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AN EMPIRICAL TEST OF COPING STYLES AS A PREDICTOR OF STATE ANXIETY IN AN EXAMINATION SITUATION

by

Heather Ann Aubry

A thesis submitted in conformity with the requirements for the degree of Doctor of Education
Department of Adult Education, Community Development, and Counselling Psychology
Ontario Institute for Studies in Education of the University of Toronto

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An Empirical Test of Coping Styles as a Predictor of State Anxiety in an Examination Situation

Doctor of Education
1997

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ABSTRACT

This study investigated the predictive validity of coping styles, trait anxiety and a trait anxiety-perception variable, a composite predictor for state anxiety, in the context of situational stress associated with Ontario Academic Credit examinations for French and English secondary school students. The Endler Multidimensional Anxiety Scales for trait anxiety (EMAS-T), state anxiety (EMAS-S) and Perception of the Situation - Revised (EMAS-P (R)) and the Coping Inventory for Stressful Situations - Adolescent (CISS-A) were administered to 95 subjects, ages 16 to 19, during a regular class at school (considered to be a low stress condition) and immediately prior to their final Ontario Academic Credit examination (a high stress condition). Gender differences in coping styles were investigated to further clarify the coping-anxiety interaction.

Present results indicated that females and males did not differ in their use of task and avoidance-oriented coping styles. However, females demonstrated a tendency to use more emotion-oriented coping than males. English-speaking female students also showed
a small but significant tendency to use avoidance-oriented coping. Contrary to prediction, task-oriented coping style was associated with high anxiety in an examination situation for females only. The results for male participants in the study failed to achieve significance for any of the coping dimensions.

Comparison of the trait anxiety dimensions and the coping styles revealed that coping styles offered superior predictive ability compared to each of the individual trait anxiety dimensions for high state anxiety. However, the Coping Inventory for Stressful Situations-Adolescent instrument produced an equivalent predictor correlation coefficient to the trait perception anxiety (ATP) composite predictor. Therefore, in this research, both the Coping Inventory for Stressful Situations-Adolescent instrument and the ATP composite predictor appear to be valid predictors for high state anxiety for female adolescents, but not for males.
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CHAPTER I

INTRODUCTION

Anxiety is a term frequently used by the general public, the popular press and the medical/psychological community. It is a pervasive societal problem. Frequent anxiety promoting situations can include: body image, employment instability, the state of the economy, the next mortgage payment, the next academic examination, and present and future interpersonal relationships. Anxiety is so common and far-reaching that it seems safe to state that everyone will probably experience an increase in anxiety, however temporary, at some time in their lives.

Anxiety disorders are classified as major mental disorders in the Diagnostic and Statistical Manual IV (DSM-IV) (1994), used by psychiatrists and psychologists to diagnose psychiatric illnesses. These disorders include severely debilitating illnesses such as agoraphobia, panic attacks, social phobia and substance-induced anxiety. Frequently, individuals are so incapacitated by anxiety that they require medication and/or hospitalization. Approximately 2% to 4% of the general population may experience an anxiety disorder severe enough to meet the DSM-IV criteria (Endler, et.al., 1991).

Extensive research shows that anxiety, stress, daily conflicts, and traumatic life events exert a negative impact on an individual's well being (Folkman & Lazarus, 1984,
1985, 1986; Endler & Parker, 1990a,b,c, 1994; Endler, Parker, & Butcher, 1993; Endler, Kantor, & Parker, 1994; Bolger, 1990; Coehlo, 1980). Some consequences of these serious and long lasting effects are depression (Folkman & Lazarus, 1984, 1985, 1986; Bruder-Mattson & Hovanitz, 1990; Billings & Moos, 1984; Forman, 1993), psychopathology (Hovanitz & Kozora, 1989; Endler & Parker, 1990b,c, 1994; Bolger, 1990; Parkes, 1986; Felton & Revenson, 1984; Aldwin & Revenson, 1987; Jorgenson & Dusek, 1990; Compas, Malcarne, & Fondacaro, 1988), physical illnesses (Hanson et al., 1989; Peterson, 1984; Carver et al., 1993), substance abuse (Wills, 1986; Jorgenson & Dusek, 1990; Coehlo, 1980; Folkman & Lazarus, 1986; Cooper, Russell, & George, 1988; Billings & Moos, 1984; Forman, 1993), poor adjustment to school, unsatisfactory academic performance (Folkman & Lazarus, 1985; Aspinwall & Taylor, 1992; Forman & O'Malley, 1984) and poor management skills (Long, 1990). Endler, et al. (1991) report that in addition to the long term effects, anxiety can result in distressing temporary symptoms such as feelings of irritation, nervousness, muscle tension and headaches. Performance tasks and perception can also be distorted. In order to prevent some of these major problems from occurring, a great deal of research has been conducted to determine a valid predictor of high state anxiety. If researchers achieve the means to predict high state anxiety in individuals, then perhaps the problems associated with anxiety can be avoided or detected early and treated successfully.

This study will examine the relationship between coping styles and state anxiety in a stressful situation using French and English secondary school students. Previous research by this author found that trait anxiety proved to be a significant predictor of high state anxiety, but a composite variable, which included not only trait anxiety measures but
also a measure of a subject's perception of the stressful event, emerged as a superior predictor to any of the individual trait anxiety dimensions (Busch (Aubry), King, & Guttman, 1993, 1994). The purpose of this study is to discover if a measure of coping styles will prove to be a significant predictor of high state anxiety and, if so, will it be a superior predictor to trait anxiety. Four areas related to the prediction of state anxiety will be examined: i) coping styles as predictors of state anxiety, ii) gender differences in coping styles and anxiety, iii) cultural differences related to coping styles, and iv) a comparison of coping styles versus trait anxiety and a composite measure (ATP), composed of trait anxiety and situation perception, as predictors of state anxiety.

This chapter is organized in six sections. In section one a brief overview of four theories of personality related to the concepts of anxiety and coping is reviewed. The concepts and theories of anxiety and some current research on anxiety are discussed in sections two and three. Section four examines concepts and theories of coping, beginning with a historical perspective. Methodological and terminological issues and problems are also presented. In the fifth section, a review of the current research literature in the area of coping, as related to adults, and children/adolescents, is reviewed. Gender studies and cultural studies are also examined to further clarify issues related to anxiety and coping. The gaps in research and the psychometric problems with current research instruments are outlined in section six, leading to the presentation of the rationale for this thesis and the subsequent hypotheses.
Theories of Personality

In order to understand the development of the theories of anxiety and coping, it is first necessary to consider the theories of personality from which anxiety and coping theories originated. Four theories of personality --- situationism, psychodynamic, trait and interactionism---are relevant to the current concepts of anxiety and coping. Specific aspects of these theories as related to anxiety and coping will be described briefly in this section. A complete review of these theories is beyond the scope of this thesis.

According to King (1980), situationism purports an outer-directed view of personality. In this theory, stimuli presented by the external environment are what govern the actions of an individual. The importance of broad response predispositions or traits is minimized; whereas situational specificity is recognized as the important determinant of behavior.

On the other hand, the psychodynamic view of personality suggests that behavior is basically inner-directed. According to Endler and Magnusson (1977), psychodynamic theorists focus their attention on the interplay among the id, ego and superego and the moderating effects of the ego.

Similar to psychodynamic theory, the trait model of personality also considers behavior to be inner-directed. It is the relatively stable within-person characteristics or traits which govern behavior that are the primary focus of the trait model. In this theory, the consistency of behavior across various situations, rather than environmental effects are the relevant issues used to explain behavior.

The interactional model of personality combines both the trait and situationism theories to explain human behavior. Endler and Magnusson (1977) postulate that
behavior is a function of both the person and the situation and to fully understand behavior, neither the person nor the situation can be examined in isolation. The person is an active component of the interactional process and the interaction is multidirectional between the person and the situation. Cognitive processes are the essential within-person determinants of behavior and it is not the situation itself that is important but the individual’s perception of the situation, or the meaning of the situation that individual attaches to it.

The aforementioned aspects of the personality theories provide the basis for the current theories of anxiety and coping and the research conducted in these areas.

**Theories of Anxiety**

According to Spielberger (1966), the first psychological reference to anxiety was Freud’s diagnosis of anxiety-neurosis in 1894. Freud considered anxiety to be internal impulses due to repressed feelings of threat, and the manifestation of anxiety was due to the partial breakdown of repression. Consistent with the psychodynamic theory of personality, Freud viewed anxiety as an internally-focused phenomenon that was not influenced by the environment. Spielberger (1966) explained that Freud spent 50 years trying to perfect his definition of anxiety, and he was never able to accomplish it to his satisfaction.

Generally, anxiety is a term used to describe both a personality variable and a transitory state (Spielberger, 1975; Endler & Magnusson, 1977). For example, a person, described as anxious, could be feeling anxiety at that particular moment, or it could mean the person generally experiences more anxiety than most of the people around him/her.
The use of one term to define the two different dimensions, has confused the field of anxiety research. Therefore, definitions of two areas of anxiety were developed. According to Cattell and Scheier (as outlined in Spielberger, 1972), two factors of anxiety emerged from their factor analytic studies of anxiety. They were the first researchers to differentiate the terms state and trait anxiety, and these definitions continue to be used by researchers today. State anxiety is recognized as a consciously perceived transitory state, which is the immediate feeling of anxiety engendered by a threat (Endler, 1975; Spielberger, 1966). It includes feelings of both emotional and physiological arousal. An emotional response can consist of feelings of tension, apprehension and fear; whereas, physiological arousal encompasses autonomic nervous reactions such as trembling, perspiring, increasing heart rate and palpitations. State anxiety can change according to the situation. Conversely, trait anxiety is defined as a stable and enduring manner of responding to situations perceived threatening. For example, an individual high in trait anxiety would demonstrate a tendency to perceive a variety of situations as threatening and would respond with elevated state anxiety.

Subsequent to Cattell and Scheier (in Spielberger, 1972), Spielberger (1975) proposed a state-trait theory of anxiety. In his unidimensional approach, the theory of anxiety moved from an unconscious focus to a conscious perspective. For Spielberger (1975), the individual would respond to a threatening situation according to his/her level of trait anxiety (and trait anxiety was determined by the amount of ego threat a person perceived). An individual, high in trait anxiety, would display a predisposition to respond with a high state anxiety reaction when confronted with a threatening situation, while a person, low in trait anxiety, would demonstrate lower levels of state anxiety in a similar
situation. In order to prove their State-Trait theory, Spielberger, Gorsuch, and Lushene (1970) developed the State-Trait Anxiety Inventory (STAI) which assessed both state anxiety (A-State) arousal and individual differences in trait anxiety (A-Trait). For example, if an individual, high in trait anxiety (A-Trait), was confronted with a situation in which he/she would be evaluated with respect to personal adequacy, a high state anxiety (A-State) reaction would be activated. A person, low in trait anxiety, would not experience state anxiety elevation when confronted with the same situation.

The theory of state-trait anxiety, as measured by the State-Trait Anxiety Inventory (STAI), displayed a limitation due to its unidimensional nature. As reported in King (1980), the STAI proved to be able to differentiate between high and low trait anxiety subjects when the situational stressor was ego-threatening in nature. State anxiety would increase for high trait anxiety subjects in this type of situation. However, trait anxiety proved to be unrelated to state anxiety when a physically threatening situation was confronted. For example, a person differentiated by the STAI measure as high in trait anxiety would respond with a corresponding elevation in state anxiety when the threatening situation was perceived to be ego-threatening. However, if the threatening situation was perceived to be physically dangerous, the subjects who experienced elevated state anxiety did not necessarily have correspondingly high scores on the trait anxiety instrument.

Endler (1975) proposed an Interaction Model of Anxiety, based on the Interaction Model of Personality, to overcome the limitations of state-trait anxiety theory. His model of anxiety encompassed three concepts: the individual's predisposition to anxiety reactions, the threatening situation itself, and the individual's perception of the threatening
situation. It is the interaction among these three dimensions, person, environment and perception, that produces state anxiety and the level of state anxiety. In this model, the individual is recognized as an active contributor to the situation and is not merely acted upon by the situation itself. A person's cognitive processing of the situation and the psychological meaning attached to the threatening situation are integral parts of the model.

The multidimensionality of the theory is explained in the definition of trait anxiety. Whereas Spielberger's concept of trait anxiety only accounted for threatening situations involving ego-threat as a measure for trait anxiety, Flood and Endler (1980) described trait anxiety as an individual's predisposition to respond with state anxiety across a variety of situations: i) social evaluation or interpersonal threat, ii) ambiguous threat, iii) physical danger threat, and iv) threat in innocuous situations or daily routines. According to this model, a state anxiety reaction will only be activated when an individual's trait anxiety profile is congruent with the threatening situation. It is not the situation itself that determines the amount of threat, but the individual's perception of that situation.

Endler et al. (1991) and Flood and Endler (1980) suggested that individuals would respond differentially to a particular situation depending on their trait anxiety and their perception of the situation. For example, if an individual scored high on the physical danger dimension of trait anxiety and the threatening situation was perceived to be physically dangerous, the person would respond with elevated state anxiety. However, if the person scored low on the trait anxiety dimension for physical danger and experienced the same situation as the individual who scored high, the low trait anxiety person would not respond with elevated state anxiety. Flood and Endler (1980) stated that in order for a state anxiety reaction to be activated, the perceived threatening situation must be
congruent with an individual’s trait anxiety profile. That is, the situation must be perceived to be high in social evaluation and the person must display a high score on the trait anxiety social evaluation dimension in order for state anxiety arousal to occur. Conversely, a person, high in social evaluation trait anxiety, would not necessarily demonstrate high state anxiety in an ambiguous or novel situation unless he/she also scored high on the ambiguous trait dimension.

Similarly, an individual high in ambiguous trait, when confronted with a new or strange situation, would demonstrate high state anxiety, but the same individual would not show high state anxiety in a daily routine situation, such as reading the newspaper or eating lunch.

State anxiety is also multidimensional. Two dimensions of state anxiety or modes of response are described in Endler et al.’s (1991) model. State anxiety is measured from two perspectives: cognitive-worry and autonomic-emotional. Cognitive-worry accounts for the responses that focus on self-evaluation, thoughts of failure and self-doubt. Autonomic-emotional includes physiological symptoms such as unsteady hands, rapid heart beat and muscle tension that one would feel when experiencing an increase in state anxiety (Endler et al., 1991).

Research on the Interaction Model of Anxiety, which proposes a multidimensional approach to the study of anxiety, eventually led to the development of the Endler Multidimensional Anxiety Scales (EMAS) (Endler et al., 1991) for measuring trait and state anxiety as well as perception of the situation. These scales provide a trait anxiety profile (EMAS-T) with scores for each of the four dimensions (social evaluation, ambiguous, physical danger and daily routines) as well as a situation perception profile
(EMAS-P(R), detailing an individual’s subjective perception scores on each of the same four dimensions. A state anxiety score (EMAS-S) is also determined using these scales. It consists of two components, autonomic-emotional and cognitive-worry. In order to further clarify the interaction of an individual’s personal trait anxiety profile and situation perception ratings without relying on group means, King and Endler (1990b) developed a mathematical model, the ATP score. This score incorporates each individual’s situation perception profile, trait anxiety profile and state anxiety inducement capacity profile into one score. King and Endler (1990b) suggested that the ATP score would represent an individual’s profile more accurately and prove to be a better predictor of high state anxiety than the individual trait anxiety dimensions. This, in fact, proved to be the case (King & Endler, 1990b, 1991; Busch (Aubry), King and Guttman, 1994). The EMAS instruments are described in detail in Chapter II.

**Current Research on Anxiety**

Due to the relevance of the EMAS scales for this study, a review of the current research on anxiety will be limited to the research that has been completed using only the EMAS scales. This research has revealed conflicting results.

Using the EMAS assessment instruments, King and Endler (1990b) tested the validity of the ATP composite predictor with 26 adults (18 female and 8 males subjects) while they were attempting a driving test. It was surmised that a driving test was a sufficiently stressful situation to arouse high state anxiety in individuals who scored high in the social evaluation and ambiguous trait anxiety dimension. They found that none of the individual trait anxiety dimensions predicted elevated state anxiety; whereas the ATP score
significantly predicted high state anxiety. In a similar study using 28 adult subjects who were having at least one dental cavity repaired, King and Endler (1992) reported a significant correlation between the ATP variable and high state anxiety. In keeping with the aforementioned study, none of the individual trait anxiety dimensions achieved significance as predictors of state anxiety.

Conversely, Jackson and King (1993) using the EMAS instruments discovered that the ATP predictor was not significant for predicting state anxiety in male, adolescent football players prior to an important game. This author, Busch (Aubry) et al. (1994) investigated the predictability of the individual trait anxiety dimensions and the ATP variable with 95 secondary school students prior to Ontario Academic Credit examinations. It was assumed that an examination would be perceived as a highly stressful situation for adolescents. (This will be discussed more fully in Chapter III.) The results for this study revealed that three of the individual trait anxiety dimensions, social evaluation, ambiguous and physical danger, were significant predictors of high state anxiety; however, the ATP variable proved to be superior to these dimensions for predicting state anxiety. Further analysis revealed that when the data were analyzed according to gender, only ambiguous trait anxiety was significantly related to high state anxiety. These results were valid for only females in the group. The ATP variable was again the superior predictor of state anxiety when compared to the results of the trait anxiety dimensions for females. No significant results were found for males. Further results of this study will be discussed in Chapter III.
Theories of Coping

A brief history of the development of coping theories helps to illuminate some of the controversy and confusion that exists in the field of coping research today. According to Parker and Endler (1996), the first recognized coping strategies, not yet formally named coping, originated with Freud in the 1890’s. His concept of “defense” was believed to be an unconscious coping reaction to stress. Anna Freud further refined these concepts of defense mechanisms to include intellectualization, denial in fantasy and altruistic surrender, to name a few. She proposed that individuals preferred and used only a few select defense mechanisms or habitual strategies for dealing with stressful situations and that some defense mechanisms were more pathological than others.

It was not until the 1960’s that the beginning of “formal” research in the field of coping began. Prior to the 1960’s, the term “coping” was used informally in medical and social science literature and was viewed as a positive response to stress. As the research increased, a more technical definition was developed. According to Haan (1965) early coping research was centred around defense mechanisms and the term coping became recognized as an “adaptive” defense mechanism.

As the field of research developed, coping was differentiated from defense mechanisms. Coping was still viewed as a positive reaction to stress, but it was considered to be “flexible, purposive, reality oriented”; whereas defensive behavior was considered “rigid, reality distorting and undifferentiated” (Haan, 1965, P.374). It was during these years that coping began to be viewed as a conscious strategy.
During the 1960's and 1970's, the first generation of coping researchers started to examine a limited number of coping responses, although they believed that an unlimited number existed. It was during this time that problem-focused and emotion-focused coping became the central concepts studied (Billings & Moos, 1981; Carver, Scheier, & Weintraub, 1989; Endler & Parker, 1990a, b; Folkman & Lazarus, 1980, 1985; Patterson & McCubbin, 1987). Problem-focused coping involved strategies which attempted to solve, reconceptualize or minimize the effects of a situation, and emotion-focused coping encompassed strategies of self-preoccupation, fantasy and wishful thinking designed to adjust affect regulation (Folkman & Lazarus, 1985). Gradually, avoidance-oriented coping, such as seeking out others or substituting an alternate task in order to avoid the threatening situation, emerged as a relevant coping response (Endler & Parker, 1990b; Suls & Fletcher, 1985). Although the general public and even the Oxford Dictionary still viewed coping as only a positive response to threat (to “deal effectively or contend; manage” (Thompson, 1992, p. 185), researchers began to investigate both positive and negative or maladaptive coping strategies.

It was in the 1960's and 1970's that coping research focused mainly on extreme situations (i.e. life threatening or traumatic events) requiring a coping response. According to Parker and Endler (1996) by focusing on extreme situations, the research became governed by situational factors, and thus person-oriented factors such as habitual coping styles became insignificant. They reported that in an extremely threatening situation, a person can respond only with coping strategies relevant to or dictated by the constraints of the situation. Although an individual may have a preferred repertoire of coping responses, these may not be accessible in an extreme situation. During this time,
the personality theory of situationism was also prevalent, and this theory helped centre the focus of research on situational factors. Therefore, individual trait factors of coping were virtually ignored.

During the 1980's and 1990's, trait studies re-emerged, resulting in an increase of research on individual differences in coping styles (Parker & Endler, 1996). Less threatening situations and an expanded variety of situations were examined, allowing coping styles or preferred ways of coping to emerge.

Throughout the developing years of coping research, the controversy between the situation and person factors has not been resolved, and the two schools of thought continue to exist. Endler and Parker (1990b, 1994) and Parker and Endler (1996) stated that coping research is divided into the interindividual and intraindividual approach. “The interindividual approach to coping attempts to identify basic coping styles: habitual coping styles used by particular individuals across different types of stressful situations (individual differences). The intraindividual (process) approach to coping, on the other hand, attempts to identify basic coping behaviors or strategies used by individuals in particular types of stressful or upsetting situations” (Parker & Endler, 1996, p.11).

Folkman and Lazarus (1985), active researchers in the coping area, have viewed coping mainly from a situation-specific or intraindividual perspective. As cited in Parker and Endler (1996), Folkman stated that “measures of coping traits and or dispositions are not generally predictive of how a person copes in an actual, naturally-occurring stressful event” (p.14). Therefore, Folkman and Lazarus (1985), using a situationism theory-based perspective, have suggested that coping is a conscious process that involves interaction with a specific stressful situation (state coping). Coping strategies may change according
to the individual's appraisal of the stressful situation as being threatening or challenging. The perception of the situation may influence how the individual copes with the associated stress and anxiety, and an individual's coping strategy may vary over the duration of the stressor and/or across differing stressful circumstances. Folkman, et al. (1986) have suggested that successful coping may depend more on a match of coping strategies to the features of the stressful situation rather than whether one strategy is more effective than another. They focus on the two broad categories of problem-focused and emotion-focused coping. Problem-focused coping refers to seeking information, the management of problems, and the action taken that may reduce stress by changing the environment. Emotion-focused coping pertains to emotional responses such as wishful thinking, self-blame and regulation of distressing emotions. From this theory, Folkman and Lazarus (1980, 1985) have developed the Ways of Coping Questionnaire (WCQ). It is a self-report measure of eight scales and 42 items designed to assess situation-specific coping strategies. Although this instrument has been one of the most frequently used, it has several intrinsic psychometric and methodological problems associated with it.

First, small sample sizes were frequently used to study construct validity. Means, standard deviations, levels of significance, sample parameters and test-retest reliability were not reported in the manual (Endler & Parker, 1994; Hess, 1992). In a critical survey of coping instruments, Schwarzer and Schwarzer (1996) found internal inconsistencies in the WCQ. They reported that the theory for the WCQ accounts for inconsistencies by explaining that individuals may adjust their coping according to the specific event and therefore, high stability was not a requirement for this test instrument to be considered
reliable. Endler and Parker (1990b) argue that a reliable coping scale should have moderate to high test-retest correlation if administered in two similar situations (p.34).

Second, the questionnaire was tested on upper middle class, Caucasian subjects and therefore, has no face validity across different cultural or ethnic groups (Hess, 1992). Similarly, Wineman, Durand & McCulloch (1994) found that the WCQ was not a good fit for adults with multiple sclerosis or a spinal cord injury. Wineman et al. (1994) postulate that the coping used by well populations may differ from those who have chronic long-term disabilities.

Third, as with other self-report instruments, the WCQ does not specify the length of the coping period. For example, if the stressful event is an examination, does the coping period include the period of time just prior to the examination or the entire situation including the outcome (Stone et al., 1991)?

Fourth, in several factor analyses, items have failed to load consistently on the factors (Hepner et al., 1991).

Fifth, researchers have added or dropped items from the questionnaire, resulting in lack of standardized measures to compare results (Felton & Revenson, 1984; Long, 1990). In his study of premedical students, Bolger (1990) used six out of eight subscales in WCQ because only six were reliable according to a criterion of Cronbach’s $\alpha > 0.5$.

Sixth, Bolger (1990) found that two measures on the WCQ, wishful thinking and self-blame, were highly correlated. His correlation analysis of the subscales revealed that wishful thinking and self-blame correlated as high as their $\alpha$ reliabilities and thus should not be used as separate variables.
In contrast to Folkman and Lazarus' (1985) beliefs, Endler and Parker (1990b, 1994) have argued that it is necessary to examine trait coping as well as situation-specific coping. They developed an Interaction Model of Anxiety, Stress and Coping. This model includes a situational dimension of coping that accounts for all the transitional coping strategies used in a specific stressful situation. These strategies can change from one situation to the next. In addition, it encompasses a trait-like dimension of coping that incorporates the enduring coping strategies or "patterns of coping reactions" (Endler & Parker, 1990b, p. 1) that an individual carries from one situation to the next. These concepts are recognized as situation-specific coping strategies and coping styles, respectively. Coping styles or trait coping is the focus of this research. As Endler and Parker (1994) hypothesize, "the interaction model of stress, anxiety and coping processes proposes that person and situation factors interact to induce perceptions of threat with consequent elevations in state anxiety levels" (p.50). Research has shown that although strategies sometimes change from one situation to the next, there is a tendency for individuals to use similar coping styles across situations (Aldwin & Revenson, 1987; Carver & Scheier, 1994; Carver et al., 1989; Compas, 1987; Endler & Parker, 1990b, 1994; Endler et al., 1994).

A relatively new coping instrument, the Coping Inventory for Stressful Situations (CISS), was developed by Endler and Parker (1990b) to provide a psychometrically sound measurement that would determine an individual's preferred coping style. The CISS is a multidimensional, self-report questionnaire designed to assess the three basic coping style dimensions of task-oriented, emotion-oriented and avoidance-oriented coping. Task-oriented coping is related to the problem-focused coping dimension of the Folkman and
Lazarus (1985) model which attempts to change the environment to reduce anxiety. It focuses mainly on the task and how to complete it or overcome the problem. Cognitive restructuring of the problem is also considered part of task-oriented coping. Similarly, emotion-oriented coping is associated with Folkman and Lazarus' (1985) emotion-focused coping dimension. This is more person-oriented and involves fantasizing, self-preoccupation and self-oriented emotional reactions. According to Endler and Parker (1990b), “the aim is to reduce stress (but this is not always successful)” (p.35). They report that frequently an individual may become more upset, thereby increasing the level of stress. The avoidance dimension of coping, involving both person and task-oriented behaviors, was included in this model because research has shown it to be a relevant coping dimension (Amirkhan, 1990; Billings & Moos, 1985; Endler & Parker, 1990a,b,c, 1994; Endler et al., 1993; Endler et al., 1994; Suls & Fletcher, 1985). Avoidance-oriented coping has been further broken down into social diversion and distraction. Social diversion aims to alleviate stress and avoid the problem through person-oriented activities, and distraction allows one to avoid the problem or stressor by becoming involved in other situations or tasks. The CISS instrument is appropriate for adults, adolescents, and some psychiatric patients, and appears to be free of the psychometric problems that have plagued other instruments in this area of research.

The CISS instrument also co-ordinates well with the prior anxiety measures developed by Endler et al. (1991) and provides a “package” of instruments that are psychometrically sound and can be easily used to investigate coping, state and trait anxiety and situation perception. A more indepth discussion of the psychometric properties, validity and reliability of the CISS is presented in Chapter II.
Current Research on Coping

Over the last 20 years, coping styles and strategies have been investigated to determine their effects on anxiety and its related problems. However, many studies have been fraught with methodological problems and conflicting results. As Taylor (1984) states "until recently, research on coping was in disarray, characterized in one respect as a three-car garage filled to the rafters with junk" (p.2313). Although it is changing slowly, this statement still seems to be valid today. Coping research has primarily concentrated on associations between coping and stress/anxiety in examination situations, coping and physical/mental illnesses, and coping and personality dimensions. A few studies have scrutinized coping and substance abuse. Previous research that has been done has concentrated on adults and children, and for the most part adolescents have been ignored. Further to this, children's studies have examined gender differences in coping, but few adult studies have considered this aspect of coping. Therefore, little is known about gender differences in coping and what has been discovered has not been replicated to date. Although many studies have used coping instruments that have questionable reliability and validity, their results need to be examined and considered in relation to the present study.

This section looks at adult and child/adolescent, gender and cultural research in the field of coping. Issues such as methodological and theoretical problems are discussed in relation to the research reviewed here. Conflicting results are presented and gaps or deficiencies in the studies are illuminated.
Adult Research

The majority of research on coping centred around the two theories of coping: state or situation-specific coping and trait or preferred, habitual coping styles. By far, the largest number of adult studies reported results from the Ways of Coping Questionnaire (WCQ) or a version of it and therefore, focused on situation-specific coping strategies. Few examined habitual coping styles, and as yet, there is still no consensus between the two schools of thought.

Adult studies have examined the coping relationship with three major variables: anxiety in examination situations, mental health, and personality. The following studies are outlined according to their theoretical perspective and the instruments used in the research. A comparison of the results between situation-specific coping and preferred coping styles is outlined.

University examinations have frequently been used in research as stressful or threatening situations in which to examine coping. Research has revealed that college students who used emotion-focused and avoidance-oriented coping, before and during the examination, experienced greater depression and increased anxiety and stress (Aspinwall & Taylor, 1992; Blankstein, et.al., 1992; Bolger, 1990; Folkman & Lazarus, 1985).

The WCQ has been used in several studies involving anxiety and stress in an examination situation. In a study of students writing their medical entrance examinations, Bolger (1990) found that wishful thinking and self-blame predicted increased anxiety before that examination. Similarly, Folkman and Lazarus (1985) reported that distancing oneself from an examination was associated with a worsened emotional state. To further
support this, Aspinwall and Taylor (1992) determined that avoidance coping decreased the benefits gained from an optimistic attitude, a sense of control, and high self-esteem. They also found that avoidance coping predicted less successful adjustment to college. Conversely, active coping, considered a form of task-oriented coping, and seeking social support, increased the benefits of an optimistic attitude, a sense of control and high self-esteem.

Blankstein, Flett, & Watson (1992) also reported maladaptive coping in test-anxious college students. They administered WCQ questionnaires, the Academic Problem-Solving Inventory and measures of state and trait test anxiety to 125 first year psychology students. The highly test-anxious students resorted to avoidance as a coping strategy. They also discovered that test anxiety was associated with a decrease in problem-solving confidence and perceived control over the situation.

The following two recent dispositional coping studies reported similar results to those of the situation-specific studies. Using the Coping Inventory for Stressful Situations (CISS), Endler and Parker (1994) found that anxiety levels were elevated in students who reported using more emotion and avoidance-oriented coping styles. In their study, undergraduates who reported high anxiety also demonstrated the use of more emotion-oriented coping prior to their midterm examination.

In a comparable study with college students using their COPE questionnaire, designed to assess individual differences in coping, Carver and Scheier (1994) detected that students, who perceived the examination as threatening, reported responding to stress through escapism and avoidance coping such as denial and turning to alcohol. Although Carver, Scheier, and Weintraub (1989) experienced some difficulties surrounding the
development of the COPE measure (i.e. large numbers of factors from the initial factor analysis and low to moderate alpha coefficients for many subscales), Schwarzer and Schwarzer (1996) contend that this "instrument is a good tool to continue research on these issues" (p. 123).

Another area that has been extensively investigated is the association between coping and mental/physical health. Several studies, using the WCQ, have reported that there is a positive link between avoidance and emotion-focused coping and depression (Aldwin & Revenson, 1987; Bruder-Mattson & Hovanitz, 1990; Folkman et al., 1986; Folkman & Lazarus, 1988; Hepner, Cook, Strozier, & Hepner, 1991). In a study of 291 adults, Aldwin and Revenson (1987) scrutinized the relationship between coping and mental health. Their subjects were asked to rate a self-named stressful episode which they had encountered in the past month and to describe how they coped with it using the WCQ. The WCQ was modified to suit the constraints of the study by deleting one item and rewording three. A measure to screen for psychological symptoms was also administered concurrently with the WCQ. They established that less adaptive coping strategies, such as escapism and emotion-focused coping, were significantly associated with poor mental health and greater stress. Similarly, in a study of 176 undergraduates, Bruder-Mattson and Hovanitz (1990) established that maladaptive coping, described as escapism and avoidance, contributed to depression as defined by the Beck Depression Inventory. Folkman and Lazarus (1988), in a study where subjects were asked to reconstruct a stressful event, found that planful problem-solving decreased an emotional state; whereas distancing worsened the emotional state.
Further to the above results, Rohde, Lewinsohn, Tilson, & Seeley (1990), in a study of adults, aged 50 plus, discovered that subjects who used ineffective escapism, such as avoidance, helplessness, passiveness, and negative ruminations, were strongly linked to current and future depression. In addition, currently depressed individuals presented with even more maladaptive and negative coping behaviors than those who developed depression later. In their use of the WCQ, these authors used six items from the WCQ and two other measures as designated by three psychologists to determine the coping strategies of their subjects.

Several studies investigating dispositional coping found significant associations between coping and mental/physical health. Tremblay and King (1994), using the CISS, the Endler Multidimensional Anxiety Scales and the Beck Depression Inventory, investigated the relationship between coping and depression. In a study of 17 male and 26 female psychiatric inpatients, they reported a significant relationship between emotion-oriented coping and depression. Task-oriented coping was negatively correlated with depression. Similarly, Endler et al. (1993) discovered that psychopathology, as determined by the Minnesota Multiphasic Personality Inventory (MMPI), was also linked to emotion-oriented coping. In this study, 176 male applicants for the position of airline pilot were asked to complete the MMPI-2 and the CISS. The results revealed that emotion-oriented coping was linked to aggressive behaviors, negative self-views and work interference.

The use of denial and disengagement prior to a diagnosis of breast cancer increased the amount of distress experienced by patients after receiving the results of their tests as predicted by the COPE questionnaire (Carver et al., 1993).
Another coping measure, the Coping Strategies Inventory (Tobin, Holroyd, & Reynolds as cited in Hovanitz, 1986) was designed to measure cognitive-behavioral trait, social-ecological and ego-dynamic components of coping. Using this measure Hovanitz, (1986) established that emotion-focused coping was associated with greater dysfunction in females who had experienced a stressful event within the last three months. The stressful incident was recalled and described by the subjects in the study. Hovanitz and Kozura (1989) also reported that “effective copers”, subjects who used problem-solving and task-oriented coping, did not experience psychopathology.

Utilizing other coping measures, researchers are in agreement with the aforementioned results. Billings and Moos (1984), from the results of their Health and Daily Living questionnaire, reported that emotional discharge and avoidance styles of coping were positively correlated to severe depression. Although the Health and Daily Living measure found consistent results with the other studies and was one of the first measures to be developed, it has been reported that this measure demonstrates unsatisfactory internal consistencies (Schwarzer & Schwarzer, 1996).

Additional areas of adult research have concentrated on the relationship between personality variables and coping. In his investigation of neuroticism using the WCQ, Bolger (1990) reported that students, high in neuroticism, coped ineffectively, using self-blame and wishful thinking, and thus increased their anxiety. Parkes (1986), employed a semi-structured interview technique to determine stressful events experienced by her subjects. Using the WCQ, she found that subjects high in neuroticism used the maladaptive coping strategies of cognitive distortion, self-blame, withdrawal and escapist fantasy. These strategies increased anxiety and depression.
Comparable studies of neuroticism/introversion also indicated that the use of maladaptive coping, particularly cognitive distortions, self-blame, withdrawal and escapist fantasy, produced increased anxiety and depression (McCrae & Costa, 1986).

Alternatively, these researchers described extroverts and low neurotics as individuals who used more direct, problem-focused coping. Extroversion positively correlated with rational action, positive thinking, restraint, perseverance and self-adaptation (McCrae & Costa, 1986). In their studies, McCrae and Costa (1986) applied a research measure which included some items from the WCQ and 50 additional items that the authors deemed relevant from a literature review.

In another personality study in which the COPE instrument was employed, the association between optimism/pessimism and coping was examined (Carver et al., 1993; Scheier, Weintraub, & Carver, 1986). These authors discovered that optimism was positively linked to active coping prior to breast surgery. The active coping strategies included accepting the reality of the situation, use of humour, and positive reframing. Conversely, pessimists tried to cope by escaping from the reality of the situation and disengaging from other life goals, thereby, increasing their levels of distress. Carver et al. (1993) found that patients who accepted the reality of the situation prior to surgery also adjusted better emotionally after the operation; whereas, overt denial resulted in concurrent distress and predicted future distress up to six months later.

Kirsch et al. (1990) applying the Health and Daily Living instrument in a study of dysphoria among college students, support Carver's et al. (1993) conclusion. They found that expectancy of a positive outcome (similar to optimism) was the best predictor of active or problem-oriented coping.
Ben-Zur and Zeidner (1995) studied Israeli adults during the Persian Gulf War and three months later during a relatively peaceful time. They found that during the crisis their subjects used more emotion-focused coping and less problem-solving. In the three months subsequent to the war, more problem-focused coping was used. In both the war and post-war sample of subjects, emotion-focused coping was positively related to anxiety.

Although the aim of coping research has been to discover successful ways of coping, most adult studies have uncovered maladaptive strategies and styles, such as avoiding situations through drug and alcohol abuse, denial of a stressor’s reality or seeking social support in order to diverge from the problem. Generally, problem-focused or task-oriented coping, such as tackling the problem, has been considered the most beneficial for an individual; whereas, emotion-oriented and avoidance-oriented coping styles have been associated with increased anxiety, distress and generally negative results (Aldwin & Revenson, 1987; Aspinwall & Taylor, 1992; Ben-Zur & Sender, 1995; Bruder-Mattson & Hovanitz, 1990; Endler & Parker, 1990 a,b,c, 1994,; Endler et al., 1993; Endler et al., 1994; Folkman & Lazarus, 1985). On the other hand, there have been studies that have shown both emotion-oriented and avoidance-oriented coping to be beneficial in certain situations (Billings & Moos, 1984; Bolger & Eckenrode, 1991; Carver et al.,1993; Folkman & Lazarus, 1985; Myerowitz, Heinrich, & Schaget, 1983). For example, when emotion-focused coping alleviates some stress then one may be able to get on with the task or work towards solving the problem (Carver & Scheier, 1994). Bolger and Eckenrode (1991), in a study of medical school students, found that avoidance-oriented coping, such as talking or spending time with a relative, could have negative effects and
increase stress; whereas avoidance-oriented coping could have beneficial effects and buffer anxiety, if the contact was a special friend or neighbour.

The research presented here used various coping measures, many of which had inherent psychometric problems or were modified according to the constraints of the research methodology. Two different concepts of coping, state and trait, were utilized, and different definitions of coping strategies were employed by the various researchers. Albeit that differences exist in this field, some trends emerged. Although emotion-oriented and avoidance-oriented coping has occasionally been found to be beneficial (Bolger, 1990; Meyerowitz et al., 1983), for the most part they have emerged as maladaptive and were associated with increased anxiety in examination situations, depression, psychopathology and personality variables such as introversion and pessimism. Problem-focused, task-oriented and active coping, all loosely associated with changing the situation and/or cognitions, were often related to positive outcomes such as lower anxiety, optimism, high self-esteem and extroversion.

Child/Adolescent Research

Whereas adult coping research has attempted to co-ordinate and replicate some studies and use test instruments based on theoretical concepts, child/adolescent studies are severely lacking in this area. Child/adolescent researchers have used various coping measures from open-ended interviews (Compas, 1988; Glyshaw et al., 1989; Stone & Neale, 1984; Wills, 1986) to structured questionnaires (Endler & Parker, 1990b; Seiffge-Krenke, 1993), and it appears that only the Coping Inventory for Stressful Situations-Adolescent instrument is theory-based. The various instruments use different coping
factors and although some trends in the research can be loosely inferred, valid
comparisons cannot be made unless the definitions are very similar. For example, Seiffge-
coping includes active coping, such as information-seeking, and internal coping, such as
reflecting on possible solutions. The concept of functional coping can be related to
Endler and Parker's (1990b) task oriented-coping. Dysfunctional coping, consisting of
ways to control feelings such as denial or repression, can be compared to Endler and
Parker's (1990b) emotion-oriented coping. Similarly, Patterson and McCubbin (1987)
developed the Adolescent Coping Orientation for Problem Experiences (A-COPE)
consisting of 12 coping patterns. Some of these patterns such as seeking diversions and
avoiding problems can be related to other subscales or factors such as the avoidance-
oriented factor from the CISS-A. It is difficult to link other factors, like being humorous,
to other instruments.

Another complication that infringes on the validity of coping research is the
modification of research instruments. For example, Jorgenson and Dusek (1990),
applying the A-COPE in their research with college students, defined two categories of
coping: a) salutary coping which includes making decisions and family support and b)
stress palliation which includes verbal aggression, drug abuse, avoidance, and
daydreaming. Plancherel and Bolognini (1995) constructed definitions of ventilation,
social interaction and humour. After careful examination of the definitions of the factors
in the various studies, factors can sometimes be grouped into adaptive and maladaptive
coping strategies. However, one must use caution when comparing one study with
another.
Another problem associated with the child/adolescent research is similar to that found in the adult research. Some measures of coping are not psychometrically sound. For example, the A-COPE was developed from the results of interviews with only 30 adolescents, and Schwarzer and Schwarzer (1996), in a critical survey of coping instruments, commented that interviews with another sample of students may yield factors different from the original six. Plancherel and Bolognini (1995) in their 3-year longitudinal study of Swiss grade six students, found just that. From their factor analysis, eight factors emerged for the French version of the A-COPE.

Stone and Neale (1984) failed to achieve valid and reliable scales when developing their Measure of Daily Coping instrument. Instead they developed an open-ended response format.

Until the CISS-A was developed by Endler and Parker (1990b), no attempts were made to investigate child/adolescent coping from either a situation-specific or a dispositional perspective.

Although many problems exist in the study of coping in both the adult and the child/adolescent literature, some useful information can be gleaned from the current papers. They also help to indicate areas where systematic research needs to be initiated.

Children and adults react to stress in many of the same ways. Maladaptive coping styles have been linked to high anxiety, poor school adjustment, alcohol and tobacco use and both mental and physical health difficulties (Asarnow, Carlson, & Guthrie, 1987; Band & Weisz, 1988; Compas et al., 1988; Glyshaw, Cohen, & Towbas, 1989; Hanson et al., 1989; Patterson & McCubbin, 1987; Wertlieb, Weigel, & Feldstein, 1987; Wills, 1986). One difference has emerged from the research. In children and young adolescents,
emotion-oriented coping appears to develop with age (Band & Weisz, 1988; Boekaerts, 1996; Compas et al., 1988; Wertleib et al., 1987). These authors suggest that children may be developmentally unable to grasp the abstract ideas or formulations in emotion-focused coping at earlier ages.

As with adults, the effects of children's inability to cope effectively with stressful events and daily stressors has resulted in negative outcomes. Some children, with increased levels of stress, resorted to using maladaptive coping such as ventilation and avoidance when dealing with that stress (Compas, 1987; Compas et al., 1988; Hanson et al., 1989; Peterson, 1984). The effect of maladaptive coping for youth with insulin-dependent Diabetes Mellitus resulted in noncompliance or poor compliance with necessary treatment (Hanson et al., 1989). Peterson (1984) found that avoidance coping consistently resulted in less beneficial outcomes in children undergoing medical and surgical procedures. Similarly, Asarnow et al. (1987), in a study of suicidal behavior in psychiatric inpatients aged 8 to 13 years, found that suicidal children generated fewer and less adaptive coping skills than nonsuicidal children. They also found that depressed children with concurrent conduct disorders reported using more physically aggressive coping strategies to deal with their stress.

In a three-year longitudinal study of children whose average age was approximately 14 years, Plancherel and Bolognini (1995) documented that girls and boys differed in their levels of anxiety and in their coping styles. Girls experienced more anxiety and depression and used more maladaptive strategies than boys. Girls used social interaction and expression of negative feelings, which in turn were related to an increase in
sleep problems, anxiety and depression. On the other hand, boys used humour and participation in sports to cope with difficult situations.

Folkman and Lazarus (1985) suggested that coping is a process and that although stable ways of coping exist, individuals can and do demonstrate variety in their use of coping strategies. These results have also been found for children. For example, a sample of 130 junior high school students generated and used more problem-focused coping in relation to academic stressors because they found these difficulties to be more controllable and solvable than social stressors; whereas social stressors often resulted in emotion-focused coping in the same subjects (Compas et al., 1988). Alternatively, Glyshaw et al. (1989) found evidence to support the fact that children and young adolescents used social entertainment or avoidance as a type of coping strategy to decrease anxiety and depression.

Inconsistent findings have been reported in the sporadic literature on adolescents. Similar to the literature on children, Jorgenson and Dusek (1990) found that maladaptive coping, such as denial, angry reactions, avoidance through drugs and alcohol, and listening to music, resulted in less than optimal resolution of problems and poor psychosocial adjustment. Better adjusted students displayed the use of social supports, decision-making, and talking about problems. These strategies were all designed to alleviate stress. Further to this study, Endler and Parker (1990b) indicated that emotion-oriented and avoidance-oriented coping were significantly correlated with almost all of the scales on the Youth Self-Report measure that assess a broad range of psychopathological behaviours. Contrary to this study, Glyshaw et al. (1989) did not discover any evidence to suggest that
coping styles or strategies could predict anxiety or depression in senior high school students.

An important area of adolescent coping relates to the maladaptive use of tobacco and alcohol to cope with stressors. Wills (1986) reports that stress was positively correlated with substance use in seventh and eighth grade adolescents. In addition, peer support, distraction coping and aggressive coping were all linked to smoking and alcohol use. Patterson and McCubbin (1987) found similar associations. Consistent with the above studies, Cooper et al. (1988) found that however maladaptive and harmful, substance use offered both a reduction in negative affect and an enhancement of positive affect. Individuals who held positive expectations that "drinking to cope" would reduce their stress levels showed an increase in use, often leading to alcohol abuse and dependence.

In a study of adolescents, ages 14 and 15, Boekaerts (1996) reported that problem-focused coping was used in response to academic stressors that were perceived as controllable by the students. An example of a controllable situation used in her study was "you are in a class and the teacher wants you to take notes, but he or she is going too fast" (p. 468). She did not find any significant relationship between emotion-focused coping and anxiety, but discovered that older students used more emotion-focused coping than younger students.

Compas, Worsham and Howell (1996) studied children, adolescents and young adults who had a parent with cancer. They found that their subjects did not feel that they had any control over the situation and thus, used very little problem-focused coping strategies. The subjects who used emotion-focused coping experienced more symptoms
of anxiety and depression than subjects who used dual coping (i.e. problem and emotion-focused).

**Gender Research**

Gender research has many of the same problems as the previously mentioned studies, and therefore, also requires systematic and careful investigation.

Overall, few adult studies have been evaluated for gender differences. Albeit, in the studies that have investigated gender and coping, some trends have surfaced. Females have disclosed using more emotion-oriented and avoidance-oriented coping which is often tied to greater psychological dysfunction and severe impairment (Billings & Moos, 1984; Endler & Parker, 1990, 1994; Endler et al., 1993; Hovanitz, 1986). According to Miller and Kirsch (1987), Funabiki et al. (1980) and Stone and Neale (1984), females also report more negative self-evaluations and self-derogatory comments which have been connected to elevated scores on the Beck Depression Inventory.

There are also some conflicting results that challenge those trends. Some studies have found that women use wider ranges of coping skills which include problem and emotion-oriented coping and the use of social support. It has been hypothesized that social support acts as a coping buffer for anxiety and stress (Long, 1991 and Houtman, 1990). Although females experience greater fluctuations of stress and anxiety levels than males (Endler & Parker, 1994; Busch (Aubry), King & Guttmann, 1994), their reported overall use of problem-oriented coping is similar to that of males (Houtman, 1990; Hamilton & Fagot, 1988). Long (1991), in a study of managers' coping styles, did not
discover any sex differences in the use of problem-solving coping. Another study of 18 year old undergraduates, by Jorgenson and Dusek (1990), failed to detect gender differences in their coping styles or their psychosocial adjustment to college.

Conversely, Stone and Neale (1984) and Hovanitz and Kozora (1989) found that effective male copers used more direct action and problem-oriented coping skills. However, as anxiety and neuroticism increased in males, so did their propensity to use less problem-solving and more avoidance coping (Houtman, 1990).

In contrast to the general lack of gender research with adults, most child studies have been examined for male/female differences. As in the adult studies, girls demonstrated more emotion-focused coping in relation to academic stressors (Compas et al., 1988). Boys used more self-centred or individualistic coping; girls tended to seek more social support as a coping style (Patterson & McCubbin, 1987; Wertlieb et al., 1987). Patterson and McCubbin (1987) suggest that girls, like adult females, use a broader range of coping than boys and utilize social support as a buffer to life's stressors and conflicts.

In a study of grade five students, Dwek, Goetz, and Strauss (1980) ascertained that girls displayed a tendency to internalize failure as a lack of ability, while boys tended to blame their failures on external factors. For example, the boys would say the examination was too hard, the teacher was no good, or more studying was needed. For the boys, their expectations for future successes were not changed due to their success/failure history. Girls needed to succeed in order to anticipate success in the future. From these conclusions, girls may be more inclined to use maladaptive coping strategies such as avoidance and denial in areas where they have previously experienced failure or difficulty.
Seiffge-Krenke (1993) found that girls experienced approximately four times more stress related to academic marks and conflict with family members than boys. In this study, Seiffge-Krende documented that girls would worry more but deal with a problem or threatening situation immediately; whereas boys would try to forget about it or procrastinate until they absolutely had to deal with the problem.

Cultural Research

Culture became an issue for the present study as a result of the demographics of the sample of subjects chosen for the study. One of the towns from which the subjects were recruited, Sturgeon Falls, Ontario, Canada, consists of approximately 75% Franco-Ontarions (Statistics Canada, 1991). With the ongoing debate regarding Quebec separation and its claim as a distinct society, it seemed appropriate to investigate the possibility of cultural differences in coping. As well, scanty research exists in this area, and as with other coping research, the measures used in these studies have similar problems as outlined in the adult literature review.

Only one study specifically investigating coping strategies of French and English Canadians was found. In a study of French Canadian, English Canadian and Hong Kong Chinese college students, Chataway and Berry (1989) established that the Chinese students experienced more communication, prejudice and adaptation problems. All of the students experienced uncertainty, loneliness and academic problems. The English Canadian students coped by using tension reduction techniques, such as eating, drugs and exercise. French Canadians used more positive thinking and sought out more social support from friends and family. Wishful thinking, self-blame and withdrawal were used
by the Chinese students. Although the Chinese students used more maladaptive coping techniques to deal with their high anxiety, their academic performance remained equivalent to the English students. Their coping strategies, however, may have kept them socially isolated.

From a large cultural study of coping strategies in European countries (Hungary, Italy, Sweden), Yemen and India, Olah (1995) ascertained that generally, subjects who experienced high anxiety on a situation reaction inventory also reported the use of avoidance coping strategies. In addition, girls used more emotion-focused coping than males, and boys used more problem-focused strategies. These results are similar to those reported in the review of the gender literature.

**Coping, Anxiety and Academic Success**

Several research studies have examined the relationship between coping, anxiety and academic success (Blankstein et al., 1992; Bolger, 1990; Chataway & Berry, 1989). There is little evidence to suggest that coping and/or anxiety are related to academic outcome. Chataway and Berry (1989) found that Chinese students used the maladaptive coping strategies of wishful thinking, self-blame and withdrawal, but this did not affect their academic success. They achieved comparable results to those of the English students. Similarly, Bolger (1990), in a study of students prior to writing their premedical entrance examination, reported that neither the level of anxiety nor the type of coping was related to the examination outcome. Blankstein, et.al. (1992) also found no significant relationship between test anxiety and test performance.
Research Problems

The field of coping research has increased dramatically since the 1960’s, and researchers are still attempting to conceptualize coping dimensions and develop valid and reliable coping instruments. From a review of the literature, it becomes obvious that many problems still exist.

First, several coping research instruments lack adequate psychometric properties. Stone and Neale (1984) when designing the Measure of Daily Coping failed to develop valid and reliable coping scales. Instead, they resorted to a written structured interview. The Health and Daily Living Coping Response instrument, used by Cooper et al. (1988) in their study on coping and alcohol abuse and Billings and Moos (1984) in their study on depression and coping, also demonstrated internal inconsistencies. Similarly, the WCQ (Folkman & Lazarus, 1988; Folkman et al., 1986) lacked internal consistency as discussed previously in this paper. Several researchers have found that in their factor analyses, items have failed to load consistently. Bolger (1990) used only six out of eight subscales because only six were reliable. Still another measure proved to lack internal consistency (Plancherel and Bolognini, 1995). They found that eight factors emerged from analyses for the French version of the COPE (Carver & Scheier, 1994), whereas only six items loaded in the original version.

Second, in a practice that adds more confusion to the field, coping researchers have frequently modified instruments to meet the needs of their particular study. For example, Rhode et al., (1990) combined six items from the WCQ with two other
measures in a study on coping and mental health. Similarly, McCrae and Costa (1986), in their research on coping and neuroticism, used items from the WCQ as well as 50 new items identified from a literature review.

Third, especially in the child/adolescent area, measures were developed without a theoretical basis. The A-COPE (Patterson & McCubbin, 1987) was generated from the interview responses of only 30 high school students. Amirkhan (1990) constructed the Coping Strategy Indicator from his previous research and various existing measures. He also did not base his measure on a theoretical background.

Fourth, due to the lack of consistency in the research instruments, comparing the results of coping research is difficult. This problem is also compounded by the varying coping dimensions in the studies. Folkman and Lazarus (1985) describe two major categories of coping, problem-focused and emotion-focused, whereas Carver et al. (1994) believed that using only two dimensions was simplistic. Therefore, their final version of the COPE contained 13 scales with four items each. They did attempt, however, to establish five categories each, to correspond with problem-focused and emotion-focused coping. Endler and Parker (1990b) also coordinated their coping dimensions with those of Folkman and Lazarus (1988). However this was not the case with other researchers. In some studies, social support is regarded as a coping measure (Folkman & Lazarus, 1985; Patterson & McCubbin, 1987), and in others it is considered to be a mediating variable, as in Endler and Parker’s (1990b) model.

Although attempts were made by the researchers of adult coping to define coping dimensions, the field of child/adolescent coping has not attempted the same. Boekaerts (1996), in a survey of child/adolescent research, stated that there is little agreement in
conceptualization and measurement of coping strategies. She reported that most researchers started from scratch to develop their own theories and instruments without considering existing research. Therefore, it is even more difficult to detect any reliable or valid trends in child/adolescent coping. For example, without carefully examining the factors comprising each coping dimension, it would be almost impossible to compare the functional and dysfunctional modes of coping in Seiffge-Krenke’s (1993) study of coping on clinical and normal samples with the assimilation, accommodation and avoidance coping dimensions of Olah’s (1995) study on adolescent cross-cultural coping. Frequently, the dimensions in one study can be only loosely related to those in another and therefore, definitive statements comparing the results cannot be made.

Fifth, conflicting results in research have demonstrated that some coping strategies can be both adaptive and maladaptive depending on the situation and the individual. Bolger and Echkenrode (1991) have shown that social diversion, a subscale of avoidance-oriented coping, helped to decrease anxiety when subjects spent time with a special friend or neighbour. Conversely, they discovered that anxiety increased when the contact was with a relative. Social interaction was found to produce an increase in anxiety and depression for females in the study conducted by Plancherel and Bolognini (1995). Similarly, whereas Carver et al. (1993) found that subjects who used denial and disengagement as coping strategies to deal with the diagnosis of breast cancer experienced an increase in distress, Meyerowitz et al. (1983) reported that they found that it was beneficial for a subject diagnosed with cancer to initially use denial as a coping method in order to have time to accept and deal with the problem.
Sixth, there does not appear to be a consistent way of collecting information on stressful events or determining how stressful the event was for an individual. The criteria as to what constitutes a stressor frequently vary. The data can be collected by an interview during which subjects recall any stressful event in their past or by questionnaires such as the Life Events and Coping Inventory or Coping with Daily Hassles (Boekaerts, 1996). The degree to which subjects perceive threat or find a situation threatening is not consistently determined.

Seventh, aside from the problems inherent in the aforementioned studies, there are also gaps in the research on coping. Although the effects of gender have been shown in the coping research on children, gender is rarely investigated in adult research. Gender research on older adolescents is also very scarce. Similarly, few studies have been conducted on coping using older adolescents as subjects. Even rarer still are studies of English and French Canadians and coping.
Rationale for this Study

Aldwin and Revenson (1987) have hypothesized that the relationships among coping styles, anxiety and outcome may produce a spiral-like effect. That is, a maladaptation in one of these three dimensions can set off a chain reaction of maladaptation in the other two dimensions. This feedback cycle may continue until major physical, emotional and/or mental dysfunctions develop.

Although a plethora of research has been conducted in the areas of coping and anxiety, the subjects of that research have been mainly adults and children. The research instruments used to collect the data have been psychometrically flawed, rendering the results suspect, while several of these results have been contradictory. They also fail to differentiate the more enduring and trait-like coping styles from the situational coping strategies. Most of the research in the adult area has used measures to assess coping strategies related to a specific situation, and these strategies can change from one situation to the next. Only two instruments, the CISS (Endler & Parker 1990) and the COPE (Carver et al., 1989), were designed to assess the more enduring and preferred styles of coping. Limited research has been conducted in this area. There is not a research instrument designed to assess both situation-specific coping and coping styles. Endler and Parker (1994) are in the process of developing a situation-specific version of the CISS. When the technology is available, ideally, research would investigate both areas of coping. Research in the area of child/adolescent coping is not theory-based, and researchers have not co-ordinated their efforts towards developing a concept of coping and how to study it. Yet, coping is an important aspect of behavior that if accurately defined and systematically researched, could lead to beneficial changes in many lives. One of the initial steps critical
to making these changes is discovering the more enduring coping styles. If these are determined for individuals, then methods could be developed to reinforce adaptive coping styles and to restructure maladaptive ones.

Few valid research studies have been conducted on older adolescents, ages 16 to 19. Thus, little is known about their coping styles and whether gender differences exist at this stage in an individual's development. There is also a paucity of research examining cultural differences in adolescent coping styles. Adolescence is the time when identity develops; many stressors occur; and physical and psychological changes appear for the first time. Mitchell (1992) suggests that since adolescents must learn to cope with the demands of society, a strong identity, good self-esteem and adaptive coping styles are necessary for their optimal development and well being. Early identification and recognition of maladaptive coping styles could perhaps lead to effective prevention and intervention strategies before major problems emerge.

Therefore, the purpose of this research is to examine the relationship between older adolescent coping styles and anxiety in a high stress situation. Specifically, this study will look at the relationship between adolescent coping styles and anxiety in a stressful secondary school examination situation using the Interaction Model of Anxiety, Stress and Coping as postulated by Endler and Parker (1990b). Since limited research has been conducted in this area, especially with adolescents, coping styles, rather than situation specific coping, will be examined, and the dimensions to be analyzed will include task, emotion, and avoidance-oriented coping, as well as the two subcategories of distraction and social diversion. This study will attempt to determine what specific coping styles are significantly related to high anxiety in a stressful situation. It will also examine
whether males and females use different coping styles in a stressful situation and whether cultural differences between English and French Canadian students' coping styles exist under this condition. In addition, it will attempt to determine if coping styles are superior predictors of state anxiety than either trait anxiety and/or the ATP variable.

It is important to establish a systematic approach to the study of anxiety and coping based on a well-developed theory using appropriately designed research instruments. The Interaction Model of Anxiety, Stress and Coping, developed by Endler and Parker (1990b), based on the Interaction Theory of Personality appears to be an appropriate place to begin. They provide a co-ordinated and integrated package of psychometrically sound and easy to administer research instruments to investigate anxiety and trait coping.

Although not equivalent to a major illness or disaster, a high school examination has been found to be a stressful event for many students (Bolger & Eckenrode, 1991; Busch (Aubry) et al., 1994; Folkman & Lazarus, 1985; Smith & Ellsworth, 1987). Furthermore, since an examination is a scheduled event, prior measures can be obtained, rather than relying on a subject's memory of the stressful event (Bolger & Eckenrode, 1991). Therefore, a high school examination is an appropriate stressful situation in which to study adolescent coping styles.
Hypotheses

Given the preceding research findings, the hypotheses for this study are as follows:

(1) Emotion-oriented and avoidance-oriented coping styles will be positively correlated with the change in state anxiety from a low stress condition to a high stress condition.

(2) Task-oriented coping style will be negatively correlated with the change in state anxiety from a low stress condition to a high stress condition or no relationship will exist between the two factors.

(3) Female adolescents will report higher emotion-oriented and avoidance-oriented coping styles than males.

(4) There will be no significant gender differences in task-oriented coping styles.

(5) French Canadian adolescents will exhibit the same coping styles as English Canadian students.

(6) Coping styles, when compared to the individual A-Trait dimensions as predictors of the change in state anxiety from a low stress situation to a high stress situation, will prove to be the superior predictor.
CHAPTER II

METHOD

The data used in this study was obtained from secondary school students in two small Northern Ontario communities during an examination situation. A preliminary analysis of the data revealed that in a high stress situation, trait anxiety and the ATP predictor only correlated significantly with state anxiety for females (Busch (Aubry) et al., 1994). Information and additional analyses regarding these results are outlined in Chapter III. The present analysis will attempt to determine the predictive ability of coping styles with respect to state anxiety in a high stress situation. In addition, differences and similarities in gender and culture will also be analyzed. These results will be compared with those of trait anxiety and the ATP predictor to determine the overall best predictor of state anxiety.

Research Participants

Research participants were 95 adolescents from three high schools in North Bay and Sturgeon Falls, Ontario, Canada, who were all writing final year examinations in Ontario Academic Credit (OAC) courses, previously known as grade 13 courses. Sturgeon Falls, population 6,000, is predominantly a Francophone community. According to the town clerk’s office in Sturgeon Falls, 75% of the population is Francophone. There
are eight French and two English elementary schools and one French and one bilingual secondary school. According to North Bay city administration, the population is 55,000 with 15% Francophone residents. There are two French and 32 English elementary schools and one French and five secondary schools in North Bay. Demographic data, detailing a student's age, sex, cultural background and grade point average, was obtained. A copy of the demographic form is in Appendix I. The students' ages ranged from 16 to 19 years with a mean age of 17.6 years. Of the 95 students, 58 were females and 37 were males. While 44 attended a Francophone school, the remaining 51 attended one of two English schools. Of the total number of students, 33 students were enrolled in Biology, 18 in Sociology, 14 in English, 12 in Geography and 16 in Chemistry. Grade averages ranged from 55 to 95 with 78 as the mean. Two subjects were eliminated from the analysis. One subject's change in A-State was greater than three standard deviations from the mean and, was therefore identified as an outlier through multiple regression. One subject was dropped when she revealed that she responded randomly to the test items (Busch (Aubry) et al., 1993).

**Test Instruments**

Four test instruments were selected for this study: Coping Inventory for Stressful Situations - Adolescent (Endler & Parker, 1990b), the Endler Multidimensional Anxiety Scales - State (Endler, Edwards, & Vitelli, 1991), the Endler Multidimensional Anxiety Scales - Trait (Endler et al., 1991), and the Endler Multidimensional Anxiety Scales - Perception (Revised) (King & Endler, 1989). These measures were chosen because they
have demonstrated construct validity and reliability and are appropriate for various populations, especially adolescents. The manuals are clearly and concisely written, with explicit scoring and interpretation instructions. Normative data for adolescents are included in the manuals, as are the necessary reliability and construct validity data.

To demonstrate the detailed and careful development of these instruments, the manual for the CISS (Endler & Parker, 1990b), for example, contains normative data collected on adult, adolescent, and psychiatric males and females. Data from various other groups, such as teachers, undergraduates, airline pilots, males incarcerated in a correctional institution, and male and female Mexican subjects have also been collected.

To further demonstrate construct validity, the authors correlated the CISS with other measures such as the Basic Personality Inventory (Endler and Parker, 1994), the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) (Endler et al., 1993), the Beck Depression Inventory (Endler & Parker, 1990c) and the Youth Self-Report (Endler & Parker, 1990b). As predicted, the appropriate measures of the avoidance and emotional scales positively correlated with the various psychopathologies.

The limitations of these measures include those of all self-report measures. Some subjects may not respond to the questionnaires honestly, whether inadvertently or purposefully (Endler & Parker, 1990b; Stone, Greenberg, Kennedy-Moore, & Newman, 1991). In addition, the authors recommend that a subject's reading level be equivalent to at least grade eight. This measure is not recommended for severely disoriented or impaired individuals (Endler & Parker, 1990b). Overall, these instruments appear to be the most valid and appropriate ones for researching coping styles and anxiety in adolescents.
**Coping Inventory for Stressful Situations - Adolescent (CISS-A)**

The CISS (Endler & Parker, 1990) is a self-report, multidimensional measure of coping styles, consisting of 48 items. Of these 48 items, 16 relate to task-oriented coping (T), 16 assess emotion-oriented coping (E) and the remaining 16 comprise the avoidance-oriented coping (A) measure. The avoidance-oriented coping measure is further separated into two subscales: distraction (D), which consists of eight items, and social diversion (S), which encompasses five items. Three items relate to only the avoidance-oriented coping dimension. Examples of task-oriented coping include "Schedule my time better" and "Think about how I solved similar problems". Two items from the emotion-oriented scale include "Blame myself for putting things off" and "Become very tense". Examples from the avoidance-oriented scale consist of "Try to go to sleep" which is both avoidance and distraction, and "Visit a friend", which is both avoidance and social diversion. The respondents are requested to rate on a five-point frequency scale (1 = not at all, 5 = very much) "How much you engage in these types of activities when you encounter a difficult, stressful, or upsetting situation."

**Endler Multidimensional Anxiety Scales-State (EMAS-S)**

The EMAS-S (Endler et al., 1991) is a self-report, multidimensional measure of state anxiety (A-State), consisting of 20 items. Of these 20 items, 10 relate to the cognitive-worry (CW) component of state anxiety and the other 10 comprise the autonomic-emotional (AE) measure of A-State (Endler & Magnusson, 1977). Examples of AE items include "Have a tense feeling in stomach" and "Hands feel unsteady." Two
items from the CW scale include "Feel inadequate" and "Unable to concentrate". The respondents are requested to rate on a five-point intensity scale (1 = not at all, 5 = very much) "How you feel at this particular moment."

Endler Multidimensional Anxiety Scales-Trait (EMAS-T)

The EMAS-T (Endler et al., 1991) is a paper and pencil self-report, multidimensional measure of trait anxiety (A-Trait), consisting of 60 items. It includes four situational dimensions of A-Trait, comprised of 15 items each. The four situational dimensions are social evaluation, physical danger, ambiguous, and daily routines. Each situation category includes such responses as "Feel tense" and "Feel nervous." The subjects are asked to picture themselves in each of these situations and report the intensity of their reactions on a five-point scale (1 = not at all, 5 = very much). An example is: "You are in a situation where you are being evaluated by other people." Subjects are then asked to rate how they feel to various items, "Feel relaxed." "Perspire."

Endler Multidimensional Anxiety Scales-Perception (Revised) (EMAS-P(R)

The EMAS-P(R) (King & Endler, 1989) is a paper and pencil, self-report instrument designed to measure an individual's perception of an experimental situation. The questionnaire consists of three items for each of the four situations: social evaluation, physical danger, ambiguous and daily routines. The respondents are asked to indicate on a five-point rating scale (1 = not at all, 5 = very much) their perception of the experimental
situation according to each of the four dimensions. Two examples of these dimensions are: "The situation you are about to experience is one in which you are being judged by other people." (social evaluation) and "The situation you are about to experience is one in which you might feel physical pain." (physical danger). In addition to the 12 items of this type, there is one question designed to determine the degree to which the situation is perceived as threatening, and two open-ended questions, allowing the respondent to describe the situation and the amount of perceived threat, in his/her own words.

Procedure

The subjects for this study were contacted during their regular classes at school. The purpose of the study was described to them in general terms by this author. A letter, outlining the research project, and a consent form (Appendix II) were distributed. One week later, the consent forms were collected and the Demographic form and the CISS-A, EMAS-T, EMAS-S, EMAS-P(R) instruments were administered to the subjects, as a group, during one of their regular classes. This was considered to be a low stress situation. Appendix III contains examples of the test instruments administered at this time.

Approximately two months later, immediately prior to their final OAC examination of the same course in which they had initially completed the questionnaires, the EMAS-S and the EMAS-P(R) were re-administered to the subjects. This was judged to be the high stress situation. Appendix IV contains examples of these test instruments.
The test instruments were administered in the English language because it was ascertained from the teachers and principal of the French school that all of the students were proficient in English by the time they reached the OAC level. This author remained in the testing situation until all of the questionnaires were completed to deal with any language problems that arose. None of the research participants asked for clarification of any of the items or words on the test instruments.
CHAPTER III

RESULTS

The analyses in this chapter are organized in four main sections: A) demographic data, B) situation data, C) trait anxiety, and D) coping. Within these sections the data are analyzed for the group as a whole and according to gender. A comparison of the trait anxiety and coping results follows at the end of the chapter. The analyses for the situation data and trait anxiety, outlined in Sections B and C were previously computed by this author and reported in Busch (Aubry) et al. (1994). Section D contains further analyses of the trait data and new analyses of the coping styles data.

In Section A, the demographic data are analyzed using analysis of variance and correlation analysis. Analysis of variance is used to determine the statistical significance of the relationship among the schools and courses with the change in state anxiety (A-State). Correlation analysis is used to determine the significance of the relationship between the age of the subjects and change in A-State and grade point average and change in A-State. These analyses are repeated according to gender.

In Section B, one-way analysis of variance is conducted to determine if the manipulation of the situation from low stress to high stress was successful. The situation perception data are analyzed using analysis of variance for repeated measures to determine if the subjects’ perceptions of the situation differ from the low stress condition to the high stress condition. These analyses are also repeated by gender.
In Section C, the trait anxiety (A-Trait) dimensions and the ATP variable are correlated with the change in A-State to determine the significance of the individual relationships and the amount of variance that is explained. Gender analysis for these variables is also computed using the same analyses.

In Section D, language is correlated with the coping styles dimension to determine the significance of the association between language and coping styles for the group as a whole and by gender. Correlation analysis is also used to determine the significance of the relationship between the coping style dimensions and the change in A-State for the group as a whole and by gender. These results are then compared to the trait anxiety and ATP variable results to determine the best predictor of the change in A-State. The aforementioned results are confirmed by regression analysis of the coping styles and the A-Trait dimensions.

**Section A: Demographic Data Analysis**

Analyses of the demographic data involved assessing their relationships to the change in state anxiety. Analysis of variance revealed that the schools and courses were not significantly associated with the change in state anxiety for the group as a whole or for males and females. Similarly, correlational analysis indicated that age and grade average had no significant relationship to state anxiety change for the whole group or by gender. The results are presented in Appendix V.
Section B: Situation Data

In a previous research paper, utilizing the same data as in this study, Busch (Aubry) et al. (1993, 1994) analyzed the data to determine if the manipulation of the stressful situation for the whole group and by gender was successful. Results indicated that the manipulation of the stressful situation was successful for the group as a whole and for males and females when the analysis was computed by gender. Students recorded a significant difference between the low stress (a regular class in school) and the high stress situation (immediately prior to a final OAC examination), with the high stress situation resulting in high anxiety for the students.

Further analysis examined the subjects’ perceptions of the situation for the group as a whole and by gender. Results indicated that the group as a whole as well as both males and females perceived the examination situation to be lower in daily routines and physical danger and higher in ambiguous and social evaluation than the regular class situation.

The statistical analysis of the above results are as follows:

Manipulation of Situational Stress

As reported in Busch (Aubry) et al. (1994) and verified for this analysis, the manipulation of the stressful situation was successful. It was found that the total state anxiety score for the stress level of the subjects in the high stress situation, as measured 10 minutes before their final OAC examination, (high stress condition), was significantly higher than the total state anxiety score in the regular class period (low stress condition). The means (and standard deviations) for the two groups were, low 32.7 (11.9) and high
48.7 (19.5); an analysis of variance for repeated measures revealed a significant difference $F(1,92) = 74.73, p<.001$.

**Situation Perception Data**

Analysis of variance for repeated measures for the four situation perception dimensions indicated that the perception of social evaluation and ambiguous increased significantly ($F(1,92) = 92.3, p<.001, F(1,92) = 8.5, p<.01$, respectively) from the low stress to the high stress condition. The subjects perceived the examination situation to be more ambiguous and to contain more aspects of social evaluation than the regular classroom situation. As expected, ratings for physical danger and daily routines decreased significantly ($F(1,92) = 15.0, p<.001, F(1,92) = 103.1, p<.001$, respectively) from the low stress to high stress condition (Figure 1). Means and standard deviations of the situation perception dimensions by condition are presented in Table 1.
Figure 1. As expected, perception of social evaluation and ambiguous increased significantly from the low stress condition to the high stress condition. The subjects perceived the examination situation (the high stress condition) to be more ambiguous and to contain more aspects of social evaluation than a regular class (low stress condition). Conversely, physical danger and daily routines decreased from the low stress to the high stress condition. The subjects perceived the examination to be lower in daily routines and physical danger than a regular class.

Table 1. EMAS-P: Means and Standard Deviations of the Situation Perception Dimensions by Condition

<table>
<thead>
<tr>
<th>Situation Perception Dimension</th>
<th>Condition</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Stress</td>
<td>M</td>
<td>S.D.</td>
</tr>
<tr>
<td>Social Evaluation</td>
<td>7.11</td>
<td>3.65</td>
<td></td>
</tr>
<tr>
<td>Physical Danger</td>
<td>4.80</td>
<td>2.90</td>
<td></td>
</tr>
<tr>
<td>Ambiguous</td>
<td>5.91</td>
<td>2.85</td>
<td></td>
</tr>
<tr>
<td>Daily Routines</td>
<td>10.80</td>
<td>3.92</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Stress</td>
<td>M</td>
<td>S.D.</td>
</tr>
<tr>
<td></td>
<td>11.39</td>
<td>3.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.52</td>
<td>1.48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.09</td>
<td>2.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.79</td>
<td>2.54</td>
<td></td>
</tr>
</tbody>
</table>


Manipulation of Stress by Gender

Significant gender differences in A-State change scores existed between the low stress condition and the high stress condition. Multivariate analysis of variance for repeated measures where the between subject variable was gender and the within subject variable was stress condition (high versus low) revealed significant main effects for both
condition and sex, $F(1,91) = 66.7, p<.01$ and $F(1,91) = 4.4, p<.05$, respectively. The gender X condition interaction also achieved significance, $F(1,91) = 15.0, p<.01$. The means and standard deviations of A-State for each of the conditions, according to gender, are exhibited in Table 2. This is further illustrated by Figure 2.

---

**Table 2. Means and Standard Deviations of State Anxiety for the Low Stress and High Stress Conditions According to Gender**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Low Stress</th>
<th>High Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>S.D.</td>
</tr>
<tr>
<td>Males</td>
<td>33.3</td>
<td>11.5</td>
</tr>
<tr>
<td>Females</td>
<td>32.4</td>
<td>12.3</td>
</tr>
</tbody>
</table>

For both males and females, perception of social evaluation and ambiguous increased significantly from the low stress condition to the high stress condition. The students perceived the examination to be higher in ambiguity and social evaluation than a regular class situation. Conversely, physical danger and daily routines decreased from the low stress to the high stress condition.

Section C: Trait Anxiety Analysis

Correlation analysis between the four A-Trait dimensions and the change in A-State revealed that the dimensions of social evaluation, physical danger and ambiguous were significantly related to the change in A-State ($r = .25, .21, .23, p<.05$, respectively). The ATP composite (which is a mathematical construct representing a composite of A-Trait and Situation Perception Dimensions) also achieved significance ($r = .35, p<.001$).

The correlation coefficients and corresponding percentages of variance are displayed in Table 3.

Table 3. Degree of Relationship Between the EMAS-S Change Scores and the Four A-Trait Dimensions and the ATP Composite

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Correlation Coefficient</th>
<th>Percentage of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Evaluation A-Trait</td>
<td>.25*</td>
<td>635</td>
</tr>
<tr>
<td>Physical Danger A-Trait</td>
<td>.21*</td>
<td>4.47</td>
</tr>
<tr>
<td>Ambiguous A-Trait</td>
<td>.23*</td>
<td>5.22</td>
</tr>
<tr>
<td>Daily Routines A-Trait</td>
<td>-.05</td>
<td>0.24</td>
</tr>
<tr>
<td>ATP Composite</td>
<td>.35***</td>
<td>11.95</td>
</tr>
</tbody>
</table>


* $p<.05$

*** $p<.001$
Gender Analysis of Trait Anxiety

Correlation analyses between the four A-Trait dimensions and the change in A-State was computed according to gender (Busch (Aubry) et al., 1994). The results revealed that there was no significant relationship for the males. For females, ambiguous A-Trait was the only A-Trait dimension to be significantly associated with the change in A-State ($r = .26$, $p<.05$). The ATP composite also was not significantly related to the change in A-State for males, but proved to be highly significant as a predictor of the change in A-State for females ($r = .40$, $p<.001$). The correlation coefficients and corresponding percentages of variance are displayed in Table 4.
### Table 4. Degree of Relationship Between the EMAS-S Change Scores and the Four A-Trait Dimensions and the ATP Variable by Gender

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Correlation Coefficient</th>
<th>Percentage of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Evaluation A-Trait</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>.05</td>
<td>.25</td>
</tr>
<tr>
<td>Females</td>
<td>.25</td>
<td>6.25</td>
</tr>
<tr>
<td><strong>Physical Danger A-Trait</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>.04</td>
<td>.13</td>
</tr>
<tr>
<td>Females</td>
<td>.16</td>
<td>2.56</td>
</tr>
<tr>
<td><strong>Ambiguous A-Trait</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>.08</td>
<td>.64</td>
</tr>
<tr>
<td>Females</td>
<td>.26*</td>
<td>6.76</td>
</tr>
<tr>
<td><strong>Daily Routines A-Trait</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>.15</td>
<td>2.25</td>
</tr>
<tr>
<td>Females</td>
<td>-.17</td>
<td>2.89</td>
</tr>
<tr>
<td><strong>ATP Composite</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>.04</td>
<td>.16</td>
</tr>
<tr>
<td>Females</td>
<td>.40***</td>
<td>16.36</td>
</tr>
</tbody>
</table>

*Note.* Reprinted from *Personality and Individual Differences*, 17, 1, by H.A. Busch, P.R. King and M.A. Guttman “Interactional Anxiety in an Examination Situation with French and English High School Students: An Empirical Test of a Composite Predictor for State Anxiety”, p.114. Copyright 1994, with kind permission from Elsevier Science Limited, The Boulevard, Langford Lane, Kidlington OX5 1GB, UK.

* p<.05
*** p<.001
Section D: Coping Styles Analysis

Analysis of Language

Pearson product-moment correlation analysis for the total group revealed that language did not have a significant effect on any of the CISS-A styles. The results are as follows: avoidance - $r = .15, p>.05$, emotion - $r = .02, p>.05$, task - $r = .01, p>.05$.

Analysis of Language by Gender

Pearson product-moment correlational analysis by gender revealed a small but significant correlation between language and avoidance-oriented coping style ($r=.28, p<.05$) for females. Neither emotion ($r=.03, p>.05$) nor task-oriented coping ($r=.11, p>.05$) displayed any relationship with language for females. Similarly, none of the coping styles for males showed any relationship with language. The results are as follows: avoidance - $r = -.11, p>.05$, emotion - $r = .05, p>.05$, task - $r = -.19, p>.05$.

Female English speaking students, in this study, demonstrated a significant tendency to utilize avoidance-oriented coping more than female French speaking students ($M=52.57, S.D.=13.88$ and $M=44.59, S.D.=14.24$, respectively). However, these results did not correlate significantly with changes in A-State.

Analysis of Coping Styles with A-State Change

Each of the five dimensions on the CISS-A (task, emotion, avoidance, distraction and social diversion) was correlated with the change in A-State (high stress condition minus low stress condition) using the Pearson product-moment correlation analysis for the group as a whole. These correlations were individually squared and multiplied by 100 to determine the percentage of variance explained by each (see Table 5). Since the
dimensions of distraction and social diversion are subscales of avoidance, are highly correlated with avoidance ($r = .89$ and $.82$, $p<.001$, respectively), and account for almost zero variance, further analyses of these dimensions have been eliminated.

Table 5. Degree of Relationship Between the Change in A-State and the Five CISS-A Styles

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Correlation Coefficient</th>
<th>Percentage of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task</td>
<td>.27**</td>
<td>7.29</td>
</tr>
<tr>
<td>Emotion</td>
<td>.18</td>
<td>3.24</td>
</tr>
<tr>
<td>Avoidance</td>
<td>.06</td>
<td>.36</td>
</tr>
<tr>
<td>Distraction</td>
<td>.10</td>
<td>.01</td>
</tr>
<tr>
<td>Social Diversion</td>
<td>.01</td>
<td>.00</td>
</tr>
</tbody>
</table>

** $p<.01$

It was hypothesized that emotion-oriented and avoidance-oriented coping styles would be positively correlated with the change in A-State and that task-oriented coping would be negatively correlated with the change in A-State. The outcome of this study was inconsistent with the above hypotheses. In fact, only task-oriented coping was
significantly correlated with changes in A-State, and that correlation was positive ($r=.27, p<.01$).

The CISS-A correlation results were then compared to each correlation coefficient of the four A-Trait dimensions (social evaluation, ambiguous, physical danger and daily routines) and the ATP composite predictor as reported in Busch (Aubry) et al. (1993). The correlation coefficients and corresponding percentages of variance are displayed in Tables 3 and 5.

As computed by Busch (Aubry), et al. (1993), three A-Trait factors, social evaluation, physical danger and ambiguous, emerged as significant predictors of A-State change scores. However, the ATP composite proved to be superior to all three A-Trait dimensions. It accounted for approximately 12% of the variance which was double the variance of any of the individual A-Trait dimensions.

Although one coping style, task, correlated significantly with the change in A-State and was slightly higher than the three A-Trait dimensions of social evaluation, ambiguous and physical danger, it did not reach the predictive value of the ATP composite. The ATP composite predictor accounted for approximately 12% of the variance; whereas the CISS-A task-oriented coping style explained approximately 7% of the variance.

Using multiple regression, analyses of CISS-A coping styles as predictors of changes in A-State revealed that approximately 12% of the variance was explained. Both task-oriented and emotion-oriented coping emerged as significant individual predictors ($t=3.027, p<.01$ and $t=2.297, p<.05$, respectively).

Regression analysis of the A-Trait dimensions revealed that A-Trait dimensions accounted for 11% of the variance with no individual dimensions achieving significance.
Analysis of Coping Styles by Gender

Analysis of variance for the three CISS-A coping dimensions revealed, as predicted, no significant difference between males and females for task-oriented coping, $F(1,91) = .34, p>.05$. Contrary to the hypothesis that females would use more avoidance-oriented coping, analysis of variance indicated a nonsignificant difference between males and females, $F(1,91) = .23, p>.05$.

However, a significant gender difference emerged for emotion-oriented coping style, $F(1,91) = 14.00, p<.001$. As predicted, females used more emotion-oriented coping ($M = 54.26, S.D.=12.12$) than males ($M = 44.94, S.D.=11.00$).

Pearson product-moment correlation coefficients were computed for each of the three CISS-A dimensions and the A-State change scores by gender. Each of these results was then squared and multiplied by $100\%$ to determine the percentage of variance accounted for by each dimension. These results are shown in Table 6.
Table 6. **Degree of Relationship Between the EMAS-S Change Scores and the Three CISS-A Dimensions by Gender**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Gender</th>
<th>Correlation Coefficient</th>
<th>Percentage of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISS Task</td>
<td>M</td>
<td>-.16</td>
<td>2.56</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>.43***</td>
<td>18.49</td>
</tr>
<tr>
<td>CISS Emotion</td>
<td>M</td>
<td>-.20</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>.14</td>
<td>1.96</td>
</tr>
<tr>
<td>CISS Avoidance</td>
<td>M</td>
<td>-.18</td>
<td>3.24</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>.10</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*** p<.001

When the subjects were categorized according to gender, only the task-oriented coping style ($r = .43$, $p<.001$) for females emerged as a significant predictor of A-State change. Task-oriented coping for females accounted for 18.49% of the variance. This again is contrary to the hypothesis which predicted task-oriented coping style would be negatively correlated with high anxiety and emotion-oriented and avoidance-oriented coping styles would be positively correlated with high anxiety. No significant results were found for males.
The CISS-A correlations by gender (Table 6) were then compared to each correlation coefficient computed by gender for the four A-Trait dimensions and the ATP composite predictor (Table 4) as reported in Busch (Aubry) et al. (1994). They found through gender analysis of the A-Trait dimensions and the ATP composite that the only significant association to emerge was for females. Ambiguous A-Trait was significantly associated with A-State change, but the ATP composite, also a significant predictor for females, accounted for more than double the variance of ambiguous A-Trait (6.8% versus 16.4%).

To further verify the correlational coefficients, multiple regression analysis was computed for CISS-A as predictors of A-State change scores. The results for males are in agreement with the correlational analysis. None of the individual coping styles were significant predictors of A-State changes. In total, approximately 12% of the variance was explained by the coping styles.

On the other hand, multiple regression analysis indicated that task-oriented coping was a significant predictor of A-State changes for females ($t=3.77, p<.001$), accounting for 23% of the variance. This also supports the results of the Pearson product-moment correlational analysis for females.

To further confirm the correlational analysis completed by Busch (Aubry) et al. (1994), multiple regression analyses were computed for the A-Trait dimensions as predictors of A-State change scores by gender. Similar to Busch (Aubry) et al. (1994), only 3% of the variance was explained and none of the individual A-Trait dimensions achieved significance for males.
For females, only daily routines A-Trait ($t=-2.327, p<.05$) emerged as a significant individual predictor of A-State change and 17% of the variance was explained using multiple regression. This is in contrast to the correlational analysis which found ambiguous A-Trait ($r=.26, p<.05$) to be the only significant predictor of high state anxiety.

Multiple regression analysis also indicated that the ATP composite was a significant predictor of A-State change scores for females. Similar to Busch (Aubry) et al. (1994) where they found $r=.40, p<.001$ for females, this regression analysis also accounted for 16% of the variance, $t=3028, p<.002$.

Comparisons of the CISS-A styles, A-Trait dimensions and the ATP composite indicate that both task-oriented coping ($r=.43, p<.001$) and the ATP composite ($r=.40, p<.001$) are highly significant predictors of high anxiety (A-State change scores) in an examination situation. They both explained approximately three times more variance than any of the individual A-Trait dimensions.
CHAPTER IV

DISCUSSION

The purpose of this study was to determine what coping styles would be activated in older adolescents during an examination situation, using psychometrically sound testing instruments. Since little research had been conducted on adolescents in the field of coping and anxiety, investigation of differences in gender, culture, coping and trait anxiety, as related to high anxiety, might contribute to prevention of adolescent physical illness and/or psychopathology. This study revealed some unique and interesting results for adolescents.

The CISS-A differentiated the coping styles of the adolescents in this study. Both males and females responded in a similar manner to the task and avoidance scales. However, females, as predicted, used more emotion-oriented coping than males. When analyzed for differences between French and English adolescents, overall, they exhibited similar coping styles. However, when examined according to gender, English-speaking females demonstrated a small but significant tendency to use more avoidance-oriented coping than French-speaking females. This is consistent with the findings of Chataway and Berry (1989). In a study of 127 university students, they found that English speaking Canadian undergraduates preferred the avoidance-oriented coping strategies of eating, taking drugs or exercising, whereas, French speaking Canadian students tended to think positively and to seek more social support. Similarly, Olah (1995) found that a high level
of anxiety was associated with avoidance-focused coping in subjects from various European countries and India.

Of all the coping styles in the CISS-A, only task-oriented coping achieved significance as a predictor of changes in A-state for the total group. Further analysis by gender revealed that whereas none of the coping styles for males reached significance, task-oriented coping for females offered a superior prediction of changes in A-State, similar to that of the ATP composite ($r = .43, p < .001$ and $r = .40, p < .001$, respectively). None of the individual coping styles was a significant predictor of high anxiety for males, nor were avoidance or emotion-oriented coping for females.

These results are in contrast to the hypotheses for this study and the outcome of most of the preceding research in the areas of coping styles and anxiety. Specifically, using the same test instruments as this study, Endler et al. (1994) and Endler and Parker (1990a,b,c) discovered that emotion-oriented and avoidance-oriented coping styles were predictive of high anxiety and task-oriented coping was associated with low anxiety. Carver and Scheier (1994), Edwards and Trimble (1992) and Folkman and Lazarus (1985), using other forms of coping questionnaires that measured problem-solving and emotion-focused coping, similar to the CISS-A, also reported that high anxiety was associated with an emotion-focused coping style.

Comparison of the results of this study with those of previous research is difficult due to the variety of test instruments used and the varying definitions of coping styles. Therefore, in order to match the studies as closely as possible, this study will be compared to the work of Endler et al. (1994), Endler and Parker (1990a,b,c) and Endler et al. (1991). Although the subjects differed in age, the research most closely resembles this
study. Examination of the stressful situations, the A-State change scores, and the correlation analyses may explain the differential results.

**Manipulation of Stressful Situation**

It was argued by Busch (Aubry) et al. (1994) that adolescents may have experienced a change from a moderate stress level to a high stress level, accounting for the nonsignificant predictive value of both the A-Trait dimensions and the ATP composite for males. This theory was supported by the results from Jackson and King (1992) in which the A-Trait dimensions and the ATP composite correlation coefficients also failed to achieve significance for predicting A-State change. It was surmised that both a regular class in secondary school and a light football practice may have involved some aspects of social evaluation, ambiguity and physical danger, resulting in a moderate stress level. Mothersill, Dobson and Neufeld (1986) reported that daily routines could include aspects of ambiguity and interpersonally threatening aspects. Since the class period was considered part of a student’s daily routine, it may have included some threatening aspects resulting in a moderately stressful situation. To further justify this conclusion, King and Endler (1990, 1991), in successful applications of the EMAS-S and EMAS-T questionnaires, reported EMAS-S scores in the low stress situation of 5 to 8 points less than the current study.

Although the above suppositions may be accurate, in that males experienced only moderate levels of stress, a comparison of the results of this study’s scores with those of Endler et al. (1991) indicated that the present study demonstrated a change in stress sufficient enough to have achieved significant results for both males and females.
Therefore, the manipulation of the situation for the present research was successful. The adolescents in this study experienced more stress than Canadian and U.S. undergraduates (Endler et al., 1991) and females experienced even more anxiety than males. The comparisons are outlined in Appendix VI. However, the results of this study failed to produce results in accordance with those of Endler et al. (1991) and Endler and Parker (1994).

**Comparison with Endler Coping Results**

When the correlations of CISS-A and A-State change scores were compared with those of Endler et al. (1994), differences emerged (Appendix VII). Whereas Endler et al. (1994), in their study of undergraduates, prior to a midterm examination, discovered a small, but significant, link for female undergraduates between emotion-oriented coping and A-State change ($r = .22, \ p<.01$), this present study demonstrated a stronger connection for females between task-oriented coping and A-State change ($r = .43, \ p<.001$). Previous research may offer explanations for these differences.

In a review of the literature, only one research paper was found to support the results of this study. Bolger (1990) discovered that although his subjects were experiencing high anxiety, premedical students engaged in problem-focused coping prior to their Medical College Admissions Test ($r = .26, \ p<.05$). He reported that as the use of problem-focused coping increased, the students’ anxiety also increased. The author suggested that preparation for a crucial examination may increase awareness of the threatening event and therefore, increase anxiety. However, the level of student’s anxiety was neither detrimental to their coping, nor was it related to the examination outcome.
As outlined in the literature review, research on adolescent coping has produced very inconsistent results. Therefore, it is not surprising that the same has occurred in the present research. Can task-oriented coping relate to high anxiety instead of the expected emotion or avoidance-oriented coping? Several possible explanations relating to the age of the subjects, the type of stressors and the relationship between coping and anxiety emerge to offer an explanation as to why task-oriented coping was significantly related to high anxiety in this study.

**Age**

Adolescents may not have the cognitive ability to quantify their feelings, resulting in differential responses to those of adults. Band and Weisz (1988) and Compas et al. (1988) reported that emotion-oriented coping develops as children mature. They suggested that the constructs related to emotion-oriented coping are often too abstract for children to grasp. Therefore, the ability to understand and utilize emotion-focused coping would begin to emanate only as the child develops. In a study of older children and young adolescents, Compas et al. (1988) discovered that problem-focused coping was better developed in these subjects than emotion-focused coping. Similarly, Endler and Okada (1975) reported that “individuals with greater maturity and sophistication in social situations can make better perceptual discriminations among situations” (p.325). Argyle and Little (1972) have also suggested that, over time, situations become more important. For example, it may be more important for college students to pass examinations due to financial reasons than for secondary school students.
Perhaps this accounts for the differences between the results of this study and those of Endler et al. (1994). The mean ages of the research participants in the present study were 17.8 years for males and 17.5 for females and Endler et al. (1994) recorded ages of 22.2 and 22.0 years for men and women, respectively. This five-year difference in age could possibly explain the differential coping responses between the adolescent secondary school students and the adult undergraduates. Emotion-oriented coping may not have fully developed in the adolescents and an examination situation may not have been as important to secondary school students as it was to undergraduates.

It has also been suggested that adolescents may be less willing than adults to report their perceptions and feelings due to social constraints (Rysk, 1993). Adolescent males may not feel that it is "cool" to report their true feelings (Busch (Aubry) et al., 1994). One female subject, in the present research, was eliminated from analysis because she admitted that she deliberately responded randomly to the questions. She explained that she felt "peer pressure" and wanted to appear socially appropriate. Although gender analysis was not reported, Davis and Cowles (1989) found that individuals with a high need for social approval tended to "fake good" on computerized assessment measures.

To support this contention, Glyshaw et al. (1989) found that adolescents' perception of their own coping was only marginally supported by the perception of others. The mothers' perceptions of their son's or daughter's coping style revealed only small and often nonsignificant correlations. For example, the mothers' perceptions of problem-solving coping styles of their children correlated with that of the senior students at only $r=.16$, $p>.05$. More research is required to determine if the mothers' perceptions
are incorrect or if the adolescents cannot or are unwilling to credibly answer the test instruments.

Another possible explanation for the emergence of task-oriented coping, as related to high anxiety, may be that although adolescents experience high anxiety, they have readily available peer and parental support and possibly encouragement to study. This may not be the case for university students. Often they may be far from home, with very few friends and therefore, receive little emotional support. As well, they may feel additional financial pressure to succeed because failure can result in additional expenses.

**Type of Stressor**

Endler et al. (1994), Folkman and Lazarus (1984) and Endler and Okada (1975) have stated that coping is interactional with one's perception of the situation and the type of stressor involved. One may have an overall personality or stable coping style, but also a situational coping reaction that varies depending on the situation. Compas et al. (1988) reported that problem-focused coping may be useful for situations that are controllable or solvable and that academic stressors may be viewed as more controllable than social stressors. In a summary of her research, Boekaert (1996) reported that adolescents choose from a repertoire of coping skills depending on the situation. Academic stressors, which were viewed as controllable in her research, aroused more problem-focused coping in contrast to interpersonal problems which caused students to rely on emotion-oriented coping.
It is possible that although adolescents experienced high levels of anxiety prior to their final OAC examinations, that they also perceived the situation to be very controllable by studying and preparing for the test (i.e. task-oriented coping). All of the students had prior experience with examination situations and many may have decided to “get the job done” even though they were experiencing high stress. In a situation such as receiving a diagnosis of cancer, one may respond with emotion-oriented or avoidance-oriented coping due to the feeling of ambiguity and lack of control (Band and Weisz, 1988; Felton & Revenson, 1984; Meyerowitz et al., 1983).

**Relationship Between Coping and Anxiety**

The possibility exists that there is no relationship between coping and anxiety or that the relationship between coping style and high anxiety is influenced by intervening variables. These intervening variables may account for the type of coping used or the level of anxiety reached in a particular situation. Researchers have, again, discovered varying results.

Endler et al. (1994) found that emotion-oriented coping was associated with high anxiety. This present study found that task-oriented coping was associated with high anxiety. Conversely, in a study of male and female high school tennis athletes, Rysk (1993) discovered that none of the coping style groups varied appreciably in their reporting of competitive anxiety. Consistent with the Rysk (1993) findings, Glyshaw et al. (1989), in their study of junior and senior high school students, found that none of the coping scales demonstrated a significant ability to predict a student’s anxiety level.
Several researchers have attempted to investigate the effects of personality variables on anxiety and coping (Aspinwall & Taylor, 1992; Boekaerts, 1996; Bolger, 1990; Folkman, 1984; Smith & Ellsworth, 1987).

Smith and Ellsworth (1987) argue that research must look at more than just coping as a predictor of anxiety/fear. They found that personal responsibility and one's perceived control over the specific situation affected the worry/fear levels of their subjects. They also suggested that mixed emotions interact with anxiety. For example, they found that even though 84% of their subjects felt hope/challenge about an examination situation, 72% of these also experienced fear and worry.

Bolger (1990) reported that optimism and positive thinking were associated with active coping. Conversely, subjects who scored high on the neuroticism scale coped ineffectively. Similarly, Aspinwall and Taylor (1992) found that active coping (considered to be similar to task-oriented coping) increased due to an optimistic attitude.

Another intervening variable may be the amount of experience that an individual has had with a particular stressful situation. Folkman (1984) has suggested that experience with a stressful situation can result in the perception of more control over that situation and thus use more task-oriented or problem-focused coping. Experience with examinations may also affect the appraisal of the test situation and one's confidence in problem-solving. Blankstein et al. (1992) found that perceived ability to control a situation and confidence in problem-solving ability was more predictive of high anxiety than coping styles.

It could be suggested that although the adolescents in the present study felt high anxiety, they may also have experienced hope/challenge emotions which encouraged them
to utilize task-oriented coping prior to the examination. They may also have felt control over their situation due to past experience with similar types of examinations. As well, some students may have felt optimistic about the outcome and although anxious, decided to take control of their situation by studying. The optimism variable may have influenced anxiety levels more than coping (Carver et al., 1993).

Folkman and Lazarus (1985) reported in their study of a college examination situation, that 94% of their subjects reported experiencing both threat emotions (fear, worry and anxiety) and challenge emotions (confidence, hope and eagerness). The amount of fear and anxiety did not affect the outcome of their examinations. Perhaps personality variables and the particular situation evoke a style of coping regardless of the level of anxiety. It has been reported to this author, in general discussions on anxiety and examinations, that several people experienced high anxiety prior to examinations even when they already had enough real marks to pass the course. They have also commented that they were very task-oriented and expended considerable effort studying.

**Gender Differences**

Gender differences have been reported in anxiety levels (Busch (Aubry) et al., 1994; Endler et al., 1991; Endler and Okada, 1975; Mellstrum et al., 1978) and in coping styles (Billings and Moos, 1984; Boekaert, 1996; Compas et al., 1988; Endler et al., 1993; Hovanitz, 1986). Generally, males appear to experience less anxiety/stress than females (Boekaerts, 1966; Busch (Aubry) et al., 1994; Hamilton and Fagot, 1988). In an examination situation, Busch (Aubry) et al. (1994) reported that females experienced higher levels of state anxiety than males. They suggested that males may not
be aware of their anxiety levels, be unwilling to report them or feel that an examination situation is only moderately stressful. These results are similar to those of Seiffge-Krenke (1993). He found that females scored four times higher on a measure of threat in an academic situation than the boys in the study. He suggested that the boys did not feel as much pressure as the girls. Perhaps single events, such as getting a driver's license or having a car accident, may be considered more stressful than an examination for males.

This present research, as predicted, discovered that females used significantly more emotion-oriented coping than males. However, contrary to the hypothesis that emotion-oriented coping would be associated with high anxiety; this was not the case. In fact, it was only in the female sample that any coping style emerged as significantly related to high anxiety and that was task-oriented coping. The literature revealed that high anxiety and emotion-oriented coping were often detrimental to the individual experiencing these. The results of this study demonstrate that the relationship between high anxiety and coping remains unclear.

In a comparison of male and female managers, Long (1990) investigated the stereotype that women are less effective managers than men. She found that women, in fact, performed as competently as men in managerial positions. In addition, she discovered that women used more styles of coping than men. Women managers used problem-focused coping as often as men; however, women also included the use of more interpersonal coping in their repertoire. This resulted in the outcome that females demonstrated broader and more flexible coping strategies than males. Hamilton and Fagot (1988) also found that female undergraduates used problem-solving behaviour as often as males.
In a study of senior high school students, Patterson and McCubbin (1987) found that girls also used a broader range of coping styles than boys. In addition to problem-solving coping, which was similar to that of the male students, the female students also incorporated the use of social support which included both parents and peers. Social support can be considered a form of emotion or task oriented coping. Endler and Parker (1990) "conceptualize social support as a mediating variable that cuts across all three coping dimensions but interacts with each in a different manner (information, emotion, diversion) facilitating stress reduction and stress management" (p.35).

Similarly, in other adolescent studies, Endler and Okada (1975) demonstrated that males and females differed significantly in their perceptions of situations. Adolescent females made better perceptual discriminations of situations than adolescent males (variance = 7.63% and 19.25% for males and females, respectively).

Another explanation for gender differences has been reported by Fujita, Diener, and Sandvik (1991). They found that women college students experienced positive and negative emotions more intensely than men. Gender accounted for 13% of the variance in a measure of happiness.

Therefore, since only female adolescent responses achieved significance in this study, perhaps it is due to a greater variety and use of coping styles and a more developed ability to perceive and reveal emotions regarding a particular situation.
CHAPTER V

CONCLUSION

This study investigated the predictive validity of coping styles, trait anxiety and a trait anxiety-perception (ATP) variable, a composite predictor for state anxiety, in the context of situational stress associated with Ontario Academic Credit (OAC) examinations for French and English secondary school students. The Endler Multidimensional Anxiety Scales for trait anxiety (A-Trait), state anxiety (A-State) and Perception of the Situation and the Coping Inventory for Stressful Situations were administered to 95 subjects, ages 16 to 19, during a regular class at school (considered to be a low stress condition) and immediately prior to their final OAC examination (a high stress condition). Gender differences in coping styles were investigated to further clarify the coping-anxiety interaction.

Present results indicated that females and males did not differ in their use of task and avoidance-oriented coping styles. Females demonstrated a tendency to use more emotion-oriented coping than males. English-speaking female students also showed a small, but significant, tendency to use avoidance-oriented coping. The CISS-A revealed, contrary to prediction, that task-oriented coping style was associated with high anxiety in an examination situation for females only. The results, for male participants in the study, failed to achieve significance for any of the coping dimensions.

Comparison of the EMAS-T dimensions and the CISS-A revealed that the CISS-A offered superior predictive ability than each of the individual A-Trait dimensions for
high state anxiety. However, the CISS-A produced an equivalent predictor correlation coefficient to the ATP composite predictor. Therefore, in this research, both the CISS-A and the ATP composite predictor appear to be valid predictors for high state anxiety for female adolescents, but not for males.

**Implications for Future Research**

Limitations of this study indicate the directions needed for future research. First, previous research, using the CISS-A with older adolescents, has only investigated the relationship between adolescent coping styles and psychopathology (Endler and Parker, 1990). The present study appears to be the first to investigate the relationship between coping styles and high anxiety in adolescents. Given that the majority of the published research does not support the results of this study, a replication of it needs to be undertaken to determine the validity of the outcome that task-oriented coping style is related to high anxiety.

Second, determination of the type of situation that would constitute a high stress condition for both males and females would help clarify the conflicting results in the field of coping styles and anxiety reported thus far. Once high stress conditions have been identified, coping research, conducted over a variety of situations, may reveal more conclusive and reliable evidence on the coping-stress relationship. An answer to the question, “When do individuals respond with trait-like coping styles; what are the styles and when do they use situation-specific coping strategies?” may emerge.
Third, measures of intervening variables, such as personality, motivation, and perceived control of the situation, could be examined in future studies, elucidating the direction of relationships, as well as other factors that influence anxiety and/or coping.

Fourth, since all of the test instruments used in this research are self-report questionnaires and adolescents may not be the best judges of their own coping styles, future researchers would be well advised to utilize corroborative reports from the parents and peers of their subjects.

Fifth, this study does not account for the effects of repeated exposure to a particular stressful situation. Perhaps a feedback loop occurs through appraisal and reappraisal of the stressful situation. For example, the initial exposure to an examination situation may have resulted in emotion-oriented coping, but reappraisal of the situation produced a change in the coping style without changing anxiety levels. A longitudinal study, examining the same type of stressful situation and subsequent coping styles and anxiety levels, may lead to increased understanding of the interactions of these variables.

Finally, a coping instrument, such as the CISS-A that measures only trait-like or stable coping dimensions, is very limited in its usefulness. It accounts for only one facet of coping --- enduring and preferred coping styles. Research has shown that coping strategies also vary across situations (Boekaert, 1966; Folkman, 1985; Compas et al., 1988). Therefore, in order to provide a complete coping profile, a situation-specific coping measure (currently being explored by Endler et al. (1994) is necessary to reveal differential but stable coping strategies for specific situations. Further research in both situation-specific coping and coping styles would help to verify that task-oriented coping is a stable coping style for adolescent females and not just in an examination situation.
References


APPENDICES
APPENDIX I

Demographic Form
DEMOGRAPHIC INFORMATION OF STUDENTS

Name: ___________________________ Code Number: ___________________________

Address: __________________________________________________________________

School: __________________________________________________________________

Age: ___________________________ Sex: M F

Grade: ___________________________ Subject: ________________________________

Past Year Overall Average: __________________________________________________________________

Present Average in this Subject: __________________________________________________________________

After graduation: Employment College University

Other ________________________________

Language: French English Other ________________________________

Language spoken at home: French English Other ________________________________

Date: __________________________________________________________________
APPENDIX II

Letter of Explanation and Consent Form
Dear Participant:

This research project has been designed to determine what questionnaire will best predict an individual's reaction to difficult, stressful or upsetting situations.

You will be presented with the four questionnaires as follows:

1. Reactions to and attitudes toward a certain situation (EMAS-S)
2. Reactions to and attitudes toward different types of situations (EMAS-T)
3. Perception of a certain situation (EMAS-P)
4. Reactions to various difficult, stressful, or upsetting situations (CISS-A)

These questionnaires will take approximately forty-five minutes to complete at this time and ten minutes just prior to your final examination in this subject.

Your participation in this study is entirely voluntary. You are free to stop at any time without affecting your schooling in any way.

All questionnaires remain strictly confidential. Participants will be assigned code numbers to ensure confidentiality. Teacher, principals and other students will not have access to individual results. Only a final group research paper will be presented.

This research is being conducted by Heather Busch, M.Ed. student at The Ontario Institute for Studies in Education and supervised by Paul King, PhD and Mary Alice Guttman, PhD.

If you have any questions regarding any aspect of this research, I can be reached at 476-1910.

Heather Busch
I, ________________________________

of ________________________________

hereby consent to voluntarily participate in the research project as described on the previous page.

_________________________________  _________________________________________
(witness)                          (signature)

Dated the ________________________ day of ________________________, 19__.
APPENDIX III

Test Instruments Administered in Low Stress Situation
**Endler Multidimensional Anxiety Scales - Trait**

**EMAS-T**

by

Norman S. Endler, Jean M. Edwards and Romeo Vitelli

Instructions: The following four sections describe a general type of situation that most people have experienced. For each type of situation, some common reactions and feelings are listed. Please use the 5-point scale to indicate the degree to which you experience these reactions and feelings in the situation described in each section.

1. **You are in situations where you are being evaluated by other people.**

   We are primarily interested in your reactions in general to those situation where you are being evaluated or observed by other people. This includes situations at work, at school, in sports, in social situations, etc., where people might be observing, grading, or judging you.

<table>
<thead>
<tr>
<th>Not at All</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

   1. Seek experiences like this.
   5. Have an “uneasy feeling”
   6. Look forward to these situations
   9. Feel Tense
   11. Heart beats faster
   12. Feel secure

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Endler Multidimensional Anxiety Scales - State

EMAS-S

by

Norman S. Endler, Jean M. Edwards and James D. Parker

Directions: The 20 items below are descriptions of reactions to and attitudes toward a certain situation. Circle a number from 1 (not at all) to 5 (very much) to describe your reactions to and attitudes toward this situation.

For each of the following 20 item, please circle a number on the 5-point scale to indicate:

How you feel at this particular moment.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not at All</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Distrust myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Feel helpless</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Perspire</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Feel uncertain</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Hands feel unsteady</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. Feel incompetent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

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**Coping Inventory for Stressful Situation - Adolescent**

**CISS-A**

by

Norman S. Endler and James D. Parker

Instructions: The following are ways people react to various difficult, stressful, or upsetting situations. Please circle a number from 1 to 5 for each item. Indicate how much you engage in these types of activities when you encounter a difficult, stressful, or upsetting situation.

<table>
<thead>
<tr>
<th>Not at All</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1. Schedule my time better.</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>5. Blame myself for putting things off.</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>20. Buy myself something.</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>30. Worry about what I am going to do.</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>40. See a movie.</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>41. Get control of the situation.</td>
</tr>
</tbody>
</table>

The items are reprinted from Coping Inventory for Stressful Situations (CISS) by N.S. Endler and J.D. Parker. Copyright © 1990 Multi-Health Systems Inc., 908 Niagara Falls Blvd., North Tonawanda, NY, 14120-2060, (800) 456-3003. Reproduced by permission.
Endler Multidimensional Anxiety Scales - Perception (Revised)

EMAS-P (R)

by

Paul R. King and Norman S. Endler

Instructions: We would like to know how you perceive the situation you are about to experience. You can tell us this by responding to the scales below. On the left side of the page, there are a number of statements. Below each statement, there are numbers from one to five. Please read each statement carefully, and then tell the degree to which the statement is true by circling one of the numbers below it. When you are deciding which numbers to circle, please report YOUR OWN perceptions, NOT what you think most people would say.

1. The situation you are about to experience is one in which you might get physically hurt.

   Not at all true 1 2 3 4 5 Very much true

4. The situation you are about to experience is one in which you are being evaluated by other people.

   Not at all true 1 2 3 4 5 Very much true

7. The situation you are about to experience is a routine or everyday situation.

   Not at all true 1 2 3 4 5 Very much true

10. The situation you are about to experience is one that is unfamiliar to you.

    Not at all true 1 2 3 4 5 Very much true

14. Please briefly describe the situation that you are about to experience.

15. Is there anything about the situation that you will experience that threatens you? If so, please write these things down.

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APPENDIX IV

Test Instruments Administered in the High Stress Condition
**Endler Multidimensional Anxiety Scales - State**

**EMAS-S**

by

Norman S. Endler, Jean M. Edwards, and James D. Parker

Directions: The 20 items below are descriptions of reactions to and attitudes toward a certain situation. Circle a number from 1 (not at all) to 5 (very much) to describe your reactions to and attitudes toward this situation.

For each of the following 20 item, please circle a number on the 5-point scale to indicate:

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<table>
<thead>
<tr>
<th></th>
<th>Not at All</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Distrust myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Feel helpless</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Perspire</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Hands feel unsteady</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. Feel incompetent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

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APPENDIX V

Analysis of Demographic Data
Analysis of Demographic Data

Analysis of variance revealed that the schools and courses were not significantly associated with the change in A-State. Correlational analysis indicated that age and grade point average had no significant effect on the change in A-State. The results for the group as a whole and by gender are presented as follows:

School:

<table>
<thead>
<tr>
<th>Group</th>
<th>F (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>$F(2,90) = 0.23$</td>
</tr>
<tr>
<td>Males</td>
<td>$F(2,33) = 0.02$</td>
</tr>
<tr>
<td>Females</td>
<td>$F(2,54) = 0.20$</td>
</tr>
</tbody>
</table>

Courses:

<table>
<thead>
<tr>
<th>Group</th>
<th>F (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>$F(4,88) = 0.49$</td>
</tr>
<tr>
<td>Males</td>
<td>$F(4,31) = 2.01$</td>
</tr>
<tr>
<td>Females</td>
<td>$F(4,52) = 0.44$</td>
</tr>
</tbody>
</table>

Age:

<table>
<thead>
<tr>
<th>Group</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>$r = -.091$</td>
</tr>
<tr>
<td>Males</td>
<td>$r = -.004$</td>
</tr>
<tr>
<td>Females</td>
<td>$r = -.004$</td>
</tr>
</tbody>
</table>

Grade Point Average:

<table>
<thead>
<tr>
<th>Group</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>$r = -.031$</td>
</tr>
<tr>
<td>Males</td>
<td>$r = -.275$</td>
</tr>
<tr>
<td>Females</td>
<td>$r = -.206$</td>
</tr>
</tbody>
</table>
APPENDIX VI

Changes in EMAS-S Scores During Stressful and Nonstressful Situation
### Changes in EMAS-S Scores During Stressful and Nonstressful Situations

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Means</td>
<td>Means</td>
</tr>
<tr>
<td></td>
<td>Nonstress</td>
<td>Stress</td>
</tr>
<tr>
<td>Canadian</td>
<td>27.63</td>
<td>30.08</td>
</tr>
<tr>
<td>Undergraduates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S.</td>
<td>30.61</td>
<td>37.95</td>
</tr>
<tr>
<td>Undergraduates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canadian</td>
<td>33.31</td>
<td>40.89</td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** The data in rows 1 and 2 are material from the EMAS copyright © 1991 by Western Psychological Services. Reprinted by Heather A. Aubry for display purposes by permission of the publisher, Western Psychological Services, 12031 Wilshire Boulevard, Los Angeles, California 90025, USA. Not to be reprinted in whole or in part for any additional purpose without the expressed written permission of the publisher. All rights reserved.

*p<.001
APPENDIX VII

Correlations of CISS-A with EMAS-S Change Scores by Gender
Correlations of CISS-A with EMAS-S Change Scores by Gender

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Task</th>
<th>Emotion</th>
<th>Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>University Students</td>
<td>.10</td>
<td>.10</td>
<td>- .09</td>
</tr>
<tr>
<td>High School Students</td>
<td>-.16</td>
<td>.43***</td>
<td>-.20</td>
</tr>
</tbody>
</table>

Note. The data in row 1 is reprinted from *Personality and Individual Differences*, 18, no.5 by N.S. Endler, L. Kantor and J.D. Parker, "State-Trait Coping, State-Trait Anxiety and Academic Performance," p.667, Copyright (1994), with kind permission from Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington OX5 1GB, UK. Adapted with permission of the author.

** p<.01

*** p<.001
APPENDIX VIII

Approvals to Use Copyright Materials
Re: Approval to use copyright material

Dear Ms. Rothwell:

As per our conversation October 3, 1996, I am writing to request approval to use copyright material from the journal Personality and Individual Differences.

I am enrolled in the Doctorate of Education program at the Ontario Institute for Studies in Education at the University of Toronto and am about to submit my thesis. I require approval for the following:

- to reproduce part of Table 2 from "State-trait coping, state-trait anxiety and academic performance" by N.S. Endler, L. Kantor and D.A. Parker, 1994, Personality and Individual Differences, 16, No. 3, pp. 467.

I hope to submit my thesis by October 9, 1996 and hope that you can accommodate me in this matter. My fax number is (705) 753-1988.

Thank you in advance for your consideration and speedy response.

Yours sincerely,

[Signature]

Heather A. Busch
SUPPORT SERV

TEL: 01865843950

643 Baywood Road
NORTH BAY, Ontario
Canada P1B 4T1

Add: Ms. Frances Rothwell
Perceywen-Bluer Science Limited
The Boulevard, Langford Lane
Kidlington, Oxford
OX5 1GB, UK

Re: Approval to use copyright material

Dear Ms. Rothwell:

As per our telephone conversation October 8, 1996, I have been able to locate the
original journal article in which the Carey Multidimensional Anxiety Scale-Perception
Revised was published. It was published in 1989 in "Personality and Individual
Differences, Vol. 10, No. 10. The title of the article is "Improving the assessment of
attention anxiety perception with respect to anxiety" and it is located on pages 1053 to
1061. At that time the copyright holder was Morwell Fergason Macmillan.

I hope that this is enough information to grant me approval to use the material in
my thesis.

Thank you for your consideration and I look forward to hearing from you in the
very near future. My fax number is (705) 840-1621.

Sincerely yours

Heather A. Busch
Dear [Name],

I am writing to follow up on our conversation earlier this week. I understand that you have been in contact with [Another Person], who has also expressed interest in working with us. I hope you have found the information provided useful.

We are excited about the potential collaboration and would be happy to discuss the details further with you. Please let me know if you would be available for a call at your earliest convenience.

Thank you for your interest in the Capital Inventory for Specialized Services (CISS). We believe it could be a valuable asset to your organization.

Best regards,

[Your Name]

[Date: October 2, 1996]
TO FAX 705/753-1988
1 page total: sdw

October 3, 1996

Heather A. Aubry
642 Baywood Road
North Bay, ON
Canada P1B 4T1

Re: Endler Multidimensional Anxiety Scales (EMAS)

Dear Ms. Aubry:

Thank you for your letter of October 2, requesting permission to reproduce copyrighted WPS material for inclusion in your doctoral thesis for the Ontario Institute for Studies in Education at the University of Toronto.

Due to margin requirements at your institution, Western Psychological Services authorizes you to photoreduce an original EMAS-S Test Form and an original EMAS-T Test Form — as well as to reproduce EMAS-S-TOT information from Table 21 of the EMAS Manual — for the for the above-described purpose: only, provided each reprint bears the following required notice in its entirety:

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Please note that authorization for reproduction of the Test Forms does not extend to reproduction by microfilm. Due to the public availability of microfilmed copies, WPS is not to authorize reproduction of its tests in this manner. While we regret any inconvenience our position may cause, we trust you understand the ethical considerations involved.

We appreciate your interest in the EMAS as well as your consideration for its copyright. If you have any follow-up questions, please feel free to contact me again.

Sincerely yours,

[Signature]

Assistant to the President
Rights and Permissions

SDW
Dear Ms. Aubry:

Thank you for your letter of October 12, requesting permission to reproduce selected test items for inclusion in your doctoral thesis for the Ontario Institute for Studies in Education at the University of Toronto.

Western Psychological Services authorizes you to reproduce items 1, 5, 6, 9, 11 and 12 from the EMAS-T — as well as items 2, 7, 9, 13, 14, and 19 from the EMAS-S — as indicated in your correspondence and for the above-described purpose only, provided each reprint bears the following required notice in its entirety:

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Please note that this authorization does extend to reproduction by microfilm.

We appreciate your interest in the EMAS as well as your consideration for its copyright. If you have any follow-up questions, please feel free to contact me again.

Sincerely yours,

Susan Dunn Weinberg
Assistant to the President
Rights and Permissions

SDW:se
6 October 1996

Ms. Heather Aubry,  
642 Baywood Rd.,  
North Bay, ON  
P1B 4T1

Dear Ms. Aubry,

Further to your recent request, I am pleased to advise that you have my permission to use the Endler Multidimensional Anxiety Scales - Perception (Revised) (EMAS-P(R)) for purposes of your dissertation. This extends to reproducing this instrument, in whole or in part, for insertion in your dissertation.

Yours sincerely,

[Signature]

Paul R. King, Ph.D., C.Psych.  
Psychologist
Subject: Re: Approval to use copyright material

Date: Tue, 8 Oct 1996 14:23:16 -0700 (PDT)
From: Norman Endler <endler@yorku.ca>
To: Heather Busch <busch@cwconnect.ca>

Heather A. Aubrey:
The official copyright for the EMAS, CISS & PAID materials are held by Western Psychological Services, Multi-Health Systems and Pergamon Press. It is OK with me to reproduce the material, but you need official permission from them. Cheers, Norman J. Endler

On Thu, 3 Oct 1996, Heather Busch wrote:

> October 3, 1996
> 642 Baywood Road
> NORTH BAY, Ontario
> P1B 4T1
> 
> Attn: Dr. N. S. Endler
> Department of Psychology
> York University
> 4700 Keele Street,
> NORTH YORK, Ontario
> M3J 1P3
> 
> Dear Dr. Endler:
> 
> I am completing my thesis as a requirement for an EdD at the Ontario Institute for Studies in Education at the University of Toronto. The subject of my thesis examined the predictability of high anxiety using the CISS-A, EMAS-S, EMAS-T and EMAS-F (Revised) questionnaires.
> 
> I would like to include these questionnaires and some parts of tables from some of your published research and require your approval to do so. Specifically, in addition to the above questionnaires, I would like your permission for the following:
> 
> - To reproduce part of Table 2 from "State-trait coping, state-anxiety and academic performance," by N.S. Endler, L. Kantor and D.A. Parker, 1994, Personality and Individual Differences, 16, No.5, p.667.
> 
> 
> I have contacted the copyright holders and their approval is forthcoming. I hope to submit my thesis by October 9, 1996 and hope that you can accommodate me in this matter. My Email address is cbusch@cwconnect.ca
> 
> Thank you in advance for your consideration and I look forward to hearing from you in the near future.
> 
> Yours sincerely