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**Perceived effectiveness of problem-focused and emotion-focused coping : the role of appraisal of event controllability and personality traits**

Lawrence Ira Marks

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To the Graduate Council:

I am submitting herewith a dissertation written by Lawrence Ira Marks entitled "Perceived effectiveness of problem-focused and emotion-focused coping : the role of appraisal of event controllability and personality traits." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

Kathleen Davis, Major Professor

We have read this dissertation and recommend its acceptance:

William Hahn, Mark Hector, Bill Poppen

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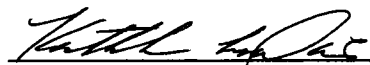
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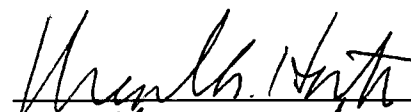

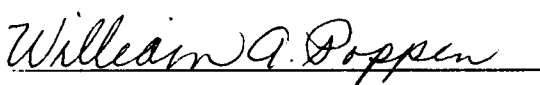
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\_\_\_\_\_  
Associate Vice Chancellor and  
Dean of The Graduate School

PERCEIVED EFFECTIVENESS OF PROBLEM-FOCUSED AND  
EMOTION-FOCUSED COPING: THE ROLE OF APPRAISAL OF EVENT  
CONTROLLABILITY AND PERSONALITY TRAITS

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee - Knoxville

Lawrence Ira Marks

August 1999

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## ABSTRACT

Two broad types of coping labeled problem-focused and emotion-focused have been used to classify the many ways of coping with stressful events. The goodness of fit between individuals' appraisals of control over a stressful event and their use of problem-focused and emotion-focused coping strategies has been shown to be related to psychological adjustment. However, there is an absence of studies that examine individuals' perceived effectiveness of problem-focused coping and perceived effectiveness of emotion-focused coping in relation to appraisals of control. In addition, two of the five traits of the five-factor model of personality that have consistently been identified as being important in the coping process are neuroticism and extraversion. There has been less coping research conducted with the other three traits of conscientiousness, agreeableness, and openness, and with how any of the five traits influence perceived coping effectiveness.

In this study, undergraduate students read a vignette that described either a mostly controllable or mostly uncontrollable academically related stressful event and then indicated their appraisal of control over the event and their perceived coping effectiveness when imagining using both problem-focused and emotion-focused coping strategies to cope with the given stressful event. Participants also completed an assessment of the five-factors of personality and of socially desirable responding. Problem-focused coping was

rated as more effective in coping with the controllable stressful event than with the uncontrollable event. Emotion-focused coping was rated as more effective for coping with the uncontrollable event than with the controllable event. Across both events problem-focused coping was rated as more effective than emotion-focused coping. Supplementary analyses with gender revealed that women rated emotion-focused coping higher in effectiveness than men. Regression models including controllability, the five personality traits, and social desirability as predictors only accounted for 16% of the variance in perceived effectiveness of problem-focused coping and only 14% of the variance in perceived effectiveness of emotion-focused coping. The meaning of these findings are discussed along with limitations of the study and implications for practice and research.



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## CHAPTER I

### INTRODUCTION

#### Statement of Problem

A comprehensive theory of stress and coping has been developed by Susan Folkman, Richard Lazarus, and their colleagues (Coyne & Lazarus, 1980; Folkman, 1984; Folkman & Lazarus, 1980; 1981; 1985; Folkman, Lazarus, Gruen, & DeLongis, 1986; Lazarus, 1966; 1981; Lazarus & Folkman, 1984b) in an effort to explain the complex transactional process between stressful events and how people cope. The theory defines how individuals' primary and secondary appraisals affect the coping process. Of especial influence on primary and secondary appraisals are individuals' judgments of the amount of personal control they have over the stressful event. Folkman and Lazarus (1980; 1985; Lazarus & Folkman, 1984b) also propose two main functions of coping strategies. Problem-focused coping strategies involve cognitive and behavioral efforts to change or solve the problem. Emotion-focused strategies are aimed at lessening the emotional distress connected with an event. An appropriate match between coping strategy use and appraisal of control would be using problem-focused coping with a primarily controllable event or emotion-focused coping with a primarily uncontrollable event. An inappropriate match between coping strategy use and appraisal of control would be using problem-focused coping with a primarily uncontrollable event or emotion-focused coping with a

primarily controllable event.

The goodness of fit hypothesis (Folkman, Schaefer, & Lazarus, 1979; Forsythe & Compas, 1987) predicts that when an appropriate match is made between control appraisal and coping strategies, adjustment will be better than if an inappropriate match is made. Support for the goodness of fit hypothesis has come from studies (e.g., Forsythe & Compas, 1987; Silovsky & Lyman, 1993) that have examined the use of two general forms of coping (problem-focused and emotion-focused) along with a one item assessment of control appraisal (e.g., "I had a great deal of control" versus "I had very little control"). These studies have used various measures of psychological adjustment as dependent variables or outcomes. However, the important variable of perceived effectiveness of coping has been largely ignored when studying goodness of fit.

Recently, researchers have reconsidered the role of personality in coping, especially with the development of the five-factor model (Costa & McCrae, 1988) which describes five comprehensive personality traits: neuroticism, extraversion, conscientiousness, agreeableness, and openness. In addition, there have been robust findings of the relationship between neuroticism and extraversion and disparate coping strategies (McCrae & Costa, 1986; Suls, David, & Harvey, 1996). A new conceptualization has emerged that suggests that both personality factors and situational factors play a role in coping and coping effectiveness. Among the questions as yet

unanswered is how personality influences the goodness of fit model described in the transactional theory.

The present study examined the goodness of fit model by having participants indicate their ways of coping with a given stressful event that they have rated as either mostly controllable or mostly uncontrollable. Furthermore, this study expands earlier findings by 1) designing the method so that all participants are responding to one of two versions of the same event, described to be mostly controllable or mostly uncontrollable, 2) assessing the relationship between controllability and perceived coping effectiveness for both problem-focused and emotion-focused coping, and 3) examining the role of major personality factors (neuroticism, extraversion, conscientious, agreeableness, and openness) on perceived coping effectiveness.

## Literature Review

### Transactional Theory

Given the complexity of coping responses, theoretical models that have been developed to explain this process consequently have become more elaborate than earlier models. The initial conceptualization of coping was from a psychodynamic approach. Coping was proposed to be defense mechanisms aimed at reducing internal and external threats to the ego (Freud, 1894/1964; Haan, 1977). Suls et al. (1996) labeled this perspective as the first generation of coping research. Problems with this model, including

difficulty measuring ego defenses, inability to predict outcome, and an ignoring of many problem solving strategies, led researchers to the second generation of coping research: the transactional perspective (Suls et al., 1996).

With the transactional perspective there was a paradigm shift from emphasizing ego defenses to examining the role of individual appraisals and situational determinants of coping. A new comprehensive theory of stress and coping was developed by Folkman, Lazarus, and their colleagues (Coyne & Lazarus, 1980; Folkman, 1984; Folkman & Lazarus, 1980; 1981; 1985; Folkman, Lazarus, Gruen, & DeLongis, 1986; Lazarus, 1966; 1981; Lazarus & Folkman, 1984b). The foundation for their theory is that stress and coping are both process oriented and both concepts involve a transaction between the person and the environment. Stress is defined as "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Folkman, 1984, p. 840). This meaning emphasizes the dynamic nature of stress, rather than viewing stress as a particular stimulus in the environment or a certain response by a person.

Coping is defined as "cognitive and behavioral efforts to master, reduce, or tolerate the internal and/or external demands that are created by the stressful transaction" (Folkman, 1984, p. 843). There are several important aspects of this definition. First, coping efforts can take the form of



a variety of coping strategies. Second, coping involves a mobilization of effort and does not include automatic or unconscious thoughts or acts, nor routine ways of adapting, that is, engaging in behaviors that do not require effort, according to Folkman and Lazarus' theory (Lazarus & Folkman, 1984a).

Third, coping is a process that entails changing types of coping strategies or frequency of use of particular coping strategies depending on the stressful event or within a certain event. This view is in contrast to explaining coping as a trait or personality style (Lazarus & Folkman, 1984a, 1984b). Fourth, the usefulness of a specific coping strategy is not dependent on the strategy itself. Usefulness or effectiveness refers to the degree to which the distress associated with an event is overcome, diminished, or endured. A particular coping strategy may be more effective when used in one situation or with one stage of an event than when used in a different situation or a later stage of an event (Lazarus & Folkman, 1984a). In addition, more or less use of coping strategies does not necessarily directly effect the outcome of these efforts.

According to Folkman & Lazarus' theory, the mediating factors between a stressful event and coping responses are a series of recurring cognitive appraisals that individuals make. In contrast to actual coping efforts or strategies, these cognitive appraisals may be unconscious or automatic (Lazarus & Folkman, 1984a). During what has been labeled primary appraisal, the individual evaluates what is at stake as he/she assesses whether an event is irrelevant, benign-positive, or stressful (Coyne

& Lazarus, 1980; Folkman & Lazarus, 1980; Lazarus & Folkman, 1984b). An irrelevant appraisal has little or no personal meaning for an individual. A benign-positive appraisal would be made if an event is expected to enhance one's well being. Stressful appraisals include three types: harm/loss, threat, and challenge. Harm/loss refers to physical or psychological damage or loss that a person has already suffered. Threat refers to anticipated harms or losses. Challenge refers to anticipated potential for mastery or gain and includes pleasurable emotions. It is possible for a person to make more than one type of stressful appraisal for an event (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984b). For example, moving to a new city might be appraised as a challenge for the exciting opportunities, but also as a threat because of difficulty adjusting or getting established in a new location. In addition, the use of coping strategies can vary as a function of what is at stake (Folkman, Lazarus, Gruen, & DeLongis, 1986). Throughout the literature, researchers refer to the implications of highly stressful events on coping and adjustment (Holmes & Rahe, 1967; Kobasa, 1979; Selye, 1979). With increased stress levels, individuals may become more impaired which may require greater adjustment.

Primary appraisals might also include an assessment of the desirability or importance of an event. Vinokur and Selzer (1975) reported that psychological impairment was more severe for people who described a stressful event as undesirable compared to those who perceived an event as

desirable. Undesirable events also tended to be perceived by participants in their study as requiring greater adjustment. Carver, Scheier, and Weintraub (1989) found that the importance of the situation for a person was related to using different coping strategies.

The other mediating factor, secondary appraisal involves the person assessing what can be done about a situation. During secondary appraisal, the person considers coping options and resources (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984b).

Primary and secondary appraisal may occur simultaneously or either one may proceed the other. Primary and secondary appraisals are continually influenced by person factors and environment factors. An especially significant factor is the person's judgment of the amount of personal control he or she has over the stressful event. This appraisal of control influences both the perceived stress and coping options (Folkman, 1984; Folkman & Lazarus, 1980; Lazarus & Folkman, 1984b; Vinokur & Selzer, 1975).

Folkman and Lazarus (1980; Lazarus & Folkman, 1984b) describe two types of coping: problem-focused and emotion-focused. Emotion-focused strategies are aimed at lessening the emotional distress connected with an event and tend to be used when the stressful event, appraised as harm/loss or threat, also has been appraised as not amenable to change. Problem-focused coping strategies, in contrast, tend to be used more frequently when the

situation is appraised as changeable, and these strategies involve cognitive and behavioral efforts to change or solve the problem. Beliefs about control and problem-focused coping have a positive and reciprocal relationship (Compas, Banez, Malcarne, & Worsham 1991). Control, a key to the coping process, has been conceptualized as being a subcategory of changeability (Vitaliano, DeWolfe, Maiuro, Russo, & Katon, 1990).

Folkman & Lazarus' theory suggests that both emotion-focused and problem-focused coping occur together. Support for this notion is demonstrated in Folkman and Lazarus' (1980) study of coping in a middle-aged community sample. Their analysis of 1,332 stressful episodes, reported by their sample of 100, revealed that in 98% of the episodes, both types of coping were employed. While they report, as expected, a moderate correlation between these two categories of coping, they argue that these categories are conceptually distinct. They also suggest that people were more variable than consistent in their use of coping strategies, giving more weight to situational factors than personality factors, although both play a role.

### Measurement of Coping

In their 1980 report, Folkman and Lazarus described the first version of the Ways of Coping, their instrument for measuring problem-focused and emotion-focused coping. In their 1985 revision of the Ways of Coping, Folkman and Lazarus reported that a factor analysis yielded eight scales, one problem-focused scale, six emotion-focused scales (wishful thinking,

distancing, emphasizing the positive, self-blame, tension-reduction, self-isolation), and one social support scale composed of both problem- and emotion-focused items. In a third report (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986) a factor analysis was conducted that yielded similar coping scales as the 1985 version: confrontive coping, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving, and positive reappraisal.

When examining ways of coping, many investigators have used one version of the Ways of Coping, or have derived scales based on the Ways of Coping to fit their particular study (e.g., Bolger, 1990; Forsythe & Compas, 1987; MacNair & Elliott, 1992). Factor analyses of the Ways of Coping have yielded varying scales, with most being classified as either problem-focused or emotion-focused (e.g., Aldwin & Revenson, 1987; Vitaliano et al., 1990). There appears to be general agreement in the literature that coping serves at least these two primary functions (Compas et al., 1991; Endler & Parker, 1990). However, the Ways of Coping has been criticized on several psychometric dimensions such as the varying number of extracted factors (Endler & Parker, 1990; Schwarzer & Schwarzer, 1996).

Several other coping assessments have been developed that include some aspects of problem-focused and emotion-focused coping. However, these scales also assess other coping dimensions and the emotion-focused coping scale often includes generally maladaptive strategies. For example, Tobin,

Holroyd, Reynolds, and Wigal (1989) developed the Coping Strategies Inventory measuring eight strategies (problem solving, cognitive restructuring, emotional expression, social support, problem avoidance, wishful thinking, self-criticism, and social withdrawal). Through hierarchical factor analyses they categorized the items that made up the strategies as problem engagement, emotion engagement, problem disengagement, or emotion disengagement. At the tertiary level, they broadly categorized the strategies as engagement or disengagement. Endler and Parker (1990) constructed the Coping Inventory for Stressful Situations to assess task-oriented coping, emotion-oriented coping, and avoidance-oriented coping. The emotion-oriented scale included generally dysfunctional strategies such as self-blame and was positively associated with state and trait anxiety. In an early coping assessment, Billings and Moos (1981; 1984) classified coping strategies as appraisal-focused, problem-focused or emotion-focused. Later, the same strategies were reconceptualized as either active-cognitive, active-behavioral, or avoidance strategies (Holahan & Moos, 1987).

As another alternative, Carver et al. (1989) developed the COPE scale, which, compared to the Ways of Coping (as well as other coping measures), includes more coping domains and has clearer items. The COPE contains scales that were initially developed theoretically and then confirmed empirically through factor analysis. While there is some overlap between the Ways of Coping and the COPE as far as the types of strategies measured,

Carver et al. (1989) place more emphasis on the independent strategies over the broader categories of either emotion- or problem-focused. Nevertheless, based on Folkman and Lazarus' conceptualization of stress and coping, their own model of behavioral self-regulation (Scheier & Carver, 1988), and other research on coping strategies, Carver et al. describe some of the COPE's 15 conceptually distinct scales as being related to either problem-focused coping (active coping, planning, suppression of competing activities, restraint coping, and seeking social support - instrumental) or emotion-focused coping (seeking social support - emotional, acceptance, and focus on and venting of emotions) and present the other scales (behavioral disengagement, mental disengagement, positive reinterpretation and growth, denial, turning to religion, alcohol/drug use, and humor) as not falling clearly into one type of coping.

### Appraisal of Control

The transactional nature of Folkman and Lazarus's model is described in their 1985 analysis of coping during three stages of a college examination. They measured ways of coping at three times: 1) two days before the exam, 2) five days after the exam and two days before students received their grades, and 3) five days after students received their grades. They found problem-focused coping to be used more during time 1 and a decrease in this type of coping from time 1 to time 2. This pattern of use parallels the potential amount of control associated with the respective stages. In the beginning,

students could employ study strategies to prepare for the exam, but once the exam took place, coping was used more to ameliorate the possible distressing emotions or uncertainty about one's grade on the exam. At the same time, the participants did use both types of coping at each stage of the exam, demonstrating the complexity of coping. One reason that both types of coping occur simultaneously is because emotion-focused efforts are often needed to alleviate the distress so that individuals may successfully employ problem-focused coping (Folkman, 1984).

The Folkman and Lazarus (1985) study illustrates the importance of situational appraisals of control during the time when people contemplate what they can do about a stressful event, part of the secondary appraisal process. The transactional perspective dictates that the appraisal of control needs to be considered within a specific person-environment relationship (Folkman, 1984). Appraisals of control are influenced by person factors such as generalized beliefs about control, especially in ambiguous situations (Rotter, 1966). Appraisals of control also are dependent on the unique situational factors. Because perceptions of control are person and situation specific, they need to be assessed as such in order to determine a person's idiosyncratic understanding of the stressful event.

#### Goodness of Fit Model

An important consideration for researchers investigating the effectiveness of coping with stressful events is the model of evaluation. As



described by Folkman (1992), the goodness of fit model considers appraisals of control as a moderator of the relationship between coping and outcome. When individuals assess a situation as under their control and they mostly use problem-focused coping, they are demonstrating an appropriate match or good fit between their appraisal and coping strategies. Likewise, if a person primarily employs emotion-focused coping after assessing an event as controllable, they are exhibiting an inappropriate match or poor fit between their appraisal and coping strategies (Folkman, 1992). Assessing goodness of fit that considers appraisals of control and coping within a specific person-environment transaction is more suitable when describing effectiveness of coping and is consistent with Lazarus and Folkman's theory of stress and coping.

Through deductive reasoning, a logical hypothesis would be that if there is a proper match between people's appraisal of control and their coping strategies, adjustment to the stressor would be more beneficial than if there was an improper fit between appraisal of control and coping strategies (Forsythe & Compas, 1987). That is, when the "appropriate" coping strategy is employed (e.g., problem-focused strategies when event is appraised as controllable), effectiveness, in terms of problem-resolution or physical or mental health adjustment, ought to be greater than when an "inappropriate" strategy is used (e.g., problem-focused strategies when event is appraised as uncontrollable). Support for this hypothesis was demonstrated in a study by

Forsythe and Compas (1987). In their study, subjects selected from a list the most distressing event that they had experienced in the previous six months. Appraisal of control was measured by one dichotomous item ("I had a great deal of control" versus "I had very little control"). Participants then completed the Ways of Coping Checklist, which yielded two general types of coping (emotion-focused and problem-focused) and the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974), as an assessment of psychological symptoms. The HSCL measures depression, anxiety, somatization, interpersonal sensitivity, and obsessive-compulsiveness experienced during the previous week. Forsythe and Compas (1987) found that the goodness of fit between appraised controllability and coping strategies corresponded in the expected direction with psychological symptoms. When individuals used a greater proportion of problem-focused coping when events were appraised as controllable they had lower psychological symptom scores. Similarly, when individuals used a greater proportion of emotion-focused coping with events appraised as less controllable, they reported fewer psychological symptoms. This pattern of results was verified only for the ratio of problem- to emotion-focused coping. When problem-focused coping and emotion-focused coping were considered separately along with their relationship to appraisals and outcome (psychological symptoms), no interactions were found.

Silovsky and Lyman (1993; Silovsky, 1992) carried the research

further by first assessing actual controllability of events (as rated by experts) and then examining the relationship between coping strategies, appraisal of control, and adjustment. In their study, participants indicated, from either an inventory of controllable events or one of uncontrollable events, which stressful events they had experienced in the previous six months.

Participants also indicated their appraisal of control over the events, assessed with one item. Next, the investigators selected two events for each participant, one for which the participant's rating of controllability and the experts' rating of controllability were similar and one for which the two ratings were dissimilar. Participants' coping was measured by the Ways of Coping Checklist and adjustment was assessed through the Profile of Mood States (McNair, Lorr, & Droppleman, 1971), which was adapted to assess participants' current feelings about the event that they had experienced. The researchers found that participants had better current adjustment when, for accurately appraised controllable events, they used more problem-focused coping. For controllable stressors that were inaccurately appraised, using less problem-focused strategies was related to poorer current adjustment. There were no clear relationships between adjustment, coping, and appraisals for uncontrollable events.

Other investigations lend support to the hypothesis of goodness of fit between type of coping and perceptions of controllability. Compas, Malcarne, and Fondacaro (1988) found that young adolescents reported fewer

emotional/behavioral problems when they generated more problem-focused solutions for social stressors that they perceived as controllable. With regard to children's coping with leukemia (a low-controllability stressor), using emotion-focused coping tended to be most adaptive, as measured by three different perspectives (Weisz, McCabe, & Dennig, 1994). Vitaliano et al. (1990) found that correlations between depression and problem-focused coping were negative when participants in their nonpsychiatric samples appraised a stressful event as changeable.

When investigating the effectiveness of coping with stressful events, Folkman (1992) notes that researchers should consider proximity of the outcome and the relevance of the outcome. With studies that examine specific events, such as coping with an illness, the proximity and relevance of an outcome may be more clear. When studies examine general coping processes across various events (e.g., Forsythe & Compas, 1987; Silovsky & Lyman, 1993), measuring coping effectiveness becomes more complicated. Proximal outcomes, which may be directly effected by a stressful event might be more meaningful than more distal outcomes, which may be influenced by multiple factors (Folkman, 1992). Nonetheless, Forsythe and Compas (1987) measured self-reported psychological symptoms that were present during the week prior to individuals' participation in the study as an outcome of coping with an event that occurred within six months. Silovsky and Lyman (1993) measured mood, but in specific reference to a stressful event.

### Perceived Coping Effectiveness

An individual's personal appraisals of a stressful event not only play a role in the coping strategy that is selected, but are key to the entire process of coping. Recognizing this importance of individual differences, researchers studying coping often include participants' assessments of the event on a number of primary appraisal factors (stressfulness, desirability, importance, etc.), in addition to a self-report of coping strategies. Outcome measures that assess a person's physical symptoms or mood states have provided useful information concerning the effectiveness of the various coping strategies used by a person. However, this approach assumes that endorsing use of a coping strategy will produce unvarying effects and it misses the individual differences in application of the strategy (Aldwin & Revenson, 1987). To be consistent with the view that a person's individual experience is critical in examining ways of coping, assessing perceived coping effectiveness (PCE) or coping efficacy, a person's perception that the coping strategy was effective (Aldwin & Revenson, 1987), in relation to relevant appraisal variables is warranted. In terms of Folkman's (1992) explanation, perceived coping effectiveness is certainly a proximal and relevant outcome. Currently, in the vast coping literature, there is a paucity of studies that examine PCE, and none that examine perceived effectiveness of problem-focused coping and perceived effectiveness of emotion-focused coping in relation to appraisal of control.

Overall perceived effectiveness of coping has been examined within a goodness of fit model by Conway and Terry (1992). They reported that more problem-focused coping was associated with greater overall perceived coping effectiveness, when events were appraised as controllable. Neither problem-focused coping nor the two scales used to measure emotion-focused coping (labeled as self-denigration and escapism) appeared to be related to overall perceived coping effectiveness when events were appraised as uncontrollable.

Bowman and Stern (1995) asked nurses dealing with occupational stress to indicate their perceived coping effectiveness of strategies used with a participant defined high-control stressor and low-control stressor that had occurred within the previous two weeks. They also assessed somatic symptoms and positive and negative affect that occurred during the previous few days. They found that coping was perceived as more effective for the nurses when the nurses used problem-solving strategies for episodes in which they perceived a high amount of control. Support was not found for the goodness of fit model when measuring general psychological adjustment or affect. The authors suggested that the discrepancy between this and early findings may be due to their assessing routine work stress rather than a major stressor, as in past research supporting goodness of fit between appraisals of control, coping, and psychological adjustment (e.g., Forsythe & Compas, 1987).

There appears to be at least two general ways of approaching

measurement of PCE. First, researchers may include one to four items about the overall PCE of a stressful event. For example, Lennon, Dohrenwend, Zautra, and Marbach (1990) measured satisfaction with one's role in the outcome of a stressful event with one item. Zautra and Wrabetz (1991) used one item to assess how participants rated their overall coping and one item to assess participants' beliefs about how they would handle the same event in the future. Conway and Terry (1992) used four items to assess participants' general satisfaction with their overall coping efforts. Second, researchers may incorporate an assessment of PCE within the measure of coping strategies. For example, Irion and Blanchard-Fields (1987) included a 4-point Likert scale (not effective - very effective) after each item on the Ways of Coping Questionnaire. Other researchers used a similar approach, but had participants rate effectiveness only if they reported using a particular coping strategy (e.g., Haney & Long, 1989; Long & Gessaroli, 1989; Ptacek, Smith, & Zanas, 1992). Menaghan (1983) suggests that when PCE is assessed, the researcher must simultaneously assess use of coping strategies. All of these investigators treated PCE as being a personal variable that is most accurately obtained from the participants. They did not discuss the accuracy of PCE or the validity of how they measured PCE.

### Personality and Coping

The transactional approach that has been described above emphasizes individual appraisals of a stressful event and diverse use of two

comprehensive coping strategies, emotion-focused and problem-focused, that fit with the demands of the stressor. This theory diverges from the first generation of coping research which proposed stable, enduring coping styles based on personality. However, there have been repeated findings that the situational factors suggested in the transactional theory only account for part of the variation in coping (Suls et al., 1996). Recently, a third generation of coping research has emerged that emphasizes personality as being influential in the coping process (Suls et al., 1996).

In this developing approach, researchers have examined the relationship between coping strategies and specific personality traits, such as hardiness (Marks & Harris, 1992; Williams, Wiebe, & Smith, 1992), locus of control (Carver et al., 1989), and optimism (Scheier, Carver, & Bridges, 1994). However, others (e.g., O'Brien & DeLongis, 1996; Watson & Hubbard, 1996) have examined broader, higher order personality traits, such as those of the five-factor model of personality.

The five-factor model of personality, also known as the Big Five (Watson & Hubbard, 1996), posits that there are five main personality traits: neuroticism, extraversion, conscientiousness, agreeableness, and openness to experience (Costa & McCrae, 1988, 1992a; Wiggins & Trapnell, 1997). These five factors provide a robust taxonomy to describe individual differences in the structure of personality (Digman, 1990). There appears to be agreement in the literature for use of this hierarchical structure of personality traits



(Goldberg, 1993). Traits at the top of the five-factor hierarchy reflect a broad, yet intercorrelated, range of personality descriptors (Watson, Clark, & Harkness, 1994). McCrae and Costa (1997b) present evidence that the factor structure of the five-factor model is similar across diverse national cultures. Use of this encompassing assessment of personality allows for a more comprehensive examination of personality traits in coping research (Watson & Hubbard, 1996). Two of the five traits that have consistently been identified as being important in the coping process are neuroticism and extraversion (Bolger, 1990; McCrae & Costa, 1986; O'Brien & DeLongis, 1996; Terry, 1994) whereas there has been less coping research conducted with conscientiousness, agreeableness, or openness (Costa, Somerfield, & McCrae, 1996; Hewitt & Flett, 1996; Watson & Hubbard, 1996).

Individuals who are high in neuroticism tend to view situations as more threatening, tend to be easily upset, tend to overreact to minor stressors, and tend to experience negative affect. They also tend to use generally less adaptive or less effective coping strategies such as self-blame, escape-avoidance, distancing, hostile reaction, and passivity (Bolger, 1990; McCrae & Costa, 1986; O'Brien & DeLongis, 1996; Watson & Hubbard, 1996). Some descriptors that comprise high neuroticism include anxiety, depression, self-blame, oversensitivity, self-criticism, stress overreactivity, and negativistic appraisal (Watson et al., 1994).

Individuals who are high in extraversion tend to be warm, gregarious,

confident, assertive, and enthusiastic, and tend to experience positive affect. They also tend to use generally more theoretically adaptive or effective coping strategies such as rational action and positive thinking (McCrae & Costa, 1986; McCrae & John, 1992; O'Brien & DeLongis, 1996; Watson & Hubbard, 1996). Some traits that comprise extraversion include dominance, energy, positive affectivity, and excitement seeking (Watson et al., 1994).

Individuals who are high in conscientiousness tend to be determined, planful, disciplined, and responsible. They avoid risky situations and tend to show constraint (Costa et al., 1996; Watson et al., 1994). Some traits that are correlated with conscientiousness include deliberation, self-discipline, achievement striving, and orderliness (Watson et al., 1994).

Conscientiousness appears to be related to use of problem-focused coping strategies (Watson & Hubbard, 1996).

Individuals who are high in agreeableness tend to be empathic, sensitive, benevolent, and trustworthy. Traits that are related to agreeableness include trust, altruism, and cooperation (Watson et al., 1994). Individuals who are high in openness are relatively more open than closed to the factors that make up the openness trait: fantasy, aesthetics, feelings, actions, ideas, and values (McCrae, 1993-94).

### Integration of Personality and Goodness of Fit

Enduring personality traits such as those of the five-factor model are absent from the transactional model (Costa & McCrae, 1990). Proponents of

the transactional model argue that situational determinants are the most important in explaining variability within individuals' coping behavior across stressors. In contrast, personality researchers contend that individuals' traits need to be the focus when explaining individuals' coping behavior (Krohne, 1996). In fact, it is likely that both situational determinants and personality influence coping.

As mentioned above, neuroticism is associated with generally less adaptive coping and extraversion is associated with more adaptive coping. Part of the reason that those who are high in neuroticism use less effective coping methods may be that they do not adequately match their coping strategies to their appraisal of control. Similarly, those who are high in extraversion may be able to be more flexible in their coping strategies, using the coping strategy that fits best with the situational demands. Terry (1994) reported that individuals who were low in neuroticism and who appraised an event as being more controllable tended to use more problem-focused coping. Although Terry's study took the first step in exploring the role of personality in the goodness of fit model, she did not include a measure of adjustment or perceived effectiveness in her study; thus she did not test the full goodness of fit model.

#### Purpose of Study and Hypotheses

In this study, the goodness of fit model was examined with the following variables: personality traits (neuroticism, extraversion,

conscientious, agreeableness, and openness), appraisal of control, ways of coping (emotion-focused and problem-focused), and perceived coping effectiveness. Perceived coping effectiveness was believed to be an important, yet understudied variable in the goodness of fit model. In addition, based on the literature that the personality traits of the five-factor model appear to be related to coping, it was believed that these traits may also influence perceived coping effectiveness. Thus, the purpose of this investigation was to answer the following two research questions:

1. Is the goodness of fit model valid when perceived coping effectiveness is the outcome measure?
2. What influence do the personality traits of the five-factor model of personality have on perceived effectiveness of problem-focused and emotion-focused coping?

This investigation expanded earlier studies by 1) designing the method so that all participants are responding to one of two versions of the same event, described to be mostly controllable or mostly uncontrollable, 2) assessing the relationship between controllability and perceived coping effectiveness for problem-focused and emotion-focused coping, and 3) examining the role of the five-factor model of personality on perceived coping effectiveness.

The research design of this study included an experimental component and a descriptive component. The manipulation of the vignettes as either

controllable or uncontrollable formed the experimental part, and the examination of the relationships between personality and perceived coping effectiveness formed the descriptive aspect. In addition, this study can be classified as analogue research because the participants imagined experiencing the assigned stressful event rather than actually experiencing it (Heppner, Kivlighan, & Wampold, 1992).

The hypotheses for this study were made based on the above review of the literature.

For the first research question:

1. There will be no difference between the group that reads the controllable stressful event and the group that reads the uncontrollable stressful event on overall perceived coping effectiveness scores.
2. There will be no difference between perceived effectiveness of problem-focused coping and perceived effectiveness of emotion-focused coping, regardless of the controllability of the stressful event.
3. The group that reads the controllable stressful event will have a significantly higher mean score for perceived effectiveness of problem-focused coping than for perceived effectiveness of emotion-focused coping. The group that reads the uncontrollable stressful event will have a significantly higher mean score for perceived effectiveness of emotion-focused coping than for perceived effectiveness of problem-focused coping.

For the second research question, which is largely exploratory in nature:

1. One of the null hypotheses is that none of the independent variables (controllability, neuroticism, extraversion, conscientiousness, agreeableness, openness, self-deceptive enhancement, or impression management) will impact perceived problem-focused coping effectiveness. The alternative hypothesis is that at least one of the independent variables will impact perceived problem-focused coping effectiveness.
2. The other null hypothesis is that none of the variables (controllability, neuroticism, extraversion, conscientiousness, agreeableness, openness, self-deceptive enhancement, or impression management) will impact perceived emotion-focused coping effectiveness. The alternative hypothesis is that at least one of the independent variables will impact perceived emotion-focused coping effectiveness.

## CHAPTER II

### METHOD

#### Preliminary Work and Analyses

Before carrying out this study, preliminary work and analyses needed to be conducted to assess the psychometric properties of three of the instruments. First, two vignettes describing a controllable and uncontrollable stressful event were developed and validated. Second, a factor analysis of the COPE was conducted to provide an empirical basis for determining which coping strategies were problem-focused and which were emotion-focused. Third, the reliability of the perceived coping effectiveness measure was investigated.

#### Vignette Validation

The investigator developed a series of vignettes describing various stressful events that were intended to vary in controllability. Ideas for these events came from a prior study carried out by the investigator in which 150 college students were asked to describe the most stressful event that they experienced within the last six months. Two versions were written for each of the five developed stressful events, one that described a situation that was mostly controllable and one that described a situation that was mostly uncontrollable. Feedback on the vignettes was obtained from several of the author's colleagues.

Next, 52 students and 10 psychologists read and rated the

controllability and stressfulness for each of five vignettes. The informed consent statement for this vignette validation study is presented in Appendix A1. The demographic information for this sample is presented in Appendix B1.

Participants in this vignette validation study were asked to read five vignettes. Following each vignette, the participants rated the stressfulness and controllability of the vignettes, each on a 9 point Likert scale anchored by 1 = Not at all stressful (1= No control) and 9 = Extremely stressful (9 = Complete control). In order to control for participants comparing the vignettes and for effects of order of vignettes, the following procedure was used. The pairs of vignettes were randomly assigned a number (1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B, 5A, 5B, where A was the controllable vignette and B was the uncontrollable vignette). Participants received a randomly ordered set of five vignettes (e.g., vignettes 2A, 1A, 3B, 5B, 4A or a set of the corresponding five vignettes, 2B, 1B, 3A, 5A, 4B). There were nine different random orders used for the college students and four different random orders used for the psychologists.

In the student sample, all of the pairs of vignettes were significantly different ( $p < .05$ ) on the controllability ratings in the expected direction. Yet, most of the mean scores were not meaningfully different; that is, either the rating for the uncontrollable version was not below 5 and/or the rating for the controllable version was not above 5 or the mean difference between the



versions was slight. There was one vignette pair that did have a satisfactory significant difference between the controllability rating for the controllable event ( $M = 6.77$ ,  $SD = 1.50$ ) and for the uncontrollable event ( $M = 3.88$ ,  $SD = 1.80$ ),  $t(50) = 6.28$ ,  $p < .001$ . For the controllable event, 84.6% of the student sample rated controllability as 6 or higher. For the uncontrollable event, 76.9% of the student sample rated controllability as 4 or lower. However, with this vignette pair there was also a significant difference between the ratings of stressfulness between the controllable ( $M = 7.62$ ,  $SD = 1.06$ ) and uncontrollable ( $M = 8.42$ ,  $SD = .81$ ) event as revealed by a Mann-Whitney Test ( $U = 193.5$ ,  $p < .005$ ). A Mann-Whitney Test was conducted with the stressfulness variable because the responses were not normally distributed. For the controllable event, 96.2% of the student sample rated the stressfulness as 6 or higher. For the uncontrollable event, 100% rated the stressfulness as 7 or higher.

The sample of psychologists appeared to concur with the students' ratings for the vignette pair examined above. For the controllable event, 4 out of the 5 psychologists rated controllability as 6 or higher. For the uncontrollable event, 4 out of the 5 psychologists rated controllability as 4 or lower. On stressfulness, for the controllable event, all 5 psychologists rated stressfulness as 6 or higher. Similarly, for the uncontrollable event, all 5 psychologists rated stressfulness as 6 or higher. Inferential statistical tests were not carried out with the psychologists' ratings because of the small

sample size. Because of the suitable controllability ratings and because both of the versions were rated as at least “very stressful” on average by college students and university counseling center psychologists, this vignette pair was selected to be used in the principal study.

### COPE Factor Analysis

In order to obtain problem-focused and emotion-focused coping use scales and corresponding perceived coping effectiveness scales, a factor analysis was conducted on the COPE’s 15 coping strategies using 392 undergraduate students. The informed consent statement is presented in Appendix A2. Demographic information for this sample is presented in Appendix B2. The 15 coping strategy use scores, rather than the 60 individual items, were used in the factor analysis because the 15 coping strategies are based on the factor analysis of the individual items conducted by Carver et al. (1989). Factor analyzing the COPE allows both theoretically adaptive and maladaptive coping strategies to be included in the problem-focused and emotion-focused scales. Using an extraction method of maximum likelihood with varimax rotation, five factors were explored and then four factors were explored. In both analyses, there were two factors of which one may be labeled as problem-focused and one as emotion-focused. The factor loadings for the four factors are presented in Appendix C1, and the eigenvalues for the four factors are presented in Appendix C2. To verify these two factors, a principal component analysis with varimax rotation was

conducted and similar results were obtained for the two factors. The problem-focused coping factor consists of three coping strategies: planning, active coping, and suppression of competing activities. All of these strategies involve active attempts to solve the problem. The emotion-focused coping factor consists of three coping strategies: seeking emotional social support, seeking instrumental social support, and focus on and venting of emotions. All of these strategies involve attempts to reduce emotional distress. Although Carver et al. (1989) originally conceptualized seeking instrumental social support as a problem-focused strategy, all of the social support items loaded on a single factor in their analysis. They chose to keep these scales separate based only on conceptual reasons, suspecting that in other populations or situations, they may be empirically distinct. In Aldwin and Revenson's (1987) factor analysis of the Ways of Coping Scale (Folkman & Lazarus, 1985), a social support factor emerged that included instrumental and emotional reasons for seeking support. It appears that the support gained from others reduces emotional distress and is the important component of this coping strategy (Cohen & Wills, 1985; Power, 1988; Turner, 1983). Thus, in the present study, both social support strategies were included in the emotion-focused scale.

The two other factors that emerged will be noted here, but not included in the further analyses because the hypotheses under investigation concern only emotion-focused and problem-focused coping. One factor may be labeled

as avoidance consisting of four coping strategies (behavioral disengagement, denial, alcohol/drug use, and mental disengagement). Another factor may be labeled as acceptance consisting of three factors (positive reinterpretation and growth, restraint coping, and acceptance).

#### Reliability of Perceived Coping Effectiveness

The test-retest reliability of the perceived coping effectiveness (PCE) measure was determined by inviting a random group of participants to return one week after the first administration of the COPE and the PCE measure and complete these two measures a second time. Of the 392 undergraduate students, 80 returned. The demographic information, which was similar to the larger sample, is presented in Appendix B3. The participants were given the same vignette that they read the prior week and were asked to complete the measure of coping and coping effectiveness a second time. Each participant wrote a personal code number on their packet to facilitate matching the two packets. The paired samples correlations for the 15 strategies on the PCE measure ranged from .52 for active coping to .89 for turning to religion (See Appendix D). Although a few of the correlations were moderate, they are similar to those obtained by the authors of the COPE on the individual coping strategies. The test-retest reliability coefficient was .64 for the problem-focused coping effectiveness scale (consisting of 3 coping strategies) and was .81 for the emotion-focused coping effectiveness scale (consisting of 3 coping strategies). The internal

consistency was determined by Chronbach alpha coefficients for problem-focused coping effectiveness ( $\alpha = .77$ ) and for emotion-focused coping effectiveness ( $\alpha = .82$ ).

## Principal Study

### Participants

Participants were a sample of male and female college students enrolled in undergraduate courses at the University of Tennessee – Knoxville. Participants were recruited in two ways. The first recruitment method made use of the standard psychology student subject pool. Students in this pool had the opportunity to earn extra credit in their psychology classes through participation in research projects. Following the psychology subject pool procedure, students visited a bulletin board where this project and other projects were posted. Students read a brief description and procedures of the study and, if they were interested, signed up for a specified time and place to participate. The second recruitment method was done by the investigator contacting various instructors at the University of Tennessee - Knoxville and asking for permission to use students in their classes as participants. Instructors agreeing to this allowed the investigator to come to the class and make an announcement that briefly described the study and procedures as well as times and places for students to participate. The instructor announced the amount of extra-credit available if students chose to participate. The study was announced to 26 classes in the departments of

Biology (1 class), Child and Family Studies (1 class), Counseling, Deafness, and Human Services (4 classes), Education (1 class), English (12 classes), Health (4 classes), Sociology (1 class), Speech Communication (1 class), and Statistics (1 class).

Through these recruitment procedures, 392 undergraduate students participated. Only those participants who rated stressfulness on one of the two vignettes as 6 or higher, using a 9-point scale, and who rated controllability in the intended direction were used in the analyses. For the controllable event, those participants who responded to the control question with 6 or higher were considered to have rated the vignette as mostly controllable. For the uncontrollable event, those participants who responded to the control question with 4 or lower were considered to have rated the vignettes as mostly uncontrollable. These restrictions yielded a sample of 212 ( $n=107$  for the controllable vignette and  $n=105$  for the uncontrollable vignette).

The subsample ( $n = 212$ ) was similar in all demographic percentages to the larger sample (See Appendix B<sub>2</sub>). The mean age was 19.8 and the median and modal age was 19. There were 141 (66.5%) women and 71 (33.5%) men. Most of the subsample were freshmen (97; 45.8%) and sophomores (61; 28.8%) with 32 (15.1%) juniors and 22 (10.4%) seniors. Ethnicity in the subsample closely matched the large sample with 182 (85.8%) Whites/Euro-Americans, 19 (9.0%) Blacks/African-Americans, 6 (2.8%) Asians, 1 (.5%)

Hispanic, and 4 (1.9%) reporting ethnicity as "other."

### Measures

Demographic Information Sheet. This form asked participants to indicate their age, sex, ethnicity, year in college, and grade point average. (See Appendix E1; The actual font size and style used on the measures in the study have been modified to fit the appendices.)

Vignette. Participants read one randomly assigned vignette that described either a mostly controllable or mostly uncontrollable academically related stressful event (See Appendix E2). This pair of vignettes was selected from the vignette validation study described above. Because participants were included only if their ratings were 6 or higher for the controllable vignette or 4 or lower for the uncontrollable vignette, there was a significant difference between the participants' mean controllability ratings for the controllable vignette ( $M = 7.27$ ,  $SD = 0.94$ ) and the mean controllability ratings for the uncontrollable vignette ( $M = 2.98$ ,  $SD = 0.82$ ),  $t(207.3) = 35.48$ ,  $p < .001$ . The data used for this test of differences in mean controllability ratings did not meet the assumption of homogeneity of variance, therefore a t-test was used in which equal variances were not assumed. As in the vignette validation study, there was also a significant difference between the ratings of stressfulness between the controllable vignette ( $M = 7.33$ ,  $SD = 1.01$ ) and uncontrollable vignette ( $M = 8.28$ ,  $SD = 0.87$ ),  $t(210) = -7.40$ ,  $p < .001$ . Both mean ratings indicate that participants found the events at least

“very stressful.”

Stress and Control Appraisals. These items were written to assess the participants' ratings of stressfulness and controllability of the given stressful event that they imagined experiencing (See Appendix E<sub>2</sub>). Stressfulness was assessed with one item using a 9 point Likert scale: “Imagine that you are in this situation. How stressful would this situation be for you?” Controllability also was assessed with one item using a 9 point Likert scale: “Imagine that you are in this situation. How much control, overall, would you have in this situation?” This procedure of using a single self-report question to assess overall control beliefs in reference to a specific event follows previous research methods (e.g., Aldwin & Revenson, 1987; Forsythe & Compas, 1987; Silovsky & Lyman, 1993).

COPE. Coping was measured by Carver et al.'s (1989) 60-item assessment of ways of coping (See Appendix E<sub>3</sub>). Participants read that the items relate to two main functions of coping, namely solving the problem and reducing emotional distress. For each item, they were asked, “Imagine that you are experiencing the event described in the scenario. How likely would you be to use this strategy?” Responses were made using a four point Likert-type scale where 0 = I would not do this at all, 1 = I would do this a little bit, 2 = I would do this a medium amount, and 3 = I would do this a lot. There are 15 different coping strategies assessed, each comprised of four items. Scores for each of the 15 coping strategies are computed by summing the four



items that comprise each coping strategy. The COPE can be adapted to measure dispositional coping or situational coping. In the present study, the COPE was used to assess coping with a specific situation.

The authors (Carver et al., 1989) report that the instrument incorporates the following 13 conceptually distinct coping strategies (with coefficient alpha and test-retest reliabilities for the dispositional version in parentheses): active coping (.62, .56), planning (.80, .63), suppression of competing activities (.68, .46), restraint coping (.72, .51), seeking instrumental social support (.75, .64), seeking emotional social support (.85, .77), positive reinterpretation and growth (.68, .48), acceptance (.65, .63), turning to religion (.92, .86), focus on and venting of emotions (.77, .69), denial (.71, .54), behavioral disengagement (.63, .66), and mental disengagement (.45, .58). Coefficient alphas and test-retest reliabilities for the 80 participants in the present study who completed the COPE twice are as follows: active coping (.58, .60), planning (.79, .68), suppression of competing activities (.66, .57), restraint coping (.69, .67), seeking instrumental social support (.75, .74), seeking emotional social support (.84, .84), positive reinterpretation and growth (.74, .78), acceptance (.74, .57), turning to religion (.95, .90), focus on and venting of emotions (.82, .81), denial (.72, .63), behavioral disengagement (.76, .74), and mental disengagement (.60, .81).

Carver et al. (1989) reported that coefficient alphas for the coping

strategies were higher when participants were rating coping with specific situations compared to the dispositional format. In addition, two experimental coping strategies are included in the version of the COPE distributed by the authors, alcohol/drug use and humor. For the 80 participants included in the present reliability analyses, the alcohol/drug use strategy had a coefficient alpha of .97 and a test-retest reliability of .84. For humor, the coefficient alpha was .89 and the test-retest reliability was .86. These two coping strategies were included in the present study to increase the diversity of coping strategies under investigation, although they may not be related to problem-focused or emotion-focused coping.

Evidence of both convergent and discriminant validity of the COPE scale has been reported by Carver et al. (1989). For example, they found that optimism was positively correlated with active coping, planning, restraint coping, positive reinterpretation and growth, acceptance, and turning to religion and negatively correlated with denial, behavioral disengagement, and mental disengagement. Self-esteem was positively correlated with active coping and planning and negatively related to denial and behavioral disengagement. Anxiety was positively correlated with focus on and venting of emotions, denial, behavioral disengagement, and mental disengagement and negatively associated with active coping and positive reinterpretation and growth.

As described above under preliminary work and analyses, a factor

analysis of the COPE yielded a problem-focused coping use scale (comprised of planning, active coping, and suppression of competing activities) and an emotion-focused coping use scale (comprised of seeking emotional social support, seeking instrumental social support, and focus on and venting of emotions). Example items from each of the strategies that comprise the two scales are listed in Appendix E4. The problem-focused and emotion-focused coping use scales were used in the principal study only to determine the perceived coping effectiveness measure.

Perceived Coping Effectiveness (PCE). This measure was a slightly modified version of an assessment of coping effectiveness employed by McCrae and Costa (1986). For each item on the COPE, participants were asked to respond to a corresponding perceived coping effectiveness question (See Appendix E3): "Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?" Responses were made on a four-point Likert scale (0 = Not at all effective; 1 = A little effective; 2 = Fairly effective; 3 = Very effective). The PCE scale for problem-focused coping is based on the three coping strategies determined by the factor analysis of the COPE. Likewise, the PCE scale for emotion-focused coping is based on the three strategies that form the emotion-focused coping use scale.

The procedure for scoring perceived coping effectiveness followed other

researcher's scoring procedures of PCE (Haney & Long, 1989; Ptacek et al., 1992). Participants' ratings on the items that comprise the two effectiveness scales were summed to yield two total effectiveness scores (effectiveness of problem-focused coping and effectiveness of emotion-focused coping). These totals then were divided by the number of strategies that comprise the effectiveness scales yielding an average effectiveness score per coping strategy. Both coping effectiveness scales were comprised of three coping strategies so the total effectiveness scores were divided by three. The resulting range of scores of each of the effectiveness scales was 0-12.

The reliability for PCE is presented in the preliminary work and analyses above. The validity of this self-report method is supported in several ways. To begin, the employed method of assessing PCE follows and builds on the assessment of PCE used by other researchers (Haney & Long, 1989; McCrae & Costa, 1986; Ptacek et al., 1992). In addition, McCrae & Costa (1986) reported that coping strategies were disparately related to perceived effectiveness in problem-solving and in distress-reduction. The validity of the PCE measure also is supported by meeting the four criteria that Laing (1988) discusses to evaluate the usefulness of self-report measures. Her first requirement is "The respondent must clearly understand what information is being requested" (p. 61). The items used to assess PCE were written in an unambiguous and straightforward manner. In addition, a brief explanation of problem-focused and emotion-focused coping was given to

participants. Her second requirement is "The information requested must be available to the respondent" (p. 61). As mentioned above, because participants in the present study were responding to a stressful event that they imagined happening to them, they were in the best position to indicate whether and how much they would use a strategy as well as whether and to what degree they perceived a strategy to be effective regardless of whether they would use it. Her third requirement is "The respondent must be willing to provide the information" (p. 61). In this study, it was presumed that the participants were willing to provide honest information because all received extra credit in their class, all participation was voluntary, and as Heppner et al. (1992) suggest, because confidentiality was assured. Her fourth requirement is "The examiners must be able to interpret the response accurately" (p. 61). Responses to PCE are subjective, but were interpreted with a score that was compared across participants.

NEO Five-Factor Inventory (NEO-FFI). The NEO-FFI is a shortened version of the NEO Personality Inventory-Revised (NEO PI-R; Costa & McCrae, 1992a). The NEO PI-R is a widely used measure that assesses five factors of personality: neuroticism, extraversion, conscientiousness, agreeableness, and openness. Each of the five factors on the NEO-FFI is measured by 12 items making the total scale 60 items. Participants indicate their agreement with statements on a five-point Likert type scale ranging from "strongly disagree" to "strongly agree." An example of an item from the

Neuroticism scale is "When I'm under a great deal of stress, sometimes I feel like I'm going to pieces." The authors report that correlations between the NEO-FFI and the NEO PI-R domains range from .77 to .92. Coefficient alphas for the NEO-FFI are reported to be .86 for Neuroticism, .77 for Extraversion, .73 for Openness, .68 for Agreeableness, and .81 for Conscientiousness.

Costa and McCrae (1992a) demonstrate convergent and divergent validity through "correlations between the NEO-FFI scales and a measure of the five-factor model based on adjective self-reports obtained three years earlier.... The convergent correlations range from .56 to .62; none of the divergent correlations exceeds .20" (p. 53). Using the NEO PI-R, T-scores for substance-abuse outpatients were found to be greater than 55 (considered high by Costa & McCrae, 1992a) on Neuroticism and less than 45 (considered low by Costa & McCrae, 1992a) on Agreeableness and Conscientiousness (Piedmont & Ciarrocchi, in press). In addition, as revealed by a correlational analysis, individuals who reported more symptoms as measured by the Brief Symptom Inventory (Derogatis, 1993) tended to be high on Neuroticism and low on Conscientiousness (Piedmont & Ciarrocchi, in press). MacDonald, Anderson, Tsagarakis, and Holland (1994) correlated college students' scores on the NEO PI with scores on the Myers-Briggs Type Indicator (MBTI; Briggs & Myers, 1987). For both men and women, Neuroticism was positively related to Feeling, Extraversion (on the NEO PI) was positively related to

Extraversion (on the MBTI), Openness was positively related to Intuition, Agreeableness was positively related to Feeling, and Conscientiousness was positively related to Judging. Craig, Loheidi, Rudolph, Leifer, and Rubin (1998) correlated scores on the NEO PI-R with scores on the Adjective Check List (Gough & Heilbrun, 1983), a measure of psychological needs. Among their significant results, Neuroticism on the NEO PI-R was negatively correlated with Affiliation and positively correlated with Succorance, Extraversion was positively correlated with Dominance and Exhibition, Openness was positively correlated with Autonomy and Change, Agreeableness was positively correlated with Nurturance and negatively correlated with Aggression, and Conscientiousness was positively related to Endurance and Orderliness.

Balanced Inventory of Desirable Responding (BIDR). The BIDR (Paulhus, 1991, 1994) measures two aspects of socially desirable responses (See Appendix E5). The Self-Deceptive Enhancement (SDE) subscale assesses the tendency to report truthful but positively exaggerated self-descriptions. The Impression Management (IM) subscale assesses the tendency to deliberately report desirable self-descriptions. Participants indicate how true of them each of the 40 items (20 on each scale) are using a 7 point Likert-type scale where 1=Not true and 7=Very true. Paulhus (1994) reports that coefficient alphas range from .68-.80 for SDE and .75-.86 for IM in samples of undergraduates. The author also reports 5-week test-retest

correlations to be .69 for SDE and .77 for IM.

Validity of the BIDR is demonstrated by correlations between the sum of the two BIDR scales with similar social desirability measures including the Marlowe-Crowne scale (Crowne & Marlowe, 1960) at .73 and Edwards's SD scale (Edwards, 1957) at .64 (Paulhus, 1994). Booth-Kewley, Edwards, and Rosenfeld (1992) found that respondents' IM and SDE scores were lower when the respondents were anonymous versus when the respondents were identified. Paulhus (1994) reports significant ( $p < .01$ ) correlations between SDE scores and scores on the NEO-FFI (Costa & McCrae, 1989) scales of Extraversion (.38), Conscientiousness (.24), Neuroticism (-.41), and Openness (.32) as well as between IM scores and Agreeableness (.35) and Conscientiousness (.33). The BIDR is being used in this study to test for socially desirable responding when participants are indicating perceived effectiveness of coping strategies.

### Procedure

A questionnaire packet containing the measures previously described was administered to the participants in small and large groups in a university classroom. To control for effects of order of the measures, the three primary measures (Vignette/COPE/PCE, NEO-FFI, and BIDR) were randomly ordered in the packets. Prior to beginning the questionnaire packet, participants were asked to read an informed consent statement, which they were able to keep (See Appendix A2). Next, the administrator



(same as the author/investigator) announced brief instructions. Participants then were asked to work on the questionnaire packet at their own pace. For the participants who would be returning in one week, arrangements were made for the time and place of the second administration as they completed and turned in their questionnaire packet. Participants had an opportunity to ask questions about the purpose of the research upon completing all administrations of the questionnaire.

## CHAPTER III

### RESULTS

To answer the first main research question regarding goodness of fit between appraised controllability of a stressful event and perceived coping effectiveness of problem-focused and emotion-focused coping, a two-way mixed ANOVA was conducted. The independent variable, or between subjects factor, was the vignette version (controllable or uncontrollable). The repeated measures factor was perceived coping effectiveness (problem-focused and emotion-focused). The dependent variable was perceived coping effectiveness scores.

A summary of the ANOVA results are presented in Table 1. The first hypothesis for the first research question was that there will be no difference between the group that reads the controllable stressful event and the group that reads the uncontrollable stressful event on perceived coping effectiveness scores. This hypothesis was not rejected,  $F(1,210) = .234, p > .60$ . The second hypothesis for the first research question was that there will be no difference between perceived effectiveness of problem-focused coping and perceived effectiveness of emotion-focused coping, regardless of the controllability of the stressful event. This hypothesis was rejected,  $F(1,210) = 83.99, p < .001$ . However, both of these findings are qualified by the significant interaction of the variables as predicted by the third hypothesis.

The third hypothesis for the first research question was that the group

Table 1

Two-way Mixed Analysis of Variance for Perceived Coping Effectiveness  
and Vignette Version

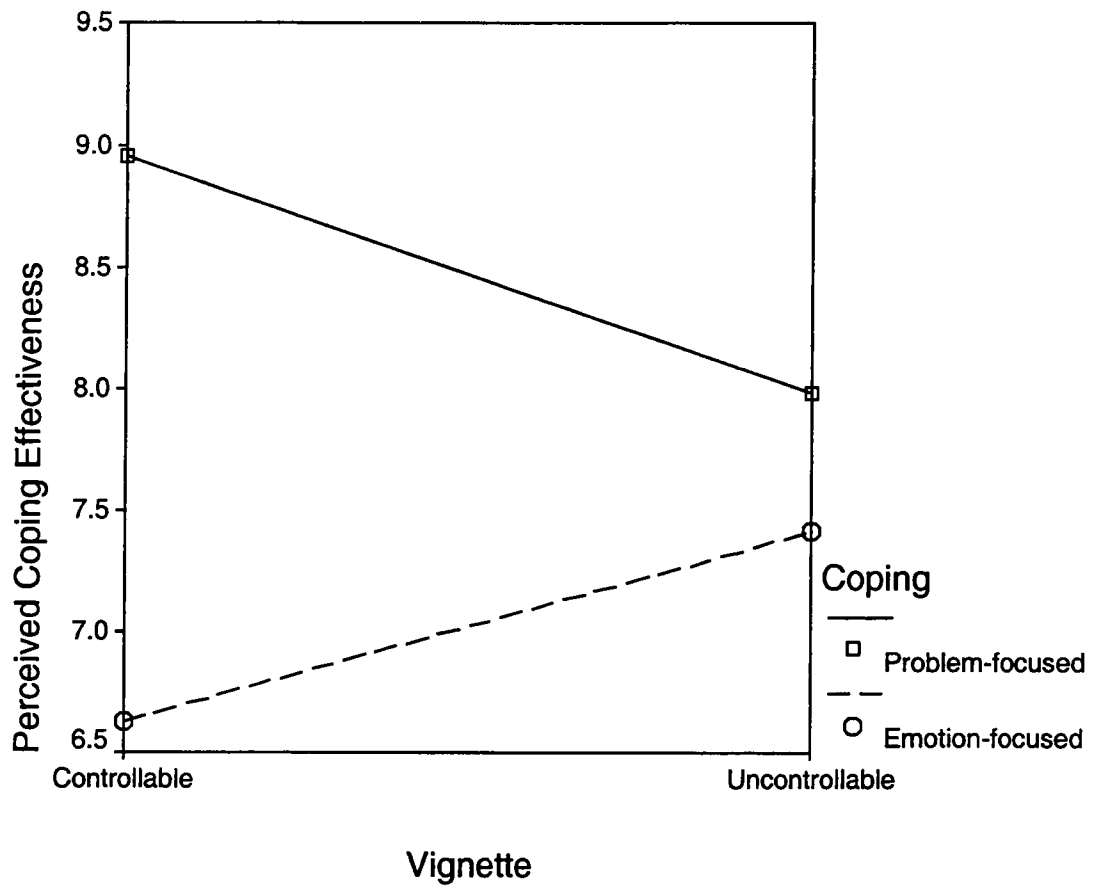
| Source                 | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> |
|------------------------|-----------|-----------|-----------|----------|
| Between Subjects       |           |           |           |          |
| Vignette Version       | .961      | 1         | .961      | .234     |
| Error                  | 863.184   | 210       | 4.110     |          |
| Within Subjects        |           |           |           |          |
| Coping Effectiveness   | 222.376   | 1         | 222.376   | 83.99**  |
| Coping Effectiveness x |           |           |           |          |
| Vignette Version       | 81.824    | 1         | 81.824    | 30.90**  |
| Error                  | 556.020   | 210       | 2.648     |          |

\*\* $p < .001$

that reads the controllable stressful event will have a significantly higher mean score for perceived effectiveness of problem-focused coping than for perceived effectiveness of emotion-focused coping. And, the group that reads the uncontrollable stressful event will have a significantly higher mean score for perceived effectiveness of emotion-focused coping than for perceived effectiveness of problem-focused coping. This hypothesis was partially supported by the significant interaction between perceived coping effectiveness and controllability of the vignette,  $F(1,210) = 30.90, p < .001$ .

Follow-up tests were conducted to examine the significant differences in the interaction. Figure 1 illustrates the pattern of the interaction. Descriptive statistics (minimum values, maximum values, means, and standard deviations) for perceived coping effectiveness are presented in Table 2. For the controllable event, the mean problem-focused coping effectiveness rating ( $M = 8.96, SD = 1.72$ ) was significantly higher than the mean emotion-focused coping effectiveness rating ( $M = 6.63, SD = 2.06$ ),  $t(106) = 8.81, p < .001$ . For the uncontrollable event, contrary to the hypothesis, the mean rating for problem-focused coping effectiveness ( $M = 7.98, SD = 1.58$ ) was significantly higher than the mean rating for emotion-focused coping effectiveness ( $M = 7.41, SD = 1.95$ ),  $t(104) = 3.32, p < .001$ .

Across both events, problem-focused coping was rated as significantly more effective for the controllable event than for the uncontrollable event,  $t(210) = 4.29, p < .001$ . The expected result was also found for emotion-



**Figure 1.** Graph of mean ratings of perceived coping effectiveness for problem-focused and emotion-focused coping for the controllable and uncontrollable vignette.

Table 2

Descriptive Statistics for Perceived Effectiveness of Problem-Focused and Emotion-Focused Coping

| Vignette       | Dependent Variable | N   | Minimum | Maximum | Mean | SD   |
|----------------|--------------------|-----|---------|---------|------|------|
| Controllable   | PCE-PF             | 107 | 4.33    | 12.00   | 8.96 | 1.72 |
|                | PCE-EF             | 107 | 1.67    | 11.00   | 6.63 | 2.06 |
| Uncontrollable | PCE-PF             | 105 | 4.33    | 11.00   | 7.98 | 1.58 |
|                | PCE-EF             | 105 | 2.33    | 12.00   | 7.41 | 1.95 |
| Total Sample   | PCE-PF             | 212 | 4.33    | 12.00   | 8.47 | 1.72 |
|                | PCE-EF             | 212 | 1.67    | 12.00   | 7.02 | 2.04 |

Note. PCE – PF = Perceived coping effectiveness – problem-focused coping; PCE – EF = Perceived coping effectiveness – emotion-focused coping.

focused coping effectiveness across both events. The mean effectiveness for emotion-focused coping was rated significantly higher for the uncontrollable event than for the controllable event,  $t(210) = -2.84, p < .005$ .

The primary analysis for the second main research question regarding the impact of personality traits on perceived coping effectiveness was a set of multiple regression procedures. To determine which independent variables may be related to the dependent variables, a first step was to examine the relationship between the independent variables (controllability, five personality factors, and two social desirability subscales) and the dependent variables (perceived problem-focused coping effectiveness and perceived emotion-focused coping effectiveness). Stressfulness ratings were also included in this initial examination. Three correlation matrices were developed, one using the total sample ( $n=212$ ), one using the group that read the controllable vignette ( $n=107$ ), and one using the group that read the uncontrollable vignette ( $n=105$ ). These correlation matrices are presented in Tables 3-5. To adjust for the multiple correlations, the level of significance was set at .005.

The criterion variables for the regression procedures were perceived problem-focused coping effectiveness and perceived emotion-focused coping effectiveness. The predictor variables used in the regressions were controllability ratings, the scores on the five personality factors, and the scores on the two social desirability subscales. All of the predictor variables

Table 3

Intercorrelations Among Personality Traits, Social Desirability, Stressfulness Ratings and Perceived CopingEffectiveness (N = 212)

| Variable             | 1    | 2     | 3     | 4    | 5    | 6    | 7    | 8     | 9    | 10   | 11 |
|----------------------|------|-------|-------|------|------|------|------|-------|------|------|----|
| 1. PCE - PF          | -    |       |       |      |      |      |      |       |      |      |    |
| 2. PCE - EF          | .15  | -     |       |      |      |      |      |       |      |      |    |
| 3. Neuroticism       | -.06 | .25*  | -     |      |      |      |      |       |      |      |    |
| 4. Extraversion      | .06  | .05   | -.24* | -    |      |      |      |       |      |      |    |
| 5. Openness          | .12  | .04   | .05   | .04  | -    |      |      |       |      |      |    |
| 6. Agreeableness     | .06  | .14   | -.15  | .28* | .03  | -    |      |       |      |      |    |
| 7. Conscientiousness | .28* | -.09  | -.33* | -.02 | -.14 | .08  | -    |       |      |      |    |
| 8. Stressfulness     | -.11 | .22*  | .37*  | -.04 | -.07 | -.10 | -.07 | -     |      |      |    |
| 9. Controllability   | .24* | -.23* | -.25* | .08  | .01  | .11  | .18  | -.50* | -    |      |    |
| 10. SDE              | .16  | -.09  | -.43* | .04  | .05  | -.03 | .34* | -.11  | .21* | -    |    |
| 11. IM               | .04  | .01   | -.05  | .01  | .10  | .33* | .17  | .06   | .03  | .26* | -  |

Note. PCE - PF = Perceived coping effectiveness - problem-focused coping; PCE - EF = Perceived coping

effectiveness - emotion-focused coping; SDE = Self-Deceptive Enhancement; IM = Impression Management.

\*p < .005.



Table 4

Intercorrelations Among Personality Traits, Social Desirability, Stressfulness Ratings and Perceived CopingEffectiveness for Participants Reading the Controllable Vignette (N = 107)

| Variable             | 1    | 2    | 3     | 4    | 5    | 6    | 7   | 8    | 9    | 10  | 11 |
|----------------------|------|------|-------|------|------|------|-----|------|------|-----|----|
| 1. PCE - PF          | -    |      |       |      |      |      |     |      |      |     |    |
| 2. PCE - EF          | -.04 | -    |       |      |      |      |     |      |      |     |    |
| 3. Neuroticism       | -.10 | .15  | -     |      |      |      |     |      |      |     |    |
| 4. Extraversion      | -.00 | .04  | -.21  | -    |      |      |     |      |      |     |    |
| 5. Openness          | .16  | .00  | .08   | .11  | -    |      |     |      |      |     |    |
| 6. Agreeableness     | .02  | .18  | -.21  | .27  | .00  | -    |     |      |      |     |    |
| 7. Conscientiousness | .19  | -.13 | -.19  | -.10 | -.21 | -.01 | -   |      |      |     |    |
| 8. Stressfulness     | -.02 | .18  | .35*  | -.04 | -.06 | -.13 | .05 | -    |      |     |    |
| 9. Controllability   | .05  | -.16 | -.24  | -.03 | .14  | .07  | .14 | -.20 | -    |     |    |
| 10. SDE              | .11  | .01  | -.34* | -.04 | .13  | -.08 | .24 | -.12 | .07  | -   |    |
| 11. IM               | -.01 | .09  | .11   | -.08 | .00  | .30* | .13 | .20  | -.07 | .19 | -  |

Note. PCE - PF = Perceived coping effectiveness - problem-focused coping; PCE - EF = Perceived coping

Effectiveness - emotion-focused coping; SDE = Self-Deceptive Enhancement; IM = Impression Management.

\*p < .005.

Table 5

## Intercorrelations Among Personality Traits, Social Desirability, Stressfulness Ratings and Perceived Coping

## Effectiveness for Participants Reading the Uncontrollable Vignette (N = 105)

| Variable             | 1    | 2    | 3     | 4    | 5    | 6    | 7    | 8     | 9    | 10   | 11 |
|----------------------|------|------|-------|------|------|------|------|-------|------|------|----|
| 1. PCE - PF          | -    |      |       |      |      |      |      |       |      |      |    |
| 2. PCE - EF          | .52* | -    |       |      |      |      |      |       |      |      |    |
| 3. Neuroticism       | .08  | .28* | -     |      |      |      |      |       |      |      |    |
| 4. Extraversion      | .07  | .11  | -.25  | -    |      |      |      |       |      |      |    |
| 5. Openness          | .11  | .07  | .01   | -.02 | -    |      |      |       |      |      |    |
| 6. Agreeableness     | .03  | .17  | -.05  | .29* | .06  | -    |      |       |      |      |    |
| 7. Conscientiousness | .29* | .00  | -.40* | .01  | -.09 | .12  | -    |       |      |      |    |
| 8. Stressfulness     | .08  | .13  | .30*  | .06  | -.12 | .06  | -.02 | -     |      |      |    |
| 9. Controllability   | -.20 | -.11 | -.12  | -.01 | .01  | -.12 | -.04 | -.31* | -    |      |    |
| 10. SDE              | .11  | -.11 | -.45* | .07  | -.01 | -.03 | .38* | .10   | -.03 | -    |    |
| 11. IM               | .06  | -.06 | -.17  | .09  | .18  | .35* | .20  | -.03  | -.02 | .33* | -  |

Note. PCE - PF = Perceived coping effectiveness - problem-focused coping; PCE - EF = Perceived coping effectiveness - emotion-focused coping; SDE = Self-Deceptive Enhancement; IM = Impression Management.

\*p < .005.

were included initially in this full model, or simultaneous regression (Wampold & Freund, 1987), because it was not known which variables would best predict perceived problem-focused or emotion-focused coping effectiveness. Using the full model revealed the significance of all the variables under consideration on perceived coping effectiveness. To determine the contribution of each variable to the regression, stepwise regressions were conducted in which the statistical computer program mathematically selected the most significant predictors to include in the models.

For the second research question, the first null hypothesis was that none of the independent variables (controllability, neuroticism, extraversion, conscientiousness, agreeableness, openness, self-deceptive enhancement, or impression management) would impact perceived problem-focused coping effectiveness. Stressfulness was not included as an independent variable because only those participants who rated stressfulness as 6 or higher were included in the analyses, thus intentionally restricting the variation of stress ratings. The alternative hypothesis was that at least one of the independent variables would impact perceived problem-focused coping effectiveness. The regression model including all of the independent variables was significant,  $F(8,203) = 4.65, p < .001$ . However, this model only accounted for 16% of the total variance. Controllability, openness, and conscientiousness were all significant predictors at  $p < .05$ . The Beta coefficients for all of the variables

are presented in Table 6. To assess the contribution of each variable to the regression model, a stepwise regression procedure was performed.

Conscientiousness was entered first by the statistical computer program, followed by controllability and openness. Together, these three variables accounted for 14% of the variance. The Beta coefficients and R-square changes are presented in Appendix F1.

The second null hypothesis for the second research question was that none of the variables (controllability, neuroticism, extraversion, conscientiousness, agreeableness, openness, self-deceptive enhancement, or impression management) would impact perceived emotion-focused coping effectiveness. The alternative hypothesis was that at least one of the independent variables would impact perceived emotion-focused coping effectiveness. The regression model including all of the independent variables was significant,  $F(8,203) = 4.12, p < .001$ . As with problem-focused coping effectiveness, only a relatively small amount (14%) of the total variance was accounted for by this model. Controllability, neuroticism, and agreeableness were all significant predictors at  $p < .01$ . The Beta coefficients for all of the variables are presented in Table 7. Again, to determine how much each variable adds to the regression model, a stepwise regression procedure was carried out. Neuroticism was entered first, followed by agreeableness and controllability, and these three variables accounted for 13% of the variance. The Beta coefficients and R-square changes are

Table 6

Full Model Multiple Regression for Predicting Problem-Focused  
Coping Effectiveness (N = 212)

| Variable        | <u>B</u> | <u>SE B</u> | $\beta$ | <u>t</u> |
|-----------------|----------|-------------|---------|----------|
| (Constant)      | 2.713    | 1.284       |         | 2.11     |
| Controllability | .146     | .050        | .197    | 2.91**   |
| N               | .028     | .016        | .135    | 1.75     |
| E               | .017     | .019        | .063    | 0.91     |
| O               | .039     | .017        | .150    | 2.27*    |
| A               | .010     | .020        | .034    | 0.46     |
| C               | .072     | .018        | .284    | 3.93**   |
| SDE             | .050     | .043        | .091    | 1.17     |
| IM              | -.034    | .041        | -.061   | -0.83    |

Note.  $R^2 = .16$ . N = Neuroticism; E = Extraversion; O =

Openness; A = Agreeableness; C = Conscientiousness; SDE =

Self-Deceptive Enhancement; IM = Impression Management.

\* $p < .05$ . \*\* $p < .01$ .

Table 7

Full Model Multiple Regression for Predicting Emotion-Focused  
Coping Effectiveness (N = 212)

| Variable        | <u>B</u> | <u>SE B</u> | $\beta$ | <u>t</u> |
|-----------------|----------|-------------|---------|----------|
| (Constant)      | 3.089    | 1.538       |         | 2.01     |
| Controllability | -.183    | .060        | -.209   | -3.06**  |
| N               | .069     | .019        | .277    | 3.54**   |
| E               | .023     | .023        | .072    | 1.02     |
| O               | .007     | .021        | .021    | 0.32     |
| A               | .070     | .024        | .212    | 2.86**   |
| C               | .002     | .022        | .006    | 0.76     |
| SDE             | .056     | .051        | .086    | 1.09     |
| IM              | -.043    | .049        | -.065   | -0.89    |

Note.  $R^2 = .14$ . N = Neuroticism; E = Extraversion; O =

Openness; A = Agreeableness; C = Conscientiousness; SDE =

Self-Deceptive Enhancement; IM = Impression Management.

\*\* $p < .01$ .

presented in Appendix F2.

### Supplementary Analyses

There have been inconsistent reports regarding the role of gender on use of coping strategies. Many investigators have reported that there was no relationship between gender and use or perceived effectiveness of problem-focused or emotion-focused coping (Blanchard-Fields & Irion, 1988; Conway & Terry, 1992; Haney & Long, 1989; Forsythe & Compas 1987; Moeller, Richards, Hooker, & Ursino, 1992). Ptacek et al. (1992) found that men reported relatively more use of problem-focused coping than emotion-focused coping than did women. However, there was no difference between the genders on frequency of use of problem-focused coping. In addition, there was no difference between men and women on the perceived effectiveness ratings of problem-focused coping.

In contrast, other researchers have found differences between men and women in the types of coping strategies employed. For example, Billings and Moos (1984) reported that women used more emotional-discharge coping than did men. Endler and Parker (1990) found that men and women did not differ in task-oriented coping, but women did score significantly higher than men on emotion-focused coping. Carver et al. (1989) concluded that women tended to report more use of focus on and venting of emotions and seeking instrumental and emotional social support, all the strategies that comprised the emotion-focused scale in the present study.

Folkman and Lazarus (1985; Lazarus & Folkman, 1984b) do not consider gender as influential in their theory of stress and coping. However, because the variables of interest only accounted for a small amount of the variance of the dependent variables in the present study, gender was examined to determine its contribution to the variance in participants' ratings of perceived effectiveness of problem-focused and emotion-focused coping.

First, two 2 x 2 ANOVAs were conducted with the vignette version and gender as independent variables. Perceived effectiveness of problem-focused coping was the dependent variable in one ANOVA and perceived effectiveness of emotion-focused coping was the dependent variable the other ANOVA. The summary of the ANOVA for problem-focused coping effectiveness is presented in Table 8. There was a significant main effect for vignette version,  $F(1,208) = 19.16, p < .001$ . As reported in the primary results, problem-focused coping was rated as significantly more effective for the controllable event than for the uncontrollable event.

The ANOVA summary for perceived effectiveness of emotion-focused coping is presented in Table 9. There was a significant main effect for vignette version,  $F(1,208) = 9.69, p < .005$ . As in the primary results, for emotion-focused coping, the mean effectiveness rating was significantly higher for the uncontrollable event than for the controllable event. There was also a significant main effect for gender,  $F(1,208) = 15.38, p < .001$ .



Table 8

Analysis of Variance of Gender and Vignette Version for Perceived  
Effectiveness of Problem-Focused Coping

| <u>Source</u>             | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> |
|---------------------------|-----------|-----------|-----------|----------|
| Gender                    | 5.286     | 1         | 5.286     | 1.94     |
| Vignette Version          | 52.135    | 1         | 52.135    | 19.16**  |
| Gender x Vignette Version | 1.388     | 1         | 1.388     | .51      |
| Error                     | 566.123   | 208       | 2.722     |          |

\*\*p < .001

Table 9

Analysis of Variance of Gender and Vignette Version for Perceived  
Effectiveness of Emotion-Focused Coping

| Source                    | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> |
|---------------------------|-----------|-----------|-----------|----------|
| Gender                    | 58.301    | 1         | 58.301    | 15.38**  |
| Vignette Version          | 36.731    | 1         | 36.731    | 9.69*    |
| Gender x Vignette Version | .196      | 1         | .196      | .05      |
| Error                     | 788.322   | 208       | 3.790     |          |

\* $p < .01$  \*\* $p < .001$

Across both events, women ( $M = 7.37$ ,  $SD = 1.93$ ) rated perceived effectiveness of emotion-focused coping higher than did men ( $M = 6.32$ ,  $SD = 2.09$ ). There were no significant interactions in either ANOVA.

As with the primary analyses, both a full model regression and a stepwise regression were performed for each dependent variable. For perceived problem-focused coping effectiveness, the regression model including gender, controllability, the five personality variables, and the two social desirability variables was significant,  $F(9,202) = 4.96$ ,  $p < .001$ , and accounted for 18% of the total variance. Gender, controllability, neuroticism, openness, and conscientiousness were all significant predictors at  $p < .05$ . The Beta coefficients for all of the variables are presented in Table 10. To determine the contribution of each variable, a stepwise regression procedure was performed. The results were the same as in the primary analyses (See Appendix F1). Conscientiousness was entered first by the statistical computer program, followed by controllability and openness. These three variables accounted for 14% of the variance. It appears that gender and neuroticism may have been significant in the full model and not in the stepwise model because the amount of variance accounted for by gender and neuroticism in the full model can be accounted for by one, two, or all three of the significant variables in the stepwise model. In other words, gender and neuroticism do not appear to contribute additional information that is not accounted for by conscientiousness, control, or openness.

Table 10

Full Model Multiple Regression Including Gender for Predicting Problem-Focused Coping Effectiveness (N = 212)

| Variable        | <u>B</u> | <u>SE B</u> | $\beta$ | <u>t</u> |
|-----------------|----------|-------------|---------|----------|
| (Constant)      | 2.556    | 1.269       |         | 2.01     |
| Gender          | -.668    | .265        | -.184   | -2.52*   |
| Controllability | .164     | .050        | .221    | 3.28**   |
| N               | .039     | .017        | .188    | 2.37*    |
| E               | .026     | .019        | .094    | 1.35     |
| O               | .044     | .017        | .167    | 2.55*    |
| A               | .017     | .020        | .061    | 0.83     |
| C               | .081     | .018        | .318    | 4.37**   |
| SDE             | .031     | .043        | .056    | 0.72     |
| IM              | -.013    | .041        | -.023   | -0.31    |

Note.  $R^2 = .18$ . N = Neuroticism; E = Extraversion; O =

Openness; A = Agreeableness; C = Conscientiousness; SDE =

Self-Deceptive Enhancement; IM = Impression Management.

\* $p < .05$ . \*\* $p < .01$ .

For perceived emotion-focused coping effectiveness, the regression model including gender, controllability, the five personality variables, and the two social desirability variables was significant,  $F(9,202) = 4.85, p < .001$ , and accounted for 18% of the total variance. Gender, controllability, neuroticism, and agreeableness were all significant predictors at  $p < .05$ . The Beta coefficients for all of the variables are presented in Table 11. To assess the contribution of each variable, a stepwise regression procedure was performed. Neuroticism was entered first, followed by gender, controllability, and agreeableness, and together these four variables accounted for 16% of the variance. The Beta coefficients and R-square changes are presented in Appendix G. Thus, when taking into account neuroticism, controllability, and agreeableness, gender has an affect on perceived effectiveness of emotion-focused coping. Finding gender to be significant in the stepwise regression for perceived effectiveness of emotion-focused coping and not in the stepwise regression for perceived effectiveness of problem-focused coping mirrors the gender findings revealed in the ANOVAs with gender, vignette version, and perceived coping effectiveness.

The demographic data is presented in Appendix H. Raw scores for the variables used in the analyses also are presented in Appendix H.

Table 11

Full Model Multiple Regression Including Gender for Predicting Emotion-Focused Coping Effectiveness (N = 212)

| Variable        | <u>B</u> | <u>SE B</u> | $\beta$ | t       |
|-----------------|----------|-------------|---------|---------|
| (Constant)      | 3.309    | 1.511       |         | 2.19    |
| Gender          | .937     | .315        | .217    | 2.97**  |
| Controllability | -.209    | .059        | -.238   | -3.52** |
| N               | .053     | .020        | .215    | 2.70**  |
| E               | .011     | .023        | .035    | 0.50    |
| O               | .000     | .020        | .002    | 0.02    |
| A               | .059     | .024        | .180    | 2.45*   |
| C               | -.010    | .022        | -.034   | -0.47   |
| SDE             | .083     | .051        | .127    | 1.62    |
| IM              | -.073    | .049        | -.110   | -1.50   |

Note.  $R^2 = .18$ . N = Neuroticism; E = Extraversion; O =

Openness; A = Agreeableness; C = Conscientiousness; SDE =

Self-Deceptive Enhancement; IM = Impression Management.

\* $p < .05$ . \*\* $p < .01$ .

## CHAPTER IV

### DISCUSSION

The way individuals cope with stressful events is a complex process. The present investigation set out to answer two research questions about the coping process. The first research question asked whether the goodness of fit model (Folkman, 1992; Folkman et al., 1979; Forsythe & Compas, 1987) was valid when perceived coping effectiveness was the outcome measure. Based on the results of this study, the general answer appears to be yes. The second research question examined the influence of the personality traits of the five-factor model of personality on perceived coping effectiveness when individuals assess a stressful event as mostly controllable or mostly uncontrollable. The results of this study indicate the influence of these personality traits on perceived coping effectiveness is minor.

Regarding the goodness of fit model, a prominent finding was that problem-focused coping strategies were rated as much more effective than emotion-focused coping strategies in coping with a controllable stressful event. In fact, this difference between the mean rating for perceived effectiveness of problem-focused coping and the mean rating for perceived effectiveness of emotion-focused coping was the largest difference between the two average perceived coping effectiveness scores across both vignettes. Problem-focused coping strategies involve efforts to change or solve the problem and have been hypothesized to be more effective or more useful with

controllable situations (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984b). This hypothesis is additionally supported from the finding that problem-focused coping was rated as more effective when coping with a controllable situation than with an uncontrollable situation.

Contrary to predictions, problem-focused coping also was rated as more effective than emotion-focused coping in the uncontrollable situation. The goodness of fit model (Folkman, 1992; Folkman et al., 1979; Forsythe & Compas, 1987) would predict that emotion-focused coping should be rated as more effective because this type of coping is more appropriate given the uncontrollable characteristics of the situation. The actual difference between the average effectiveness ratings was small, less than one point, and may not be meaningful in applied settings. However, this finding does suggest that efforts at attempting to solve the problem are perceived as useful, even when these strategies may go counter to the nature of the stressful event. It is important to also consider that a stressful event is rarely completely controllable or not. In fact, only 16% of the present sample rated the controllable event as completely controllable and only 7.6% of the sample rated the uncontrollable event as completely uncontrollable. The majority of participants perceived some control in the uncontrollable event. Thus, the high effectiveness ratings of problem-focused coping in the uncontrollable situation may have occurred because the situation was appraised as at least partly controllable or changeable. According to Folkman & Lazarus' theory,



in most situations, both types of coping are typically employed (Folkman, 1984; Folkman & Lazarus, 1980).

When the control vignettes were considered separately, there was no relationship between problem-focused coping effectiveness and emotion-focused coping effectiveness for the group that read the controllable vignette. In contrast, in the uncontrollable condition, there was a positive relationship between problem-focused coping effectiveness and emotion-focused coping effectiveness. This positive association was the strongest relationship ( $r = .52$ ) revealed in all three correlation matrices. Across both vignettes, as participants' ratings of controllability of the situation decreased, perceived stressfulness tended to increase, even with the restricted range of scores for the stressfulness variable. Moreover, the uncontrollable vignette was rated as significantly more stressful than the controllable vignette. Taking these relationships together suggests that because there is more stress in uncontrollable situations, individuals find emotion-focused coping more effective than in controllable situations as it is aimed at reducing emotional distress. However, individuals also tend to continue to believe that problem-focused coping is somewhat more effective under these uncontrollable, stressful conditions.

As hypothesized, emotion-focused coping was rated as more effective in the uncontrollable situation than in the controllable situation. This part of the goodness of fit model is supported, although the actual difference between

the mean ratings was minor. Across both vignettes, emotion-focused coping was rated as less effective than problem-focused coping.

Previous researchers have included both theoretically adaptive (e.g., seeking social support) and maladaptive (e.g., self-blame) strategies in their emotion-focused scale and have reported either no significant findings regarding emotion-focused coping or that emotion-focused coping was less beneficial (e.g., Conway & Terry, 1992; Roberts, 1995; Vitaliano et al., 1990). In these studies, it seems that if a strategy was not clearly problem-focused then it was categorized as emotion-focused, even when the strategy was not directly related to focusing on one's emotions. It could be argued that part of the explanation for the general lower ratings of emotion-focused effectiveness in previous research was due to the inclusion of either maladaptive strategies or strategies that are more appropriately conceptualized along other dimensions such as avoidance.

However, the emotion-focused scale in the present study included only strategies that were aimed at either alleviating one's distressing emotions or experiencing one's emotions (seeking social support and focus on and venting of emotions). The current findings suggest that it is not necessarily the inclusion of less adaptive strategies in emotion-focused scales that has led to the apparently poor effectiveness of emotion-focused strategies, but that individuals do tend to rate coping strategies that are emotion-focused as less effective than problem-focused strategies.

One explanation for the lower effectiveness ratings of emotion-focused coping overall is the emphasis in Western culture for individuals to maintain a high degree of control over their environment or an internal locus of control (Furby, 1979; Lefcourt, 1982; Rotter, 1975; Shapiro, Schwartz, & Astin, 1996). It may be that focusing on emotions implies less control and a weaker disposition. Focusing on emotions seems counter to the traits of being independent, in control, objective, and analytical that are valued in Western society (Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Rotter, 1975; Stam, 1987). Thus, in controllable and uncontrollable situations, if one can and does use problem-focused coping, these strategies are preferred and believed to be more effective.

The supplementary analyses revealed that there were gender differences in the perceived effectiveness of emotion-focused coping ratings across both vignettes. Women rated emotion-focused coping as more effective overall than did men. Whereas there have been mixed findings in the literature regarding gender and coping use or effectiveness ratings, these results support the contention that women and men differ in their experience of the effectiveness of emotion-focused coping strategies. Previous findings of no difference may have been related to how emotion-focused coping was measured. In the present study, emotion-focused strategies included seeking social support and focusing on and venting of emotions. The present finding is consistent with the socialization of men's gender role as instrumental and

women's gender role as expressive (Gibbs, 1985; O'Neil, 1981). This gender role socialization view suggests that women and men differ in what traits are valued, and this value difference seems to be reflected in the reported difference between women and men on emotion-focused coping effectiveness ratings. Again, consistent with an expressive role, women in this sample appear to find the emotion-focused coping strategies of seeking social support and focusing on and venting of emotions more effective than men who may not value expressiveness as much. However, women and men did not differ significantly in ratings of perceived effectiveness of problem-focused coping. When it comes to coping strategies, women may not be limited by a socialized gender role of thinking that only emotion-focused strategies will be effective.

The personality traits of neuroticism, extraversion, openness, agreeableness, and conscientiousness were also examined to determine their influence on perceived coping effectiveness of problem-focused and emotion-focused coping. A full regression model including all of the independent variables predicted only 16% of the variance in problem-focused coping effectiveness and only 14% of the variance in emotion-focused coping effectiveness. Similar results were obtained using a stepwise regression procedure. These findings suggest that personality traits as measured by the NEO-FFI have a relatively inconsequential influence on an individual's perceived problem-focused or emotion-focused coping effectiveness. With the qualification that a small amount of the variance was accounted for by the

models, the significance of the individual predictor variables can be discussed.

For problem-focused coping effectiveness, conscientiousness, controllability, and openness were statistically significant predictors in the simultaneous regression model and the stepwise regression model. Individuals who are high in conscientiousness tend to be determined, planful, disciplined, and responsible (Costa et al., 1996; Watson et al., 1994). These traits fit with the goals of problem-focused coping and are congruent with the present finding that conscientiousness accounts for a statistically significant amount of the variance of perceived effectiveness of problem-focused coping strategies. The influence of controllability of the stressor is consistent with the finding that problem-focused coping was rated as most effective in coping with the controllable event. Individuals' appraisals of control appear to be a fundamental quality of problem-focused coping use and its perceived effectiveness. The personality trait of openness seems less directly related to problem-focused coping. Individuals who are high in openness seek out and enjoy varied experiences, are more aware of their many thoughts and feelings, and appreciate arts, ideas, and aesthetics (McCrae, 1993-94; McCrae & Costa, 1997a). However, the present finding is consistent with a recent report that suggested that openness is associated with individuals' preference for typically engaging in problem-solving thinking and behaving (Ferguson & Patterson, 1998). The analyses with gender indicated that gender does not

influence perceived problem-focused coping effectiveness ratings beyond what variability is accounted for by conscientiousness, controllability, and openness.

For perceived effectiveness of emotion-focused coping, there were four statistically significant predictors in the simultaneous regression model and the stepwise regression model: neuroticism, agreeableness, controllability, and gender. Neuroticism has repeatedly been shown to influence the coping process (e.g., Bolger, 1990; McCrae & Costa, 1986; Terry, 1994), and the present findings are no exception. Individuals high in neuroticism tend to experience distressing emotions and tend to be emotionally unstable (Costa & McCrae, 1992a). They also tend to use generally less adaptive emotion-focused coping strategies such as self-blame, escape-avoidance, distancing, hostile reaction, and passivity (Bolger, 1990; McCrae & Costa, 1986; O'Brien & DeLongis, 1996; Watson & Hubbard, 1996). In addition, MacDonald et al. (1994) reported that neuroticism was positively correlated with the Feeling scale on the Myers-Briggs Type Indicator. The present finding suggests that people higher in neuroticism may also experience more adaptive emotion-focused coping strategies as effective for reducing their emotional distress. The central component of agreeableness is relationships with others. High scorers on this trait are more sensitive and empathic (Watson et al., 1994). Finding emotion-focused coping to be perceived as effective corresponds with the social support and focus on feelings aspects of this type of coping as

measured in this study. Similar to problem-focused coping effectiveness, controllability of the event influenced perceived effectiveness of emotion-focused coping. Controllability had a negative beta coefficient in the regressions, suggesting that decreases in controllability ratings were related to increases in perceived effectiveness of emotion-focused coping scores. Controllability was the only predictor that explained a significant amount of variance in both types of coping effectiveness ratings. Although the contribution of controllability was small, this finding does support the hypothesis that the controllability of a stressful event is a consistent factor in determining which coping strategies will be rated as most effective. Furthermore, as discussed above, gender also influences the ratings of perceived effectiveness of emotion-focused coping with women's perceptions of the effectiveness of this type of coping being greater than men's perceptions of the effectiveness of this type of coping.

Although previous researchers have suggested that extraversion is related to coping use, the present results revealed insignificant relationships between extraversion and perceived coping effectiveness of problem-focused and emotion-focused coping. Some investigators have reported that extraversion is related to use of problem-focused strategies (McCrae & Costa, 1986; Parkes, 1986), but O'Brien & DeLongis (1996) suggested that this relationship occurs because of the negative association between neuroticism and extraversion. Amirkhan, Risinger, and Swickert (1995) reported that

extraversion was related to the coping strategy of seeking social support. Based on previous research, individuals high in extraversion do appear to have a tendency to use adaptive coping strategies. The lack of significance in the present results may be reflecting the mixed findings regarding extraversion and coping use. Furthermore, the present findings concern perceived coping effectiveness, a construct that is different from coping use. Perhaps students high in extraversion are less likely to make a distinction between the effectiveness of primarily adaptive problem-focused and emotion-focused coping in controllable and uncontrollable stressful situations. Again, the entire discussion regarding personality and perceived coping effectiveness is qualified by the small percentage of variance accounted for by the personality traits as measured by the NEO-FFI. These results may be more of a statistical significance than of a practical significance.

Socially desirable responding also was examined in this study to determine if it influenced ratings of the dependent variable, perceived coping effectiveness. The relationships between the scales measuring impression management and self-deceptive enhancement with the scales measuring perceived coping effectiveness were insignificant, indicating the participants were not responding in a socially desirable manner.

### Limitations

Before drawing conclusions from the findings, some limitations of this study should be taken into account. One issue concerns the definition of the



control variable. There was no standardized meaning of control for participants to follow. They were simply asked to indicate how much control, overall, they would have in the situation described in the vignette. Some, although probably few, may have misinterpreted control to refer to control over their reactions rather than control in the event.

In addition, appraisals of control can change over the course of a stressful event. In Folkman & Lazarus' theory, coping is a transactional process, not a static response. The present design is limited in that it does not assess the process of coping or coping over time. With a single item to assess control, it is not known what aspects of the event the participants perceived as controllable. Each event was designed so that the overall control (e.g., cause and outcome) was either mostly controllable or uncontrollable. However, there may have been variability in what aspects were salient for the participants. Although the appraisal of control was hypothesized to be important in individuals' choices of coping strategies rather than the content of the event, towards which aspects of the stressful event the participants were gearing their coping strategies was not clear. The potential for control in most situations is complex and the multifaceted appraisals of control can effect coping strategy use (Folkman, 1984).

Although not part of the primary investigation, it was notable that approximately one-half of the participants in the larger sample appraised controllability and stressfulness in the intended directions. The vignette

versions that were used in the present study were selected because of the obtained controllability and stressfulness ratings in the vignette validation study. In that study, participants read and rated five vignettes on stressfulness and controllability. The packet of the five vignettes contained a random mixture of low and high control vignettes which allowed the participants to possibly make mental comparisons on controllability among the five vignettes. In contrast to the participants in the vignette validation study, it may be that the control dimension was not as salient for the participants in the principal study because they only responded to one vignette, and thus there was no opportunity to compare low and high control vignettes. Although the present findings support the importance of appraisal of control in perceived problem-focused and emotion-focused coping effectiveness, the findings may have been more or less pronounced if the appraisal of control of the situation was more salient to the participants.

Numerous coping inventories were reviewed prior to the decision to use the COPE, which ultimately had the most advantages. A factor analysis of the COPE revealed a problem-focused and emotion-focused scale, two broad types of coping that have been widely studied. The strategies included in these scales are similar to other coping inventories, however the existing variations make it difficult to make comparisons across studies. In addition, there remains debate regarding the most appropriate conceptualization of coping. The emotion-focused and problem-focused classification covers only a

portion, albeit substantial, of coping strategies.

The experimental component of the research design allowed for the manipulation of the controllability of the vignette. With any analogue research, there is a concern about external validity. It seems that the stressful events described were indeed ones to which the student participants could relate. However, actual coping efforts were not measured, only what the participants imagined they would do. It may be that coping efforts would vary when students are actually faced with the stressful situation. In addition, this sample appeared representative of the population of undergraduate students at the University of Tennessee – Knoxville in terms of demographics, but the results may not apply to other age cohorts or populations.

#### Conclusions and Implications for Practice

The results of this study support the goodness of fit model (Folkman, 1992; Folkman et al., 1979; Forsythe & Compas, 1987) that emphasizes the fit between appraisal of control and coping strategy use and effectiveness. Based on previous research with personality and coping, it was expected that personality would have had a larger impact on perceived coping effectiveness, but the observed effect was minor. However, practitioners should not abandon considering the role of personality in coping. Assessing the traits of the five-factor model can be useful in counseling (Costa & McCrae, 1992b; McCrae & Costa, 1991; Piedmont, 1998; Watson et al., 1994), even though

the relationship between the traits and perceived coping effectiveness largely remains undetermined.

Again, this study does lend support for the importance of one's appraisal of control in the coping process. The present findings also support the notion that maintaining or achieving control in situations is desirable in Western culture, despite the more balanced approach indicated by the goodness of fit model in research and popularly illustrated by the serenity prayer. With individuals apparently favoring problem-focused coping in general, practitioners might judiciously encourage clients to determine what aspects of a stressful event are potentially controllable. In fact, Taylor and Brown (1988) suggest that individuals maintaining an illusion of control may be less depressed than individuals with more realistic perceptions of control. Practitioners might choose to emphasize problem-solving coping strategies in preventive and rehabilitative interventions when there is a high level of control, although not abandon giving attention to emotion-focused coping when control is low (Lazarus & Folkman, 1984b; Schwartz & Rogers, 1994).

Practitioners should also be cognizant of the finding that men and women may experience the effectiveness of emotion-focused coping strategies differently. When appropriate, men may need to be encouraged and supported more to see the potential effectiveness of emotion-focused coping strategies. In addition, many men may be more comfortable with and have a preference for a psychoeducational or active, problem solving counseling

approach versus a more experiential approach (Robertson & Fitzgerald, 1992). In contrast, women do seem to find emotion-focused coping strategies to be effective when coping with stressful events.

The appraisal of control may often occur unconsciously. Counselors may choose to highlight this aspect of the coping process to assist individuals in understanding their coping options. Appraisals of control depend on changing situational factors and perceptions of control can vary across individuals even when imagining being in the exact same scenario. Assessing the reasons underlying an individual's appraisal of control would provide useful information for counselors. Counselors should also be sensitive to the fact that beliefs about control in general and in specific situations may vary within and between cultures (Marks, 1998).

### Conclusions and Implications for Research

Perceived coping effectiveness appears to be a useful dimension to consider and assess in research on the coping process. This study established the reliability for a method of assessing perceived coping effectiveness. The differential findings associated with problem-focused and emotion-focused coping suggests that researchers should assess the effectiveness of specific types of coping. McCrae and Costa (1986) suggested that useful information also might be provided by specific, individualized ratings of perceived coping effectiveness pertaining to individual goals of coping such as accomplishing a task or personal growth.

Previous research has demonstrated a connection between personality and coping effectiveness, perceived or otherwise (Bolger, 1990; Hewitt & Flett, 1996; McCrae & Costa, 1986). The present study found only mild support for this relationship. Neuroticism has been demonstrated as being influential in the coping process and emerged as a statistically significant, though perhaps less meaningful, predictor of perceived emotion-focused coping effectiveness. Extraversion also has been associated with the coping process, but did not influence perceived coping effectiveness in the present study. With these mixed findings, further research is needed to clarify how neuroticism and extraversion influence perceived coping effectiveness.

It is noteworthy that openness and conscientiousness were included as significant variables in the regression model predicting perceived problem-focused coping effectiveness and that agreeableness was included as a significant variable in the model predicting perceived emotion-focused coping effectiveness, because these three traits have been understudied (Costa et al., 1996; Hewitt & Flett, 1996; Watson & Hubbard, 1996). Although the role of these traits was indirect and relatively small, researchers should consider them in future research.

There have been mixed findings regarding gender differences in ratings of use and effectiveness of coping strategies. The present study suggests that women report emotion-focused strategies to be more effective than men. Future research could include a measure of gender role attitudes

to further clarify how gender influences coping effectiveness.

The perceived controllability of a stressful situation has an influential effect on the coping process. As an event changes over time, a parallel assessment of appraisals of control would expand the research and clinical implications of this variable. For example, researchers might assess how coping use and coping effectiveness are related to appraisal of control over the cause of the stressful event, control while the event is happening, and control over the outcome, as well as to dispositional beliefs about control.

As mentioned earlier, there were many participants who did not appraise controllability and stressfulness in the intended direction, especially compared to what was expected based on the results from the vignette validation study. With the exception of Silovsky and Lyman (1993), there has been little research that examines the accuracy of appraisals of control in relation to the goodness of fit model. An interesting area for future research would be to examine what situational factors or personality traits contribute to the accuracy of individuals' perceptions of control. This information might be used to develop a measure of coping intelligence or resourcefulness.

Individuals' perceptions of control also may vary across the life span. The participants in the present study included only college students, most of whom were in the same age cohort. Blanchard-Fields and Irion (1988) demonstrated that use of problem-focused and emotion-focused coping strategies for controllable and uncontrollable events varied across

adolescents, young adults, and mature adults. Older adults' appraisals of control may be influenced by their life experiences and thus affect the coping process (Aldwin, 1991). Future research on perceived coping effectiveness, appraisals of control, and personality traits could include other age cohorts (Irion & Blanchard-Fields, 1987).

Personality traits also may influence individuals' appraisals of stress. Those scoring high on neuroticism are more likely to experience distress and thus may be more likely to appraise a situation as stressful. Less is known about the relationship between the other four personality traits and appraisals of stress. Stressfulness was not examined in the present study because of the restricted variability of stress. Including ratings of stress as a variable in future research would build a more comprehensive description of the coping process. At the same time, broad models of stress and coping can ignore important differences at the individual level. With the complexity of the coping process, a challenge for future researchers remains to include the most relevant variables in developing an understanding of the coping process that can be used in applied settings.

The working hypothesis in this project was that the appraisal of control is key to the coping process. In practical applications, many other situational factors of the event influence coping. The nature or content of the event was not of concern here, but might be considered in future research. For example, it is likely that coping with a divorce differs from coping with



an academic stressor in a number of ways.

Finally, future research should employ diverse methodologies when studying coping and coping effectiveness. For example, a phenomenological investigation would allow for potential confirmation and illustration of previous discoveries as well as stimulating other conceptualizations of coping. A longitudinal design assessing perceived coping effectiveness over the changing process of a stressful event would also build on the present findings.

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Appendices

**Appendix A**  
**Informed Consent Statements**

Appendix A<sub>1</sub>Informed Consent Statement for the Vignette Validation Study

## INFORMED CONSENT

I am a graduate student in the counseling psychology program in the Counseling, Deafness, and Human Services Department at the University of Tennessee - Knoxville. I would like to thank you for helping me with this project.

In this study, I am interested in your ratings of the stressfulness and controllability of a variety of vignettes that describe stressful events. One of these vignettes will be selected for use in a separate investigation concerning ways of coping. First, you will be asked to respond to a few demographic questions. Next you will read five vignettes and respond to two items following each of the 5 vignettes. The entire procedure will take approximately 15 minutes.

I do not expect you to experience any discomfort or risk while participating in this research project. Your participation is completely voluntary, and you are free to withdraw your consent and to discontinue participation at any time without penalty or prejudice. The information you provide will be confidential. You should not put your name anywhere on the questionnaires. Your responses will be recorded using code numbers and the data will be reported in such a way as not to allow identification of the responses of any individual. In addition, your name will not be used in any part of any presentations or publications resulting from this project. Data from this investigation also may be used to answer future research questions.

If you have any questions about the procedures or other aspects of the study or if you would like information about the findings, you may contact Larry Marks in 102 Claxton Addition, University of Tennessee - Knoxville, 37996 or at 423-974-5131.

**BY COMPLETING THE ATTACHED QUESTIONNAIRE, YOU ARE GIVING VOLUNTARILY CONSENT TO PARTICIPATE IN THIS RESEARCH PROJECT WITH FULL KNOWLEDGE OF THE ABOVE.**

**PLEASE DETACH AND KEEP THIS PAGE FOR YOUR INFORMATION.**

Appendix A<sub>2</sub>

Informed Consent Statement for Principal Study Including Preliminary Work  
of the COPE Factor Analysis and Perceived Coping Effectiveness Reliability

## INFORMED CONSENT STATEMENT

This research project, an investigation of coping and perceived coping effectiveness, is being conducted by Larry Marks, a graduate student in the counseling psychology program in the Counseling, Deafness, and Human Services Department at the University of Tennessee - Knoxville. Larry Marks' advisor is Dr. Kathleen Davis. We would like to thank you for helping with this project.

We are interested in the ways people cope with stressful situations. This project will ask that you read a vignette that describes a stressful event and imagine that you are experiencing the event. Next, you will be asked to indicate whether you would use certain strategies to cope with the event described and your perceived effectiveness of those strategies. In addition, there are two measures of personality traits and styles. The entire procedure will take approximately 50 minutes.

We do not expect you to experience any discomfort or risk while participating in this research project. Your participation is completely voluntary, and you are free to withdraw your consent and to discontinue participation at any time prior to completing and submitting the questionnaire packet without penalty or prejudice. The information you provide will be confidential. You should not put your name anywhere on the questionnaire packet. Your responses will be recorded using code numbers and the data will be reported in such a way as not to allow identification of the responses of any individual. In addition, your name will not be used in any part of any presentations or publications resulting from this project. Data from this investigation also may be used to answer future research questions.

If you have any questions about the procedures or other aspects of the study or if you would like information about the findings, you may contact Larry Marks in 102 Claxton Addition, University of Tennessee - Knoxville, 37996 or at 423-974-5131.

BY COMPLETING THE ATTACHED QUESTIONNAIRE PACKET, YOU ARE GIVING VOLUNTARY CONSENT TO PARTICIPATE IN THIS RESEARCH PROJECT WITH FULL KNOWLEDGE OF THE ABOVE.

PLEASE DETACH AND KEEP THIS PAGE FOR YOUR INFORMATION.

**Appendix B**

**Demographic Information for Participants in Preliminary Work**

Appendix B<sub>1</sub>Demographic Information of Participants in the Vignette ValidationStudents (n = 52)

Age:  $M = 20.9$ ,  $SD = 3.58$

Sex: 14 men, 37 women

Year in College: 3 freshmen, 21 sophomores, 16 juniors, 12 seniors

Psychologists (n = 10)

Sex: 4 men, 6 women

Years of experience working with college students after receiving the doctoral

degree: 4 with 1-5 years, 1 with 11-15 years, 1 with 16-20 years, 1 with  
26-30 years, 3 with 31-35 years

Appendix B<sub>2</sub>

Demographic Information of Undergraduate Student Participants in the  
COPE Factor Analysis (n = 392)

Age:  $M = 19.9$ ,  $SD = 3.68$ , Median = 19, Mode = 19

Sex: 137 (34.9%) men, 255 (65.1%) women

Year in College: 176 (44.9%) freshmen, 122 (31.1%) sophomores,  
56 (14.3%) juniors, 38 (9.7%) seniors

Ethnicity: 338 (86.2%) White/Euro-Americans, 30 (7.7%)  
Blacks/African-Americans, 9 (2.3%) Asians, 8 (2.0%) Hispanics,  
6 (1.5%) "others"



Appendix B<sub>3</sub>

Demographic Information of Students Participating in the Second  
Administration for Reliability of Perceived Coping Effectiveness (n = 80)

Age:  $\underline{M}$  = 20.1,  $\underline{SD}$  = 4.44, Median = 19, Mode = 19

Sex: 17 (21.3%) men, 63 (78.8%) women

Year in College: 32 (40%) freshmen, 32 (40%) sophomores,  
9 (11.3%) juniors, 7 (8.8%) seniors

Ethnicity: 67 (83.8%) White/Euro-Americans, 8 (10%) Blacks/African-  
Americans, 2 (2.5%) Asians, 1 (1.3%) Hispanic,  
2 (2.5%) "others"

**Appendix C**  
**Factor Analysis of the COPE Results**

Appendix C<sub>1</sub>Summary of the Factor Analysis of the Coping Strategies from the COPE

| Coping Strategy      | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|----------------------|----------|----------|----------|----------|
| SESS                 | .91      | -.06     | .01      | .15      |
| FVE                  | .64      | .09      | .14      | -.14     |
| SISS                 | .56      | .23      | .01      | .13      |
| Planning             | .19      | .75      | -.31     | .11      |
| Active coping        | .19      | .71      | -.18     | -.08     |
| SCA                  | -.02     | .45      | .00      | .05      |
| BEHDIS               | .09      | -.32     | .64      | .17      |
| Denial               | .12      | -.18     | .56      | .20      |
| Alcohol/drug use     | -.01     | .01      | .49      | -.07     |
| Mental disengagement | .12      | -.24     | .45      | .37      |
| POSRG                | -.00     | .18      | -.18     | .74      |
| Restraint coping     | .05      | .04      | .21      | .46      |
| Acceptance           | .03      | .00      | .11      | .41      |
| Humor                | -.09     | -.07     | .31      | .35      |
| Religion             | .20      | -.07     | -.23     | .29      |

Note. The extraction method was maximum likelihood with varimax rotation. SESS = Seeking emotional social support; FVE = Focus on and venting of emotions; SISS = Seeking instrumental social support; SCA = Suppression of competing activities; BEHDIS = Behavioral disengagement; POSRG = Positive reinterpretation and growth.

Appendix C<sub>2</sub>Eigenvalues for the First Four Factors From the Factor Analysis of the COPE

---

| Factor | Eigenvalue | Percent of Variance |
|--------|------------|---------------------|
| 1      | 2.936      | 19.57               |
| 2      | 2.453      | 16.35               |
| 3      | 1.703      | 11.353              |
| 4      | 1.307      | 8.714               |

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**Appendix D**

**Test-Retest Correlations for Perceived Coping Effectiveness**

## Appendix D

One-Week Test-Retest Correlations for Perceived Coping Effectiveness of Coping Strategies on the COPE (N = 80)

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| Coping Strategy                      | r   |
|--------------------------------------|-----|
| Active coping                        | .52 |
| Planning                             | .67 |
| Suppression of competing activities  | .60 |
| Restraint coping                     | .75 |
| Seeking instrumental social support  | .70 |
| Seeking emotional social support     | .83 |
| Positive reinterpretation and growth | .77 |
| Acceptance                           | .71 |
| Turning to religion                  | .89 |
| Focus on and venting of emotions     | .69 |
| Denial                               | .63 |
| Behavioral disengagement             | .74 |
| Mental disengagement                 | .70 |
| Humor                                | .78 |
| Alcohol/drug use                     | .74 |

---

Note. All paired samples correlations were significant at  $p < .001$ .

Appendix E  
Demographic Information Form and Measures

Appendix E<sub>1</sub>Demographic Information Form

As a code number, please enter the date of your birth (date of the month only) plus the last four digits of your phone number. For example, if you were born on the 21<sup>st</sup> and your phone number is 974-5131, then enter 215131.

CODE NUMBER: \_\_\_\_\_

Please complete the following demographic information. Circle or fill in your response.

Age \_\_\_\_\_

Sex: 1 = male  
2 = female

Ethnicity: 1 = African-American / Black  
2 = American Indian  
3 = Asian American  
4 = Euro-American / White  
5 = Hispanic American  
6 = Other \_\_\_\_\_

Year in College: 1 = freshman  
2 = sophomore  
3 = junior  
4 = senior  
5 = graduate

Approximate Grade Point Average (G.P.A.):

0 = 0.00-1.00  
1 = 1.01-1.50  
2 = 1.51-2.00  
3 = 2.01-2.50  
4 = 2.51-3.00  
5 = 3.01-3.50  
6 = 3.51-4.00





### Uncontrollable Vignette and Stress and Control Appraisals

Please read the scenario below that describes a stressful event. Imagine that you are in the situation described.

You are enrolled in a class that is required for your major. You have taken three of the four exams in this class. The professor has stated that your grade for the class will be an average of the three highest exam grades. In other words, you can drop your lowest exam score (of the four) to compute your average. If you miss an exam you are not allowed to make it up. Up to this point, you have a high D average on the three exams you have taken. This average is a bit unusual for you, but you have found this instructor to make the class particularly difficult. You know that if you can score high enough on the fourth exam you can pull your average up to a C and maybe even a B. It is very important to you to do well in this class and to perform well overall academically. In addition, you must maintain a certain GPA to continue your financial aid. The night before the exam, there is a power outage and your alarm clock does not go off at the set time. Consequently, you oversleep and by the time you wake, there is not enough time to go in to take the last exam.

#### Individual Assessment of Event

Imagine that you are in the situation described. Please circle the number on the continuum that best matches how YOU feel about each question.

1. How stressful would this situation be for you?

1 - - - - 2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7 - - - - 8 - - - - 9  
 Not at all                  Mild                  Medium                  Very                  Extremely  
 Stressful                  Stress                  Stress                  Stressful                  Stressful

2. How much control, overall, would you have in this situation?

1 - - - - 2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7 - - - - 8 - - - - 9  
 No Control                  Little                  Some                  A lot of                  Complete  
    Control                  Control                  Control                  Control

Appendix E<sub>3</sub>COPE/Perceived Coping Effectiveness

## PLEASE READ:

There are two main functions of coping strategies. One function includes using thoughts or actions that change or solve the problem. A second function is to reduce the emotional distress connected with an event or problem. Next you will read a series of coping strategies and will be asked how likely you would be to use the strategy to cope with the situation described in the scenario and how effective you think the strategy would be for solving the problem and/or for reducing your emotional distress.

Choose your answers thoughtfully, and make your answers as true for you as you can. There are no right or wrong answers. Your answers should reflect your own style, not what you think "most people" might say or do.

For each coping strategy there are two questions (parts a and b). Please circle the number that corresponds to your response.

**1. I would try to grow as a person as a result of the experience.**

a. Imagine that you are experiencing the event described in the scenario.

How likely would you be to use this strategy?

- 0 = I would not do this at all
- 1 = I would do this a little bit
- 2 = I would do this a medium amount
- 3 = I would do this a lot

b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?

- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**2. I would turn to work or other substitute activities to take my mind off things.**

a. Imagine that you are experiencing the event described in the scenario.

How likely would you be to use this strategy?

- 0 = I would not do this at all
- 1 = I would do this a little bit
- 2 = I would do this a medium amount
- 3 = I would do this a lot

b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?

- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

Please continue responding to parts a and b of each of the coping strategy items on the next several pages.

**Questions a and b are the same for each coping strategy item:**

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario.  
How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**3. I would get upset and let my emotions out.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                    0                    1                    2                    3  
                         Not at all effective    A little effective    Fairly effective    Very effective

**4. I would try to get advice from someone about what to do.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                    0                    1                    2                    3  
                         Not at all effective    A little effective    Fairly effective    Very effective

**5. I would concentrate my efforts on doing something about it.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                    0                    1                    2                    3  
                         Not at all effective    A little effective    Fairly effective    Very effective

**6. I would say to myself "this isn't real."**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                    0                    1                    2                    3  
                         Not at all effective    A little effective    Fairly effective    Very effective

**7. I would put my trust in God.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                    0                    1                    2                    3  
                         Not at all effective    A little effective    Fairly effective    Very effective

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**8. I would laugh about the situation.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

**9. I would admit to myself that I can't deal with it and would quit trying.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

**10. I would restrain myself from doing anything too quickly.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

**11. I would discuss my feelings with someone.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

**12. I would use alcohol or drugs to make myself feel better.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**13. I would get used to the idea that it happened.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

**14. I would talk to someone to find out more about the situation.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

**15. I would keep myself from getting distracted by other thoughts or activities.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

**16. I would daydream about things other than this.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

**17. I would get upset, and would be really aware of it.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective    A little effective    Fairly effective    Very effective

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**18. I would seek God's help.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**19. I would make a plan of action.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**20. I would make jokes about it.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**21. I would accept that this had happened and that it couldn't be changed.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**22. I would hold off doing anything about it until the situation permitted.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**23. I would try to get emotional support from friends or relatives.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**24. I would just give up trying to reach my goal.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**25. I would take additional action to try to get rid of the problem.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**26. I would try to lose myself for a while by drinking alcohol or taking drugs.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**27. I would refuse to believe that it had happened.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |



- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**28. I would let my feelings out.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

**29. I would try to see it in a different light, to make it seem more positive.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

**30. I would talk to someone who could do something concrete about the problem.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

**31. I would sleep more than usual.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

**32. I would try to come up with a strategy about what to do.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**33. I would focus on dealing with this problem, and if necessary would let other things slide a little.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**34. I would get sympathy and understanding from someone.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**35. I would drink alcohol or take drugs, in order to think about it less.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**36. I would kid around about it.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**37. I would give up the attempt to get what I wanted.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**38. I would look for something good in what was happening.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**39. I would think about how I might best handle the problem.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**40. I would pretend that it hadn't really happened.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**41. I would make sure not to make matters worse by acting too soon.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**42. I would try hard to prevent other things from interfering with my efforts at dealing with this.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**43. I would go to movies or watch TV, to think about it less.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**44. I would accept the reality of the fact that it happened.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**45. I would ask people who have had similar experiences what they did.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**46. I would feel a lot of emotional distress and I would find myself expressing those feelings a lot.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

**47. I would take direct action to get around the problem.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
                  Not at all effective   A little effective   Fairly effective   Very effective

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**48. I would try to find comfort in my religion.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

**49. I would force myself to wait for the right time to do something.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

**50. I would make fun of the situation.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

**51. I would reduce the amount of effort I put into solving the problem.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

**52. I would talk to someone about how I felt.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot

- b.                   0                   1                   2                   3  
Not at all effective   A little effective   Fairly effective   Very effective

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**53. I would use alcohol or drugs to help me get through it.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**54. I would learn to live with it.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**55. I would put aside other activities in order to concentrate on this.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**56. I would think hard about what steps to take.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**57. I would act as though it hadn't even happened.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

- a. Imagine that you are experiencing the event described in the scenario.  
How likely would you be to use this strategy?
- b. Imagine YOU are actually USING this strategy to cope with the event described in the scenario. How effective would this strategy be FOR YOU in solving the problem and/or reducing your emotional distress associated with the problem?
- 

**58. I would do what had to be done, one step at a time.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**59. I would learn something from the experience.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**60. I would pray more than usual.**

- a. 0 = I would not do this at all  
1 = I would do this a little bit  
2 = I would do this a medium amount  
3 = I would do this a lot
- b.
- |                      |                    |                  |                |
|----------------------|--------------------|------------------|----------------|
| 0                    | 1                  | 2                | 3              |
| Not at all effective | A little effective | Fairly effective | Very effective |

**Have you ever experienced a situation similar to the one described in the scenario?**

1 = yes            2 = no

Appendix E<sub>4</sub>

Example items from the COPE strategies that form the problem-focused and emotion-focused scales

## Planning (problem-focused):

I would make a plan of action.

I would think hard about what steps to take.

## Active coping (problem-focused):

I would concentrate my efforts on doing something about it.

I would do what had to be done, one step at a time.

## Suppression of competing activities (problem-focused):

I would put aside other activities in order to concentrate on this.

I would try hard to prevent other things from interfering with my efforts at dealing with this.

## Seeking emotional social support (emotion-focused):

I would discuss my feelings with someone.

I would try to get emotional support from friends or relatives.

## Seeking instrumental social support (emotion-focused):

I would try to get advice from someone about what to do.

I would ask people who have had similar experiences what they did.

## Focus on and venting of emotions (emotion-focused):

I would get upset and let my emotions out.

I would let my feelings out.







**Appendix F**  
**Stepwise Regression Results**

Appendix F<sub>1</sub>Stepwise Regression for Predicting Problem-Focused Coping Effectiveness (N = 212)

| Model | Variable | <u>R</u> <sup>2</sup> | <u>R</u> <sup>2</sup> Change | <u>F</u> of change | <u>B</u> | <u>SE B</u> | <u>β</u> | <u>t</u> |
|-------|----------|-----------------------|------------------------------|--------------------|----------|-------------|----------|----------|
| 1     |          | .08                   | .08                          | 17.34**            |          |             |          |          |
|       | C        |                       |                              |                    | .07      | .02         | .276     | 4.17**   |
| 2     |          | .12                   | .04                          | 9.03**             |          |             |          |          |
|       | C        |                       |                              |                    | .06      | .02         | .240     | 3.63**   |
|       | Control  |                       |                              |                    | .15      | .05         | .199     | 3.01**   |
| 3     |          | .14                   | .02                          | 5.69*              |          |             |          |          |
|       | C        |                       |                              |                    | .06      | .02         | .263     | 3.98**   |
|       | Control  |                       |                              |                    | .14      | .05         | .194     | 2.96**   |
|       | O        |                       |                              |                    | .04      | .02         | .155     | 2.39*    |

Note. C = Conscientiousness; Control = Controllability; O = Openness.

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

Appendix F<sub>2</sub>Stepwise Regression for Predicting Emotion-focused Coping Effectiveness (N = 212)

| Model | Variable | R <sup>2</sup> | R <sup>2</sup> Change | F of change | B    | SE B | β     | t      |
|-------|----------|----------------|-----------------------|-------------|------|------|-------|--------|
| 1     |          | .06            | .06                   | 13.36**     |      |      |       |        |
|       | N        |                |                       |             | .06  | .02  | .245  | 3.66** |
| 2     |          | .09            | .03                   | 7.74*       |      |      |       |        |
|       | N        |                |                       |             | .07  | .02  | .272  | 4.09** |
|       | A        |                |                       |             | .06  | .02  | .185  | 2.78*  |
| 3     |          | .13            | .04                   | 8.67*       |      |      |       |        |
|       | N        |                |                       |             | .06  | .02  | .226  | 3.36*  |
|       | A        |                |                       |             | .07  | .02  | .201  | 3.06*  |
|       | Control  |                |                       |             | -.17 | .06  | -.197 | -2.94* |

Note. N = Neuroticism; A = Agreeableness; Control = Controllability.

\*p < .01. \*\*p < .001.

Appendix G  
Supplementary Stepwise Regression

## Appendix G

Stepwise Regression Including Gender for Predicting Emotion-focused Coping Effectiveness

(N = 212)

| Model | Variable | R <sup>2</sup> | R <sup>2</sup> Change | F of change | B    | SE B | β     | t       |
|-------|----------|----------------|-----------------------|-------------|------|------|-------|---------|
| 1     |          | .06            | .06                   | 13.36**     |      |      |       |         |
|       | N        |                |                       |             | .06  | .02  | .245  | 3.66**  |
| 2     |          | .10            | .04                   | 8.86**      |      |      |       |         |
|       | N        |                |                       |             | .05  | .02  | .203  | 3.03**  |
|       | Gender   |                |                       |             | .86  | .29  | .200  | 2.98**  |
| 3     |          | .14            | .04                   | 10.39**     |      |      |       |         |
|       | N        |                |                       |             | .04  | .02  | .144  | 2.12*   |
|       | Gender   |                |                       |             | 1.00 | .29  | .232  | 3.49**  |
|       | Control  |                |                       |             | -.19 | .06  | -.216 | -3.22** |
| 4     |          | .16            | .02                   | 4.73*       |      |      |       |         |
|       | N        |                |                       |             | .04  | .02  | .173  | 2.51*   |
|       | Gender   |                |                       |             | .81  | .30  | .189  | 2.74**  |
|       | Control  |                |                       |             | -.20 | .06  | -.221 | -3.33** |
|       | A        |                |                       |             | .05  | .02  | .147  | 2.18*   |

Note. N = Neuroticism; A = Agreeableness; Control = Controllability.

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

**Appendix H**

**Raw Data**



Appendix H

Data of Demographics and Total Scores for Variables Used in Principal Study Analyses (N = 212)

| SUBUNO | AGE | GENDE | ETHNIC | YEAR | GP | VIGNT | STR | CON | SD | IM | NE | OE | AO | C  | PF | EF    | FF    |
|--------|-----|-------|--------|------|----|-------|-----|-----|----|----|----|----|----|----|----|-------|-------|
| 2      | 24  | 2     | 4      | 3    | 5  | 1     | 6   | 7   | 4  | 6  | 27 | 36 | 30 | 33 | 36 | 6     | 5.67  |
| 4      | 20  | 2     | 4      | 2    | 6  | 1     | 7   | 7   | 4  | 8  | 16 | 31 | 25 | 38 | 40 | 11.33 | 7.33  |
| 7      | 19  | 2     | 3      | 2    | 6  | 2     | 9   | 3   | 4  | 7  | 40 | 20 | 27 | 30 | 31 | 10    | 10.33 |
| 8      | 18  | 2     | 4      | 1    | 4  | 1     | 8   | 7   | 5  | 2  | 20 | 42 | 29 | 36 | 38 | 8     | 9.33  |
| 9      | 20  | 2     | 4      | 3    | 5  | 1     | 7   | 6   | 7  | 11 | 20 | 39 | 30 | 30 | 28 | 6.67  | 7     |
| 14     | 18  | 1     | 1      | 1    | 6  | 1     | 7   | 7   | 8  | 2  | 28 | 37 | 19 | 19 | 41 | 7.67  | 6.67  |
| 16     |     | 1     | 4      | 1    | 5  | 1     | 8   | 6   | 10 | 2  | 22 | 40 | 43 | 31 | 23 | 11.33 | 10.67 |
| 17     | 18  | 2     | 4      | 1    | 5  | 2     | 8   | 3   | 6  | 8  | 25 | 43 | 34 | 35 | 27 | 9.67  | 9.67  |
| 18     | 18  | 2     | 4      | 1    | 5  | 2     | 7   | 2   | 8  | 5  | 8  | 44 | 21 | 37 | 45 | 10.33 | 9.67  |
| 19     | 21  | 2     | 4      | 4    | 4  | 2     | 9   | 3   | 5  | 11 | 30 | 31 | 29 | 40 | 32 | 11    | 12    |
| 22     | 18  | 2     | 4      | 1    | 4  | 1     | 7   | 7   | 3  | 3  | 20 | 32 | 20 | 32 | 30 | 5     | 5     |
| 23     | 24  | 2     | 4      | 4    | 6  | 2     | 8   | 4   | 3  | 7  | 18 | 36 | 29 | 33 | 31 | 6.67  | 5.67  |
| 26     | 19  | 1     | 4      | 1    | 1  | 1     | 8   | 6   | 2  | 3  | 40 | 26 | 25 | 21 | 22 | 8.33  | 7.67  |
| 27     | 19  | 2     | 4      | 1    | 6  | 1     | 8   | 6   | 6  | 4  | 19 | 39 | 22 | 37 | 40 | 8     | 10.33 |
| 32     | 18  | 2     | 4      | 1    | 3  | 1     | 6   | 7   | 5  | 12 | 29 | 34 | 43 | 41 | 23 | 6.67  | 6.67  |
| 33     | 21  | 2     | 4      | 3    | 3  | 1     | 7   | 7   | 8  | 11 | 14 | 36 | 33 | 37 | 33 | 10.67 | 7     |
| 34     | 24  | 2     | 4      | 2    | 5  | 1     | 7   | 7   | 4  | 10 | 35 | 30 | 21 | 38 | 34 | 8.67  | 5     |
| 35     | 20  | 1     | 4      | 2    | 5  | 2     | 9   | 2   | 6  | 9  | 25 | 37 | 23 | 36 | 32 | 8.33  | 5.67  |
| 40     | 19  | 1     | 4      | 2    | 5  | 1     | 7   | 8   | 13 | 9  | 18 | 29 | 29 | 40 | 33 | 9     | 6     |
| 42     | 18  | 2     | 4      | 1    | 1  | 2     | 9   | 2   | 7  | 4  | 39 | 29 | 11 | 30 | 32 | 9.33  | 10.67 |
| 44     | 18  | 2     | 4      | 2    | 6  | 1     | 8   | 8   | 6  | 3  | 24 | 33 | 33 | 20 | 33 | 9.33  | 7.67  |
| 45     | 19  | 2     | 4      | 2    | 5  | 1     | 6   | 8   | 5  | 2  | 16 | 28 | 32 | 31 | 36 | 9.67  | 7.33  |
| 49     | 19  | 2     | 4      | 2    | 4  | 2     | 9   | 3   | 2  | 6  | 37 | 37 | 28 | 34 | 30 | 7     | 8.67  |
| 52     | 19  | 2     | 1      | 1    | 6  | 1     | 7   | 9   | 9  | 6  | 19 | 28 | 26 | 27 | 33 | 12    | 7.33  |
| 53     | 19  | 2     | 4      | 2    | 5  | 2     | 9   | 3   | 6  | 3  | 26 | 35 | 20 | 31 | 27 | 7.67  | 6.67  |
| 54     | 25  | 2     | 4      | 3    | 4  | 2     | 8   | 3   | 2  | 4  | 33 | 30 | 27 | 32 | 25 | 8.67  | 6.33  |
| 55     | 23  | 1     | 4      | 4    | 5  | 2     | 8   | 1   | 2  | 3  | 34 | 25 | 31 | 32 | 30 | 10.33 | 10.33 |
| 56     | 20  | 2     | 4      | 3    | 6  | 1     | 8   | 7   | 2  | 6  | 30 | 34 | 19 | 46 | 32 | 12    | 8     |

|   |   |   |   |   |    |       |
|---|---|---|---|---|----|-------|
| S | U | B | N | O | 60 |       |
| A | G | E |   |   | 18 |       |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 1     |
| G | P | A |   |   |    | 5     |
| V | I | G | N | T | E  | 2     |
| S | T | R | E | S | S  | 8     |
| C | O | N | T | R | L  | 4     |
| S | D | E |   |   |    | 10    |
| I | M |   |   |   |    | 5     |
| N |   |   |   |   |    | 19    |
| E |   |   |   |   |    | 40    |
| O |   |   |   |   |    | 30    |
| A |   |   |   |   |    | 37    |
| C |   |   |   |   |    | 41    |
| P | F | E | F | F | F  | 8.33  |
| E | F | E | F | F | F  | 7.33  |
| S | U | B | N | O | 61 | 20    |
| A | G | E |   |   |    | 20    |
| G | E | N | D | E | R  | 1     |
| E | T | H | N | I | C  | 1     |
| Y | E | A | R |   |    | 3     |
| G | P | A |   |   |    | 4     |
| V | I | G | N | T | E  | 2     |
| S | T | R | E | S | S  | 7     |
| C | O | N | T | R | L  | 4     |
| S | D | E |   |   |    | 6     |
| I | M |   |   |   |    | 7     |
| N |   |   |   |   |    | 21    |
| E |   |   |   |   |    | 29    |
| O |   |   |   |   |    | 29    |
| A |   |   |   |   |    | 36    |
| C |   |   |   |   |    | 27    |
| P | F | E | F | F | F  | 7.67  |
| E | F | E | F | F | F  | 9     |
| S | U | B | N | O | 62 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 1     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |
| G | P | A |   |   |    | 4     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 6     |
| C | O | N | T | R | L  | 8     |
| S | D | E |   |   |    | 10    |
| I | M |   |   |   |    | 4     |
| N |   |   |   |   |    | 17    |
| E |   |   |   |   |    | 34    |
| O |   |   |   |   |    | 27    |
| A |   |   |   |   |    | 34    |
| C |   |   |   |   |    | 39    |
| P | F | E | F | F | F  | 8     |
| E | F | E | F | F | F  | 9.67  |
| S | U | B | N | O | 63 | 18    |
| A | G | E |   |   |    | 18    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 1     |
| G | P | A |   |   |    | 6     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 8     |
| C | O | N | T | R | L  | 9     |
| S | D | E |   |   |    | 6     |
| I | M |   |   |   |    | 2     |
| N |   |   |   |   |    | 25    |
| E |   |   |   |   |    | 30    |
| O |   |   |   |   |    | 24    |
| A |   |   |   |   |    | 39    |
| C |   |   |   |   |    | 31    |
| P | F | E | F | F | F  | 6.33  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 64 | 18    |
| A | G | E |   |   |    | 18    |
| G | E | N | D | E | R  | 1     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |
| G | P | A |   |   |    | 3     |
| V | I | G | N | T | E  | 2     |
| S | T | R | E | S | S  | 9     |
| C | O | N | T | R | L  | 3     |
| S | D | E |   |   |    | 0     |
| I | M |   |   |   |    | 3     |
| N |   |   |   |   |    | 31    |
| E |   |   |   |   |    | 32    |
| O |   |   |   |   |    | 25    |
| A |   |   |   |   |    | 26    |
| C |   |   |   |   |    | 16    |
| P | F | E | F | F | F  | 7.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 65 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 1     |
| G | P | A |   |   |    | 2     |
| V | I | G | N | T | E  | 2     |
| S | T | R | E | S | S  | 8     |
| C | O | N | T | R | L  | 3     |
| S | D | E |   |   |    | 0     |
| I | M |   |   |   |    | 3     |
| N |   |   |   |   |    | 25    |
| E |   |   |   |   |    | 31    |
| O |   |   |   |   |    | 22    |
| A |   |   |   |   |    | 35    |
| C |   |   |   |   |    | 26    |
| P | F | E | F | F | F  | 7.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 66 | 18    |
| A | G | E |   |   |    | 18    |
| G | E | N | D | E | R  | 1     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |
| G | P | A |   |   |    | 3     |
| V | I | G | N | T | E  | 2     |
| S | T | R | E | S | S  | 9     |
| C | O | N | T | R | L  | 3     |
| S | D | E |   |   |    | 0     |
| I | M |   |   |   |    | 3     |
| N |   |   |   |   |    | 31    |
| E |   |   |   |   |    | 32    |
| O |   |   |   |   |    | 22    |
| A |   |   |   |   |    | 36    |
| C |   |   |   |   |    | 26    |
| P | F | E | F | F | F  | 7.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 67 | 20    |
| A | G | E |   |   |    | 20    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 3     |
| G | P | A |   |   |    | 4     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 9     |
| C | O | N | T | R | L  | 7     |
| S | D | E |   |   |    | 6     |
| I | M |   |   |   |    | 12    |
| N |   |   |   |   |    | 32    |
| E |   |   |   |   |    | 28    |
| O |   |   |   |   |    | 14    |
| A |   |   |   |   |    | 29    |
| C |   |   |   |   |    | 40    |
| P | F | E | F | F | F  | 6.67  |
| E | F | E | F | F | F  | 3.33  |
| S | U | B | N | O | 68 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |
| G | P | A |   |   |    | 4     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 9     |
| C | O | N | T | R | L  | 7     |
| S | D | E |   |   |    | 8     |
| I | M |   |   |   |    | 8     |
| N |   |   |   |   |    | 14    |
| E |   |   |   |   |    | 36    |
| O |   |   |   |   |    | 24    |
| A |   |   |   |   |    | 41    |
| C |   |   |   |   |    | 37    |
| P | F | E | F | F | F  | 7.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 69 | 20    |
| A | G | E |   |   |    | 20    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 3     |
| G | P | A |   |   |    | 4     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 9     |
| C | O | N | T | R | L  | 7     |
| S | D | E |   |   |    | 6     |
| I | M |   |   |   |    | 12    |
| N |   |   |   |   |    | 32    |
| E |   |   |   |   |    | 28    |
| O |   |   |   |   |    | 14    |
| A |   |   |   |   |    | 29    |
| C |   |   |   |   |    | 40    |
| P | F | E | F | F | F  | 6.67  |
| E | F | E | F | F | F  | 3.33  |
| S | U | B | N | O | 70 | 18    |
| A | G | E |   |   |    | 18    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 1     |
| Y | E | A | R |   |    | 1     |
| G | P | A |   |   |    | 3     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 7     |
| C | O | N | T | R | L  | 9     |
| S | D | E |   |   |    | 2     |
| I | M |   |   |   |    | 5     |
| N |   |   |   |   |    | 17    |
| E |   |   |   |   |    | 24    |
| O |   |   |   |   |    | 20    |
| A |   |   |   |   |    | 31    |
| C |   |   |   |   |    | 34    |
| P | F | E | F | F | F  | 7     |
| E | F | E | F | F | F  | 10.67 |
| S | U | B | N | O | 71 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |
| G | P | A |   |   |    | 6     |
| V | I | G | N | T | E  | 2     |
| S | T | R | E | S | S  | 9     |
| C | O | N | T | R | L  | 4     |
| S | D | E |   |   |    | 2     |
| I | M |   |   |   |    | 4     |
| N |   |   |   |   |    | 33    |
| E |   |   |   |   |    | 28    |
| O |   |   |   |   |    | 22    |
| A |   |   |   |   |    | 26    |
| C |   |   |   |   |    | 28    |
| P | F | E | F | F | F  | 6.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 72 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |
| G | P | A |   |   |    | 5     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 6     |
| C | O | N | T | R | L  | 7     |
| S | D | E |   |   |    | 3     |
| I | M |   |   |   |    | 4     |
| N |   |   |   |   |    | 18    |
| E |   |   |   |   |    | 31    |
| O |   |   |   |   |    | 33    |
| A |   |   |   |   |    | 36    |
| C |   |   |   |   |    | 23    |
| P | F | E | F | F | F  | 6.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 73 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |
| G | P | A |   |   |    | 5     |
| V | I | G | N | T | E  | 2     |
| S | T | R | E | S | S  | 9     |
| C | O | N | T | R | L  | 4     |
| S | D | E |   |   |    | 2     |
| I | M |   |   |   |    | 4     |
| N |   |   |   |   |    | 33    |
| E |   |   |   |   |    | 28    |
| O |   |   |   |   |    | 22    |
| A |   |   |   |   |    | 26    |
| C |   |   |   |   |    | 28    |
| P | F | E | F | F | F  | 6.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 74 | 20    |
| A | G | E |   |   |    | 20    |
| G | E | N | D | E | R  | 1     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 3     |
| G | P | A |   |   |    | 2     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 8     |
| C | O | N | T | R | L  | 7     |
| S | D | E |   |   |    | 2     |
| I | M |   |   |   |    | 1     |
| N |   |   |   |   |    | 11    |
| E |   |   |   |   |    | 38    |
| O |   |   |   |   |    | 25    |
| A |   |   |   |   |    | 31    |
| C |   |   |   |   |    | 40    |
| P | F | E | F | F | F  | 8.33  |
| E | F | E | F | F | F  | 8.33  |
| S | U | B | N | O | 75 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 3     |
| Y | E | A | R |   |    | 1     |
| G | P | A |   |   |    | 4     |
| V | I | G | N | T | E  | 1     |
| S | T | R | E | S | S  | 7     |
| C | O | N | T | R | L  | 4     |
| S | D | E |   |   |    | 2     |
| I | M |   |   |   |    | 3     |
| N |   |   |   |   |    | 26    |
| E |   |   |   |   |    | 31    |
| O |   |   |   |   |    | 33    |
| A |   |   |   |   |    | 36    |
| C |   |   |   |   |    | 23    |
| P | F | E | F | F | F  | 6.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 76 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |
| G | P | A |   |   |    | 5     |
| V | I | G | N | T | E  | 2     |
| S | T | R | E | S | S  | 9     |
| C | O | N | T | R | L  | 4     |
| S | D | E |   |   |    | 2     |
| I | M |   |   |   |    | 4     |
| N |   |   |   |   |    | 33    |
| E |   |   |   |   |    | 28    |
| O |   |   |   |   |    | 22    |
| A |   |   |   |   |    | 26    |
| C |   |   |   |   |    | 28    |
| P | F | E | F | F | F  | 6.67  |
| E | F | E | F | F | F  | 7     |
| S | U | B | N | O | 77 | 19    |
| A | G | E |   |   |    | 19    |
| G | E | N | D | E | R  | 2     |
| E | T | H | N | I | C  | 4     |
| Y | E | A | R |   |    | 2     |

| SUBNO | AGE | ENDER | ETHNIC | YEAR | GP | VIGNTE | STRESS | CONTRL | SD | IM | NE | O  | A  | C  | PFF | EFF   |       |
|-------|-----|-------|--------|------|----|--------|--------|--------|----|----|----|----|----|----|-----|-------|-------|
| 120   | 18  | 2     | 4      | 1    | 3  | 2      | 9      | 3      | 1  | 3  | 28 | 46 | 28 | 36 | 24  | 8.33  | 10.33 |
| 121   | 18  | 2     | 4      | 2    | 3  | 2      | 9      | 3      | 8  | 5  | 22 | 38 | 24 | 32 | 29  | 6.67  | 8     |
| 123   | 19  | 2     | 4      | 1    |    | 1      | 9      | 7      | 9  | 12 | 26 | 31 | 32 | 33 | 33  | 9     | 8.33  |
| 124   | 20  | 2     | 4      | 2    | 4  | 1      | 9      | 6      | 4  | 9  | 23 | 40 | 26 | 42 | 35  | 10    | 9.67  |
| 125   | 19  | 2     | 4      | 1    | 3  | 2      | 9      | 3      | 5  | 9  | 27 | 24 | 44 | 38 | 36  | 8     | 6     |
| 129   | 19  | 2     | 4      | 1    | 2  | 1      | 7      | 6      | 7  | 4  | 23 | 44 | 25 | 35 | 25  | 6     | 9     |
| 130   | 19  | 1     | 4      | 1    | 2  | 1      | 6      | 6      | 0  | 1  | 22 | 31 | 22 | 29 | 34  | 8.67  | 5.67  |
| 135   | 18  | 2     | 1      | 1    | 2  | 1      | 9      | 7      | 8  | 6  | 39 | 27 | 24 | 24 | 38  | 5.33  | 6.33  |
| 137   | 20  | 1     | 4      | 3    | 4  | 2      | 7      | 3      | 4  | 6  | 13 | 28 | 22 | 33 | 34  | 4.33  | 4.33  |
| 138   | 19  | 1     | 4      | 1    | 1  | 2      | 9      | 2      | 6  | 4  | 33 | 23 | 19 | 24 | 23  | 5     | 5     |
| 139   | 18  | 1     | 4      | 1    | 4  | 2      | 9      | 3      | 7  | 5  | 15 | 38 | 29 | 27 | 37  | 8.67  | 6     |
| 141   | 18  | 2     | 4      | 1    | 6  | 1      | 8      | 6      | 4  | 5  | 27 | 42 | 26 | 36 | 22  | 8.33  | 8.33  |
| 142   | 19  | 1     | 4      | 1    | 6  | 1      | 7      | 7      | 6  | 8  | 15 | 27 | 26 | 33 | 25  | 9.33  | 9     |
| 143   | 19  | 2     | 4      | 2    | 6  | 2      | 9      | 3      | 2  | 6  | 31 | 32 | 26 | 30 | 34  | 10    | 9.67  |
| 144   | 18  | 2     | 1      | 1    | 3  | 2      | 9      | 3      | 4  | 4  | 16 | 27 | 27 | 39 | 38  | 6.67  | 6.67  |
| 145   | 19  | 2     | 4      | 1    | 5  | 2      | 8      | 4      | 8  | 8  | 22 | 34 | 25 | 32 | 30  | 6.67  | 6.33  |
| 146   | 18  | 2     | 4      | 1    | 6  | 1      | 9      | 7      | 3  | 12 | 31 | 42 | 28 | 33 | 40  | 11    | 6.33  |
| 147   | 22  | 2     | 4      | 4    | 4  | 1      | 6      | 8      | 10 | 5  | 32 | 17 | 30 | 32 | 35  | 11.33 | 6.33  |
| 148   | 18  | 2     | 4      | 1    | 4  | 1      | 7      | 9      | 4  | 6  | 22 | 34 | 26 | 41 | 23  | 5.33  | 10.33 |
| 150   | 47  | 2     | 4      | 4    | 6  | 2      | 9      | 3      | 7  | 10 | 14 | 33 | 23 | 34 | 31  | 6.33  | 8     |
| 153   | 19  | 2     | 1      | 2    | 4  | 1      | 9      | 9      | 10 | 5  | 23 | 28 | 25 | 19 | 46  | 9.67  | 9.67  |
| 154   | 19  | 2     | 4      | 3    | 6  | 1      | 7      | 8      | 5  | 8  | 25 | 29 | 39 | 37 | 31  | 10.33 | 6.33  |
| 157   | 19  | 2     | 4      | 2    | 3  | 2      | 8      | 3      | 4  | 3  | 30 | 36 | 10 | 33 | 23  | 5.67  | 5.33  |
| 159   | 19  | 2     | 4      | 1    | 6  | 1      | 7      | 7      | 8  | 3  | 22 | 29 | 31 | 39 | 34  | 10.33 | 6.33  |
| 160   | 19  | 2     | 4      | 2    | 3  | 1      | 8      | 6      | 6  | 4  | 23 | 26 | 24 | 22 | 22  | 7.67  | 9     |
| 162   | 22  | 1     | 4      | 4    | 5  | 2      | 9      | 3      | 9  | 2  | 15 | 34 | 30 | 31 | 43  | 8.33  | 8.33  |
| 163   | 19  | 2     | 4      | 1    | 5  | 2      | 9      | 3      | 7  | 7  | 16 | 38 | 27 | 37 | 25  | 9     | 8.33  |
| 165   | 18  | 2     | 1      | 1    | 3  | 1      | 9      | 7      | 11 | 10 | 14 | 20 | 22 | 23 | 48  | 5.33  | 8.67  |
| 166   | 18  | 2     | 1      | 1    | 3  | 1      | 7      | 7      | 5  | 4  | 15 | 26 | 22 | 25 | 32  | 8     | 8.33  |
| 167   | 19  | 2     | 4      | 2    | 6  | 2      | 8      | 3      | 2  | 6  | 29 | 36 | 41 | 29 | 30  | 9.67  | 8.33  |
| 170   | 18  | 2     | 4      | 1    | 6  | 1      | 7      | 6      | 8  | 10 | 15 | 40 | 17 | 41 | 38  | 8.33  | 5.67  |
| 172   | 18  | 1     | 1      | 1    | 2  | 1      | 6      | 8      | 7  | 5  | 21 | 30 | 28 | 37 | 30  | 8     | 10.33 |

| SUBNO | AGE | ENDER | ETHNIC | YEAR | GPA | VIGNT | STRESS | CONTROL | SD | IM | N  | E  | O  | A  | C  | PFF   | EFF   |
|-------|-----|-------|--------|------|-----|-------|--------|---------|----|----|----|----|----|----|----|-------|-------|
| 173   | 19  | 1     | 4      | 2    | 1   | 2     | 9      | 3       | 5  | 5  | 38 | 33 | 26 | 34 | 21 | 8.33  | 5.67  |
| 175   | 20  | 1     | 4      | 4    | 5   | 2     | 8      | 3       | 13 | 1  | 6  | 41 | 27 | 18 | 46 | 5.33  | 2.33  |
| 178   | 18  | 2     | 4      | 1    | 3   | 1     | 8      | 9       | 7  | 8  | 16 | 37 | 38 | 37 | 38 | 11.33 | 8     |
| 180   | 19  | 2     | 4      | 1    | 5   | 2     | 6      | 4       | 1  | 8  | 25 | 40 | 28 | 37 | 29 | 5.67  | 5     |
| 181   | 18  | 2     | 4      | 1    | 6   | 2     | 7      | 4       | 0  | 2  | 24 | 31 | 27 | 32 | 34 | 8.67  | 7     |
| 182   | 19  | 2     | 1      | 1    | 3   | 1     | 6      | 8       | 8  | 5  | 16 | 32 | 26 | 33 | 41 | 11.33 | 6.33  |
| 183   | 19  | 2     | 4      | 2    | 3   | 1     | 8      | 6       | 10 | 10 | 14 | 26 | 22 | 36 | 36 | 8     | 6.33  |
| 185   | 19  | 2     | 4      | 1    | 4   | 2     | 9      | 3       | 6  | 9  | 38 | 38 | 17 | 25 | 35 | 10.33 | 9.67  |
| 186   | 18  | 2     | 4      | 1    | 5   | 2     | 7      | 3       | 1  | 6  | 28 | 26 | 33 | 33 | 21 | 4.33  | 7     |
| 189   | 30  | 2     | 1      | 4    | 5   | 1     | 6      | 7       | 9  | 11 | 9  | 27 | 16 | 41 | 35 | 7.67  | 11    |
| 190   | 21  | 2     | 4      | 4    | 4   | 1     | 8      | 8       | 4  | 9  | 20 | 35 | 28 | 39 | 29 | 8.67  | 1.67  |
| 194   | 20  | 2     | 4      | 2    | 3   | 1     | 7      | 6       | 5  | 7  | 27 | 21 | 27 | 29 | 29 | 7     | 4.33  |
| 196   | 21  | 2     | 4      | 3    | 6   | 1     | 8      | 8       | 3  | 7  | 28 | 26 | 20 | 35 | 46 | 8     | 4.67  |
| 197   | 18  | 2     | 4      | 1    | 3   | 2     | 8      | 3       | 3  | 9  | 32 | 27 | 37 | 40 | 25 | 7.33  | 10    |
| 199   | 21  | 1     | 5      | 4    | 4   | 2     | 8      | 3       | 2  | 3  | 34 | 33 | 20 | 22 | 17 | 5.67  | 7.33  |
| 200   | 18  | 2     | 4      | 1    | 6   | 1     | 6      | 7       | 5  | 10 | 24 | 36 | 16 | 36 | 28 | 8     | 7.33  |
| 207   | 18  | 2     | 1      | 1    | 4   | 2     | 9      | 2       | 9  | 3  | 24 | 28 | 21 | 23 | 33 | 10    | 10    |
| 209   | 19  | 2     | 4      | 1    | 6   | 2     | 9      | 4       | 6  | 7  | 29 | 36 | 22 | 35 | 40 | 7.33  | 7.33  |
| 211   | 21  | 1     | 4      | 3    | 5   | 2     | 8      | 4       | 3  | 2  | 21 | 36 | 33 | 26 | 29 | 6.67  | 6     |
| 212   | 19  | 1     | 4      | 3    | 6   | 2     | 9      | 4       | 8  | 2  | 25 | 28 | 17 | 19 | 29 | 7.67  | 5.33  |
| 218   | 18  | 2     | 4      | 1    | 6   | 2     | 7      | 4       | 3  | 4  | 29 | 31 | 35 | 30 | 37 | 9.33  | 8.33  |
| 224   | 18  | 2     | 1      | 1    | 6   | 2     | 8      | 4       | 4  | 5  | 28 | 29 | 35 | 31 | 23 | 7     | 11.33 |
| 226   | 19  | 2     | 4      | 1    | 3   | 2     | 7      | 4       | 9  | 6  | 21 | 37 | 17 | 37 | 37 | 6.33  | 6     |
| 227   | 18  | 1     | 4      | 1    | 5   | 2     | 9      | 1       | 10 | 11 | 11 | 34 | 35 | 16 | 37 | 9.33  | 6.67  |
| 228   | 19  | 2     | 4      | 1    | 4   | 2     | 9      | 3       | 3  | 7  | 37 | 32 | 24 | 27 | 32 | 6.67  | 6.67  |
| 230   | 21  | 2     | 4      | 3    | 4   | 2     | 9      | 3       | 3  | 6  | 16 | 39 | 24 | 39 | 29 | 4.33  | 5.33  |
| 233   | 18  | 2     | 4      | 1    | 6   | 2     | 8      | 2       | 1  | 7  | 42 | 25 | 34 | 31 | 32 | 8.67  | 8.67  |
| 234   | 22  | 1     | 4      | 3    | 4   | 2     | 8      | 3       | 1  | 2  | 16 | 33 | 34 | 31 | 23 | 8.67  | 4.67  |
| 236   | 20  | 2     | 4      | 2    | 6   | 2     | 9      | 2       | 9  | 13 | 19 | 47 | 24 | 42 | 32 | 9.33  | 7.33  |
| 237   | 18  | 1     | 4      | 1    | 6   | 2     | 7      | 3       | 2  | 6  | 22 | 29 | 18 | 30 | 31 | 9.67  | 7.67  |
| 238   | 19  | 2     | 4      | 2    | 6   | 2     | 9      | 4       | 1  | 3  | 25 | 28 | 8  | 30 | 38 | 4.67  | 5.33  |
| 239   | 21  | 2     | 4      | 4    | 5   | 1     | 7      | 7       | 10 | 8  | 28 | 41 | 35 | 27 | 35 | 9.67  | 8     |

|        |      |      |      |       |      |      |     |      |      |      |      |      |      |      |       |       |       |      |      |       |      |     |      |      |      |     |      |      |     |      |      |       |      |      |
|--------|------|------|------|-------|------|------|-----|------|------|------|------|------|------|------|-------|-------|-------|------|------|-------|------|-----|------|------|------|-----|------|------|-----|------|------|-------|------|------|
| SUBNO  | 240  | 242  | 244  | 245   | 250  | 251  | 252 | 253  | 256  | 257  | 259  | 260  | 261  | 263  | 264   | 266   | 268   | 269  | 270  | 273   | 274  | 276 | 277  | 278  | 279  | 280 | 282  | 285  | 287 | 288  | 290  | 294   |      |      |
| AGE    | 18   | 20   | 19   | 19    | 22   | 19   | 20  | 19   | 21   | 21   | 19   | 26   | 18   | 18   | 19    | 20    | 19    | 20   | 20   | 20    | 24   | 21  | 22   | 19   | 19   | 19  | 18   | 18   | 18  | 21   | 20   | 18    |      |      |
| ENDER  | 1    | 2    | 2    | 2     | 1    | 2    | 1   | 2    | 1    | 1    | 1    | 1    | 1    | 1    | 2     | 2     | 1     | 1    | 1    | 2     | 2    | 1   | 2    | 2    | 2    | 1   | 1    | 2    | 1   | 1    | 1    | 1     | 2    |      |
| ETHNIC | 4    | 4    | 4    | 4     | 4    | 4    | 4   | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4     | 4     | 4     | 4    | 4    | 4     | 4    | 4   | 4    | 4    | 4    | 4   | 4    | 4    | 4   | 4    | 4    | 4     | 4    |      |
| YEAR   | 1    | 3    | 1    | 1     | 4    | 1    | 2   | 1    | 1    | 3    | 3    | 1    | 1    | 1    | 1     | 2     | 2     | 2    | 2    | 3     | 2    | 3   | 4    | 5    | 5    | 1   | 1    | 1    | 1   | 1    | 1    | 1     | 1    |      |
| GPA    | 6    | 5    | 6    | 4     | 4    | 6    | 4   | 6    | 6    | 4    | 3    | 6    | 6    | 3    | 2     | 6     | 6     | 5    | 4    | 2     | 2    | 6   | 6    | 6    | 5    | 5   | 4    | 6    | 6   | 5    | 6    | 6     | 5    |      |
| VIGNTE | 2    | 1    | 2    | 1     | 2    | 1    | 2   | 2    | 2    | 1    | 2    | 1    | 2    | 1    | 2     | 1     | 2     | 1    | 2    | 2     | 2    | 2   | 2    | 2    | 2    | 2   | 2    | 2    | 2   | 2    | 2    | 2     | 2    |      |
| STRESS | 7    | 7    | 9    | 7     | 9    | 6    | 7   | 9    | 9    | 8    | 9    | 9    | 7    | 7    | 9     | 8     | 7     | 7    | 6    | 9     | 9    | 9   | 9    | 9    | 8    | 9   | 7    | 8    | 8   | 8    | 9    | 9     | 9    |      |
| CONTRL | 4    | 7    | 2    | 7     | 3    | 8    | 3   | 4    | 3    | 6    | 6    | 1    | 8    | 6    | 3     | 7     | 4     | 8    | 3    | 3     | 4    | 4   | 3    | 3    | 7    | 3   | 7    | 3    | 1   | 6    | 1    | 9     | 3    |      |
| SD     | 3    | 1    | 3    | 11    | 8    | 5    | 3   | 8    | 5    | 11   | 4    | 11   | 7    | 7    | 4     | 3     | 8     | 9    | 10   | 13    | 11   | 11  | 11   | 4    | 4    | 4   | 2    | 2    | 5   | 10   | 12   | 4     | 6    |      |
| IM     | 4    | 3    | 7    | 5     | 3    | 11   | 3   | 1    | 5    | 5    | 3    | 7    | 5    | 5    | 3     | 4     | 6     | 4    | 6    | 10    | 6    | 6   | 14   | 8    | 8    | 0   | 4    | 4    | 5   | 6    | 9    | 0     | 3    |      |
| N      | 21   | 32   | 22   | 22    | 27   | 39   | 22  | 17   | 21   | 34   | 26   | 14   | 18   | 22   | 28    | 26    | 18    | 19   | 7    | 5     | 20   | 5   | 28   | 37   | 32   | 39  | 39   | 15   | 16  | 10   | 25   | 30    | 19   | 40   |
| E      | 36   | 37   | 41   | 42    | 29   | 25   | 29  | 29   | 35   | 35   | 28   | 24   | 22   | 25   | 36    | 40    | 19    | 33   | 31   | 31    | 22   | 22  | 29   | 29   | 39   | 23  | 31   | 27   | 27  | 28   | 28   | 35    | 14   |      |
| O      | 19   | 25   | 34   | 34    | 30   | 31   | 24  | 29   | 23   | 23   | 21   | 38   | 28   | 22   | 29    | 30    | 36    | 30   | 29   | 26    | 22   | 18  | 40   | 31   | 34   | 36  | 26   | 22   | 34  | 21   | 26   | 26    | 26   | 25   |
| A      | 24   | 38   | 40   | 35    | 29   | 37   | 32  | 33   | 27   | 28   | 29   | 30   | 31   | 28   | 33    | 34    | 36    | 25   | 41   | 38    | 26   | 28  | 29   | 14   | 23   | 40  | 27   | 45   | 30  | 31   | 24   | 26    | 23   |      |
| C      | 26   | 39   | 45   | 26    | 43   | 35   | 34  | 31   | 37   | 26   | 20   | 32   | 20   | 29   | 27    | 39    | 25    | 41   | 42   | 43    | 26   | 28  | 18   | 25   | 40   | 27  | 45   | 39   | 31  | 24   | 38   | 33    | 33   |      |
| PF     | 9.33 | 10   | 9.33 | 10.33 | 9.33 | 8.67 | 8   | 9.67 | 7.67 | 8    | 9.33 | 9.67 | 7.67 | 9.33 | 7     | 10.33 | 10.67 | 8.33 | 9.67 | 7.33  | 9    | 9   | 6.67 | 6    | 5.33 | 6   | 7.67 | 9.33 | 9   | 8.67 | 7    | 10.67 | 8.33 | 9.33 |
| EFF    | 6.33 | 7.67 | 9.33 | 9.67  | 7.67 | 8.33 | 7   | 6.67 | 4    | 7.67 | 6.67 | 3    | 5.33 | 7    | 10.33 | 7.33  | 7.33  | 7.33 | 4.67 | 11.33 | 5.33 | 6   | 6    | 6.33 | 6    | 10  | 5.33 | 7    | 5   | 3    | 4.67 | 4.67  | 9.33 |      |

| SUBNO | AGE | GENDER | ETHNIC | YEAR | GP | VIGNTE | STRESS | CONTROL | SD | IM | N  | E  | O  | A  | C    | PFF   | EFF   |
|-------|-----|--------|--------|------|----|--------|--------|---------|----|----|----|----|----|----|------|-------|-------|
| 295   | 20  | 2      | 4      | 2    | 5  | 2      | 7      | 4       | 6  | 10 | 22 | 24 | 33 | 29 | 40   | 8.67  | 5     |
| 296   | 21  | 2      | 4      | 4    | 5  | 1      | 7      | 7       | 10 | 8  | 20 | 27 | 27 | 32 | 41   | 11    | 8.33  |
| 297   | 18  | 2      | 4      | 2    | 5  | 2      | 7      | 4       | 10 | 15 | 17 | 40 | 40 | 34 | 31   | 9.67  | 9.33  |
| 298   | 19  | 2      | 4      | 2    | 5  | 2      | 9      | 3       | 2  | 6  | 41 | 38 | 44 | 33 | 13   | 6.67  | 4     |
| 299   | 20  | 1      | 4      | 2    | 4  | 1      | 7      | 7       | 5  | 4  | 15 | 27 | 19 | 39 | 37   | 10.33 | 7.33  |
| 300   | 19  | 2      | 4      | 2    | 6  | 2      | 9      | 3       | 4  | 2  | 30 | 32 | 28 | 23 | 35   | 9     | 10.67 |
| 302   | 19  | 2      | 4      | 2    | 6  | 1      | 9      | 7       | 1  | 4  | 34 | 27 | 34 | 40 | 9.33 | 6     |       |
| 305   | 20  | 2      | 4      | 2    | 4  | 1      | 6      | 7       | 6  | 3  | 13 | 40 | 23 | 30 | 39   | 9     | 5     |
| 308   | 19  | 2      | 4      | 1    | 6  | 1      | 9      | 6       | 5  | 6  | 22 | 38 | 27 | 37 | 37   | 9     | 4     |
| 309   | 21  | 1      | 4      | 3    | 6  | 2      | 8      | 3       | 6  | 5  | 25 | 30 | 29 | 28 | 28   | 8.67  | 10.67 |
| 312   | 18  | 1      | 4      | 1    | 4  | 2      | 7      | 4       | 7  | 1  | 21 | 31 | 27 | 24 | 27   | 8.33  | 6.67  |
| 313   | 18  | 2      | 4      | 1    | 5  | 2      | 6      | 3       | 6  | 11 | 17 | 15 | 34 | 31 | 34   | 5     | 5.33  |
| 315   | 21  | 1      | 3      | 3    | 4  | 2      | 7      | 3       | 9  | 5  | 28 | 22 | 30 | 20 | 24   | 8.33  | 5     |
| 320   | 18  | 2      | 4      | 1    | 6  | 1      | 9      | 8       | 5  | 5  | 42 | 27 | 28 | 32 | 37   | 10.33 | 5     |
| 321   | 18  | 2      | 3      | 1    | 5  | 2      | 9      | 1       | 0  | 3  | 40 | 27 | 25 | 32 | 36   | 10.33 | 8.67  |
| 322   | 47  | 2      | 6      | 3    | 4  | 2      | 9      | 1       | 11 | 8  | 26 | 34 | 34 | 40 | 37   | 8.33  | 9.33  |
| 324   | 19  | 1      | 4      | 1    | 5  | 2      | 8      | 3       | 6  | 5  | 28 | 18 | 30 | 15 | 26   | 7.67  | 6.33  |
| 326   | 19  | 1      | 3      | 2    | 3  | 2      | 9      | 3       | 4  | 5  | 44 | 30 | 10 | 34 | 32   | 9.67  | 8.67  |
| 327   | 20  | 2      | 4      | 2    | 4  | 1      | 6      | 9       | 5  | 2  | 23 | 27 | 24 | 25 | 30   | 6.33  | 3.33  |
| 329   | 22  | 1      | 4      | 3    | 5  | 1      | 7      | 9       | 14 | 5  | 10 | 29 | 28 | 36 | 36   | 11.33 | 6.67  |
| 330   | 19  | 1      | 4      | 1    | 3  | 2      | 8      | 2       | 5  | 7  | 27 | 29 | 35 | 32 | 28   | 6.33  | 5     |
| 333   | 18  | 2      | 4      | 1    | 6  | 1      | 7      | 8       | 5  | 7  | 19 | 42 | 22 | 27 | 30   | 10.67 | 5.67  |
| 334   | 20  | 1      | 4      | 2    | 5  | 1      | 8      | 7       | 10 | 8  | 28 | 35 | 23 | 28 | 33   | 10.67 | 10    |
| 339   | 20  | 2      | 4      | 2    | 6  | 1      | 9      | 7       | 2  | 7  | 23 | 35 | 24 | 39 | 28   | 10    | 7.67  |
| 340   | 19  | 2      | 4      | 2    | 5  | 1      | 8      | 6       | 5  | 5  | 28 | 29 | 29 | 27 | 26   | 11.67 | 8.33  |
| 341   | 19  | 1      | 4      | 1    | 6  | 1      | 7      | 8       | 5  | 4  | 15 | 37 | 19 | 21 | 27   | 7     | 3     |
| 343   | 21  | 1      | 4      | 2    | 4  | 2      | 7      | 3       | 7  | 4  | 16 | 33 | 20 | 33 | 38   | 8.67  | 7     |
| 345   | 22  | 1      | 4      | 4    | 5  | 1      | 6      | 8       | 11 | 5  | 3  | 42 | 40 | 36 | 44   | 11    | 2.33  |
| 346   | 18  | 2      | 4      | 1    | 6  | 1      | 6      | 7       | 8  | 9  | 19 | 38 | 22 | 45 | 46   | 9.67  | 8.33  |
| 351   | 19  | 2      | 4      | 1    | 6  | 1      | 7      | 8       | 5  | 8  | 13 | 34 | 15 | 41 | 37   | 8     | 6     |
| 352   | 18  | 2      | 4      | 1    | 6  | 1      | 9      | 7       | 6  | 5  | 32 | 28 | 31 | 28 | 29   | 9.67  | 6.33  |
| 353   | 19  | 1      | 4      | 2    | 6  | 1      | 6      | 9       | 8  | 7  | 22 | 27 | 32 | 34 | 37   | 8.67  | 4.67  |

| SUBNO | AGE | ETHNIC | YEAR | GP | VIGNT | STR | CON | SDE | IM | N  | E  | O  | A  | C  | PFEFF | EFEFF |
|-------|-----|--------|------|----|-------|-----|-----|-----|----|----|----|----|----|----|-------|-------|
| 355   | 22  | 4      | 3    | 1  | 2     | 9   | 3   | 7   | 2  | 34 | 29 | 40 | 29 | 23 | 9     | 9     |
| 356   | 18  | 1      | 1    | 1  | 2     | 9   | 3   | 1   | 2  | 42 | 24 | 33 | 21 | 24 | 6.5   | 7.67  |
| 357   | 19  | 1      | 1    | 5  | 1     | 7   | 7   | 6   | 3  | 8  | 33 | 31 | 34 | 46 | 9.33  | 7     |
| 361   | 19  | 2      | 2    | 4  | 2     | 9   | 3   | 8   | 6  | 21 | 29 | 32 | 33 | 42 | 7.33  | 6     |
| 362   | 19  | 2      | 2    | 6  | 2     | 9   | 3   | 5   | 8  | 32 | 41 | 38 | 43 | 37 | 10.67 | 7.67  |
| 364   | 19  | 1      | 2    | 6  | 1     | 7   | 7   | 5   | 0  | 14 | 31 | 24 | 26 | 42 | 9     | 4.33  |
| 366   | 21  | 1      | 2    | 3  | 2     | 9   | 2   | 4   | 8  | 27 | 30 | 25 | 34 | 36 | 9.67  | 8.33  |
| 367   | 20  | 1      | 2    | 6  | 2     | 7   | 4   | 4   | 9  | 30 | 19 | 28 | 31 | 39 | 9.67  | 8.67  |
| 368   | 18  | 2      | 2    | 6  | 2     | 7   | 3   | 4   | 4  | 26 | 29 | 23 | 33 | 34 | 9     | 9     |
| 371   | 19  | 1      | 3    | 5  | 1     | 7   | 6   | 6   | 3  | 18 | 30 | 22 | 31 | 36 | 11    | 7.33  |
| 372   | 19  | 2      | 2    | 6  | 2     | 8   | 2   | 1   | 3  | 30 | 28 | 30 | 30 | 42 | 10.33 | 7.33  |
| 374   | 18  | 2      | 1    | 5  | 2     | 9   | 2   | 1   | 5  | 26 | 30 | 21 | 37 | 28 | 6.67  | 7     |
| 377   | 18  | 2      | 1    | 5  | 1     | 6   | 8   | 8   | 7  | 22 | 43 | 34 | 18 | 39 | 10    | 3     |
| 380   | 21  | 2      | 2    | 5  | 2     | 8   | 3   | 3   | 8  | 30 | 41 | 34 | 37 | 14 | 6     | 9.33  |
| 381   | 19  | 1      | 1    | 4  | 1     | 6   | 9   | 5   | 0  | 14 | 28 | 29 | 29 | 23 | 8.67  | 5     |
| 382   | 22  | 1      | 4    | 5  | 1     | 7   | 8   | 6   | 3  | 19 | 36 | 22 | 34 | 36 | 8     | 7     |
| 383   | 18  | 2      | 1    | 2  | 1     | 7   | 6   | 10  | 2  | 26 | 29 | 30 | 24 | 34 | 8.33  | 6     |
| 384   | 23  | 2      | 4    | 5  | 1     | 6   | 8   | 4   | 5  | 22 | 29 | 37 | 35 | 37 | 9.33  | 7.33  |
| 385   | 21  | 2      | 4    | 5  | 1     | 9   | 6   | 3   | 10 | 39 | 26 | 24 | 28 | 30 | 6     | 7.33  |
| 387   | 20  | 2      | 3    | 6  | 1     | 9   | 7   | 8   | 8  | 20 | 22 | 30 | 29 | 38 | 10    | 3.67  |
| 388   | 20  | 1      | 3    | 4  | 1     | 7   | 7   | 12  | 10 | 17 | 40 | 29 | 34 | 38 | 10    | 2.33  |
| 389   | 19  | 1      | 2    | 4  | 1     | 8   | 7   | 8   | 3  | 17 | 39 | 25 | 30 | 29 | 6.67  | 6.33  |
| 390   | 20  | 1      | 2    | 4  | 1     | 8   | 6   | 2   | 4  | 31 | 21 | 35 | 31 | 31 | 10.33 | 4.33  |
| 391   | 22  | 1      | 4    | 5  | 1     | 7   | 6   | 9   | 12 | 20 | 29 | 24 | 31 | 37 | 10.67 | 5.33  |

Note. SUBNO = Participant number; ETHNIC = Ethnicity; VIGNTE = Vignette Version; SDE = Self deceptive enhancement; IM = Impression management; N = Neuroticism; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness; PFEFF = Perceived problem-focused coping effectiveness; EFEFF = Perceived emotion-focused coping effectiveness

## Vita

Lawrence Ira Marks (“Larry”) was born and raised in Tampa, Florida. He attended Manhattan Elementary (grades 1-5), Robert E. Lee Elementary (grade 6), Madison Junior High (grades 7-9), and Robinson High School (grades 10-12). He graduated from the University of Florida in Gainesville, with a Bachelor of Science degree in psychology in May, 1991. Following graduation, he immediately began the doctoral program in counseling psychology at the University of Tennessee – Knoxville. He completed his predoctoral internship at the Counseling Center at the University of Missouri – Columbia. The doctoral degree was received in August, 1999.