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Religiousness, Coping, and Locus of Control as Predictors of Anxiety

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by

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ABSTRACT

Religiousness, Coping, and Locus of Control as Predictors of Anxiety

by

Rebecca Brooks

In order to evaluate the cognitive appraisal and meaning-making components of the

Transactional Model (Lazarus & Folkman, 1984) and Meaning-Making Model (Park &

Folkman, 1997) of coping, several specific forms of appraisal and coping strategies were

analyzed in the present study. It has been proposed that religiousness and time influence the

meaning-making process (Park, 2005); therefore, an interaction of intrinsic religiousness and

time were key variables in the study as well. A survey designed to address relationships among

locus of control, type of situation, intrinsic religious orientation, specific coping styles, and

maladaptive psychological symptoms was administered to 240 students of a regional university.

Evidence was found for the importance of primary cognitive appraisal, but no evidence was

found for the interaction of intrinsic religious orientation and time on meaning-making coping or

psychological symptoms.

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CHAPTER 1

INTRODUCTION

In times of stress, many people turn to religion to help them cope. Studies show that

following crises such as the Oklahoma City bombing, medical illness, the attacks on the World

Trade Center, or even the everyday stress that college students experience, people have reported

using religion to cope with their distress (Ai, Tice, Peterson, & Huang, 2005; Pargament, Smith,

Koenig, & Perez, 1998). Religious coping occurs when one's "religion is a source through

which critical life situations and stressors are dynamically processed and understood" (Shreve-

Neiger & Edelstein, 2004, p. 381). At present, there are many crises or stressful situations in

which a person may have little or no control of the stressor. The research discussed in the

present study suggests that following some forms of religious coping, people tend to experience

greater psychological well-being and endorse lower levels of distress and psychological

symptoms such as depression or anxiety. It is the author's objective to further explore the nature

of coping by examining the coping process in light of religious problem solving styles and locus

of control.

Clinical Importance of Religion

Researchers have attempted to define religion as a construct. Generally, religion involves

denominational characteristics such as a shared doctrine and worship style (Fetzer Institute,

2003). Adams (1995) defines religion as "a particular form of worship, theology, ritual, or creed

associated with one of the five major world religions (Christianity, Judaism, Islam, Hinduism,

Buddhism) or other minor religions" (p. 202). In other words, religion includes denominations

associated with these five major categories as well as "minor" categories that are not listed by

Adams. Shreve-Neiger and Edelstein (2004) reported that religion can be defined in several

ways. One such definition stresses three components of religion: organizational aspects, subjective aspects, and beliefs. Organizational aspects involve institutions, church membership, and attendance. Subjective aspects involve a person's commitment to a religious doctrine as well as the importance of religion to the person. Religious beliefs are the beliefs about a relationship with God or a supreme being. Shreve-Neiger and Edelstein also suggested that religion can be operationally defined according to observable dimensions such as church attendance or prayer.

Therapists in the helping professions have been encouraged to understand that religion is important because it affects worldviews, views of gender differences, sexual preference, and family structure. To religious people, religion is as important as race, ethnicity, social-economic status, culture, and gender (Adams, 1995). The American Psychological Association's "Ethical Principles of Psychologists and Code of Conduct" ([APA], 2002) outlines that psychologists are to treat religion with the same lack of bias as gender and race.

In a clinical sense, it is suggested that religion and spirituality promote psychological well-being and reduce levels of stress and depression (Fetzer Institute, 2003). For example, anxiety and depression following life stress events were buffered by intrinsic religiousness among Protestant respondents although the same was not found for Catholics (Park, Cohen, & Herb, 1990). Murphy et al. (2000) found that religious belief was related to lower depression and hopelessness. Further analysis revealed that the relationship between religious belief and hopelessness moderated the effect on depression. Some researchers have suggested that therapists include religion and spirituality in the assessment process; therapists may consider collaborating with the leaders of religious organizations in the treatment process. It is also suggested that in some circumstances, it may benefit the therapeutic process if the client is

matched to a therapist based on views of religion and spirituality (Kilpatrick & McCullough, 1999; Worthington & Sandage, 2001).

Religious Orientation

Researchers have recognized differences among people who identify internally with their religion and people who have a more utilitarian view of religion. This distinction is intrinsic-extrinsic religious orientation. A person with an intrinsic religious orientation has strong internal motivation to follow a religion fully. In the present study, intrinsic religious orientation will represent a personal sense of religiousness or spirituality. Extrinsic religious orientation refers to a tendency to use religion for external gains. In this case, religion serves an instrumental purpose, often serving to benefit a person's social standing (Allport & Ross, 1967).

Religion and Well-Being

Laurencelle, Abell, and Schwartz (2002) found that intrinsic religious faith has a positive relationship to well-being. In a sample of 210 participants, people with high and moderate levels of intrinsic religious faith scored better overall than people with low levels of intrinsic faith on several measures of mental health. These measures included ego strength, defense mechanisms, splitting, individuation-separation, anxiety, depression, and interpersonal sensitivity. Another study reveals that in a sample of 474 undergraduates, intrinsic religious orientation and personal prayer were significantly related to better well-being, and extrinsic religious orientation and church attendance were sometimes related to lower well-being. Well-being was assessed using measures of depression, anxiety, and self-esteem (Maltby, Lewis, & Day, 1999).

Ellison (1991) noted four ways in which religion may enhance psychological and social well-being. First, religion provides a setting of social integration and support. Churches offer opportunities for fellowship among people with similar values and beliefs. Religion may

improve social integration by creating opportunities for regular social intercourse in large and reliable networks and opportunities for participation in ritual events with significant meaning (Ellison, 1991). Similarly, Bradley (1995) found that church attendees tend to be part of large social networks, receive more phone calls, and have better perceptions of the quality of their supportive relationships than those who do not attend church. Indeed, these social resources have a positive impact on the health of church attendees (Bradley).

The second way in which religion enhances well-being is that religion usually involves a relationship with a divine-other. It is possible that one can draw conclusions about how to resolve problems in one's life by examining what a divine-other would do in a given situation. Also, belief in a loving God may enhance one's feelings of self-esteem and self-efficacy (Ellison, 1991).

Third, religion provides systems of meaning and existential coherence that may help a person to interpret and cope with stressful life events such as bereavement and chronic health problems. It has been shown that belonging to a religious group is predictive of successful coping with a stressful event as well as growth following a stressful event (Park & Helgeson, 2006).

Fourth, religion promotes patterns of organization and lifestyle. Denominational categories may strengthen one's sense of belonging, which may in turn enhance psychological wellness. Lifestyle may be affected by religion because many religious beliefs include abstaining from unhealthy behaviors such as smoking and alcohol consumption. Other religions may affect a person's diet or sexual behaviors (Ellison, 1991).

<center>Coping</center>

Religion also promotes well-being in the sense that many people rely on religious coping

<center>13</center>

processes when faced with a significant life stressor. A 2005 study of 226 men with HIV/AIDS investigated the role spirituality plays in coping with HIV. The results were mixed depending on the manner in which spirituality was measured—overall spirituality on the Coping with HIV instrument (e.g. "I read the Bible," "I attend church," "I pray") did not relate to health related quality of life or mental health. However, men who participated in spiritual coping or spiritual growth on the Health Promoting Lifestyle Profile (e.g. "I believe my life has purpose," "I am aware what is important to me in life") experienced better quality of life and more positive mental health (Frame, Uphold, Shehan, & Reid, 2005). It seems that the Coping with HIV instrument addressed religious behaviors whereas the Health Promoting Lifestyle Profile addressed religious beliefs. Following will be a discussion of specific forms of coping and religious coping.

Transactional Model of Stress and Coping

The transactional model of stress and coping begins with cognitive appraisal. Cognitive appraisal can be split into two categories, primary and secondary appraisal. During primary appraisal, a person determines the extent to which a situation is threatening, controllable, or predictable. Secondary appraisal occurs when a person decides on an appropriate response to the event. After cognitive appraisal, a person engages in either problem-focused or emotion-focused coping. Problem-focused coping occurs when a person takes action against the problem causing the stress. A person engages in emotion-focused coping when he or she does nothing about the event; rather, the person will instead change how he or she feels about and interprets the event (Lazarus & Folkman, 1984; Park, 2005).

In a study of undergraduates, Bjorck and Cohen (1993) identified that students cope with situations differently whether the situation is primarily appraised as a threat, loss, or a challenge.

Students faced with threats compared to losses endorsed more active problem solving and religious coping and used less emotional social support as a coping mechanism. Students faced with challenges used more active problem solving coping and less emotional social support, wishful thinking, and religious coping compared to nonchallenges. When students ranked how effective they perceived coping strategies to be in six hypothetical scenarios, the strategies employed in challenge situations were rated as most effective. Overall, the problem solving style was the most preferred coping method. Bjorck and Cohen suggested that the preferred methods of coping might be a result of a desire to maintain or restore a sense of control over the situation. Furthermore, students with high intrinsic religiousness employed more religious coping than students with low intrinsic religiousness. Finally, religious coping was chosen more often in high stress situations than lower stress situations.

Religious Problem Solving

A problem solving style represents a pattern of coping styles that tends to be consistent across a variety of situations. Pargament et al. (1988) conducted interviews with 15 people about problems they have experienced involving religion and how they coped with those problems. Based on these interviews, the researchers identified three main religious problem solving styles: self-directing, deferring, and collaborative. These styles differ from one another in terms of responsibility and activity. In the self-directing style, the individual takes responsibility for resolving the problem and the individual takes an active stance toward solving the problem. In the deferring style, the individual places the responsibility for resolving the problem onto God and takes a passive role while waiting for God to solve the problem or for a solution to emerge. Finally, in the collaborative style, the individual perceives himself or herself sharing the responsibility for problem solving with God and both take an active role in solving the problem.

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Pargament et al. (1988) followed these interviews by creating the Spiritual Problem Solving Scales. The inventory consists of 36 items, and factor analysis revealed evidence for the three main problem solving styles previously mentioned. When compared to other scales of religiousness, competence, and control, it was found that for the collaborative style subjects experienced high internal control, low chance control, and high self-esteem. For the deferring style subjects experienced low internal control, low self-esteem, low active problem solving, and high chance control. Thus, the deferring style seems to represent what is often referred to as the dysfunctional religious problem solving style. Finally, the self-directing style is related to active problem solving, seems to be effective, and is related to the individual's competence at problem solving.

Pieper (2004) found that psychiatric inpatients who scored high on a measure of intrinsic religiosity used positive religious coping and a collaborative coping style to maintain or achieve existential and psychological well-being. Existential well-being was also positively related to deferred coping style and had a negative relationship to self-directing. Existential well-being was measured by the Spiritual Well-Being Scale, and psychological well-being was measured by the Dutch version of the State-Trait Anxiety Inventory.

Ways of Coping and Religious Coping

Carver, Scheier, and Weintraub (1989) further developed the Transactional Model of Stress and Coping into a measure of coping called the COPE, which identifies different types of problem-focused and emotion-focused coping. From this measure, the following forms of coping have been identified: active coping, planning, suppression of competing activities, restraint coping, seeking social support for instrumental reasons, seeking social support for emotional reasons, focusing on and venting of emotions, behavioral disengagement, positive

reinterpretation and growth, denial, acceptance, and turning to religion (Lazarus & Folkman, 1984; Park, 2005).

Although the COPE assesses turning to religion as a form of coping, there is need for another measure that specifically addresses religious ways in which a person copes with a stressor. For this reason, Pargament, Koenig, and Perez (2000) developed a measure of religious coping called the RCOPE. This measure assesses negative as well as positive forms of religious coping.

Among the forms of negative religious coping studied by Pargament et al. (2000) is *spiritual discontent*, which is confusion or dissatisfaction with the person's relationship to God because of the stressor. This form of coping was negatively correlated with physical health and positively correlated with a measure of psychosomatic symptoms. Another form of negative religious coping is *demonic reappraisal*, appraising the situation as an act of the devil. *Passive religious deferral* involves waiting passively for God to resolve the conflict. *Interpersonal religious discontent* occurs when the individual experiences confusion or dissatisfaction with the person's relationship to clergy or other church members because of the stressor. *Reappraisal of God's powers* involves altering one's beliefs of the extent to which God has power over the situation. This form of coping had a negative correlation with physical health and a positive correlation with psychosomatic symptoms. The *punishing God reappraisal* occurs when a person appraises the situation as a punishment for his or her sins. This reappraisal was negatively correlated to physical health and positively related to psychosomatic symptoms. Finally, *pleading for direct intercession* also seems to be a negative form of coping including prayers for a miracle or divine intercession to resolve the crisis. This form of coping had a negative correlation with physical health. Each of these forms of negative religious coping with

the exception of demonic reappraisal and passive religious deferral were positively correlated with distress at the time of the interview (Pargament et al., 2000). Another study involving college students, individuals with severe medical illness, and people coping with the Oklahoma City bombing indicates that negative religious coping is related to higher emotional distress, lower quality of life, and higher frequency of psychological symptoms (Pargament et al., 1998).

There are several forms of positive religious coping that are associated with reduced distress and increased well-being and growth (Pargament, Koenig, et al., 2000; Pargament, Smith, et al., 1998). *Religious purification and forgiveness* involves confession, seeking forgiveness for sins, and forgiving others for sins. *Seeking religious direction* involves relying on religion to provide new purposes in life. Similarly, *religious conversion* involves spiritual awakenings or radically transforming one's life through religion. *Religious helping* occurs when an individual provides spiritual support to others through prayer or comfort. Religious helping had a negative correlation with psychosomatic symptoms. *Seeking support of clergy or church members* involves interacting with a church or religious congregation for social and spiritual support. This form of coping had a negative correlation with psychosomatic symptoms. *Collaborative religious coping* occurs when a person shares responsibility with God for resolving the conflict. This form of coping had a weak positive correlation with physical health. A person may engage in *religious focus* by shifting his or her attention away from the stressor and instead focusing attention on religious matters. Religious focus was negatively related to psychosomatic symptoms. *Active religious surrender* occurs when a person does what he or she can to resolve the problem and leaves the rest to God. *Benevolent religious reappraisal* occurs when a person defines the stressor as part of God's plan or finds a meaningful lesson inherent in the situation. *Spiritual connection* occurs when the person copes by strengthening his or her

connections to God or a higher power. Finally, *marking religious boundaries* involves

discerning between activities that are acceptable or unacceptable within the parameters of the

person's religion. Each of these forms of positive religious coping is positively related with

stress related growth and positive religious outcomes (Pargament et al., 2000).

Pargament et al. (1998) administered the RCOPE to people coping with the Oklahoma

City bombing, medically ill hospital patients, and college students. Among the participants

coping with the Oklahoma City bombing, positive forms of religious coping were related to

increased stress related growth, positive religious outcomes, and slightly higher Post-Traumatic

Stress Disorder (PTSD) symptoms. Among the college sample, positive religious coping was

associated with a lower level of psychosomatic symptoms, moderate increases in stress related

growth, and positive religious outcome. Negative religious coping was associated with higher

emotional distress, poorer physical health, more psychosomatic symptoms, and increases in

stress related growth. Among the hospital patient sample, positive religious coping was related

to increased medical diagnoses, decreased functional status, poorer cognitive status, increased

cooperativeness, increased stress related growth, and higher positive religious outcomes.

Negative religious coping was associated with increased medical diagnoses, decreased functional

status, poorer subjective health, poorer cognitive status, increased depression, poorer quality of

life, and increased stress related growth and positive religious outcomes. Pargament,

Tarakeshwar, Ellison, and Wulff (2001) found that among religious people (members of a

church, church leaders, and clergy) those who engaged in forms of positive religious coping

identified by the RCOPE experienced high positive affect, low depression, and high religious

satisfaction. High scores on negative religious coping items were related to low scores of

positive affect, high depressive affect, and low scores of religious satisfaction among the church

leaders and clergy.

Meaning-Making Model

The Transactional Model of coping may be invalid in some circumstances that do not allow for problem-solving forms of coping because the event is not within the person's realm of control (e.g. disasters, chronic illnesses, or death). To address this, Park and Folkman (1997) proposed a meaning-making model of coping. According to this model, there are two types of meaning, global meaning and appraised meaning. Global meaning is a person's worldview, encompassing beliefs about the nature of the world as well as goals and desired life outcomes. Appraised meaning, similar to primary appraisal, is the process of determining the extent to which a situation or event is a loss, threat, or challenge. During this stage one also determines why the event occurred.

Among religious people, there is often a discrepancy between appraised meaning and global meaning. For example, if a person's global meaning includes beliefs in a benevolent God and then a disaster occurs, the stress is likely to be a threat to the person's global meaning. In fact, Park (2005) suggested that the extent of the discrepancy between the appraisal of the stressor and the person's global meaning is directly proportional to the amount of distress the person perceives. A person must adjust his or her worldview and life goals to accommodate the event. Oftentimes among religious people, meaning-making coping results in increased stress initially following the event; however, after the stressful situation is incorporated into the person's worldview, there is often evidence of stress-related growth, subjective well-being, and low depression symptoms.

Park attributed this outcome to the meaning-making coping process; that is, people reappraise events in a more positive light in order to maintain their sense of global meaning.

This process was measured by the positive reinterpretation and growth scale of the COPE and corresponds to the act of reappraisal in the previously mentioned models of coping. In one study, Park (2005) examined religion and meaning-making in the situation of coping with bereavement. It was found that religion was a significant predictor of subjective well-being, and path analysis revealed that meaning-making moderated this relationship. It was also found that religion predicted stress related growth, and this relationship was partially mediated through meaning-making.

Spiritual Framework Model

Gall et al. (2005) proposed a spiritual framework model based on the Transactional Model of coping. The elements of the framework are stressor, spiritual appraisal, person factors, spiritual connections, spiritual coping behavior, meaning-making, and well-being. According to Gall et al., spiritual coping begins with a form of life stress. A person then uses spiritual appraisal to attribute the stressor to a cause such as self, others, chance, or God or the devil. During this process, individuals also evaluate how the stress affects their sense of connection to God and which form of coping would be the most effective. This, in turn, interacts with person factors and spiritual connections and directly influences spiritual coping behavior. Person factors involve an individual's religious doctrine, intrinsic or extrinsic orientation, problem solving styles, and a sense of hope.

Spiritual connections represent constructs that a person may feel connected to. Most frequently, this is God, nature, or life in general, but spiritual connections also apply to other forces or people that a person may rely on and feel connected to. Like the appraisal process, person factors and spiritual connections influence spiritual coping behaviors. These behaviors can be private or organized, personal or traditional, and include prayer, church attendance,

worship, meditation, scripture reading, song, and imagery. The coping behaviors along with

spiritual connections influence a person's ability to find meaning in life and stress situations. In

addition to influencing the spiritual appraisal of the next stressor, the meaning-making process

helps determine a person's emotional, social, physical, and spiritual well-being (Gall et al.,

2005).

<u>Similarities Among Coping Styles</u>

The Transactional, Meaning-Making, and Spiritual Framework models of coping seem to

have many things in common. All three models incorporate the form of appraisal during which a

person evaluates the extent of the threat. Both the Meaning-Making model and the Spiritual

Framework also incorporate evaluations of the threat to one's worldview, including one's

religious worldview. Similarly, both of these models include a stage of meaning-making before

well-being is achieved.

<div align="center">Locus of Control</div>

Julian Rotter, as cited by Lange and Tiggeman (1981), defined locus of control as the

expectancy that behavioral reinforcement comes from either an internal or external source. A

person with an internal locus of control believes that rewards are dependent upon his or her own

behavior. In other words, motivation for behavior comes from within the self. A person with an

external locus of control believes that external forces such as chance, luck, fate, or powerful

others reward behavior. In other words, motivation for behavior comes from sources outside the

self (Lange & Tiggeman, 1981; Rao & Murthy, 1984).

<u>Multidimensional Locus of Control</u>

Rotter, the developer of the Internal-External Locus of Control Scale (Rotter, 1966),

intended the measure of locus of control to be dichotomous—a person would have either an

internal or an external locus of control. Rotter's scale also assumes that external locus of control is unidimensional (Watkins, 1980). However, it is argued that external locus of control is actually a multidimensional construct encompassing beliefs that people in positions of political power control reinforcement or beliefs that the world is so complex that it is impossible to exert complete control over one's own reinforcement (Harper, Oei, Mendalgio, & Evans, 1990; Lindbloom & Faw, 1982). For this reason, Levenson (1972) created a new scale of internal and external locus of control, incorporating three subscales: internal, chance, and powerful others. Internal locus of control differed from both chance and powerful others in a sample of 96 college students. For males, chance scores were significantly different from powerful others scores. Thus, a distinction should be made between these types of external control. The inventory is comprised of 24 Likert-style statements. A score is obtained for each subscale; therefore, a person's degree of external locus of control is not merely seen as the lack of internal locus of control (Levenson, 1972, 1974; Walkey, 1979).

<div align="center">Coping and Mental Health</div>

In many research studies, negative emotional states such as depression and anxiety measure the success of coping strategies (Pieper, 2004). The APA Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) defines a depressive episode as "a period of at least 2 weeks during which there is either depressed mood or the loss of interest or pleasure in nearly all activities" (APA, 2000, p. 349). Symptoms of a major depressive episode include depressed mood most of the day, nearly every day, decreased pleasure in most activities most of the day, nearly every day, significant weight loss or gain, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue, feelings of worthlessness nearly every day, decreased ability to think or concentrate nearly every day, and

recurrent thoughts of death or suicide (APA, 2000). Anxiety is defined as "the apprehensive anticipation of future danger or misfortune accompanied by a feeling of dysphoria or somatic symptoms of tension. The focus of anticipated danger may be external or internal" (APA, 2000, p. 820). Common symptoms of anxiety listed in the DSM-IV-TR are restlessness, easily fatigued, difficulty concentrating, irritability, tension, and sleep disturbance (APA, 2000). For research purposes, anxiety is difficult to define operationally because the word is sometimes used interchangeably with fear. Sullivan, Kent, and Coplan (2000) defined anxiety as an uncomfortable anticipation of a threatening or fearful situation closely related to the stress response. Thus, anxiety is associated with several disturbances such as confusion, an urge to escape a situation, shortness of breath, chest pressure, palpitations, tension, hot or cold flashes, queasiness, and more (Sullivan et al., 2000).

Effects of Anxiety

Sullivan et al. (2000) explained the detrimental effects anxiety can have on a person's body. Anxiety and stress decrease the pituitary gland's ability to produce hormones such as thyroid stimulating hormone, growth hormone, and hormones involved in the reproductive system. Anxiety can also increase risk of cardiovascular morbidity and can reduce heart period variability. Patients with anxiety frequently develop gastrointestinal problems such as irritable bowel syndrome. Even the immune system is affected by anxiety: stress and anxiety appear to be responsible for a reduction of white blood cells in anxious patients (Sullivan et al., 2000). Pathological levels of anxiety are classified into several categories of anxiety disorders in the DSM-IV-TR (APA, 2000) including panic disorder, specific phobias, social phobia, obsessive-compulsive disorder, posttraumatic stress disorder, acute stress disorder, and generalized anxiety disorder.

State Versus Trait Anxiety

Anxiety is typically measured according to the amount of anxiety perceived during a state of stress or as the amount of anxiety a person endorses as a personality trait (Cattell & Sheier, 1961). The distinction between state anxiety and trait anxiety tends to be supported and extended by researchers (Endler, Edwards, Vitelli, & Parker., 1989; Gaudry, Vagg, & Spielberger, 1975; Spielberger, 1985). For example, in the creation of the Endler Multidimensional Anxiety Scale Endler et al. (1989) proposed perceived anxiety as a measure in addition to state and trait anxiety.

State anxiety is a variable measure of tension, worry, and nervousness at a given point in time, also involving activation of the autonomic nervous system (Cattell & Sheier, 1961; Gaudry et al., 1975; Spielberger, 1985). It has been proposed that there are different dimensions of state anxiety as a response to situations, cognitive-worry and autonomic-emotional. Cognitive-worry is the aspect of the anxiety response that involves thoughts about one's inadequacies and failures or worry and dread about a situation. A response is autonomic-emotional when the sympathetic nervous system is activated, resulting in physical symptoms such as sweaty palms, increased heart rate, and shortness of breath (Endler et al., 1989). A person may describe these symptoms as a feeling of being keyed up, nervous, jittery, or tense (Sullivan et al., 2000).

Trait anxiety, on the other hand, is a personality characteristic describing the tendency of a person to perceive life situations as threatening. Levels of trait anxiety among people tend to be stable over time; that is, the more trait anxiety a person possesses the more likely it is that a person will respond to a stressful situation with state anxiety (Cattell & Scheier, 1961; Gaudry et al., 1975; Spielberger, 1985). Furthermore, it appears that trait anxiety can also be divided into

dimensions such as social evaluation, physical danger, ambiguous anxiety, and anxiety during

daily routines (Endler et al., 1989).

Statement of Problem

In sum, people are faced with stressful situations throughout their lives. Therefore, it is

important to understand how people cope with stress. Many theoretical models of coping

include religion in the problem solving or coping process (e.g., Gall et al., 2005; Pargament,

Kennell, et al., 1988; Pargament, Koenig, et al., 2000; Park & Folkman, 1997), yet empirical

support for such models is not clear. Understanding the role that religion plays in coping could

be of benefit to clinicians when designing a treatment strategy (Kilpatrick & McCullough, 1999;

Worthington & Sandage, 2001). The author of this study intends to further explore the nature of

coping and religious coping in the context of locus of control and religious orientation. Mental

health outcome will be measured according to levels of depression, anxiety, and stress expressed

by the participant after coping with a stressful event.

Hypotheses

Hypotheses for the present study are guided by the following research questions:

1) In what way does intrinsic religious orientation affect coping?

2) How does locus of control relate to coping and anxiety?

3) How do different forms of coping reduce psychological symptoms?

4) What types of stressors are likely to result in successful coping?

In order to address these general research questions, the following specific hypotheses are

proposed. Hypotheses 1 through 3 are similar to existing research, whereas Hypotheses 4

through 6 are partial replications and original hypotheses guided by previous research.

1. It is expected that differences in perceived distress will be observed according to whether the

student appraises the situation as a threat, loss, or a challenge, consistent with Bjorck and Cohen (1993).

2. Consistent with the findings of Park and Folkman (1997), intrinsic religiousness and elapsed time since the most stressful event are expected to have an interaction effect on meaning-making coping. Specifically, it is expected that when intrinsic religiousness is high and elapsed time is low meaning-making coping will be low. When intrinsic religiousness is high and elapsed time is high meaning-making coping will be high.

3. Guided by the findings of Brown and Siegel (1988) and Bjorck and Cohen (1993), it is expected that Internal locus of control will be the strongest predictor of problem-focused coping when compared to Powerful Others and Chance locus of control.

4. Intrinsic religiousness and elapsed time since the stressful event are expected to have an interaction effect on psychological symptoms. Specifically, it is expected that when intrinsic religiousness is high and elapsed time is low depression, anxiety, and stress will be high. When intrinsic religiousness is high and elapsed time is high depression, anxiety, and stress will be low.

5. Problem-focused coping measured by the COPE and positive religious coping measured by the RCOPE are expected to have a negative relationship with psychological symptoms. In contrast, emotion-focused coping and negative religious coping are expected to have a positive relationship with symptoms.

6. It is expected that Chance locus of control will be a positive predictor of psychological symptoms and Internal and Powerful Others locus of control will be negative predictors of psychological symptoms.

CHAPTER 2

METHODS

The methods chapter is divided into four subsections. First, the participants are

described. Second, each measure's use and psychometric properties are described. A

demographics questionnaire, the Religious Background and Beliefs Scale, the Intrinsic-Extrinsic

Religious Orientation Scale, the Religious Problem Solving Scales, Levinson's Locus of Control

Scale, a questionnaire about a stressful situation, the Depression Anxiety Stress Scale, the COPE,

and the RCOPE are discussed. Third, the procedure for collecting the data is described. Finally,

the statistical analyses for each hypothesis are discussed.

Participants

Participants of this study were undergraduate students at a public, mid-sized regional

southeastern university. They were recruited via the university's online participant pool, and

were offered modest extra credit for participation. A sample of 240 students (76 males, 164

females) was recruited to participate in this study.

Measures

Several measures were used to assess the variables of interest to this study. Following is

a brief description of each measure including available reliability and validity information.

A demographics questionnaire (see Appendix A) was administered to assess basic

information such as gender, age, and year in college.

Religious background was assessed using the Religious Background and Behavior

questionnaire (RBB). The scale is a brief measure of religious practices and beliefs (see

Appendix B). There are two main components, God Consciousness and Formal Practices. Total

RBB scores may also be computed. Cronbach's alphas (α) for God Consciousness, Formal

Practices, and Total RBB were reported as .76, .81, and .86, respectively. Two-day test-retest was also found to be .94, .96, and .97, respectively (Connors, Tonigan, & Miller, 1996). Cronbach's alphas in the present study were found to be .76, .82, and .89, respectively.

The Intrinsic-Extrinsic Religious Orientation Scale Revised (see Appendix C; Gorsuch & McPherson, 1989) consists of 14 items rated on a 1 – 5 Likert scale ranging from "Strongly Disagree" to "Strongly Agree." The Intrinsic Scale was used to measure religiousness; the α for Intrinsic Scale items was found to be .83 by Gorsuch & McPherson (1989). In the present study the α for the Intrinsic Scale was found to be .84.

Locus of control was measured using Levinson's Locus of Control Scale (LOC; 1981). The measure consists of three scales measuring Internal (I Scale), Powerful Others (P Scale), and Chance (C Scale) forms of locus of control. The overall measure consists of 24 items in a 6-point Likert format (see Appendix D). Kuder-Richardson reliability is a measure of internal consistency for measures with dichotomous variables; this statistic was reported to be .64 for the I Scale, .77 for the P Scale, and .78 for the C Scale. One-week test retest reliability coefficients ranged from .60 to .79, and 7-week test-retest reliability was .66, .62, and .73, respectively. Cronbach's alphas in the present study were found to be .73 for the I Scale, .74 for the P Scale, and .73 for the C Scale.

The author of the present study developed a set of questions in order to measure aspects of a specific, self-reported stressful event (see Appendix E). Students were asked to identify the most stressful negative event from the past 2 months and indicate how much distress they perceived due to the event on a scale of 1-10. This is consistent with Park, Cohen, and Murch (1996). The respondent was asked to rate the extent to which the situation was a loss, threat, and challenge, similar to Bjorck and Cohen (1993). Similarly, the respondent was asked to choose

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whether the negative event was mostly a loss, mostly a threat, or mostly a challenge. The participant was then asked approximately how many days ago the event occurred and to briefly describe the event. Finally, the respondent was asked to report the number of significant stressors he or she has experienced within a 2-month period.

The Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 2005) has three subscales and is presented in Appendix F. The depression subscale measures symptoms such as dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest, anhedonia, and inertia. The anxiety scale measures autonomic arousal, skeletal musculature effects, situational anxiety, and subjective anxious affect. The stress scale measures difficulty relaxing, nervous arousal, ease of being upset, irritability, and impatience. A DASS total score consists of the sums of the Depression, Anxiety, and Stress scores, as recommended by the DASS manual (Lovibond & Lovibond, 2005). Lovibond (1998) reports alphas for the Depression scale to be α = .91, Anxiety α = .84, and Stress α = .90. Antony, Bieling, Cox, Enns, and Swinson (1998) found similar alphas of .91, .92, and .95 for Depression, Anxiety, and Stress, respectively. Furthermore, concurrent validity of the Depression scale and the Beck Depression Inventory was .77, and the Anxiety scale correlated with the Beck Anxiety Inventory, r = .84 and the State Trait Anxiety Inventory – Trait, r = .44. Concurrent validity was expected to be low with the STAI – T because the DASS measures emotional states rather than personality traits. In the present study, alphas were computed as .96 for the Depression scale, .94 for the Anxiety scale, .94 for the Stress scale, and .93 for the Total scale.

The COPE (see Appendix G; Carver et al., 1989) consists of 52 items among 13 subscales to measure different coping strategies. The subscales consist of active coping, planning, suppression of competing activities, restraint coping, seeking social support for

instrumental reasons, seeking social support for emotional reasons, focusing on and venting of

emotions, behavioral disengagement, positive reinterpretation and growth, denial, acceptance,

turning to religion, and mental disengagement. Each subscale consists of 4 items, rated Likert-

style from "I usually don't do this at all" to "I usually do this a lot." Carver et al. (1989) reported

that alpha levels for each subscale ranged from .62 to .92 with the exception of mental

disengagement (α = .45). Test-retest reliability was also examined. Correlation coefficients for

each subscale after a 6-week interval ranged from .42 to .89. After an 8-week interval,

correlation coefficients ranged from .46 to .86. The subscales of the COPE are grouped

according to problem-focused and emotion-focused coping. Because of the number of subscales

and because of intercorrelations among the subscales, total scores of problem-focused coping

and emotion-focused coping was used. In the present study, Cronbach's alphas for each subscale

ranged from .61 to .94. The alphas for problem-focused coping and emotion-focused coping

scales were .90 and .88, respectively.

The RCOPE is a measure of religious or spiritual coping developed by Pargament et al.

(2000) and is shown in Appendix H. The situational form breaks five general categories

(meaning, gain control, comfort and closeness to God, intimacy with others and closeness to

God, and life transformation) into 17 specific forms of religious coping. The inventory has 85

statements to which the student responds how well the statement describes him or her, using a

rating of 1 ("A great deal") to 4 ("Not at all"). Cronbach's Alpha was reported to be .80 or

greater for each subscale except Marking religious Boundaries (α = .61) and Reappraisal of

God's power (α = .78; Pargament, Koenig, et al., 2000). In the present study, Cronbach's Alpha

ranged from .81 to .97 for each subscale. Similar to the COPE, the RCOPE has many subscales

addressing specific forms of coping and many of these subscales correlate with one another.

Researchers have identified that these specific forms of coping can be positive or negative. Therefore, totals of positive religious coping and negative religious coping were used for the present study.

Procedure

Upon approval from the Institutional Review Board of East Tennessee State University, participants completed the study on the internet using SONA, the university's online participant pool management software. Students were offered modest extra credit in university courses for participation in an online study. Students logged into the program, selected the study from a list of studies based on a brief description, and read a confidentiality statement. By continuing on to the survey questions, they acknowledged consent to participate in the study. Because the study asked students to think about a stressful situation, referral information was provided in the event that a student wished to seek counseling regarding the event. The measures were presented in three sections. The first section consisted of the demographic questionnaire, the RBB, Intrinsic – Extrinsic Orientation Scale, Religious Problem Solving Scales, LOC, and the DASS. These measures were presented in random order, and the items within each measure were randomized. The second section consisted of the stressful situation questionnaire, prompting the participant to evaluate his or her most negative event within the past 2 months. The third section consisted of the COPE and the RCOPE presented in random order; items for these measures were randomized. Situational instructions for these measures were used; the respondent was prompted to answer according to the coping styles used in response to the negative event in Section 2.

Statistical Analyses

Hypothesis 1 states that differences in psychological symptoms will be expected according to whether the student mainly appraises the situation as a threat, loss, or a challenge.

This was analyzed using one-way analysis of variance (ANOVA). The total DASS score was the dependent variable, whereas appraisal was the independent variable.

Hypothesis 2 states that religiousness and elapsed time since the stressful event are expected to have an interaction effect on meaning-making coping. Specifically, it was expected that when religiousness is high and elapsed time is low meaning-making coping will be low. When religiousness is high and elapsed time is high meaning-making coping will be high. Hypothesis 2 was analyzed using hierarchical multiple linear regression in order to control for demographic variables and number of stressors. The dependent variable was a total of meaning-making religious coping. Block 1 consisted of control variables. Block 2 included centered scores of both intrinsic religiousness and elapsed time. Block 3 added the product of the centered scores of religiousness and time in order to represent the interaction.

Hypothesis 3 states that Internal LOC will be the strongest predictor of problem-focused coping when compared to Powerful Others LOC and Chance LOC. This is consistent with the findings of Brown and Siegel (1988) and Bjorck and Cohen (1993). Hypothesis 3 was analyzed using simultaneous multiple linear regression. A total score of problem-focused coping was the dependent variable and was regressed on Internal, Powerful Others, and Chance LOC.

Hypothesis 4 states that religiousness and elapsed time since the stressful event are expected to have an interaction effect on distress. Specifically, it was expected that when intrinsic religiousness is high and elapsed time is low psychological symptoms will be high. When religiousness is high and elapsed time is high psychological symptoms will be low. Hypothesis 4 was analyzed using hierarchical multiple linear regression in order to control for demographic variables, elapsed time since the event, and number of stressors. The dependent variable was a total DASS score. Block 1 consisted of control variables. Block 2 included

intrinsic religiousness and elapsed time. Block 3 included a variable measuring the interaction of religiousness and time.

Hypothesis 5 states that problem-focused coping measured by the COPE and positive religious coping measured by the RCOPE are expected to have a negative relationship with psychological symptoms. In contrast, emotion-focused coping and negative religious coping are expected to have a positive relationship with symptoms. Hypothesis 5 was analyzed using hierarchical multiple linear regression in order to control for demographic variables, elapsed time since the event, and number of stressors. Control variables were entered in Block 1. Block 2 included problem-focused coping, emotion-focused coping, positive religious coping, and negative religious coping. The dependent variable was a total DASS score.

Hypothesis 6 proposes that Chance LOC will be a positive predictor of psychological symptoms and Internal and Powerful Others locus of control will be negative predictors of psychological symptoms. Hypothesis 6 was analyzed using hierarchical multiple linear regression in order to control for demographic variables as needed, elapsed time since the event, and number of stressors. A total DASS score was the dependent variable and was regressed on control variables in Block 1. Block 2 added Internal LOC, Powerful Others LOC, and Chance LOC.

CHAPTER 3

RESULTS

Prior to data analysis, the demographic data were analyzed and the responses from nine

participants who reported ages under 18 were omitted. The participants' ages ranged from 18 to

49, with a mean of 21.77 (SD = 5.697). There were 164 female (68.3%) and 76 male (31.7%)

participants. One hundred three (42.9%) of the participants were freshmen, whereas 44 (18.3%)

were sophomores, 43 (17.9%) were juniors, 46 (19.2%) were seniors, 2 (.8%) were graduate

students, and 2 (.8%) were nondegree seeking students. Number of children ranged from 0 to 7,

although 194 (80.8%) participants reported having no children. One hundred eight (48%) of the

participants were involved in dating relationships, 96 (40%) were single, 25 (10.4%) were

married, and 11 (4.6%) were divorced. Religious background was briefly assessed with the RBB

scale and it was found that 50.4% of the participants described themselves as religious (believe

in God and practice religion), 26.7% described themselves as spiritual (believe in God but not

religious), 10.4% were unsure (do not know what to believe about God), 9.2% were agnostic

(believes people cannot really know about God), and 3.3% were atheist (do not believe in God).

Each variable of interest was examined in SPSS 11.5 for accuracy, missing variables, and

distribution normality. Eight cases were missing more than half of the entries and were omitted

from the analysis, leaving 240 cases for the analysis. The values for skewness and kurtosis were

within an appropriate range below the absolute value of 2 except for elapsed time since the

participant's most negative stressful situation and number of significant stressors in the past 2

months. The elapsed time variable was found to have skew of 8.301 and kurtosis of 78.973,

violating the assumption of a normal distribution. To correct this, a constant was added to the

variable and the mathematical logarithm was calculated. The transformed variable had a skew of

.603 and kurtosis of 1.189. Similarly, the number of stressors variable had a skew of 4.399 and kurtosis of 26.291. To correct this, a constant was added to the variable and the mathematical logarithm was calculated. The transformed variable had a skew of .488 and kurtosis of 1.426.

To determine whether gender influenced the results, a series of Independent Samples *t* Tests were computed for each variable. The findings revealed statistically significant differences for the following variables only: 1) positive religious coping (*t* [211] = 2.350, *p* = .020), 2) intrinsic religious orientation (*t* [227] = 3.437, *p* = .001), and 3) emotion-focused coping (*t* [229] = 4.590, *p* = .000). Thus, gender was added as a control variable for analyses incorporating these variables.

<u>Hypothesis 1</u>

To determine if there was statistically significant difference among the three types of appraisal of stressors on DASS total scores, a one way ANOVA was conducted. The result revealed that there was a statistically significant difference in the mean DASS total scores among the three types of appraisal (*F* [2, 223] = 5.985, *p* = .003; see Table 1). Post hoc comparisons with Tukey's statistic suggest that significant differences of DASS total scores exist between people who perceive a stressor as mostly a loss (*M* = 37.84, *SD* = 31.316) and people who perceive a stressor as mostly a challenge (*M* = 28.25, *SD* 21.992, mean difference = 9.59, p < .048; see Figure 1). Significant differences of DASS total scores also exist between people who perceive a stressor as mostly a threat (*M* = 43.78, *SD* = 30.300) and people who perceive a stressor as mostly a challenge (Mean difference = 15.53, p < .01; See Figure 2).

Table 1

Analysis of Variance for DASS Total Scores

	Sum of Squares	df	Mean Square	*F*	Sig.
Between Groups	8669.210	2	4334.605	5.985	.003
Within Groups	161512.02	223	724.269		
Total	170181.23	225			

Note. *N* = 225
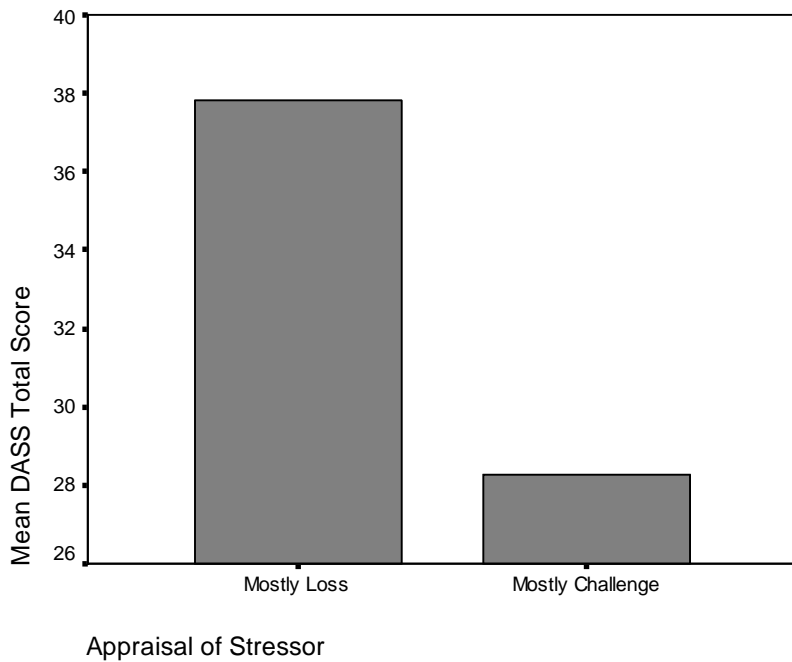
Figure 1. Mean DASS Total Scores for Mostly Loss and Mostly Challenge Appraisals of a
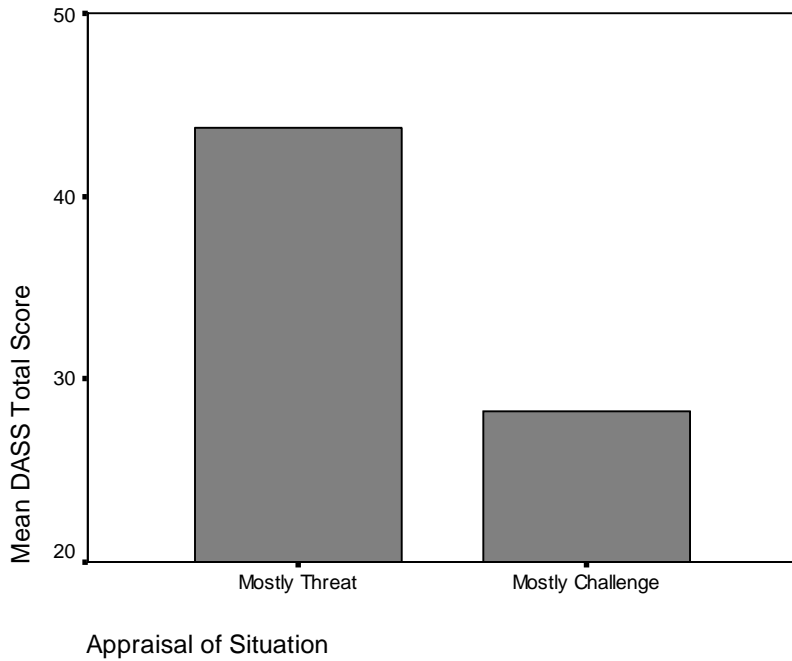
Stressor.

Figure 2. Mean DASS Total Scores for Mostly Threat and Mostly Challenge Appraisals of a

Stressor.

<u>Hypothesis 2</u>

Table 2 represents the means, standard deviations, and bivariate Pearson correlations of

meaning-making coping and uncentered ratings of religiousness and time elapsed since the

participant's most significant stressor. As shown, meaning-making was negatively correlated

with intrinsic religious orientation ($r = -.381$, $p < .01$).

Table 2

Means, Standard Deviations, and Intercorrelations for Meaning-Making Coping and Predictor Variables

Variable	*M*	*SD*	Intrinsic Orientation	Elapsed Time
Meaning-making Coping	35.98	9.475	-.381**	-.048
Predictor Variables				
Intrinsic Orientation	19.95	6.764	--	.027
Elapsed Time	1.27	.626	--	--

* $p < .05$, ** $p < .01$

Before examining the moderating effect of elapsed time on religious orientation, the religious orientation variable and the transformed elapsed time variable were centered by subtracting the mean of each scale from each individual score to eliminate multicollinarity problems. The interaction term Religiousness x Elapsed Time represents a cross product of these centered variables. Table 3 displays the main and moderating effects for religiousness and elapsed time on students' ratings of meaning-making coping. The table displays unstandardized regression coefficients (*B*), the standard error of *B* (*SEB*), standardized regression coefficients (β), and the amount of variance explained by each model (R^2 and ΔR^2). The coefficients represent the effects of the predictors at the final step of the analysis. As previously stated, gender was included as a control variable.

Table 3

Hierarchical Regression Analysis Summary for Variables Predicting Meaning-Making Coping

Variable	B	SEB	β	R^2	ΔR^2
Block 1				.173**	--
Gender	-1.626	1.421	-.080		
Number of Stressors	3.818	2.258	.114		
Religious Background and Beliefs	.158*	.078	.217*		
Block 2				.200**	.026
Religiousness	-.335*	.150	-.240*		
Elapsed Time	-.068	.986	-.005		
Block 3				.207**	.008
Religiousness x Elapsed Time	-.218	.166	-.090		

* $p < .05$, ** $p < .01$

Note. $N = 184$. Only Religious background and beliefs and intrinsic religious orientation contributed uniquely to the variance of Meaning-Making Coping ($\alpha = .05$).

As shown in Table 3, the first step controlled for gender, the number of stressors in the past 2 months, and religious background and beliefs. The overall model for Block 1 was significant (F [3,181] = 12.664, p = .000, R^2 = .173). The total score of the participants' religious background and beliefs accounted for a significant amount of the variance in meaning-making religious coping (β = .217, p < .05). The overall model for Block 2 was also significant (F [5,179] = 8.935, p = .000, R² = .200, ΔR^2 = .026). The added centered variable representing religiousness accounted for a significant amount of the variance in meaning-making religious

coping ($\beta = -.240$, p < .05). As intrinsic religiousness increased by one standard deviation,

meaning-making religious coping decreased by .240 standard deviations. The overall model for

Block 3 was also significant (F [6, 178] = 7.764, p = .000, R² = .207, ΔR^2 = .008). The

interaction variable did not account for a significant amount of the variance in meaning-making

religious coping. Thus, results indicated a main effect for intrinsic religious orientation, but

there was no main effect for elapsed time nor was there evidence of a moderation effect between

the two variables.

<div align="center">Hypothesis 3</div>

Table 4 represents the means, standard deviations, and bivariate Pearson correlations of

Problem-focused Coping and the predictor variables Chance LOC, Internal LOC, and Powerful

Others LOC. As shown, Problem-focused Coping was significantly negatively correlated with

Chance LOC ($r = -.159$, $p < .05$) and Powerful Others LOC ($r = -.200$, $p < .01$). Chance LOC

was also significantly positively correlated with Powerful Others LOC ($r = .561$, $p < .01$)

Table 4

Means, Standard Deviations, and Intercorrelations for Problem-focused Coping and Predictor

Variables

Variable	*M*	*SD*	Chance LOC	Internal LOC	Powerful Others LOC
Problem-Focused Coping	54.32	11.382	-.159*	.105	-.200**
Predictor Variables					
Chance LOC	15.85	6.360	--	-.041	.561**
Internal LOC	26.21	6.279	--	--	-.064
Powerful Others LOC	16.15	6.255	--	--	--

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

The LOC predictor variables were entered into a simultaneous regression model predicting problem-focused coping. The results (shown in Table 5) indicate that the model was significant (R^2 = .095, *F* [3, 213] = 7.440, *p* = .000) and explained 9.5% of the variance in problem-focused coping. Chance LOC was found to be the only significant and thus unique predictor of problem-focused coping (β = .263, *p* = .001). As Chance LOC increases by one standard deviation, problem-focused coping increases by .263 standard deviations.

Table 5

Simultaneous Regression Analysis Summary for Variables Predicting Problem-focused Coping

Variable	*B*	*SEB*	β	*p*
Chance LOC	1.144	.340	.263**	.001
Internal LOC	-.522	.284	-.120	.068
Powerful Others LOC	.112	.347	.025	.746

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

Note. N = 216. *R²* = .095, Adjusted *R²* = .082, *p* = .000. Chance LOC was the only significant predictor of Problem-focused Coping.

<u>Hypothesis 4</u>

Table 6 represents the means, standard deviations, and bivariate Pearson correlations of meaning-making coping and uncentered ratings of religiousness and time elapsed since the participants' most substantial stressor for men and women, respectively. None of the correlations were significant.

Table 6

Means, Standard Deviations, and Intercorrelations for DASS Total Scores and Predictor

Variables

Variable	M	SD	Intrinsic Orientation	Elapsed Time
DASS Total Score	34.53	27.782	-.004	.051
Predictor Variables				
Intrinsic Religious Orientation	19.95	6.764	--	.027
Elapsed Time	1.27	.626	--	--

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

Before examining the moderating effect of elapsed time on religious orientation, the religious orientation variable and the transformed elapsed time variable were centered by subtracting the mean of each scale from each individual score to eliminate multicollinarity problems. The interaction term Religiousness x Elapsed Time represents a cross product of these centered variables. Table 7 displays the main and moderating effects for religiousness and elapsed time on DASS Total Scores.

Table 7

Hierarchical Regression Analysis Summary for Variables Predicting DASS Total Scores

Variable	B	SEB	β	R^2	ΔR^2
Block 1				.050*	--
Gender	7.509	4.544	.127		
Number of Stressors	16.428*	7.231	.168*		
Religious Background and Beliefs	.166	.250	.078		
Block 2				.066*	.016
Religiousness	.348	.485	.086		
Elapsed Time	4.582	3.146	.107		
Block 3				.070*	.004
Religiousness x Elapsed Time	.437	.527	.062		

* $p < .05$, ** $p < .01$

Note. $N = 181$.

As shown in Table 7, the first step controlled for gender, the number of stressors in the past 2 months, and religious background and beliefs. Only the number of stressors in the past 2 months contributed significantly to the variance in total DASS scores ($R^2 = .050$, F [3, 178] = 3.103, $p = .028$). In the second step, the added centered scores of religiousness and the transformed variable representing the log of elapsed time since a stressful situation were not found to add significantly to the variance of meaning-making coping ($R^2 = .066$, $\Delta R^2 = .016$, F [5, 176] = 2.492, $p = .033$). In the final step, the interaction term (a product of the centered religiousness and elapsed time variables) was not found to add significantly to the variance of

meaning-making coping ($R^2 = .070$, $\Delta R^2 = .040$, F [6, 175] = 2.187, $p = .046$). None of the

results for men or women suggests that a particular variable had a unique main or moderating

effect.

<u>Hypothesis 5</u>

Table 8 represents the means, standard deviations, and bivariate Pearson correlations of

the DASS Total Score and the predictor variables: Problem-focused Coping, Emotion-focused

Coping, Positive Religious Coping, and Negative Religious Coping. As shown, the DASS Total

Score was positively correlated with Emotion-focused Coping ($r = .339$, $p < .01$), Positive

Religious Coping ($r = .171$, $p < .05$), and Negative Religious Coping ($r = .375$, $p < .01$).

Problem-focused Coping was positively correlated with Emotion-focused Coping ($r = .497$, $p <$

.01) and with Positive Religious Coping ($r = .206$, $p < .01$). Emotion-focused Coping was

positively correlated with Positive Religious Coping ($r = .548$, $p < .01$) and with Negative

Religious Coping ($r = .296$, $p < .01$). Positive Religious Coping was positively correlated with

Negative Religious Coping ($r = .363$, $p < .01$).

Table 8

Means, Standard Deviations, and Intercorrelations for DASS Total Scores and Predictor

Variables

Variable	*M*	*SD*	Problem	Emotion	Positive	Negative
DASS Total Score	34.02	27.460	.075	.339**	.171*	.375**
Predictor Variables						
Problem-focused	54.32	11.382	--	.497**	.206**	.012
Emotion-focused	80.69	14.789	--	--	.548**	.296**
Positive Religious	150.91	51.366	--	--	--	.363**
Negative Religious	56.40	15.844	--	--	--	--

* $p < .05$, ** $p < .01$

Note. $N = 228$.

The control and predictor variables were entered into a hierarchical regression model predicting DASS Total scores. In the first step, the predictor variables (gender, number of stressors in the past 2 months, elapsed time since the most significant stressor, religious background and beliefs, and intrinsic religious orientation) did not account for a significant amount of the variance in DASS Total scores ($R^2 = .051$, $F [5, 161] = 1.714$, $p = .134$). In the second step, the coping predictor variables uniquely accounted for 15.2% of the variance in DASS Total Scores ($R^2 = .202$, $\Delta R^2 = .152$, $F [9, 157] = 4.417$, $p = .000$). In the second step, Emotion-focused Coping was a positive predictor of DASS Total scores ($\beta = .227, p = .030$). Negative Religious Coping was also positive predictor of DASS Total scores ($\beta = .447, p = .005$). The summary of the regression analyses is presented in Table 9.

Table 9

Hierarchical Regression Analysis Summary for Variables Predicting DASS Total Scores

Variable	*B*	*SEB*	β	*R²*	Δ*R²*
Block 1				.051	--
Gender	6.569	4.834	.109		
Number of Stressors	7.590	7.491	.074		
Elapsed Time	3.901	3.224	.090		
Religious Background and Beliefs	-.075	.275	-.035		
Intrinsic Religious Orientation	.743	.556	.179		
Block 2				.202**	.152**
Problem-focused Coping	-.209	.211	-.081		
Emotion-focused Coping	.432*	.197	.227*		
Positive Religious Coping	.063	.088	.115		
Negative Religious Coping	.447**	.157	.246**		

$* p < .05, ** p < .01$

Note. $N = 166$.

Hypothesis 6

Table 10 represents the means, standard deviations, and bivariate Pearson correlations of the DASS Total score, and the predictor variables Chance LOC, Internal LOC, and Powerful Others LOC. As shown, the DASS Total Score was positively correlated with Chance LOC ($r = .286$, $p < .01$) and Powerful Others LOC ($r = .173$, $p < .01$) and was negatively correlated with

Internal LOC ($r = -.135$, $p < .05$). Chance LOC was positively correlated with Powerful Others

LOC ($r = .561$, $p < .01$).

Table 10

Means, Standard Deviations, and Intercorrelations for DASS Total Scores and Predictor

Variables

Variable	*M*	*SD*	Chance LOC	Internal LOC	Powerful Others LOC
DASS Total Score	34.02	27.460	.286**	-.135*	.173**
Predictor Variables					
Chance LOC	15.85	6.360	--	-.041	.561**
Internal LOC	26.21	6.279	--	--	-.064
Powerful Others LOC	16.15	6.255	--	--	--

* $p < .05$, ** $p < .01$

As shown in Table 11, the control and predictor variables were entered into a hierarchical

regression model predicting DASS Total scores. In the first step, the predictor variables (number

of stressors in the past 2 months and elapsed time since the most significant stressor) account for

3.2% of the variance in DASS Total scores ($R^2 = .032$, F [2, 191] $= 3.196$, $p = .043$). In the

second step, the predictor variables were found to explain 11.9% of the variance in DASS Total

scores ($R^2 = .152$, $\Delta R^2 = .119$, F [5, 188] $= 6.719$, $p = .000$). In the second step, Chance LOC

was found to be the only unique positive predictor of DASS Total scores ($B = 1.272$, $p = .000$).

In other words, as Chance LOC increased by one point, DASS Total scores increased by 1.272

points.

Table 11

Hierarchical Regression Analysis Summary for Variables Predicting DASS Total Scores

Variable	B	SEB	β	R^2	ΔR^2
Block 1				.032*	--
Number of Stressors	13.359	6.905	.133		
Elapsed Time	1.640	2.957	.038		
Block 2				.152**	.119**
Chance LOC	1.272	.348	.297**		
Internal LOC	-.040	.312	-.009		
Powerful Others LOC	.358	.357	.081		

* $p < .05$, ** $p < .01$

Note. $N = 193$. Chance LOC was the only significant predictor of DASS Total Scores.

CHAPTER 4

DISCUSSION

This chapter discusses the results of each hypothesis in the order they were proposed and the relationship of the data to previous research. Implications for practice are then discussed based on the results of the present study. Next, directions for future research are outlined as well as limitations with the present study. A summary follows, outlining the major findings of the present study.

Hypothesis 1

Hypothesis 1 stated that differences in psychological symptoms would be observed based on whether the participant appraised a stressful situation as mostly loss, threat, or challenge. This hypothesis was supported by the data. There were two main differences in DASS scores based on the appraisal of the stressor. First, students experiencing a loss had a higher mean DASS score than students experiencing a challenge. Second, students experiencing a threat had a higher mean DASS score than students experiencing a challenge. It is possible that the stress related to a challenge was viewed more positively than a loss or a threat; however, it must be considered that the participants' definitions of loss, threat, and challenge were arbitrary—each person responded to the question based on his or her own definition of loss, threat, and challenge.

These results support both the Transactional and Meaning-making models of coping because attributions of loss, threat, and challenge are primary cognitive appraisals that affect the outcome of coping. Primary cognitive appraisal is the process by which a person determines the extent to which the stressor can be controlled, evaluates the threat of the stressor, and evaluates how predictable the stressor may be. These appraisals drive the secondary cognitive appraisals

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by which the person chooses how to respond to the stressor (Bjorck & Cohen, 1993; Lazarus & Folkman, 1984; Park, 2005). Results of the present study suggest that a challenge appraisal is associated with a more positive outcome (i.e., lower depression, anxiety, and stress) than both threat and loss appraisals. Therefore, future research should examine how the secondary appraisals and coping strategies differ based on the type of primary attribution. In a study of similar appraisals, Bjorck and Cohen found that students employed problem solving coping strategies most often in challenge situations rather than loss or threat situations. Strategies focusing on seeking emotional support were used most often in loss situations. Overall, problem-focused coping was the most preferred coping method across all forms of appraisal in Bjorck and Cohen's study, and perhaps a person has more control to successfully overcome a challenge situation using problem solving coping than with a loss or threatening situation. It was proposed in Hypothesis 3 that a person's sense of Internal LOC would predict problem-focused coping, but this Hypothesis was not supported. Future research should examine this relationship in the context of each type of appraisal as well as the overall outcome of coping.

<center>Hypothesis 2</center>

Hypothesis 2 stated that religiousness and elapsed time since a stressful situation would have an interaction effect on meaning-making coping such that high intrinsic religiousness and high elapsed time would contribute to high meaning-making coping and high intrinsic religiousness and low elapsed time would contribute to low meaning-making coping. Previous research has supported this complex relationship between religiousness and time (Park, 2005; Park & Folkman, 1997). Among the religious, a stressor poses a threat to a religious worldview or God concept. For example, among Christians it is believed that God is all powerful, God is benevolent, and yet evil exists—bad things happen. In order to resolve the stress, the

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discrepancy between the perceived stress and the person's worldview (in this example, the relationship between God's power and the evil in the world) must be reduced or solved either by forming a new meaning of the stressor or by modifying the person's worldview (Hall & Johnson, 2001; Kitson, 2000; Park, 2005; Park & Folkman). In a study of bereavement, Park observed high discrepancies between global meaning and the meaning of the stressor. For participants in a later stage of bereavement, this discrepancy diminished, suggesting that with the passage of time, new global meanings or appraised meanings were formed. In the present study, a main effect was found between intrinsic orientation and meaning-making coping. As intrinsic religiousness increased, meaning-making coping decreased. However, there was no main effect for elapsed time, nor was there support for the interaction between religiousness and elapsed time. As will be discussed later in Hypothesis 4, neither did the proposed interaction influence overall wellbeing.

Hypothesis 3

Hypothesis 3 stated that internal locus of control would be the strongest locus of control predictor of problem-focused coping. This hypothesis was not supported. Although chance and powerful others were both individually negatively correlated with problem-focused coping, chance was the only significant predictor of problem-focused coping. In fact, when controlling for the other dimensions of locus of control, the relationship changed direction, revealing chance as a positive predictor of problem-focused coping. For each standard deviation increase in chance locus of control, the total score for problem-focused coping increased by .263 standard deviations. This is interesting because the nature of problem-focused coping suggests that an individual assumes some or all of the responsibility for the resolution of the problem (Carver, Scheier, & Weintraub, 1989). In the present study, it was found that students who have high

tendencies to attribute control of a situation to chance also tend to assume personal responsibility for the resolution of the problem.

Hypothesis 4

Similar to Hypothesis 2, Hypothesis 4 stated that religiousness and elapsed time would have an interaction effect on distress such that high religiousness and low elapsed time would predict a high DASS overall score and high religiousness and high elapsed time would predict a low DASS score. In other words, it was predicted that while a stressor was relatively new a person with high intrinsic religious orientation would experience greater depression, anxiety, and stress perhaps due to a situation that was incompatible with the person's religious worldview. Given the passage of time, it was expected that a person's intrinsic religious orientation would contribute to more successful coping. This hypothesis was not supported. In fact, neither intrinsic religious orientation nor elapsed time since the stressor indicated a main effect for the DASS score. Thus, intrinsic religious orientation did not influence depression, anxiety, and stress scores, nor did the elapsed time since the stressful situation.

Hypothesis 5

Hypothesis 5 stated that problem-focused and positive religious coping would have a negative relationship with psychological symptoms. In contrast, emotion-focused and negative religious coping were expected to have a positive relationship with symptoms. This hypothesis was only half supported. Emotion-focused coping and negative religious coping did indeed have a positive relationship with DASS scores, but problem-focused coping and positive religious coping did not have any relationship to DASS scores. For each standard deviation increase in negative religious coping, DASS scores increased by .246 standard deviations. For each standard deviation increase in emotion-focused coping, DASS scores increased by .227 standard

deviations.

RCOPE subscales representing negative religious coping included Spiritual Discontent, Demonic Reappraisal, Passive Religious Deferral, Interpersonal Religious Discontent, Reappraisal of God's Powers, Punishing God Reappraisal, and Pleading for Direct Intercession. These subscales were classified as negative religious coping because there is evidence that they are ineffective toward successful coping and often contribute to greater dysfunction following a stressful situation. Although these subscales seemed to be aptly classified, the converse was not true. The positive religious coping subscales did not appear to have a relationship at all to depression, anxiety, and stress. Following is a synopsis of each of the negative religious coping subscales (Pargament, Koenig, et al., 2000).

Spiritual Discontent occurs when a person is not satisfied with his or her relationship with God while coping with a stressor. *Demonic Reappraisal* describes a person's tendency to blame the Devil for a stressful situation. When a person waits passively for God to take control and resolve a situation, it is called *Passive Religious Deferral*. Interpersonal *Religious Discontent* refers to discontent with clergy or members of a religious organization during the coping process. *Reappraisal of God's Powers* occurs when a person redefines his or her concept of God and God's power over the situation. The *Punishing God Reappraisal* occurs when a person appraises the situation as a form of punishment from God. Finally, *Pleading for Direct Intercession* occurs when a person pleads to God for a miracle or other form of divine intervention to resolve the stressor (Pargament, Koenig, et al., 2000). In the present study, the combination of the practices described by these subscales was linked to greater psychological distress in the form of depression, anxiety, and stress. On the other hand, positive religious coping was not related to low scores of depression, anxiety, and stress. Similarly, emotion-

focused coping was linked to greater distress, but problem-focused coping was not. In other words, it was not shown that coping by addressing the stressor has an effect on raising or lowering depression, anxiety, or stress; however, coping by merely altering or venting one's emotions is related to higher depression, anxiety, and stress.

<div align="center">Hypothesis 6</div>

Hypothesis 6 stated that chance locus of control would positively predict psychological symptoms whereas internal and powerful others locus of control would negatively predict symptoms. In other words, it was expected that a participant would experience greater psychological wellness when the participant attributed cause of a stressor to an identifiable source such as self, another person, or a group of people than if the participant attributed cause of a stressor to fate or chance. This was partially supported by the data. Chance locus of control was indeed a positive predictor of DASS scores, but internal locus of control and powerful others locus of control were not found to predict DASS scores in any direction. For every standard deviation increase of chance locus of control the overall DASS score increased by .297 standard deviations.

The Chance scale in Levinson's Locus of Control Scale is sensitive to a sense of control in luck, fate, and even spiritual forces such as God, whereas the internal and powerful others dimensions attribute control to a specific individual or group of individuals (Levenson, 1972). Therefore, it was shown that people who attributed control to forces such as fate, luck, chance, or God, psychological symptoms such as depression, anxiety, and stress tended to increase. This supports the primary cognitive appraisal step in the Transactional Model of stress and coping and the Spiritual Framework Model (Gall et al., 2005; Lazarus & Folkman, 1984).

One particular caveat to this finding in relation to the present study is the possibility that

some participants may distinguish God as a force similar to chance or fate, whereas other participants could distinguish God as a powerful other. The Multidimensional Health Locus of Control scale is similar to Levenson's Locus of Control Scale in that it determines dimensions of health locus of control for internal, powerful others, and chance (Luszyzynska & Schwarzer, 2005). Wallston et al. (1999) have shown support for the addition of a scale to the Multidimensional Health Locus of Control scale in order to represent belief that God or a supreme being is a source of control. A similar measure should be devised or adapted in future research to differentiate locus of control in God from chance and powerful others.

Table 12 presents a list of each hypothesis followed by a summary of whether the hypothesis was supported or not supported by the data.

Table 12

Summary of Hypotheses and Results

Hypothesis	Results
1. There will be a difference in Total DASS scores according to an appraisal of loss, threat, or challenge.	Supported
2. There will be an interaction effect of intrinsic religious orientation and elapsed time since a stressor on meaning-making coping.	Partially supported – one main effect, no interaction
3. Internal locus of control will predict problem-focused coping.	Unsupported
4. There will be an interaction effect of intrinsic religious orientation and elapsed time since a stressor on DASS Total scores.	Unsupported

Table 12 (continued)

Hypothesis	Results
5. Problem-focused and positive religious coping will predict low DASS Total scores whereas emotion-focused and negative religious coping will predict high DASS Total scores.	Half supported
6. Chance locus of control will predict high DASS Total scores whereas internal and powerful others locus of control will predict low DASS Total scores	Partially supported

<u>Limitations</u>

Several limitations must be considered when interpreting the results of the present study. First, the sample consisted of students in a regional university. Therefore, results cannot be generalized across different geographic regions and education levels.

The instruments used in the present study were self-report measures and were presented in the form of an internet-based survey. Due to the number of items presented in the survey, it was estimated that it could have taken students up to an hour and a half to complete the questionnaire; thus, fatigue may have influenced students' responses. In order to present the coping measures as situational measures, the three main sections of the survey could not be randomized. Thus, fatigue may have influenced responses especially in the section about coping styles.

The coping style questions were primed based on a stressful situation within the past 2 months. The way the participant coped with one particular stressor may not be how that

participant generally copes with a stressor. Thus, the results are based on how participants coped with one specific but meaningful stressor and not how they cope overall with stress. Also, because the participants could not be asked to describe their symptoms of depression, anxiety, or stress as related to one particular stressor's influence on the participant's overall mental health, it has to be considered that outside factors that were not controlled for may have influenced DASS scores. Possible confounds could be diagnoses of mood disorders, perception of how important the stressful situation was to the participant, difficulty of quantifying the number of stressors experienced in a time period, and the severity of the other stressors that have happened to the participant in a 2-month time frame. A limitation is that the DASS total scores were used in the present study. The aim of the present study was to explore the nature of religiousness, coping, and locus in control in relation to psychological symptoms in general. However, if the DASS were split up, it would be possible to study the effect on depression, anxiety, or stress while at the same time controlling for the other two. For example, Hypothesis 4 suggested that religiousness and elapsed time would have an interaction effect on distress such that high religiousness and low elapsed time would predict a high DASS overall score and high religiousness and high elapsed time would predict a low DASS score. Instead, if the interaction was proposed to have an effect on depression, the researcher could control for stress and anxiety. In fact, exploratory analysis revealed a significant model ($F[8, 173] = 75.698$, $p < .01$) and main effect for the elapsed time variable ($\beta = .103$, $p < .01$) when controlling for anxiety and stress in addition to the other control variables in Hypothesis 4.

As previously mentioned, Levinson's Locus of Control Scale is not sensitive to a sense of control in God or a supreme being. It cannot be assumed that a sense of control in God would be measured by the Chance subscale or the Powerful Others subscale because each participant could

experience the sense of God or supreme being in a different manner. It is also a limitation that the Intrinsic-Extrinsic Religious Orientation Scale is not sensitive to a sense of religious maturity. The present sample consisted of mostly young adults in a rural Appalachian geographic region. It is probable that a broader sample would represent broader religious views and maturity levels, and these could therefore possibly affect how a person copes with a stressor and how much time is needed to cope with a stressor.

The survey questions in the Stressful Situation Questionnaire were developed by the author of the study and contained subjective ratings of perceived distress. Furthermore, participants were instructed to reflect on a recent stressful situation but were given a period of 2 months to increase the chances of the participant reflecting on a meaningful and substantial stressor. However, several participants responded that the situation happened up to 10 years prior, thus skewing the data. This may have indicated an ongoing stressor that was still troublesome to the participant within the past 2 months. Other participants responded to the same question with an elapsed time of 0 days; it is unclear to the researcher whether the situation occurred within the same day the survey was administered or if it is an ongoing stressor. Because of the significant skew of the data, a constant was added to the elapsed time and then the mathematical log was calculated in order to normalize the data. However, caution must be used when interpreting the results due to the possibility that both high numbers and low numbers may represent an ongoing struggle or stress. In addition, participants were asked to decide whether the situation represented mostly a loss, mostly a threat, or mostly a challenge. Each definition of loss, threat, and challenge was at the participants' discretion and was therefore not based on a uniform understanding of the meaning of each word. However, by leaving the definition up to the discretion of the participant, the participant was able to choose the term that

most fit the participant's appraisal. For example, many people may appraise a death of a relative as a loss, but some may view it as a challenge to be overcome. In this case, a definition of loss and challenge could have contaminated the integrity of the participant's true appraisal of the situation. In sum, participants may not have been evaluating the same type of stressor.

<center>Implications and Future Research</center>

One of the most obvious implications of the present study is the support for the importance of cognitive appraisal in the coping process. As mentioned earlier, cognitive appraisal is the first step in the Transactional Model of stress and coping and consists of primary and secondary appraisal (Lazarus & Folkman, 1984; Park, 2005). Primary appraisal was addressed in the present study by identifying each person's locus of control and attribution of loss, threat, and challenge; therefore, Hypothesis 1, Hypothesis 3, and Hypothesis 6 pertained to primary appraisal. Locus of control and the loss, threat, and challenge appraisals indeed affected DASS scores, although locus of control was not found to affect problem-focused coping styles as suggested by Hypothesis 5. Overall coping styles appeared to somewhat influence DASS scores. As suggested, emotion-focused coping and negative religious coping did predict increased depression, anxiety, and stress. However, coping styles known for being most effective, such as problem-focused coping and positive religious coping, did not predict any changes in depression, anxiety, and stress. Because of the limitation of the composite scores that were used for problem-focused, emotion-focused, positive religious, and negative religious coping, future research should focus on identifying links between specific primary appraisals such as locus of control and loss, threat, challenge identification with more specific secondary appraisals such as the individual subcategories found within the COPE and RCOPE measures. However, this is difficult because of the similarity and intercorrelations of some of the subcategories as well as

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similarities between the measures themselves (Carver et al., 1989; Pargament et al., 2000).

Hypothesis 2 and Hypothesis 4 were developed in order to test two relationships between a person's religious beliefs and elapsed time in response to Park and Folkman's Meaning-making Framework model of coping (1997; Park, 2005). Although this relationship is present in previous research (Park), it was not found in the present study. However, as previously discussed, the limitations of the elapsed time variable leave the results inconclusive. Future research on this relationship should indeed focus on correcting the normalcy problems associated with the elapsed time variable. In addition, it may be beneficial to distinguish positive meaning-making coping (i.e., positive reinterpretation and growth) from the other negative forms of meaning-making coping in the COPE. It would also be of interest to observe whether or not the theorized interaction is present for only some types of attribution and not others. Park and Folkman developed the Meaning-making Framework in response to the fact that many stressful situations are beyond the realm of a person's control; therefore, future research should distinguish if there are differences in the proposed interaction according to perceived control of the situation.

Finally, the Intrinsic-Extrinsic Religious Orientation Scale is a measure of religious orientation only. It does not indicate a level of religious maturity. Future studies may also incorporate religious maturity as a variable when coping.

<p align="center">Summary and Conclusions</p>

Studies have shown that people often rely on religion when coping with stress (Ai et al., 2005; Pargament, Smith, et al., 1998). Religion encompasses religious organizations such as churches, subjective aspects such as personal commitment, and religious beliefs about God or a supernatural force (Shreve-Neiger & Edelstein, 2004). Several studies have shown religion or

religious coping to promote wellbeing and decrease stress and depression (Fetzer Institute, 2003; Murphy et al., 2000; Park et al., 1990). Intrinsic religious orientation is an internal motivation to follow a religion; it is thus a personal commitment to religious beliefs (Allport & Ross, 1967). Intrinsic religious orientation is related to psychological wellbeing in several studies (Bradley, 1995; Ellison, 1991; Laurencelle et al., 2002; Maltby et al., 1999).

The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) is a popular model of coping beginning with cognitive appraisal of a stressor followed by problem-focused or emotion-focused coping. Carver et al. (1989) identified 12 subcategories of problem-focused and emotion-focused coping. Furthermore, Pargament et al. (2000) identified seven forms of negative religious coping and 11 forms of positive religious coping.

Park and Folkman's Meaning-Making Framework (1997) expands upon the Transactional Model to include situations that may not be within a person's realm of control. According to this model, there is often a discrepancy between a person's global meaning or worldview and appraised meaning or interpretation of the stressor. When there is a discrepancy between appraised meaning and global meaning, a person must adjust either his or her worldviews or interpretation of the stressor in order to cope successfully with the situation. Another form of coping is the Spiritual Framework Model proposed by Gall et al. (2005). This model incorporates a spiritual appraisal, individual person factors, spiritual connections and relationships, specific coping behaviors, meaning-making, and ultimately, wellbeing.

Bjorck and Cohen (1993) suggested that appraisal may determine the type of problem solving strategies a person may employ in response to a stressor and may also contribute to a more positive outcome. For example, Bjorck and Cohen found that people who appraised a situation as a challenge employed more problem-solving techniques and therefore showed less

maladaptive symptoms than people who appraised situations as threats or losses. The present study confirmed that students who appraise a situation as a challenge also showed fewer signs of depression, anxiety, and stress than students facing appraised situations of losses or threats.

Another form of appraisal that may influence coping or problem solving is locus of control. Locus of control is the belief that behavior is motivated from within the self (internal) or from outside sources (external) (Lange & Tiggeman, 1981). Levenson (1981) expanded upon locus of control theory, suggesting that in addition to internal locus of control, external locus of control can be split up into two categories, chance and powerful others. Chance locus of control is the expectation that reinforcement is due to chance, luck, or fate, whereas powerful others locus of control is the expectation that reinforcement comes from other people in positions of power.

The success of coping strategies is often measured by identifying a person's dysfunctional psychological symptoms such as depression or anxiety (Pieper, 2004). A depressive episode is a period in which a person experiences a depressed mood or loss of interest in normally pleasurable activities for a duration of time (APA, 2000). Anxiety is similar to the stress response and includes an anticipation of a threatening situation, confusion, shortness of breath, tension, and more (Sullivan et al., 2000). Anxiety and stress can have detrimental effects on a person's body such as decreasing important hormones and suppressing the immune system (Sullivan et al., 2000) as well as influencing psychological disorders such as those under the category of anxiety disorders (APA, 2000). Trait anxiety is the amount of anxiety a person experiences as a personality characteristic, whereas state anxiety is the amount of anxiety specifically perceived during a state of stress (Cattell & Sheier, 1961). In coping research, therefore, state anxiety is of more interest than trait anxiety.

The purpose of the present study was to further explore the relationships among intrinsic religious orientation, coping and religious coping, attributions such as locus of control and cognitive appraisals of stressors, and the resulting depression, anxiety, and stress following a stressor. A sample of 240 college students at a midsized regional university was obtained to participate in the present study. The measures used were a demographics questionnaire, the Religious Background and Beliefs scale (Connors et al., 1996), the Intrinsic-Extrinsic Religious Orientation Scale, Revised (Gorsuch & McPherson, 1989), Levinson's Locus of Control Scale (1981), a set of questions pertaining to a stressful situation the participant had recently experienced, the COPE (Carver et al., 1989), the RCOPE (Pargament et al., 2000), and the DASS (Lovibond & Lovibond, 2005). Six hypotheses were proposed.

The first hypothesis was that there would be a difference in DASS scores according to whether the stressor was appraised as a loss, a threat, or a challenge. This hypothesis was supported. Participants who appraised a stressor as a challenge experienced lower depression, anxiety, and stress than participants who appraised a situation as a loss or a threat. The second hypothesis was that religiousness and elapsed time would interact to affect meaning-making coping such that for people with high religiousness and low elapsed time, meaning-making coping would be low and for people with high religiousness and high elapsed time, meaning-making coping would be high. This was half supported. There was a negative relationship between intrinsic religious orientation and meaning-making coping in response to a specific stressful situation. However, there was no main effect for elapsed time since the stressful situation, nor was there an interaction of the two variables. The third hypothesis proposed that internal locus of control would be the strongest locus of control predictor of problem-focused coping. This hypothesis was not supported; in fact, although chance locus of control and

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powerful others locus of control were negatively correlated with problem-focused coping, when controlling for the other forms of locus of control, chance was the only positive predictor for problem-focused coping. The fourth hypothesis proposed that intrinsic religious orientation and elapsed time would have an interaction effect such that high intrinsic religious orientation and low elapsed time would predict a high DASS score and high intrinsic religious orientation and high elapsed time would predict a low DASS score. This was not supported; there was no main effect for intrinsic religious orientation, elapsed time, or the interaction variable. The fifth hypothesis suggested that problem-focused and positive religious coping would have a negative relationship with DASS scores and emotion-focused and negative religious coping would have a positive relationship with DASS scores. This hypothesis was half supported. Negative religious coping and emotion-focused coping predicted higher DASS scores, but there was no relationship with positive religious coping and problem-focused coping. Finally, the sixth hypothesis suggested that chance locus of control would positively predict DASS scores and internal locus of control and powerful others locus of control would negatively predict DASS scores. This was partially supported. Chance locus of control indeed predicted increased DASS scores but internal locus of control and powerful others locus of control did not have an effect.

Overall, the two hypotheses designed to test the religiousness-elapsed time interactions proposed in the Meaning-making Framework were not supported by the present study. This could be for several reasons which are limitations of the present study. First, the elapsed time variable was a number reported by the participant on the questionnaire that was developed to ask questions about a recent stressful situation. Several people responded with very recent stressors within 0 to 1 days, whereas some responded with ongoing stressors or stressors that happened over 2 months prior to the study. This resulted in a leptokurtic, positively skewed distribution.

To correct this, the data were transformed by adding a constant and calculating the mathematical logarithm of the data. Although there was a sample size of 164 women for the study, only 76 men participated; thus the results of the analyses for men may not be representative of the sampled population. Finally, in Park and Folkman's study (1997), meaning was measured using the Positive Reinterpretation and Growth scale of the COPE, whereas the meaning-making variable in the present study was a composite of all positive and negative subscales in the COPE that addressed forming meaning in response to a stressor. In other words, whereas Positive Reinterpretation and Growth is indeed one subscale of Meaning-making Coping, so too were Reappraisal of God's Powers, Demonic Reappraisal, and the Punishing God Reappraisal. In the present study, Meaning-making Coping addressed all forms of reappraisal or reinterpretation.

The hypotheses designed to support the importance of appraisal in the coping process were mostly supported. Although locus of control did not predict specific coping strategies, the combination of locus of control and the appraisal of loss, threat, and challenge partially predicted overall DASS outcomes. Another future study may also investigate how different people may perceive the same situation differently as a threat, loss, or challenge and the role that may play on influencing secondary appraisals and coping processes.

In future research of the meaning-making model, coping styles identified as meaning-making styles (i.e., positive reinterpretation and growth, demonic reappraisal, reappraisal of God's powers, punishing God reappraisal) should be analyzed separately in addition to other measures of stress related growth. Elapsed time should be measured in such a way to obtain normally distributed data. This could be done by analyzing ongoing stressors separately from individual stressful events, enforcing that the participant reflect on a stressor within a specified time frame, or simply reducing the variable to a categorical variable. Furthermore, if ongoing

stressors were reported as the time the stressors began, it could reduce the leptokurtic peak at the low end of the distribution. Future research should also incorporate other aspects of the transactional and spiritual framework models such as religious support and connections as well as different dimensions of spirituality.

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APPENDIXES

APPENDIX A

DEMOGRAPHIC QUESTIONNAIRE

Please complete the following information.

Age in years: __

Gender: Male   Female

Year in school: Freshman, Sophomore, Junior, Senior, Graduate, Non-degree Seeking

Sexual Orientation: Heterosexual, Homosexual, Bisexual

Are you bi/curious?

Which describes you best? Single, Dating, Married, Divorced, Widowed

Number of Children: __

Religious Affiliation: __

Describe the income in the household where you grew up: Low Income, Low-Middle Income, Middle Income, High-Middle Income, High Income

RELIGIOUS BACKGROUND AND BEHAVIORS QUESTIONNAIRE (Connors, Tonigan, & Miller, 1996)

Which of the following best describes you at the present time:
Atheist (I do not believe in God)
Agnostic (I believe we can't really know about God)
Unsure (I don't know what to believe about God)
Spiritual (I believe in God but I'm not religious)
Religious (I believe in God and practice religion)

For the past year, how often have you done the following:
(1) Never, (2) Rarely, (3) Once a month, (4) Twice a month, (5) Once a week, (6) Twice a week, (7) Almost daily, (8) More than once a day

Thought about God
Prayed
Meditated
Attended worship service
Read-studied scriptures, holy writings
Had direct experiences of God

Have you ever in your life:
(1) Never, (2) Yes, in the past but not now, (3) Yes, and I still do

Believed in God
Prayed
Meditated
Attended worship service regularly
Read scriptures or holy writings regularly
Had direct experiences of God

INTRINSIC – EXTRINSIC ORIENTATION SCALE, REVISED (Gorsuch & McPherson, 1989)

Please choose the extent to which you agree or disagree with the following statements.
(1) Strongly Agree
(2) Agree
(3) Neither Agree nor Disagree
(4) Disagree
(5) Strongly Disagree

1.   I enjoy reading about my religion.
2.   I go to church because it helps me to make friends.
3.   It doesn't much matter what I believe so long as I am good.
4.   It is important to me to spend time in private thought and prayer.
5.   I have often had a strong sense of God's presence.
6.   I pray mainly to gain relief and protection.
7.   I try hard to live all my life according to my religious beliefs.
8.   What religion offers me most is comfort in times of trouble and sorrow.
9.   Prayer is for peace and happiness.
10.   Although I am religious, I don't let it affect my daily life.
11.   I go to church mostly to spend time with my friends.
12.   My whole approach to life is based on my religion.
13.   I go to church mainly because I enjoy seeing people I know there.
14.   Although I believe in my religion, many other things are more important in life.

LOCUS OF CONTROL (Levenson, 1981)

This section is a series of attitude statements. Each represents a commonly held opinion. There are no right or wrong answers. You will probably agree with some items and disagree with others. We are interested in the extent to which you agree or disagree with such matters of opinion. Read each statement carefully. Then indicate the extent to which you agree or disagree by choosing the number corresponding to each statement. The numbers and their meanings are indicated below:

(1) Disagree strongly
(2) Disagree somewhat
(3) Disagree slightly
(4) Agree slightly
(5) Agree somewhat
(6) Agree strongly

First impressions are usually best. Read each statement, decide if you agree or disagree and the strength of your opinion, and choose the appropriate number. If you find that the numbers to be used in answering do not adequately reflect your own opinion, use the one that is *closest* to the way you feel.

1. Whether or not I get to be a leader depends mostly on my ability.
2. To a great extent my life is controlled by accidental happenings.
3. I feel like what happens in my life is mostly determined by powerful people.
4. Whether or not I get into a car accident depends mostly on how good a driver I am.
5. When I make plans, I am almost certain to make them work.
6. Often there is no chance of protecting my personal interests from bad luck happenings.
7. When I get what I want, it's usually because I'm lucky.
8. Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power.
9. How many friends I have depends on how nice a person I am.
10. I have often found that what is going to happen will happen.
11. My life is chiefly controlled by powerful others.
12. Whether or not I get into a car accident is mostly a matter of luck.
13. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.
14. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.
15. Getting what I want requires pleasing those people above me.
16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.
17. If important people were to decide they didn't like me, I probably wouldn't make many friends.
18. I can pretty much determine what will happen in my life.

19. I am usually able to protect my personal interests.
20. Whether or not I get into a car accident depends mostly on the other driver.
21. When I get what I want, it's usually because I worked hard for it.
22. In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.
23. My life is determined by my own actions.
24. It's chiefly a matter of fate whether or not I have a few friends or many friends.

APPENDIX E

STRESSFUL SITUATION QUESTIONNAIRE

Think of the different kinds of stressful situations you've been involved in within the past *two months*. It may help to look at a calendar. Choose the *most negative* of these situations and answer according to your perceptions of the situation.

1. Please indicate from a scale of 1 – 10 how much this situation distressed you where (1) is "The situation distressed me very little," and (10) is "This situation distressed me very much; I could barely stand it."

2. Please rate the extent to which this situation represented a loss on a scale of 1 – 10 where (1) is "extremely little loss" and (10) is "extremely great loss." You are welcome to use your own definition of "loss."

3. Please rate the extent to which this situation represented a threat on a scale of 1 – 10 where (1) is "extremely little threat" and (10) is "extremely great threat." You are welcome to use your own definition of "threat."

4. Please rate the extent to which this situation represented a challenge on a scale of 1 – 10 where (1) is "extremely little challenge" and (10) is "extremely challenging." You are welcome to use your own definition of "challenge."

5. Please choose which answer best describes your negative event. Mostly a loss, mostly a threat, mostly a challenge

6. Approximately how many days ago did the event occur? It may help to look at a calendar.

7. Briefly describe the stressful situation.

8. How many significant stressors have you experienced *in all* during the past two months? Give your best estimate. It may help to look at a calendar.

DEPRESSION ANXIETY STRESS SCALE (Lovibond & Lovibond, 1995)

Please read each statement and choose a number 0, 1, 2 or 3 that indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

(0) Did not apply to me at all
(1) Applied to me to some degree, or some of the time
(2) Applied to me to a considerable degree, or a good part of time
(3) Applied to me very much, or most of the time

1. I found myself getting upset by quite trivial things
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I just couldn't seem to get going
6. I tended to over-react to situations
7. I had a feeling of shakiness (e.g., legs going to give way)
8. I found it difficult to relax
9. I found myself in situations that made me so anxious I was most relieved when they ended
10. I felt that I had nothing to look forward to
11. I found myself getting upset rather easily
12. I felt that I was using a lot of nervous energy
13. I felt sad and depressed
14. I found myself getting impatient when I was delayed in any way (eg, elevators, traffic lights, being kept waiting)
15. I had a feeling of faintness
16. I felt that I had lost interest in just about everything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I perspired noticeably (e.g., hands sweaty) in the absence of high temperatures or physical exertion
20. I felt scared without any good reason
21. I felt that life wasn't worthwhile
22. I found it hard to wind down
23. I had difficulty in swallowing
24. I couldn't seem to get any enjoyment out of the things I did
25. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)
26. I felt down-hearted and blue
27. I found that I was very irritable

28. I felt I was close to panic
29. I found it hard to calm down after something upset me
30. I feared that I would be "thrown" by some trivial but unfamiliar task
31. I was unable to become enthusiastic about anything
32. I found it difficult to tolerate interruptions to what I was doing
33. I was in a state of nervous tension
34. I felt I was pretty worthless
35. I was intolerant of anything that kept me from getting on with what I was doing
36. I felt terrified
37. I could see nothing in the future to be hopeful about
38. I felt that life was meaningless
39. I found myself getting agitated
40. I was worried about situations in which I might panic and make a fool of myself
41. I experienced trembling (e.g., in the hands)
42. I found it difficult to work up the initiative to do things

APPENDIX G

COPE (Carver, Scheier, & Weintraub, 1989)

The following items deal with ways you coped with the negative event in your life. There are many ways to try to deal with problems. These items ask what you did to cope with this negative event. Obviously different people deal with things in different ways, but we are interested in how you tried to deal with it. Each item says something different about a particular way of coping. We want to know to what extent you did what the item says. How much or how frequently. Don't answer on the basis of what worked or not—just whether or not you did it. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can. Choose the answer that best applies to you.

(1) I didn't do this at all
(2) I did this a little bit
(3) I did this a medium amount
(4) I did this a lot

1.   I took additional action to try to get rid of the problem
2.   I concentrated my efforts on doing something about it
3.   I did what had to be done, one step at a time
4.   I took direct action to get around the problem
5.   I tried to come up with a strategy about what to do
6.   I made a plan of action
7.   I thought hard about what steps to take
8.   I thought about how I might best handle the problem
9.   I put aside other activities in order to concentrate on it
10.   I focused on dealing with this problem, and if necessary let other things slide a little.
11.   I kept myself from getting distracted by other thoughts or activities
12.   I tried hard to prevent other things from interfering with my efforts at dealing with it
13.   I forced myself to wait for the right time to do something
14.   I held off doing anything about it until the situation permitted
15.   I made sure not to make matters worse by acting too soon
16.   I restrained myself from doing anything too quickly
17.   I asked people who have had similar experiences what they did
18.   I tried to get advice from someone about what to do
19.   I talked to someone to find out more about the situation
20.   I talked to someone who could do something concrete about the problem
21.   I talked to someone about how I felt
22.   I tried to get emotional support from friends or relatives
23.   I discussed my feelings with someone
24.   I got sympathy and understanding from someone
25.   I looked for something good in what was happening
26.   I tried to see it in a different light, to make it seem more positive
27.   I learned something from the experience
28.   I tried to grow as a person as a result of the experience

29.   I learned to live with it
30.   I accepted that this has happened and that it can't be changed.
31.   I got used to the idea that it happened.
32.   I accepted the reality of the fact that it happened
33.   I sought God's help
34.   I put my trust in God
35.   I tried to find comfort in my religion
36.   I prayed more than usual
37.   I got upset and let my emotions out
38.   I let my feelings out
39.   I felt a lot of emotional distress and I found myself expressing those feelings a lot
40.   I got upset, and was really aware of it
41.   I refused to believe that it has happened.
42.   I pretended that it hasn't really happened
43.   I acted as though it hasn't even happened
44.   I said to myself, "this isn't real."
45.   I gave up the attempt to get what I want
46.   I just gave up trying to reach my goal
47.   I admitted to myself that I couldn't deal with it, and quit trying
48.   I reduced the amount of effort I'm putting into solving the problem
49.   I turned to work or other substitute activities to take my mind off things
50.   I went to movies or watch TV, to think about it less
51.   I daydreamed about things other than this
52.   I slept more than usual

RCOPE (Pargament, Koenig, et al., 2000)

The following items deal with ways you coped with the negative event in your life. There are many ways to try to deal with problems. These items ask what you did to cope with this negative event. Obviously different people deal with things in different ways, but we are interested in how you tried to deal with it. Each item says something different about a particular way of coping. We want to know to what extent you did what the item says. How much or how frequently. Don't answer on the basis of what worked or not—just whether or not you did it. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can. Choose the answer that best applies to you.

(1) Not at all,
(2) Somewhat,
(3) Quite a bit,
(4) A great deal

1. Saw my situation as part of God's plan.
2. Tried to find a lesson from God in the event.
3. Tried to see how God might be trying to strengthen me in this situation.
4. Thought that the event might bring me closer to God.
5. Tried to see how the situation could be beneficial spiritually.
6. Wondered what I did for God to punish me.
7. Decided that God was punishing me for my sins.
8. Felt punished by God for my lack of devotion.
9. Wondered if God allowed this event to happen to me for punishment of my sins.
10. Wondered if God was punishing me for my lack of faith.
11. Believed the Devil was responsible for my situation.
12. Felt the situation was the work of the Devil.
13. Decided the Devil made this happen.
14. Wondered if the Devil had anything to do with this situation.
15. Questioned the power of God.
16. Thought that some things are beyond God's control.
17. Realized that God can not answer all of my prayers.
18. Realize that there were some things that even God could not change.
19. Felt that even God has limits.
20. Tried to put my plans into action together with God.
21. Worked together with God as partners.
22. Tried to make sense of the situation with God.
23. Felt that God was working right along with me.
24. Worked together with God to relieve my worries.
25. Did my best and then turned the situation over to God.
26. Did what I could and then put the rest in God's hands.
27. Took control of what I could, and then gave the rest up to God.
28. Tried to do the best I could then let God do the rest.
29. Turned the situation over to God after doing what I could.

30.   I didn't do much, just expected God to solve my problems for me.
31.   Didn't try much of anything; simply expected God to take control.
32.   Didn't try to cope: only expected God to take my worries away.
33.   Knew that I couldn't handle the situation, so I just expected God to take control.
34.   Didn't try to do much; just assumed God would handle it.
35.   Pleaded with God to make things turn out okay.
36.   Prayed for a miracle.
37.   Bargained with God to make things better.
38.   Made a deal with God so that he would make things better.
39.   Pleaded with God to make everything work out.
40.   Tried to deal with my feelings without God's help.
41.   Tried to make sense of the situation without relying on God.
42.   Made decisions about what to do without God's help.
43.   Depended on my own strength without support from God.
44.   Tried to deal with the situation on my own without God's help.
45.   Sought God's love and care.
46.   Trusted that God would be by my side.
47.   Looked to God for strength, support, and guidance.
48.   Trusted that God was with me.
49.   Sought comfort from God.
50.   Prayed to get my mind off of my problems.
51.   Thought about spiritual matters to stop thinking about my problems.
52.   Focused on religion to stop worrying about my problems.
53.   Went to church to stop thinking about this situation.
54.   Tried to get my mind off my problems by focusing on God.
55.   Confessed my sins.
56.   Asked forgiveness for my sins.
57.   Tried to be less sinful.
58.   Searched for forgiveness from God.
59.   Asked for God to help me be less sinful.
60.   Looked for a stronger connection with God.
61.   Sought a stronger spiritual connection with other people.
62.   Thought about how my life is part of a larger spiritual force.
63.   Tried to build a strong relationship with a higher power.
64.   Tried to experience a stronger feeling of spirituality.
65.   Wondered whether God had abandoned me.
66.   Voiced anger that God didn't answer my prayers.
67.   Questioned God's love for me.
68.   Wondered if God really cares.
69.   Felt angry that God was not there for me.
70.   Avoided people who weren't of my faith.
71.   Stuck to the teachings and practices of my religion.
72.   Ignored advice that was inconsistent with my faith.
73.   Tried to stick with others of my own faith.
74.   Stayed away from false religious teachings.
75.   Looked for spiritual support from clergy.

76.   Asked others to pray for me.
77.   Looked for love and concern from the members of my church.
78.   Sought support from members of my congregation.
79.   Asked clergy to remember me in their prayers.
80.   Prayed for the well-being of others.
81.   Offered spiritual support to family or friends.
82.   Tried to give spiritual strength to others.
83.   Tried to comfort others through prayer.
84.   Tried to provide others with spiritual comfort.
85.   Disagreed with what the church wanted me to do or believe.
86.   Felt dissatisfaction with the clergy.
87.   Wondered whether my church had abandoned me.
88.   Felt my church seemed to be rejecting or ignoring me.
89.   Wondered whether my clergy was really there for me.
90.   Asked God to help me find a new purpose in life.
91.   Prayed to find a new reason to live.
92.   Prayed to discover my purpose in living.
93.   Sought new purpose in life from God.
94.   Looked to God for a new direction in life.
95.   Tried to find a completely new life through religion.
96.   Looked for a total spiritual reawakening.
97.   Prayed for a complete transformation of my life.
98.   Tried to change my whole way of life and follow a new path—God's path.
99.   Hoped for a spiritual rebirth.
100.   Sought help from God in letting go of my anger.
101.   Asked God to help me overcome my bitterness.
102.   Sought God's help in trying to forgive others.
103.   Asked God to help me be more forgiving.
104.   Sought spiritual help to give up my resentments.

VITA

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