Associations of general religiousness and specific religious beliefs with coping appraisals in response to Hurricanes Katrina and Rita

A. Taylor Newton *, Daniel N. McIntosh *

* University of Denver, Denver, CO, USA

Online Publication Date: 01 March 2009

To cite this Article Newton, A. Taylor and McIntosh, Daniel N.(2009)'Associations of general religiousness and specific religious beliefs with coping appraisals in response to Hurricanes Katrina and Rita',Mental Health, Religion & Culture,12,2,129 — 146

To link to this Article: DOI: 10.1080/13674670802380400

URL: http://dx.doi.org/10.1080/13674670802380400

Full terms and conditions of use: http://www.informaworld.com/terms-and-conditions-of-access.pdf

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.
Are specific religious beliefs related to interpretations of stressful events and available coping resources? The present study addressed this by assessing appraisals, general religiousness, and two specific beliefs—verticality (deity-centered vs. person-focused approach to religion) and God image—in 63 Christian and Jewish undergraduates coping with the 2005 hurricane season. Primary appraisals (interpretation of the stressor as a challenge, threat, loss, and benefit) and secondary appraisals (perception of whether self, others, and God have control over the stressor) were related to religion. By controlling for general religiousness, unique associations of specific beliefs with appraisals were identified. General religiousness was positively associated with interpreting hurricane-related events as a loss for the Christian participants and as a benefit for the Jewish participants. For both groups, general religiousness and God image were related positively to perception that God was in control, and verticality was related negatively to the perception of self-control. For Jewish participants, verticality was associated negatively with others-control and positively with God-control. Overall, general religiousness was more related to primary appraisals (relevance), and specific beliefs were associated with secondary appraisals (resources). Investigation of finely grained distinctions in religious belief furthers understanding of the roles of religion in coping.

Keywords: appraisal; coping; general religiousness; hurricane; specific religious beliefs; transactional model

Introduction

During the 2005 hurricane season, Hurricanes Katrina and Rita caused nearly 2000 deaths, over $90 billion in direct damage, and hundreds of thousands to lose jobs (U.S. Census Bureau, 2005). The extent and proximity of these disasters also caused significant psychological distress (Ursano, Cerise, Demartino, Reissman, & Shear, 2006; Weisler, Barbee, & Townsend, 2006). Such problems are not unexpected, as researchers have documented associations of exposure to natural disaster with posttraumatic stress disorder, anxiety, depression, health status, resource loss, and other measures of distress (see Norris et al., 2002). Given the impact of such events, psychologists have explored factors that can help predict and understand how people respond in such traumatic circumstances. The present study examines how religious beliefs relate to some of the
earliest responses: people’s appraisals of the relevance of the event and the resources they have available to cope with the event.

There is compelling evidence that religion plays a role in coping and adjustment following stressful events (McIntosh, Silver, & Wortman, 1993; Park & Cohen, 1993; Tix & Frazier, 1998). Indeed, religion is one of the most typical ways individuals cope (Pargament, 1997; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). The involvement of religion with coping nears commonsense when one considers that hardship, suffering, and conflict in the face of adversity are central concerns of many world religions and systems of religious belief (Pargament, 1997). It is not surprising then that people who have religious beliefs find them especially relevant when faced with stressful situations. However, any review of the literature quickly makes obvious the complexity of the relationship between religion and coping. Religion demonstrates both positive and negative associations with coping, particularly with various coping strategies and outcomes (Pargament, Smith, Koenig, & Perez, 1998). Unfortunately, most studies have assessed religion’s role in a limited fashion, making it difficult to discover why religion sometimes has positive associations with specific variables and sometimes negative associations (Koenig, 2006; Smith, Pargament, Brant, & Oliver, 2000; Worthington, Kuranus, McCullough, & Sandage, 1996). Part of this difficulty stems from the likelihood that religion plays multiple roles at different points in the coping process. Moreover, religion is a compound of different factors (various beliefs, behaviors, etc.); because much past research has relied on single-item, content-free, or behavioral measures of religion, it has been unable to address the variability of religious belief in these multiple roles. With this in mind, a more nuanced and multidimensional consideration of religion becomes important for the study of relations between religion and coping with stressful events (Seybold & Hill, 2001).

It is likewise important to examine the role of religion specifically in response to natural disasters, as psychological processes and responses following natural disasters may differ from those following human-caused trauma (Norris, Friedman, & Watson, 2002). Moreover, as psychologists and insurers alike point out, uncontrollable stressors such as natural disasters are often accounted for by religious attribution—“acts of God” (Koenig, 2006; Pargament, 1997).

To understand the role of religion in responses to such natural disasters, it is important to look beyond associations of general religiousness with outcomes. Fully identifying the role of religion requires looking at how (1) specific aspects of religion relate to (2) specific aspects of the coping process. In the following sections, we outline how aspects of religion may relate to specific processes in the transactional model of stress and coping. We then test specific predictions of this framework model with a sample of Christian and Jewish college students from New Orleans and Lake Charles, Louisiana, who witnessed the devastation of the 2005 hurricanes and subsequently experienced displacement.

**Transactional model of stress and coping**

Coping is a dynamic process comprising various cognitive and behavioral attempts to regulate stressful situations. The transactional model of coping emphasizes the importance of cognitive appraisals in this process (Lazarus & Folkman, 1984; see Figure 1). The salience of a stressor (primary appraisal) and the evaluation of possible personal and social resources and burdens for dealing with that stressor (secondary appraisal) together influence how a person copes with stressful situations. Such appraisals occur almost
immediately as the event unfolds; a primary appraisal of a storm as threatening one’s life
and the secondary appraisal of an easy escape route could prompt evacuation, for
example. Causal antecedents are defined as dispositional, situational, and contextual
variables that precede the stressor in the transactional model. This coping model is
“transactional” in that each part of the process (antecedents, stressors, appraisals, coping
styles, and outcomes) can interact with other parts sequentially or simultaneously, thus
creating a dynamic interplay of variables evolving across time.

How people understand stressors (primary appraisal) and resources (secondary
appraisal) is foundational to this model. Both categories of appraisals have been divided
into specific types. Lazarus and Folkman (1987) identified four types of primary
appraisals. The person may see a potential for gain (challenge), anticipate harm (threat), or
perceive that the event has already caused harm (loss) or gain (benefit). Secondary
appraisals can range from perceptions of specific social resources (e.g., having a friend who
can assist financially) to general cognitive resources (e.g., thinking you have the ability to
handle a problem). Peacock and Wong (1990) operationalized secondary appraisal as the
extent to which the situation is perceived as uncontrollable, controllable by self, or
controllable by others. These appraisals are theorized to be influenced by antecedents as
well as the transaction of the entire coping process as it evolves over time. The
transactional model holds that these appraisals will in turn influence coping choices and
ultimately outcomes.

In support of the transactional model, links have been demonstrated between
antecedents and appraisals (Folkman, Lazarus, & Gruen, 1986; Rovira, Fernandez-
Castro, & Edo, 2005; Weinstein & Quigley, 2006), between appraisals and coping strategies
(Lowe et al., 2003), and most prolifically between coping strategies and outcomes (Binford
et al., 2005; Burgess & Haaga, 1998; Leslie, Stein, & Rotheram-Borus, 2002).

Although others have demonstrated that religion plays a role in links between
appraisals and coping strategies (Maynard, Gorsuch, & Bjorck, 2001) and between coping
strategies and outcomes (Koenig, 2002; Pargament, 1997; Pargament, Koenig,
Tarakeshwar, & Hahn, 2001), investigations of associations between antecedents and
appraisals involving religion have been scarce. This is surprising, given that religious
beliefs are “person characteristic(s)” that provide potential personal and social resources
and thus fit well the criteria of antecedents to the coping process (Lazarus & Folkman,
1987, p. 143). Therefore, one of the most relevant places in the coping process that religion
could play a dramatic role has not been carefully addressed.

Religion as antecedent
As an antecedent to the coping process, religion can be considered on two levels: general
religiousness and specific religious beliefs. Broadly, general religiousness is the personal
importance of religion. More specifically, intrinsic religiousness can be conceptualized as

Figure 1. Transactional model of stress and coping (Lazarus & Folkman, 1984). The current study
considers religious variables as “causal antecedents.”
general religiousness—a style of belief that emphasizes genuine devotion and religion as an end rather than a means, usually associated with positive outcomes (Allport & Ross, 1967; Maltby, 1999). Specific religious beliefs refer to explicit worldviews or tenets of faith; these will be discussed later in more detail.

Both general religiousness and specific religious beliefs can enter and form the coping process by offering an interpretive lens, orienting framework, or cognitive processing schema (McIntosh, 1995; McIntosh et al., 1993). For example, from a religious perspective one can interpret a hurricane as the act of a vengeful deity or as a blessing in disguise. Similarly, through this same interpretive lens, religion can influence perceptions of control by God, self, and others (Jackson & Coursey, 1988; Wong-McDonald & Gorsuch, 2004; Worthington et al., 1996). These examples point to the likelihood that religion acts as an antecedent to the coping process, thus shaping cognitive appraisals of the event.

**Religion and appraisals**

Although research has shown that religion can play a role in the coping process in several ways, much less work has specified what aspects of religion influence which components of coping to shape outcomes. Such a nuanced approach may reveal that certain aspects of religion are related to one part of the coping process while other aspects are related to a different part. Because the transactional model predicts that antecedents predicate appraisals and appraisals generate coping strategies, associations between general religiousness, specific religious beliefs, and coping strategies suggest that religion influences appraisals as an antecedent.

There is some evidence that this is the case. By experimentally manipulating primary appraisal with hypothetical vignettes, Maynard et al. (2001) demonstrated that the way a person thinks about God (benevolent vs. distant) interacts with an appraised situation, resulting in differing coping strategies (e.g., a benevolent God concept correlated with deferring control to God). Another study examining secondary appraisal perception of control found differences between Catholics and Protestants at different levels of general religiousness (i.e., intrinsic religiousness; Park, Cohen, & Herb, 1990). Specifically, the researchers found that highly religious Protestants who used more religious coping strategies had less psychological distress when coping with uncontrollable negative events. On the other hand, Catholics showed no associations between intrinsic religiousness, locus of control, and psychological distress, although for controllable negative events more religious coping was related to less psychological distress. The investigators tentatively attributed this distinction to a difference in specific religious belief imbued by the respective theologies of Catholic and Protestant denominations—“works versus faith.”

These findings demonstrate two points. First, differences in religion can predict differences in appraisals. Second, the relationship between specific religious beliefs and appraisals can differ across levels of general religiousness, suggesting that when general religiousness is held constant these specific religious beliefs can be examined. These studies document that both general religiousness and specific religious beliefs influence coping. As noted previously, general religiousness, especially in the form of intrinsic religiousness, is associated with various aspects of the coping process, particularly attributions to God and positive outcomes (Koenig, 2002; Loewenthal & Cornwall, 1993; Pargament, 1997; Pargament et al., 2001; Park et al., 1990; Seybold & Hill, 2001; Worthington et al., 1996). With this in mind, we expect that general religiousness will be associated with cognitive
appraisals consistent with positive interpretations of the stressor (i.e., challenge and benefit primary appraisal) as well as the secondary appraisal that God is in control.

Despite the evidence suggesting clear hypotheses, little work has examined general religiousness as an antecedent to primary and secondary appraisals. Further, we have found no study that directly assesses specific religious beliefs as antecedents to primary and secondary appraisals in the coping process. This deficiency underscores the importance of more systematic research and serves as the impetus for this study.

Specific religious beliefs

As noted earlier, specific religious beliefs are explicit worldviews or tenets of faith. To test the association between specific religious beliefs and appraisals, we selected two categories of religious beliefs that have a high likelihood of influencing appraisals—God image and vertical/horizontal religious focus. God image refers to a person’s experiential and relational understanding of God, the sacred, or a higher power. Lawrence (1997) identified six God images—challenge, acceptance, benevolence, influence, presence, and providence. The more an individual believes each of these six dimensions, the more positive the God image of that individual. A positive God image consistent with beliefs like “God is good” and “God has influence” may be positively related to secondary appraisals like God-control, even when a situation seems otherwise uncontrollable.

The second category of religious belief we examined is vertical/horizontal religious focus. Vertical religious focus refers to a deity-centered, spiritual approach whereas horizontal religious focus refers to a person-focused, humanistic approach to religion (Benson, Donahue, & Erickson, 1993; Davidson, 1972; Donahue, 1989). For example, if a person’s goal is to help the poor, a relatively more horizontally focused individual might focus on giving food or help to build houses for the poor while a more vertically focused person might concentrate more on prayer and asking God to watch over the poor. Although it is likely that most people exhibit both foci, even simultaneously in some situations, overall differences may be apparent in average focus over a number of situations. Because vertical and horizontal focus relate to understandings of power and influence on the world, we expect that they will be associated with secondary appraisals, that is, beliefs about who is in control of a situation.

In addition to God image and vertical/horizontal religious focus, we examined individuals affiliated with two different religions—Christianity and Judaism—to explore whether the processes examined in this study function similarly across faiths. Typically, studies linking religion and coping do so with a Christian sample, sometimes comparing Protestant denominations or drawing distinctions between Protestant and Catholic faiths (e.g., Park et al., 1990). Not only are Judaism and Christianity more theologically and culturally distinct than divisions within Christianity, but also there is reason to believe that religious coping in particular differs between Jews and Christians (Loewenthal, Cinnirella, Evdoka, & Murphy, 2001; Stuckey, 2003; though for other evidence, see Loewenthal, MacLeod, Goldblatt, Lubitsh, & Valentine, 2000). For example, in a study assessing adjustment of renal disease patients to dialysis, compared with Protestants and Catholics, Jews more often reported that religion had nothing to do with adjustment (O’Brien, 1982). The possibility of relevant differences between Christianity and Judaism may allow inferences about religion as antecedent beyond God image and vertical/horizontal focus.
Present study

Building on established connections between religion and coping, the current study examined associations between religion and primary and secondary cognitive appraisals, an area in which little work has been done. Our approach included a general assessment of religiousness as well as specific religious beliefs identified as especially likely to differentially influence appraisals beyond general religiousness. We explored these associations in both Christian and Jewish participants.

The 2005 hurricane season, a highly salient and unique traumatic event, was the context for our assessment. We examined associations of religion and cognitive appraisals in Gulf Coast college students. As the hurricanes destroyed their possessions, separated them from friends, and forcibly closed their schools, students either participated in a scramble to find new colleges or were left without a place to go. In New Orleans, Tulane University students were displaced for an entire semester by Hurricane Katrina. Most students at McNeese University of Lake Charles not only saw their school battered and closed for over a month by Hurricane Rita, but also their parents’ homes damaged or destroyed.

We first hypothesized that general religiousness would be associated with primary and secondary appraisals. For primary appraisals we anticipated positive relations of general religiousness with challenge and benefit appraisals and negative relations with threat and loss appraisals. For secondary appraisals, we anticipated a positive association between general religiousness and God-control.

Second, we hypothesized that specific religious beliefs would be differentially associated with both primary and secondary appraisals. To address this hypothesis, general religiousness was statistically controlled so that the effects predicted in the first hypothesis would not mask the effects of specific religious beliefs (see Cohen & Hill, 2007 for a similar approach). In particular, we anticipated that positive God image would be related positively with challenge and benefit primary appraisals and related negatively with threat and loss. We also expected that positive God image would be associated positively with God-control secondary appraisal. Furthermore, we anticipated positive relationships between vertical religious focus and God-control, but negative relationships between vertical religious focus and self- and others-control.

Finally, because evidence suggests that associations of religion and coping variables may differ in Judaism and Christianity (Dubow, Pargament, Boxer, & Tarakeshwar, 2000; Loewenthal et al., 2001; O’Brien, 1982; Stuckey, 2003), we examined these two groups separately.

Method

Participants

Participants were 63 students from two colleges on the Louisiana Gulf Coast who were strongly affected by the 2005 hurricane season. Of these, 49 noted a past or current affiliation with a Christian religion (78%) and 14 indicated past or current Jewish religious affiliation (22%). Thirty-two of the Christian participants were White, 12 were Black, two were Asian American, one was Hispanic, and two were mixed race. All the Jewish participants were Caucasian. Among the Christian participants, 23 were Catholic (47%) and 26 were Protestant (53%). In the Christian group, 12 were male (25%), 33 were female (67%), and the gender of 4 participants (8%) was not indicated. In the Jewish group, four were male (29%), 6 were female (42%), and the gender of four additional participants
(29%) was not indicated. Average year in school was similar for Christian ($M = 2.3$, $SD = 1.2$) and Jewish ($M = 2.9$, $SD = 0.8$) students, early and late sophomore respectively. The mean age of both groups was 21.5 ($SD = 4.6$).

**Measures**

**Demographics**

Participants provided gender, age, year in school, current and past religious or spiritual affiliations, and personal impact of events surrounding the 2005 hurricane season. Personal negative impact was measured by a single dichotomous item, “Are you from a region affected by the 2005 hurricane season?” scored 0 for “not from an affected region” and 1 for “from an affected region.” Although all participants in the study were affected by the storms (all attended affected schools), being from a region directly affected may influence appraisals of the 2005 hurricane season and therefore required statistical control to isolate effects of interest.

**Religious beliefs**

God image was assessed by a 36-item measure comprising the most reliable items from Lawrence’s (1997) initial psychometric testing of the God Image Inventory (GII). There are six six-item subscales: Challenge, Acceptance, Benevolence, Influence, Presence, and Providence. Responses range from strong agree to strongly disagree, or not applicable. Items include “God, the sacred, or a higher power is looking for a chance to get even with me” (Benevolence subscale, reverse coded) and “God, the sacred, or a higher power asks me to keep growing as a person” (Challenge subscale). Reliability analyses for each of the six scales on our reduced measure yielded acceptable alphas (0.70 to 0.92). In both the original GII and our 36-item measure, intercorrelations between scales are high ($r = 0.68$ to $0.91$). Therefore, following Lawrence (1997) in recognizing the positive quality of all six GII scales, we combined them to create an index of overall positivity in God image ($\alpha = 0.96$). The higher a person scored on the GII, the more positive that person’s image of God.

Vertical/horizontal religious focus was assessed by the Verticality Scale, a 13-item forced-choice measure designed for this study (see Appendix 1). The Verticality Scale shares the vertical/horizontal distinction with the Faith Maturity Scale (FMS; Benson et al., 1993), a measure designed to assess “the degree to which a person embodies the priorities, commitments, and perspectives characteristic of vibrant and life-transforming faith” (Benson et al., 1993, p. 3). As such, the FMS is a diagnostic tool for faith; moreover, it is only appropriate for use with mainline Protestant Christians. In contrast, the Verticality Scale is not diagnostic and can be used with individuals of all religions or no religion. Items were generated from an in-depth study of traditional religious behaviors and their various motivations. The creation of this scale was informed by the advice of experts in religious studies. Participants chose either a horizontally or a vertically focused response to complete a sentence stem. For example, “When I donate money to a church, religious or spiritual organization, or charity, I do it more to...” This stem can be completed with either “give back generously to God, the sacred, or a higher power” or “help those less fortunate.” Alternatively, participants could indicate that neither option is reflective of their beliefs, or that the item is not applicable to them. Although it can be inappropriate to analyze forced-choice or ipsative data using standard psychometric analyses, in the case of scales with strong negative intercorrelations it is reasonable to treat
the data as normative (Baron, 1996). The vertical and horizontal dimensions of the Verticality Scale meet this criterion ($r(60) = -0.56, p < 0.0001$). In addition, some contend that forced-choice format is preferable to normative scales under circumstances exemplified in the current study: forced-choice helps to decrease central tendency, acquiescence, and social desirability biases (Baron, 1996; Closs, 1996). It is likely that many religious individuals would not be comfortable with placing an emphasis on either horizontal or vertical approach to the neglect of the other, and indeed, many may use both. This format allowed us to determine the relative emphasis of one or the other for each respondent, and this is the distinction of interest for this study. To achieve this, scores were summed across items by scale (items marked “Neither is true for me” were excluded), and totals of the scales for each participant were transformed to a ratio of how vertically focused a person is relative to how horizontally focused that person is. For example, someone who scored a 4 on the vertical scale and a 2 on the horizontal scale would have the same verticality ratio as someone who scored a 6 and a 3, respectively. This transformation accurately represents individuals who may have an equal emphasis on vertical and horizontal approaches to religion.

General religiousness was measured with the eight-item Intrinsic Scale (Gorsuch & McPherson, 1989) derived from the Religious Orientation Scale (Allport & Ross, 1967). Intrinsic religion is a committed approach to religion for its own sake, differing from extrinsic religion, which refers to religious behavior motivated by instrumental concerns, such as individual and social benefit to the self. As noted previously, intrinsic religiousness can be considered a measure of general religiousness (Maltby, 1999). Respondents ranked agreement with positively and negatively valenced statements on a scale from (5) strongly agree to (1) strongly disagree. Items on the I-scale include “I enjoy reading about spirituality and/or religion” and “Although I am religious and/or spiritual, I don’t let it affect my daily life” (reverse-coded). This scale is widely used and has good psychometric properties (Gorsuch & McPherson, 1989). Consistent with other work, the reliability alpha was 0.83, here.

Appraisal

Primary appraisal of the 2005 hurricane season was assessed with the Appraisal of Life Events scale (ALE; Ferguson, Matthews, & Cox, 1999), a 16-item adjective checklist of how relevant a stressor is to well-being. The ALE scale assesses threat, loss, and challenge with adjectives such as “terrifying,” “depressing,” and “demanding.” In keeping with the transactional model, we added four adjectives assessing benefit appraisal (Lazarus & Folkman, 1984). These were “beneficial,” “a blessing,” “advantageous,” and “helpful.” The salience of each adjective is rated on 6 points anchored by not at all (0) and very much so (5). This measure typically has adequate psychometric properties (Ferguson et al., 1999; Ferguson, Lawrence, & Matthews, 2000). Reliabilities for the threat and benefit subscales were good (threat $\alpha = 0.86$, benefit $\alpha = 0.81$), but were relatively low for the other two subscales (challenge $\alpha = 0.69$, loss $\alpha = 0.67$).

Secondary appraisal of the 2005 hurricane season, that is, the evaluation of possible personal and social resources, was measured with the 12 item control scale of the Stress Appraisal Measure (SAM; Peacock & Wong, 1990). The control scale of the SAM measures perception of who is and is not in control of a situation, specifically in the current study, events surrounding Hurricanes Katrina and Rita. Self-control, others-control, and no-control are scales on the SAM. In addition, we added four God-control items (see Appendix 2). Control is rated on a 5-point scale anchored by not at
all (1) and extremely (5). Items on the SAM include “Do I have the ability to do well in this situation?” (self-control) and “Is there someone or some agency I can turn to for help if I need it?” (others-control). The reliability alphas of SAM subscales included 0.79 (self-control), 0.88 (others-control), and 0.93 (God-control).

**Procedure**

Participants were recruited from sociology and psychology classes at Tulane University in New Orleans, Louisiana and McNeese University in Lake Charles, Louisiana. All individuals, of any religious or spiritual belief or no religious or spiritual belief were encouraged to participate. In group-testing sessions of 20 or fewer, participants completed a questionnaire including the above measures. Most students participated for course credit.

**Results**

**Sample differences**

The Christian sample reported more general religiousness ($M = 3.40, SD = 0.80$) than did the Jewish sample ($M = 2.23, SD = 0.81$), $t(61) = 4.8, p < 0.0001$. Individuals in the Christian sample ($M = 0.80, SD = 0.41$) were also more likely than those in the Jewish sample ($M = 0.14, SD = 0.36$) to experience a personal negative impact of the 2005 hurricane season, $t(61) = 5.4, p < 0.0001$. Relations among religion variables for the Christian and Jewish groups reported respectively: general religiousness and verticality ($r = 0.50, 0.31$), general religiousness and God image ($r = 0.74, 0.48$), and verticality and God image are ($r = 0.42, 0.74$). In the Jewish group, the correlation between verticality and God image is high, suggesting that perhaps these two variables should be combined. However, we did not do so for three reasons. First, verticality and God image are theoretically distinct constructs for which we predicted different associations. This theoretical divergence was confirmed in our results. Second, the correlation between verticality and God image in the Christian group is much lower, so combining these variables may not be appropriate. Because our intent is to compare associations between religious beliefs and appraisals in Christian and Jewish groups, we wished to avoid different predictor variables. Finally, combining verticality and God image for the Jewish group masked several important associations. For example, the significant negative relationship between others-control and verticality disappeared with the combined variable. Differences in correlations between the Christian and Jewish groups are not significant. Samples did not differ on gender, age, or year in school.

To isolate the effects of specific religious beliefs from the effect of general religiousness, we controlled for general religiousness in analyses of associations between specific religious beliefs and appraisals. Likewise, to determine the associations of these religion variables with appraisals at all levels of personal impact, we controlled for personal impact in all analyses using partial correlations. All hypothesis tests were two-tailed, and are reported in Table 1.

**Is general religiousness associated with appraisals?**

We predicted that general (intrinsic) religiousness would be associated with primary and secondary appraisals. For primary appraisals we expected challenge and benefit appraisals to have positive relationships with general religiousness and threat and loss primary appraisals to have negative relationships.
In the Christian sample, associations were not in the direction predicted. A positive relationship emerged between general religiousness and loss appraisal as well as a positive trend with threat appraisal, whereas a negative relationship was found with challenge appraisal. This pattern indicates that general religiousness was strongly associated with the Christian sample's primary appraisals, with general religiousness related to more negative interpretations of the hurricanes. In the Jewish sample, benefit appraisal was positively associated with general religiousness, but no other primary appraisals were. General religiousness appeared less associated with appraisals, but the associations were with more positive interpretations.

Regarding secondary appraisals, we predicted a positive relationship between general religiousness and God-control. In the Christian sample, as expected, a strong correlation emerged between general religiousness and God-control. For the Christian sample, higher levels of general religion were strongly related to believing that God is in control of the stressful situation. This relationship was not significant in the Jewish group, although the effect size was medium-large (Cohen, 1988) and consistent with a positive relationship between general religiousness and God-control.

**Are specific religious beliefs associated with appraisals?**

We predicted that verticality and positive God image would be associated with primary and secondary appraisals. Specifically, we anticipated that God image would be related positively with challenge and benefit primary appraisals and negatively with threat appraisal.
and loss. However, no significant relationships were found between primary appraisal and God image for either Christian or Jewish students. Additionally, we expected that God image would be positively related with God-control secondary appraisal. For the Christian sample, this relationship was supported. The relationship in the Jewish sample was a trend in the predicted direction with a large effect size (Cohen, 1988).

Regarding secondary appraisals, we hypothesized positive associations between verticality and God-control and negative associations between verticality and self- and others- control. The correlations in the Jewish sample were consistent with this hypothesis, showing a positive association between verticality and God-control appraisal and a negative association between verticality and others-control; these were not found in the Christian sample. The predicted negative relationship between verticality and self-control was significant in the Christian group and, although not significant in the Jewish group, had a large effect size (Cohen, 1988).

Discussion

This study examined associations between general religiousness, specific religious beliefs, and the primary and secondary cognitive appraisals of students coping with the aftermath of Hurricanes Katrina and Rita. In partial support of our first hypothesis, general religiousness, as measured by intrinsic religiousness, was associated with primary appraisals, though not always in predicted directions. Specifically, different patterns of relationships of general religiousness and primary appraisals emerged between the Jewish and Christian groups. For the Christian sample, general religiousness was positively related to perceiving the 2005 hurricane season as already harmful and having the potential for harm, while negatively related to perceiving the potential for gain, but had no relation to the perception of the 2005 hurricane season as beneficial. Conversely, general religiousness for the Jewish sample was only related to perceiving the 2005 hurricane season as beneficial, but not as a threat, challenge, or loss. However, as predicted, in both the Jewish and Christian groups, the more generally religious a person, the more they appraised that God was in control of the events surrounding the 2005 hurricane season.

Our second hypothesis was also supported. When controlling for general religiousness it was possible to tease out the effects of specific religious beliefs. These specific religious beliefs were related to both primary and secondary appraisals. Furthermore, specific predictions about relationships were supported in many cases. In particular, associations between verticality and secondary appraisal aligned with predictions. Verticality exhibited a negative relationship with self-control for both the Jewish and Christian groups. In other words, a person-focused, humanistic (horizontal) approach to religion was associated with the belief that the coping individual was in control of the events surrounding the 2005 hurricane season. Similarly, the correlation between a person-focused humanistic approach and the belief that others were in control of the events surrounding the 2005 hurricane season was also significant in the Jewish group. Although this relation was statistically insignificant in the Christian group, it was in the same predicted direction. The belief that God was in control was positively related to a deity-centered, spiritual (vertical) approach to religion in the Jewish group, though curiously not in the Christian group. A positive God image, however, was associated with the belief that God was in control in the Christian group. In the Jewish group, the same trend with a large effect size was discovered between a positive God image and the belief that God was in control.
The pattern of results indicates generally that general religiousness was more related to how the event was interpreted (primary appraisal) whereas images of God and verticality were related to perceptions of resources available to handle a stressor (secondary appraisal). These findings support the consideration of religious variables as antecedents in the transactional model of stress and coping. Moreover, they suggest that some aspects of coping in some circumstances may be more related to whether a person has a religious approach to life, whereas other aspects of coping may be affected by how that person is religious. If these results are found to be consistent across samples and stressors, we may conclude that general religiousness influences how one sees events as relevant to the self, and variations in religious beliefs relate to the resources one sees as available. As noted below, however, other variations in belief may influence primary, relevance appraisals; future work should investigate this directly.

What relevance do these findings have for understanding religion and coping? First, this study demonstrated that primary and secondary appraisals are associated with both general and specific measures of religion. Although religion as antecedent is an oft neglected aspect of the coping process, this study makes clear that an understanding of the relationship between religion and appraisals is crucial to understanding the overall relationship between religion and coping. Moreover, the association is evident in the earliest, formative stages of responses to aversive events.

Second, it is important to study specific religious beliefs beyond single-dimensional, content-free, or behavioral measures of religion. When controlling for general religiousness, specific religious beliefs were related to different appraisals. Had religion only been measured generally these differences would have been masked. Furthermore, by assessing Jewish and Christian religions separately, differences between the religions emerged; this adds to the growing evidence that faith tradition is a moderator of associations in religion and well-being (Loewenthal et al., 2001; Pargament, 1997).

Third, these findings demonstrate that the transactional model of stress and coping is a useful framework for exploring the many ways that religion can enter and form the coping process. Notably, both general and specific religious beliefs can be considered antecedents in the transactional model, though future work is necessary to tease apart the causal nature of religious beliefs. Finally, the current study helped to illuminate the relevance of religion in coping with the 2005 hurricane season. Although it is likely that many other factors influenced the primary and secondary appraisals of the Gulf Coast college students, general and specific religious beliefs explained relatively large amounts of variance.

Limitations and future directions

As with all cross-sectional correlational research, the current study suffers several interpretive limitations. Although strong associations were found between general and specific religious beliefs and primary and secondary appraisals, future research is essential to determine the direction of the relation across the coping process. It is likely that several waves of data will be necessary to capture the transaction of the process over time—causal directions may change and change again under the influence of the many aspects of the transactional model. For example, before a stressful event a person may hold a benevolent God image. After the event, the benevolent God image may lead the person to interpret the event as a challenge controllable by God and self. As time goes on, intervening variables, such as extraneous stressors, religious crisis, and
even the simple passage of time may lead the person to change their God image to non-benevolent and reappraise the stressful situation as a threat or a loss. With such complex and volatile transactions, quasi-experimental and longitudinal methodologies seem crucial to future studies.

An additional limitation of this study is that it examined only two specific religious beliefs—God image and verticality. However, myriad possibilities await future research. Other specific religious beliefs and worldviews about the existence of an afterlife, the presence of demonic powers, or the nature of humanity as good or evil are but a few examples of specific religious beliefs that could dramatically influence cognitive appraisals and, by extension, the entire coping process. The investigation of finely grained distinctions in religious belief will further our understanding of the roles of religion in the coping process.

Although this particular population afforded a unique opportunity to study religion and coping in an acute, severe stressful situation shared by many, findings may be different in chronic and personal stressful situations. Our understanding of the relationship between religion and coping will benefit from research on many populations in different kinds of stressful situations.

Finally, the relatively small sample size hindered the interpretation of certain results. Although some effect sizes were large, particularly in the Jewish sample, power was insufficient to attain statistical significance. Future studies should include larger sample sizes and more powerful designs.

Overall, despite its limitations, the present study demonstrated the importance of a more nuanced look at the relationship between religion and coping. It is important to understand what aspects of religion influence which components of coping. General and specific religious beliefs were associated with a specific component of coping—cognitive appraisals. In coping with Hurricanes Katrina and Rita, the religious beliefs of Tulane and McNeese students were connected with how they interpreted and made meaning from the reality of their situation as well as their perception of resources they had to deal with that situation. The current findings have opened the door to more detailed questions about the nature of religious beliefs and the mechanisms by which they influence not only coping, but many day-to-day processes that involved cognitive appraisals, including emotions and emotion regulation, decision making, and interpersonal interactions.

Acknowledgements

Special thanks to Christian Brady and Carrie Doehring for their assistance in the development of the Verticality Scale and to Amie Grady, Bernadette Adams–Gauthé, and Ashley Baker–Brumfield for their assistance with data collection. Thanks also to the members of the Stress, Trauma, and Coping Research group at the University of Denver for their helpful comments on an earlier draft of this paper.

References


**Appendix 1. Verticality scale**

For each statement below, please put a check mark next to one of the first two answers that is truer for you. Even if both are really true for you or hardly true for you, we want to know which of the two is truer. We know it may be difficult in some cases to choose one over the other. Remember that when you check one, it does not mean the other one is not true for you. It also does not mean that the one you check is very true for you. If neither one is at all true for you, put a check next to the third statement.

Please choose only one response.

For me, the more important reason to attend spiritual or religious services or gatherings is to . . .

- [ ] improve my relationship with God, the sacred, or a higher power.
- [ ] improve my relationship with other people.
- [ ] Neither is true for me.

When I ask forgiveness for something I've done wrong, I do it more because . . .

- [ ] I want to make things right with God, the sacred, or a higher power.
- [ ] I want to mend my relationship with the person I've wronged.
- [ ] Neither is true for me.

When I share my faith or religious or spiritual beliefs with others, I do so more because I want to . . .

- [ ] help others to grow and be better people.
- [ ] glorify and please God, the sacred, or a higher power.
- [ ] Neither is true for me.

I am religious primarily because

- [ ] I find meaning in my faith and comfort in my relationship with God, the sacred, or a higher power.
- [ ] it helps me to have better relationships with others.
- [ ] Neither is true for me.

If I were to go on a mission trip, it would be mainly to . . .

- [ ] serve others.
- [ ] serve God, the sacred, or a higher power.
- [ ] Neither is true for me.
When I want to help the poor and suffering, I tend to . . .

_____ ask God, the sacred, or a higher power to watch over them.a
_____ visit them, give them food, build houses, babysit, make hospital visits, etc. . . . b
_____ Neither is true for me.

When I donate money to a church, religious or spiritual organization, or charity, I do it more to . . .

_____ help those less fortunate. b
_____ give back generously to God, the sacred, or a higher power. a
_____ Neither is true for me.

When I think of “the Body of Christ,” I think of . . .

_____ people all around the world. b
_____ Jesus—born, died, and risen. a
_____ Neither is true for me.

I believe that a spiritual life (for example, salvation or transcendence) . . .

_____ is better achieved in a community. b
_____ is an individual and personal matter. a
_____ Neither is true for me.

When I read sacred texts, I hope to . . .

_____ understand how to live out my faith and beliefs in my everyday life. b
_____ become closer to God, the sacred, or a higher power. a
_____ Neither is true for me.

I find my spiritual and religious beliefs to be especially helpful when I want to . . .

_____ reach out beyond my self to other people. b
_____ reach beyond the everyday to the sacred. a
_____ Neither is true for me.

When I experience the sacred, I tend to experience connection with . . .

_____ people or nature. b
_____ God and/or the divine and transcendent. a
_____ Neither is true for me.

My most powerful spiritual or religious experiences have come when . . .

_____ I am alone and focusing on my relationship to God, the sacred, or a higher power. a
_____ I am with other people, experiencing a connection with them. b
_____ Neither is true for me.

Notes

a—Vertical focus
b—Horizontal focus
Appendix 2. God-control subscale added to the Stress Appraisal Measure

(1) Is the outcome of this situation controllable by God, the sacred, or a higher power?
(2) Does God, the sacred, or a higher power have the power to make good come from this situation?
(3) Does God, the sacred, or a higher power provide sufficient resources to me to deal with this situation?
(4) Can God, the sacred, or a higher power change this situation for the better?