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Measuring Beliefs About Suffering: Development of the Views of Suffering Scale

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Efforts to measure religion have intensified, and many specific dimensions have been identified. However, although belief is a core dimension of all world religions, little attention has been given to assessment of religious beliefs. In particular, 1 essential set of religious beliefs, those concerning the reasons for human suffering, has remained virtually unexamined despite the potential clinical relevance of these beliefs. To fill the need for a measure of people's beliefs about suffering, we developed the Views of Suffering Scale (VOSS). Analyses identified factors related to traditional Christian teachings, unorthodox theistic beliefs, karma, and randomness. Internal consistency and test–retest reliability for VOSS subscale scores were good (αs and rs $\geq$ .70). Comparisons to measures of related constructs suggest that the VOSS scores demonstrate good convergent validity. One subscale score was modestly correlated with social desirability related to image management, and 7 were positively correlated to self-deceptive enhancement. These preliminary studies suggest that the VOSS differentiates religious perspectives on suffering among a sample of U.S. university students, though more research is needed to confirm its utility in diverse populations. The VOSS provides a valid way to measure individuals' beliefs about suffering, allowing for inquiry into the factors that lead to various beliefs about suffering and the roles of these beliefs in adjusting to stressful life events.

Keywords: religious beliefs, theodicy, suffering, measurement, scale development

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People in the United States tend to report high levels of religiousness. For example, in a 2010 poll, 80% of individuals rated religion as "fairly" or "very" important to them (Gallup Poll, 2010). The increasing recognition of the psychological importance of religion has led to a dramatic increase in research on religion and spirituality, particularly in the connections between religion and both physical and mental health (for reviews, see Lee & Newberg, 2005; Masters & Hooker, in press). Increased attention has also been given to assessment of religiousness (Fetzer Institute & National Institute on Aging, 1999; Hill, in press). Many distinct dimensions of religiousness have been identified, and researchers have endeavored to develop psychometrically sound measures of these dimensions, including organizational behaviors such as worship attendance (e.g., Idler et al., 2009), private behaviors such as prayer and meditation (e.g., Ladd & Spilka, 2006), religious social support (e.g., Ellison & George, 1994), religious motivations (e.g., Gorsuch & McPherson, 1989), and religious emotions (e.g., anger at God; Exline, Yali, & Lobel, 1999). However, one aspect of religiousness—beliefs about suffering—has been curiously overlooked.

Although scholars agree that beliefs are a core religious dimension of religion (Haber, Jacob, & Spangler, 2007; Idler et al., 2003), few studies have examined religious beliefs and their relationships with other variables. Some data are available on afterlife beliefs (e.g., Krause et al., 2002; Newman, Blok, & Rips, 2006) and conceptions of God (e.g., Aten et al., 2008; Diesendruck & Haber, 2009), but almost no research has examined the content of religious beliefs about other important aspects such as divine control (cf. Pargament et al., 1999; Spilka, Shaver, & Kirkpatrick, 1997), sin and redemption, or free will versus divine determinism.

This lack is surprising given the centrality of beliefs to religion and their potential clinical implications. Knowledge of individuals' beliefs may help to explain their decisions to use various coping strategies or explain certain health behaviors (e.g., use of medical care, performance of health behaviors, self-destructive behaviors; Avants, Marcotte, Arnold, & Margolin, 2003; Koenig, 2004; Strawbridge, Shema, Cohen, & Kaplan, 2001). Further, knowledge of relationships between beliefs and well-being may help structure clinical interventions, because people often turn to religion in stressful situations (Aldwin, 2007; Büssing, Ostermann, & Matthiessen, 2005).

Beliefs about suffering, also known as *theodicies,* are one dimension of religious beliefs that seems likely to have great clinical relevance. A theodicy is any set of beliefs that attempts to reconcile orthodox teaching about God's goodness with the presence of

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suffering in the world (R. F. Brown, 1999). Theodicies attempt to answer the question, "How can God be good and powerful when there is evil in the world?" Stressful or traumatic experiences may raise existential questions (Edmondson et al., 2011) or initiate a crisis of faith (Edmondson, Park, Chaudoir, & Wortmann, 2008). Questions about evil, divine help, human nature, and hope for the future surge to the surface when people are in crisis, and religious beliefs provide answers to these questions in ways that no other authority can (Berger, 1967). Several scholars have noted the importance of beliefs about suffering (e.g., Furnham & Brown, 1992; Hall & Johnson, 2001), but there is a dearth of empirical research.

Our goal was to develop a psychometrically sound measure to facilitate inquiry into the issues relevant to beliefs about suffering. The Views of Suffering Scale (VOSS) assesses a range of the most common belief systems in the United States, including theistic, Buddhist, Atheist, Hindu, and unorthodox theistic perspectives (Pew Forum on Religion & Public Life, 2008). Although the VOSS includes beliefs from multiple belief systems, it includes more nuanced views from Christianity than other religions because the vast majority of Americans identify themselves as Christian (74% in a 2010 poll; Gallup Poll, 2010). The following 10 perspectives are included in the VOSS based on their representation in religious literature and utilization by one or more sects in the United States.

The Free Will, Open Theism, and Word–Faith perspectives are mutually exclusive beliefs about God's role in suffering. The Free Will perspective (most clearly articulated by Reformed Protestant denominations and Catholic theology) emphasizes that suffering is present because the first humans broke the divine–human relationship; the world is no longer a just and perfect place, so people can expect pain until God's eventual redemption (e.g., Aquinas, 1944; Augustine, 1937, 1948; Piper & Ergenbright, 2002). In contrast, Open Theism (represented in a range of Protestant denominations) emphasizes that God chooses to suffer with people but cannot prevent evil from taking place because God chooses to limit his foreknowledge (e.g., Boyd, 2000). The Word–Faith theodicy (also called Health & Wealth, Name It & Claim It, or Prosperity Gospels, most often present in Pentecostal denominations) holds that if one prays hard enough, believes strongly enough, and does not actively sin, he or she will not have to suffer (e.g., Hagin, 1966; Savelle, 1982).

In addition to these mutually exclusive frameworks for suffering, four other beliefs exist that can operate together and with any of the previous beliefs within a theistic framework. The Suffering God perspective emphasizes God's compassionate presence in the midst of suffering and appears in both Christianity and Judaism (e.g., Leaman, 2001; Moltmann, 1993). The Soul-Building perspective emphasizes that God always uses suffering as a challenge, and it is represented most clearly in Christianity and Islam (Aslan, 2001; Hick, 1966). The Encounter perspective (in both Judaism and Christianity) emphasizes the conversations and complex relationship with God that individuals have in the midst of suffering (e.g., Leaman, 2001; Metz & Ashley, 1994). Last, Providence beliefs refer to the level of control over specific events that individuals attribute to God (in this context, control over suffering). Consequently, Providence beliefs vary depending on theistic affiliation (see Providence, 2000).

In addition to these traditional theistic views of suffering, the VOSS also includes unorthodox theistic and nontheistic views. Unorthodox perspectives are those that affirm the existence and involvement of a divine being but deny divine characteristics that are central to the theistic religions (e.g., omnipotence, beneficence, perfection). In the Random perspective (an atheistic or agnostic belief), there is no way to predict who will suffer, and there is no underlying reason. Finally, the Retribution perspective includes both Buddhist and Hindu beliefs in its conceptualization of suffering as part of a cycle in which individuals' previous deeds impact their experience of suffering (Anantharaman, 2001; Shim, 2001).

Overview of VOSS Development

The VOSS was developed through two sequential studies. First, an initial pool of items on theodicies was developed representing a variety of religious views present in North America congruent with official denominational teachings, beliefs unassociated with specific denominations, and nontheistic beliefs. In Study 1, this group of items was pilot-tested on a sample of 246 undergraduate college students, and exploratory factor analysis (EFA) was used to identify which items should be retained. Based on the results of Study 1, we created additional items that supplemented both the theoretical and observed factors.

In Study 2 a new sample of 624 undergraduates completed the VOSS and other measures. These data provided information on factor structure, reliability, and validity. The 624 participants were randomly divided into two groups of 312 participants to allow for a second EFA and a confirmatory factor analysis (CFA) to be conducted on distinct samples (Netemeyer, Bearden, & Sharma, 2003). These data were used to determine both factor structure and items for the finalized VOSS. Test–retest data were provided by a subset of 96 participants.

Study 1

Method

Participants. Participants were 246 undergraduates (149 women, 97 men; mean age = 19.2 years) at a large northeastern public university, recruited from the participant pool for introductory psychology courses. The sample was 78.9% White, 5.7% Black, 8.9% Asian, 4.1% Hispanic/Latino, and 2.4% Biracial/Other. The majority of participants expressed belief in God. In response to the multiple choice question "Do you believe there is a God?" 23.2% chose "I am sure God really exists and that He is active in my life"; 29.3% chose "Although I sometimes question His existence, I do believe in God and believe He knows of me as a person"; 26.8% selected "I don't know if there is a personal God, but I do believe in a higher power of some kind"; 13.4% indicated "I don't know if there is a personal God or a higher power of some kind, and I don't know if I ever will"; and 7.3% answered "I don't believe in a personal God or in a higher power."

The majority (56.2%) of participants identified their religious affiliation as Christian (34.5% as Roman Catholic, 10.4% various Protestant denominations, and 11.3% "Christian"). Atheists or Agnostics made up 26.8% of the participants, 4.4% identified themselves as Jewish, 1.6% as Buddhist, 1.6% as Muslim, and

9.4% chose not to identify a religious affiliation. Participants varied in their perceptions of themselves: 33.3% identified themselves as either "moderately" or "very" religious, 36.6% as "slightly" religious, and 30.1% as "not at all" religious, while 43.9% identified themselves as "moderately" or "very" spiritual, 35.8% as "slightly" spiritual, and 20.3% as "not at all" spiritual. This sample's proportion of Catholics is higher than the national average but consistent with the most recent poll data for New England (Kosmin & Keysar, 2009). The proportion of Atheists/Agnostics in this sample is also higher than the national average of 15% (Kosmin & Keysar, 2009) but comparable to a large multiuniversity study that found that 79% of college students believe in God (suggesting that 21% are either Atheist or Agnostic; Astin, Astin, Lindholm, Bryant, & Szelenyi, 2005).

Item generation. The first version of the VOSS included 53 items regarding religious perspectives on suffering. Given our sample size of 246, this met the 5:1 ratio recommended for factor analysis (Gorsuch, 1983). Items were derived by consulting with religious leaders, reading religious teachings and articles in the psychology of religion, and discussing beliefs with adherents of various faiths. Individual items were developed based on the Christian beliefs about suffering outlined previously (i.e., Free Will, Open Theism, Word–Faith, Encounter, Suffering God, and Soul-Building), beliefs about divine providence (i.e., the control God has over specific events), and unorthodox theistic beliefs (e.g., views of God as impotent or unloving). Items highlighting a range of nontheistic beliefs (e.g., suffering as random) were also included. All questions were crafted to reflect beliefs as expressed by the average layperson and were ordered randomly.

Procedures and measures. Participants selected the study entitled "Beliefs, Values, Experiences & Well-Being" from among a list of studies in the university's online participant pool. The study description clearly indicated that both religious and nonreligious people were welcome to participate. The VOSS was part of a larger questionnaire battery assessing beliefs and well-being. Instructions for the VOSS were as follows: "For each of the following statements, please select the response that best indicates the extent of your belief or disbelief. Please use 'God' however your faith defines God." Items were rated from 1 (*strongly disagree*) to 6 (*strongly agree*; see the online Supplemental Materials for the full VOSS scale).

Demographic questionnaire. Participants reported gender, ethnicity, and current religious affiliation (selected from a list of denominations, with the option to type in their affiliation if not listed). Belief in God was rated from 0 ("I don't believe in a personal God or in a higher power") to 4 ("I am sure God really exists and that He is active in my life"; Rohrbaugh & Jessor, 1975). Perceptions of self as a religious and a spiritual person were rated on 4-point scales ranging from 0 (*not at all*) to 3 (*very*; Brief Multidimensional Measure of Religiousness/Spirituality; Fetzer Institute & National Institute on Aging, 1999).

Results

Exploratory factor analysis. In Study 1, we used EFA to identify the preliminary factor structure and item loadings. We used principle axis factoring both because distribution was not completely normal for all variables (Finch & West, 1997) and because it is more effective for latent variable identification than is principal components analysis (Floyd & Widaman, 1995). We used direct oblimin rotation because factors were expected to be correlated and listwise deletion to address missing data. Scree-plot analysis indicated a five-factor model accounting for 60.3% of the variance (see Table 1). The five factors consisted of (1) an amalgamation of traditional Christian perspectives, (2) Open Theist perspectives, (3) unorthodox theistic views, (4) beliefs of suffering as random or purposeless, and (5) beliefs about suffering as the result of karma or retribution for previous wrongdoing. Of the 53 items tested, 32 were retained for use in Study 2 based on factor loadings greater than .40 (Netemeyer et al., 2003). Items that cross-loaded were retained if they had strong construct validity (i.e., a clear basis in the theological literature; Netemeyer et al., 2003). All individual subscales had Cronbach's alphas greater than .70 for the items retained (Bernstein & Nunnally, 1994).

Discussion

Results of this first study were fairly consistent with expectations. As predicted, participants made a clear distinction between traditional theistic beliefs and alternative belief systems. The emergence of nontheistic beliefs of randomness and retribution as clear factors, despite our predominantly Christian-affiliated sample, confirmed that these are important beliefs to assess. That the subscales of theistic beliefs (e.g., Free Will) did not emerge as distinct factors in the EFA was not entirely unexpected. This may

Table 1
Eigenvalues and Total Variance Explained by Five Factors in Study 1 EFA

	Initial eigenvalues			Sums of squared loadings		
Factor	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	19.60	38.43	38.43	19.29	37.82	37.82
2	4.52	8.87	47.30	4.10	8.04	45.85
3	3.08	6.04	53.33	2.63	5.16	51.02
4	1.95	3.82	57.15	1.59	3.13	54.14
5	1.59	3.12	60.27	1.14	2.24	56.38
6	1.43	2.81	63.08	1.02	2.00	58.37
7	1.28	2.50	65.58	0.85	1.67	60.04

Note. EFA = exploratory factor analysis.

have been (a) a result of our relatively young sample (i.e., college students who may not have thought in depth about suffering prior to this study), (b) an indication that the beliefs measured are indeed interconnected, or (c) a result of poorly worded questions. To address this last possibility, all items were reevaluated for clarity and conceptual validity, and adjustments were made before commencing Study 2.

Study 2

The goals of Study 2 were to determine factor structure, finalize items for inclusion, and test hypotheses related to the VOSS's validity for this sample. The VOSS's validity was examined using previously studied measures thought to access specific constructs. We also explored correlations between VOSS subscales that expressed related and opposing beliefs, looking for relationships in the expected directions. Last, we did preliminary analyses regarding the VOSS's relationship to demographic characteristics. These hypotheses are described later in the Analytic Plan section.

Method

Based on the theoretical foundation and content of the items retained from the initial item pool, we identified items representing 10 subscales for inclusion in Study 2. Six consisted of items that initially loaded onto the first, largest factor identified in the Study 1 EFA (i.e., theistic beliefs), and new items were added to further distinguish among theistic beliefs about suffering. The other four subscales were based on the other four factors identified in the Study 1 EFA. The 10 subscales specified in Study 2 were (1) Divine Responsibility (Free Will perspectives), (2) Suffering God (beliefs about God suffering with people), (3) Overcoming (beliefs about overcoming suffering through prayer and/or faith), (4) Encounter (beliefs about suffering as a divine encounter), (5) Soul-Building (beliefs about suffering as a divinely intended personal growth experience), (6) Providence (beliefs about God's control over suffering), (7) Unorthodox (unorthodox theistic views), (8) Limited Knowledge (Open Theistic views reflecting God's limited foreknowledge), (9) Retribution (beliefs related to suffering as retribution or karma), and (10) Random (beliefs about suffering as being random or purposeless). Given the 10 identified subscales, our goal was a 30-item scale. This allowed for the suggested minimum of three items per construct (Comrey, 1988) without being too onerous for participants. An additional 38 items were created to supplement the 32 items from Study 1, following the same procedure of item development. Thus, 70 items assessed the anticipated 10 factors, well within the suggested range of overdetermination for measure development (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

In addition to determining the final factor structure, Study 2 also aimed to examine the VOSS's reliability and validity. Test–retest reliability was assessed using a 14-day interval (Robinson, Shaver, & Wrightsman, 1991), examining correlation coefficients between Time 1 and Time 2 for each subscale score (Bernstein & Nunnally, 1994; DeVellis, 1991). Internal consistency reliability was examined by measuring Cronbach's alphas for each subscale. Validity was considered by examining social desirability–influenced responses and by comparing VOSS subscale scores with other measures of related constructs, with other VOSS subscale scores, and with demographic data.

Participants. Participants were 624 undergraduates (435 women, 188 men, 1 no answer; mean age = 18.7) at a large northeastern public university, recruited from the participant pool for introductory psychology courses. The sample was 80% White, 3% Black, 8% Asian, 5% Hispanic/Latino, and 4% Biracial/Other.

Most participants expressed belief in God; 31% responded to the multiple choice question "Do you believe there is a God?" with "Yes, definitely"; 31% with "Yes, I'm mostly sure there is"; 24% with "I'm not sure"; 9% with "No, I'm mostly sure there isn't"; and 5% with "No, definitely not." Selecting their religious preference from a list of religions common in the United States, 40.4% identified themselves as Catholic, 22.9% as Atheist/Agnostic, 20.5% as Protestant, 6.7% as Jewish, 3% as Amish, and 2.4% Buddhist; the remaining 4.1% consisted of less than 1% each of Baha'i, Hindu, Muslim, Christian Scientist, and Greek/Eastern Orthodox adherents.

Procedure. Recruitment procedures for Study 2 were identical to those used in Study 1. A subset of 100 participants signed up to take the survey again after 14 days to provide test–retest data, again using a web-based survey. These participants signed up separately for the study and were e-mailed a link to a new online survey containing only the VOSS.

Measures.

Demographic questionnaire. The same questionnaire as in Study 1 was used.

Christian Orthodoxy Scale (Short Form). Belief in orthodox Christian tenets was assessed using the Christian Orthodoxy Scale (Short Form; Hunsberger, 1989). Participants rate five items from 0 (*strongly disagree*) to 6 (*strongly agree*). Items are summed and interpreted such that higher scores reflect a more orthodox religious orientation. In a previous study, the scale had internal reliability coefficients of .93–.95 and strong face validity (Hunsberger, 1989). Higher orthodoxy scores are correlated with higher scores on scales of authoritarianism, interest in religion, church attendance, and other religious constructs (Hunsberger, 1989).

Mastery Scale. Individuals' sense of personal control was assessed using the Mastery Scale (Pearlin & Schooler, 1978). Participants rate seven items from 1 (*strongly disagree*) to 5 (*strongly agree*). Responses are summed to provide a total mastery score. Previous work has shown excellent reliability and construct validity (e.g., Lachman, 2006).

World Assumptions Scale. Assumptions about justice, randomness, luck, and controllability were assessed using four subscales from the World Assumptions Scale (WAS; Janoff-Bulman, 1989). A total of 16 items (per subscale) were rated from 0 (*strongly disagree*) to 4 (*strongly agree*). Previous subscale scores yielded internal reliability estimates between .60 and .83 and correlated as expected with other measures, supporting construct validity (Kaler et al., 2008).

God Image Scales. Beliefs related to divine goodness, control, and challenge were assessed with the Benevolence, Providence, and Challenge subscales of the God Image Scales (GIS; Lawrence, 1997), which consist of 36 items rated from 0 (*strongly disagree*) to 3 (*strongly agree*). Internal reliability coefficients for all GIS subscales ranged from .86 to .94 in one previous study (Lawrence, 1997). These subscales appeared to have face validity,

but other forms have not been studied. Given the lack of any other measures related to these beliefs, however, the GIS seemed the best option for exploring the VOSS's validity, tentative though any conclusions must be.

Paulhus Deception Scales. Participants' tendency to respond in socially desirable ways was evaluated with the Paulhus Deception Scales (PDS; Paulhus, 1998), which includes an Image Management (IM) subscale identifying tendencies toward social conventionality and a Self-Deceptive Enhancement (SDE) subscale measuring unconscious denial of thoughts and feelings that may threaten one's self-concept. Forty items are rated from 1 (*not true*) to 5 (*very true*). Internal reliability coefficients have been reported at .81–.86 for the IM subscale and .70–.75 for the SDE subscale (Paulhus, 1998). Several studies have indicated that the PDS had strong face, structural (Paulhus, 1998), and convergent (e.g., Lautenschlager & Flaherty, 1990; Paulhus, 1984) validity. The PDS was completed by the test–retest subsample, with the IM subscale being used to identify patterns of socially desirable responding that might influence validity and the SDE subscale to highlight how religious beliefs may relate to an individual's self-concept.

Analytic plan. Prior to analysis, the sample was split into two randomly selected groups of 312 participants each. Participants in each group did not differ significantly from one another on any demographic variable. Following this split, three phases of analyses were conducted. First, EFA was conducted to identify possible factor structures and reduce the number of items. Second, the model identified by the EFA, the hypothesized 10-factor model, and the model including a second-order Traditional Christianity factor were all examined using CFA to determine the best fit and to select final items for individual subscales (T. A. Brown, 2006; Netemeyer et al., 2003). Last, the finalized items were analyzed using the entire sample to assess reliability and validity.

We posited several hypotheses regarding the VOSS and other measures. We expected that scores on the Christian Orthodoxy Scale (Hunsberger, 1989) would be positively correlated to traditional beliefs reflected in the Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, Encounter, and Limited Knowledge subscales but negatively correlated to the Unorthodox subscale. We hypothesized that the GIS Providence subscale (Lawrence, 1997), measuring God's general control over events, would correlate positively to VOSS Providence scores and negatively to VOSS Random scores and that the GIS Challenge subscale (Lawrence, 1997) would be positively correlated with Soul-Building, because they both include beliefs about God's desire to challenge believers. We predicted that the GIS Benevolence subscale (Lawrence, 1997) would positively correlate with Suffering God, because a benevolent God is assumed in the latter beliefs.

Next, we hypothesized that the WAS Justice subscale, measuring beliefs about the inherent justice of the world, would be positively correlated with the VOSS Retribution subscale and negatively correlated with the VOSS Random subscale, because these assume a just and a randomly ordered world, respectively. We hypothesized a positive correlation between Random and the WAS Random subscale, because they both purport to access beliefs about randomness, but a negative correlation between the VOSS Providence and WAS Random or WAS Luck subscales, because, by definition, a strong belief in God's control over details would rule out the existence of luck or randomness. We hypothesized that WAS Control (Janoff-Bulman, 1989), reflecting a belief of self as in control, would correlate positively to Retribution, because belief in retribution represents a form of personal control over suffering.

Finally, we predicted that scores on Random or Providence would correlate negatively with Mastery (Pearlin & Schooler, 1978), because either could include a sense of low individual control. We also hypothesized that Soul-Building would positively correlate to Mastery, because perception of suffering as a form of challenge could provide a sense of control.

In addition to hypotheses about relationships with established measures, we also tested hypotheses about the relationships among the VOSS subscales. We hypothesized that although the VOSS subscales representing theistic beliefs (i.e., Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, Encounter, and Limited Knowledge) would likely be intercorrelated because of their common assumptions in a divine being, the correlations would vary in strength and direction depending on whether they served as theological opposites or were mutually compatible. We expected Encounter and Divine Responsibility to be positively related, because they both assume a Free Will perspective on God's role in suffering. We hypothesized that Providence and Limited Knowledge would be strongly negatively correlated, because they have opposite views regarding God's level of control. We also expected to see strong negative correlations between nontheistic beliefs and those expressing the most clear theistic orientations (e.g., Providence and Random express opposing beliefs regarding the nature of divine control).

Last, we identified expectations regarding demographics. We posited that scores on theistic subscales (i.e., Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, Encounter, and Limited Knowledge) would positively correlate with belief in God. We hypothesized that Atheist/Agnostic affiliation would be negatively correlated to these theistic subscales, whereas Christian affiliation would be positively correlated to them. We also hypothesized that there may be positive or negative correlations on beliefs central to specific denominations (e.g., Baptist affiliation correlated positively to Providence scores). Finally, we tentatively hypothesized that VOSS subscale scores may vary by race and ethnicity, based on the limited research available (e.g., Uecker, Regnerus, & Vaaler, 2007). Blacks tend to have higher levels of religiousness than do non-Hispanic Whites (Pew Forum on Religion & Public Life, 2008; Taylor, Chatters, Jayakody, & Levin, 1996), so we hypothesized that this might appear in our data as positive correlations with items on the theistic subscales mentioned earlier.

Results

Exploratory factor analysis. We first conducted an EFA of the VOSS items, using one of the randomly selected samples. Data were examined for normality, Kaiser–Meyer–Olkin's measure of sampling adequacy (.9), and Bartlett's test of sphericity (.000). As before, principal axis factoring was employed due to the nonnormality of some of the study variables, its usefulness in identifying underlying dimensions, and its generalizability to CFA (Floyd & Widaman, 1995). Direct oblimin rotation was used to allow factors to correlate as expected (Netemeyer et al., 2003). Missing data accounted for 1.4% of potential data points and were addressed

using listwise deletion. No more than 2.2% of data was missing for any variable.

The EFA in Study 1 was used primarily for determining item retention but was also helpful in suggesting that the VOSS contained a minimum of five factors. We explored models with five to seven factors—comparing eigenvalues, variance accounted for, scree plot, and item loadings—to determine which model was the best fit (Costello & Osborne, 2005). The five-factor model provided the cleanest factor structure and accounted for the minimum 50% of the variance (Netemeyer et al., 2003). As in Study 1, this model combined the Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, and Encounter subscales into a single factor. The Unorthodox, Limited Knowledge, Retribution, and Random subscales emerged as separate factors. Using this model, we selected items for inclusion in the CFA based on factor loadings greater than .5 (Hair, Anderson, Tatham, & Black, 1998) and item communalities greater than .4 (Costello & Osborne, 2005).

Next we selected four items per subscale to be used in the CFA. The two exceptions to this were the Suffering God and Encounter subscales, which each had three items that loaded much stronger than did any others. Items with cross-loadings greater than .3 were not included in the CFA (Netemeyer et al., 2003). Most items had corrected item–total correlations greater than .5 and less than .8, as is ideal (Bearden & Netemeyer, 1998). Only two items from the Soul-Building subscale had corrected item–total correlations of .84 and .81 and were retained based on their otherwise acceptable characteristics.

Confirmatory factor analysis. After identifying the five-factor model with EFA, we tested three CFA models using a second, separate, randomly selected sample of $N = 312$ from the original 624 participants. All missing data were replaced using AMOS's regression-based stochastic imputation.

First, using AMOS 17 (Arbuckle, 2008), a CFA using maximum-likelihood estimation was conducted to test the five-factor model suggested by the previous EFA (Model 1). Second, the originally hypothesized 10-factor model (Model 2) was tested. Third, a model including a second-order Christian beliefs factor with each of the traditional Christian beliefs' first-order latent variables as indicators was tested (Model 3).

Multiple fit indices were used to assess model fit, and their standard cutoff recommendations (Hu & Bentler, 1999) were employed. The model chi-square statistic was used to determine the fit of each model to the observed data (Bollen, 1989). A nonsignificant model chi-square ($p > .05$) suggests good model fit, as it indicates that the model does not differ significantly from the observed data (Kline, 2005). The comparative fit index (CFI) and root-mean-square error of approximation (RMSEA) are based on the noncentrality parameter and were also used to assess the fit of each model. A CFI greater than .95 and an RMSEA of .05 or less suggest good fit (Hu & Bentler, 1999). Aside from the use of standard measures of model fit, Akaike's information criterion (AIC; Akaike, 1974) was used to compare the fit of nonnested models. The model with the lower AIC is the preferred model because it possesses better balance of model fit and parsimony. Modification indices were used to specify CFAs in order to isolate covariance between the measurement error in individual indicators and improve model fit.

Model 1. Model 1 was a poor fit to the data, $\chi^2(655) = 1{,}763.15$, $p < .001$; $\chi^2/df = 2.69$; CFI = .83; RMSEA = .07, 90% confidence interval (CI) [.07, .08]; AIC = 2,011.15. Even after removal of the lowest loading items, the model was still a poor fit to the data, $\chi^2(397) = 1{,}180.64$, $p < .001$; $\chi^2/df = 2.97$; CFI = .84; RMSEA = .08, 90% CI [.07, .09]; AIC = 1,376.64.

Model 2. Model 2 was an acceptable fit to the data and was a better fit than Model 1, $\chi^2(360) = 595.77$, $p < .001$; $\chi^2/df = 1.66$; CFI = .95; RMSEA = .05, 90% CI [.04, .05]; AIC = 865.76. However, in Model 2 the Encounter and Divine Responsibility factors were correlated at .99, indicating a lack of discriminant validity. We decided to retain both subscales in a single factor and to allow the measurement error within items of the original subscales to covary. The new nine-factor model provided a good fit, $\chi^2(363) = 617.03$, $p < .001$; $\chi^2/df = 1.70$; CFI = .95; RMSEA = .05, 90% CI [.04–.05]; AIC = 821.03. Model 2's item loadings average was acceptable at .76 (Hair et al., 1998), and with the exception of one Divine Responsibility item that loaded at .5, individual items loaded on factors at a magnitude of .6 to .9 (Bagozzi & Yi, 1988; see Table 2).

Model 3. Given the strong correlations among the traditional Christian belief subscales, we tested a third model that specified a second-order Traditional Christian Beliefs factor with each of those subscale first-order latent variables as indicators. While Model 3 adequately fit the data, $\chi^2(390) = 694.22$, $p < .001$; $\chi^2/df = 1.78$; CFI = .94; RMSEA = .05, 90% CI [.04, .05]; AIC = 904.22), Model 2 was a better fit.

Descriptive statistics. Mean scores for individual subscales ranged from 6.6 to 11.4 (see Table 3) and were generally slightly lower than the subscale midpoint (10.5). Fairly large standard deviations indicate that scores were quite variable across participants. The shape of the distributions approximated normality for all but the Unorthodox subscale, which was positively skewed (skewness = 0.72, $SE = 0.10$).

Reliability. Reliability for the finalized subscale scores was excellent in these analyses, all within the recommended Cronbach's alphas of .7 to .9 (Bernstein & Nunnally, 1994; see Table 3). This sample's test–retest stability coefficients for all subscales after a 14-day interval ranged from .7 to .9. (see Table 3).

Validity. Although the direction and magnitude of correlations among VOSS scores and measures of related constructs are of primary interest, we are aware of the influence of family-wise error when conducting multiple tests. After Bonferroni correction for 10 comparisons, the vast majority of correlations reported in Table 4 remain significant. Subscale scores were generally related to the other measures as predicted. As would be expected from subscales measuring related concepts, many of the theistic subscales (i.e., Suffering God, Providence, Overcoming, Soul-Building, Encounter, Divine Responsibility) correlated strongly with one another. The moderately strong correlations ($r > .40$, most $ps < .001$) with the predicted established measures suggest that the VOSS is assessing the anticipated constructs, but differentiation among the subscales measuring theistic beliefs about suffering is only moderate. For example, Providence was expected to correlate negatively with WAS Randomness, and it did indeed have the largest negative correlation ($r = -.26$); but the other theistic subscales were also significantly positively related, suggesting that the relationships are not exclusive to individual subscales.

Table 2
Estimated Factor-Item Loadings and Latent Factor Correlations for Model 2

Factor and item	Loading	1	2	3	4	5	6	7	8	9
1. Unorthodox		—								
Item 1	.73									
Item 11	.88									
Item 24	.66									
2. Random		.21**	—							
Item 3	.57									
Item 12	.75									
Item 23	.73									
3. Retribution		.20**	–.23**	—						
Item 6	.76									
Item 16	.61									
Item 30	.78									
4. Limited Knowledge		.31**	.40**	.14*	—					
Item 5	.84									
Item 26	.86									
Item 29	.82									
5. Suffering God		–.28**	–.08	–.01	.28**	—				
Item 8	.82									
Item 15	.90									
Item 22	.77									
6. Providence		–.17*	–.32**	.13	.04	.68**	—			
Item 10	.83									
Item 13	.86									
Item 20	.67									
7. Overcoming		–.20**	–.27**	.14*	.17*	.74**	.69**	—		
Item 7	.79									
Item 17	.84									
Item 27	.79									
8. Soul-Building		–.18*	–.26**	.26**	.19**	.61**	.68**	.62**	—	
Item 9	.86									
Item 19	.85									
Item 28	.84									
9. Encounter/Divine Responsibility		–.19**	–.25**	.13	.26**	.85**	.82**	.83**	.84**	—
Item 4	.76									
Item 18	.62									
Item 25	.69									
Item 2	.68									
Item 14	.74									
Item 21	.46									

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

Table 4 presents correlations between the VOSS subscales and other study measures. As predicted, Suffering God, Providence, Overcoming, Soul-Building, Encounter, and Divine Responsibility were all positively correlated with Christian Orthodoxy, suggesting that they have strong convergent validity. More specifically, as expected, Soul-Building and the GIS Challenge subscale were strongly correlated, and GIS Providence was related to the VOSS's Providence subscale. Suffering God was also positively correlated with GIS Benevolence subscale scores.

Retribution and Random scores also demonstrated convergent validity. The WAS Justice and Control subscales were most strongly correlated with Retribution, suggesting that the subscale accessed beliefs that people get what they deserve. The VOSS Random subscale was correlated positively with the WAS Randomness subscale and negatively with Justice. Convergent validity is also suggested by negative correlations between Random scores and all GIS subscales, particularly GIS Providence; this was expected, given that a purposeful God who exerts control over people's lives is logically incompatible with random experiences of suffering.

Both the Unorthodox and Providence subscale scores demonstrated convergent validity in relation to established measures. Unorthodox scores displayed convergent validity by being significantly negatively correlated to the Christian Orthodoxy Scale and the GIS Benevolence subscale. As expected, Providence was negatively correlated with both WAS Randomness and Luck subscales. There was also a negative trend ($p = .05$) in the predicted direction between VOSS Providence and Mastery Scale scores.

Although many of the predicted relationships emerged, there were several gaps. First, Mastery Scale scores were not associated with Soul-Building or Random scores. Given that both of these subscales correlated strongly with other measures as predicted, this lack of relationship is not conclusive but should be taken into consideration in assessing the scales' validity. Last, we were unable to test the validity of the Limited Knowledge subscale, because we know of no established measures that assess any similar construct. At present, this subscale has face validity but no demonstrated convergent or discriminant validity.

Table 3
Study 2 Descriptive Statistics for All VOSS Subscales in Study 2

Variable	$M \pm SD$	Response range	*SE*	Cronbach's α	Test–retest correlation (14-day interval)
Unorthodox	7 ± 3.29	3–18	0.13	.77	.65
Random	11 ± 3.59	3–18	0.14	.74	.72
Retribution	10 ± 3.52	3–18	0.14	.76	.76
Limited Knowledge	8 ± 3.56	3–18	0.14	.88	.77
Suffering God	10 ± 4.07	3–18	0.16	.87	.87
Overcoming	9 ± 3.96	3–18	0.16	.85	.82
Providence	9 ± 3.87	3–18	0.16	.82	.77
Soul-Building	11 ± 4.19	3–18	0.17	.89	.88
Encounter	10 ± 3.61	3–18	0.15	.70	.82
Divine Responsibility	11 ± 3.62	3–18	0.15	.70	.79

Note. VOSS = Views of Suffering Scale.

Construct validity: Relations with demographics. As expected, belief in God was positively correlated ($r > .57$, $p < .001$) with all of the subscales that referenced traditional beliefs about God (i.e., all subscales except for Unorthodox, Random, and Retribution). Belief in God was negatively correlated ($p < .001$) with Random ($r = -.25$) and Unorthodox ($r = -.23$) beliefs. Women were slightly more likely to believe in God ($r = .13$, $p < .05$), so it was not surprising that female gender was correlated with higher scores on the theistic subscales ($r = .10–.12$, $p < .001$).

Religious affiliation and race/ethnicity were also related to scoring patterns. A multivariate analysis of variance (MANOVA) showed a significant effect for religious affiliation between Catholics, Protestants, and Atheists/Agnostics, $F(20, 994) = 15.164$, $p < .001$, based on Wilks's Lambda. Results of Tukey's post hoc comparisons indicate that Catholics and Protestants both had significantly higher averages than did Atheist/Agnostics on measures of traditional Christian beliefs (Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, Encounter, and Limited Knowledge; all subscales $p < .001$), while Atheist/Agnostics had significantly higher mean scores on the Unorthodox and Random subscales ($p < .01$). There were no clear relationships between VOSS subscales and specific denominations.

Finally, in support of our tentative hypotheses regarding race/ethnicity, MANOVAs also revealed several significant effects, $F(30, 1676.67) = 2.62$, $p < .001$, based on Wilks's Lambda. Results of Tukey's post hoc comparisons indicate that Black respondents had higher scores than did Whites on the Overcoming ($p < .001$), Providence ($p = .001$), and Divine Responsibility ($p = .006$) subscales and endorsed items from the Unorthodox ($p < .001$) or Random ($p = .02$) subscales less than did White respondents.

VOSS responses and social desirability. In our test–retest sample of participants, we examined correlations between scores on the PDS and individual VOSS subscales. Only one (Limited Knowledge) showed a modestly correlated relationship (.25) between individuals' responses on the Image Management subscale and VOSS response patterns, suggesting that social desirability concerns do not present a major concern for the VOSS's validity. We also examined Self-Deceptive Enhancement scores and found that individuals' self-deception scores were positively correlated to scores on the Unorthodox and Limited Knowledge subscales ($p < .01$) as well as the Retribution, Suffering God, Soul-Building, Encounter, and Divine Knowledge subscales ($p < .05$).

Table 4
Study 2 Correlations Between Individual VOSS Subscales and Validation Measures

Scale	Unorthodox	Random	Retribution	Limited Knowledge	Suffering God	Overcoming	Providence	Soul-Building	Encounter	Divine Responsibility
Christian Orthodoxy	–.34**	–.30**	–.04	.10*	.69**	.66**	.57**	.56**	.65**	.67**
WAS Justice	.02	–.14**	.44**	.10*	.11**	.18**	.17**	.22**	.12**	.22**
WAS Randomness	.23**	.55**	.01	.23**	–.22**	–.22**	–.26**	–.16**	–.16**	–.23**
WAS Luck	–.03	.04	.00	–.01	.05	.02	–.10*	.02	.01	.03
WAS Control	.04	–.05	.33**	–.01	–.08	.02	–.02	.00	–.04	.03
GIS Benevolence	–.19**	–.22**	.10*	.17**	.56**	.54**	.47**	.62**	.64**	.63**
GIS Challenge	–.32**	–.27**	.10*	.14**	.59**	.57**	.47**	.69**	.65**	.64**
GIS Providence	–.27**	–.43**	–.03	–.06	.60**	.58**	.61**	.38**	.52**	.49**
Mastery	–.20**	.01	–.90*	–.12**	–.05	–.06	–.08	–.02	–.07	–.05
PDS-IM	–.10	–.07	.00	–.25*	–.06	–.10	–.08	.01	–.07	–.02

Note. VOSS = Views of Suffering Scale; Christian Orthodoxy = Christian Orthodoxy Scale (Short Form); WAS = World Assumptions Scale; GIS = God Image Scales; Mastery = Mastery Scale; PDS IM = Paulhus Deception Scales–Image Management.
* $p < .05$. ** $p < .01$.

Discussion

Study 2 provided important information about the factor structure, reliability, and construct validity of the VOSS. EFA with a large sample provided preliminary information about the measure's factor structure, which was then used to test three models with CFA. Results suggested that while Christian beliefs about suffering are strongly related, the factor structure of the VOSS is best conceptualized as nine distinct factors. Although the CFA indicated that the Encounter and Divine Responsibility subscales should be considered a single factor, condensing these items into a single subscale would be premature at this stage of the VOSS's development. The subscales contain related but theologically distinct ideas, and it seems likely that as more research is done with the VOSS the differences may emerge more distinctly, so both subscales should be retained until the factor structure can be verified. Finally, VOSS scores demonstrated strong reliability and validity. Reliability for both test–retest and individual subscale score's alphas was in the recommended range (Bernstein & Nunnally, 1994). Good construct and convergent validity was demonstrated by correlations of the VOSS with other established measures and known demographic information.

General Discussion

Overall, results from these two studies indicate that the VOSS represents a reliable, structurally sound measure of individuals' views of suffering. It is the first measure of its kind and represents an important addition to the study of religious beliefs. In addition to its strong theoretical framework, the VOSS demonstrates excellent psychometrics. Although the subscales measuring traditional Christian beliefs are intercorrelated, they also show clear construct validity and are distinct from one another. Predicted relationships between VOSS subscales and established measures were found in almost every case, indicating strong convergent validity.

These studies also represent an important contribution to the literature regarding religious beliefs and social desirability. Although some researchers have concluded that there is no relationship between social desirability and religious beliefs (e.g., Eysenck, 1999; Lewis, 2000; Watson, Morris, Foster, Hood, 1986), others have suggested that a distinction between other-deception and self-deception must be made (Leak & Fish, 1989). Our research indicates that a distinction between other- and self-deception is indeed important.

Implications for Research

The known associations between religion and physical and emotional well-being, along with the lack of reliable and valid measures of theodicies, make for a substantial gap in scientific knowledge; the VOSS provides a tool to further explore these relationships. At present, little is known about how beliefs about suffering affect decisions to access medical care, social support, or religious support. It is not known how beliefs about suffering inform coping decisions, reactions to trauma, or resilience; nor is it known which beliefs may make people more prone to depression or anxiety or which may buffer against negative sequelae of trauma.

Information about beliefs themselves can also be explored using the VOSS. How are beliefs about suffering formed? Do people absorb official religious teaching, or learn from their families or social networks? How much does exposure to trauma influence specific beliefs? How stable or amenable to change are these beliefs about suffering? What is the greatest source of change or stability for them? These are just a few of the research questions that can be addressed with this newly developed measure of religious beliefs about suffering.

Implications for Clinical Use

While the primary usefulness of the VOSS will initially be in research, it also has potential clinical applications. Once relationships between beliefs about suffering and other constructs of interest are identified, the VOSS may be an important assessment tool for highlighting areas for intervention and clinical focus for therapists who integrate spirituality into their work. Identification of beliefs that cause the most distress, provide the most comfort, or foster the most positive coping strategies may inform clinical interventions.

Strengths, Limitations, and Future Directions

The VOSS has several important strengths. The use of two large samples allowed for systematic development and multiple analyses that ensure sound psychometrics. That the VOSS is grounded in a solid theological base and was developed through rigorous analysis sets it apart from other measures of religious belief, ensuring that the constructs identified are in fact those measured (a problematic issue in previous research; e.g., Daugherty, West, Williams, & Brockman, 2009). Another strength of the VOSS is that response patterns do not appear to be unduly influenced by socially desirable responding, since even the Limited Knowledge subscale was only modestly correlated to individuals' tendencies to answer in socially conventional ways.

Limitations of the present studies include the use of convenience samples of undergraduate students, limiting generalizability. Because of their relatively young age, many students may not have given much thought to suffering or religious beliefs more generally. The sample's ethnic and religious diversity was limited, and nonwhite ethnicities, specific Protestant denominations, and other religious belief systems were each represented by only a small percentage of our participants. Further, our sample was predominantly female; women tend to be more religious than men (Francis, 1997), so the proportion of women may have influenced the differentiation that emerged between the theistic subscales.

Future research should include participants from varied ethnic and religious groups to address these norming deficits and should focus on norming the VOSS using samples with different religious and cultural characteristics. Validity should also be examined in each new sample, utilizing the most recent measures and information about religious beliefs. Future research should also continue to explore the relationship between social desirability and religious beliefs, particularly the role that self-deception may play in individuals' responses.

Last, at present the usefulness of the VOSS is limited to the North American context. We consciously streamlined the content of the VOSS in order to keep the measure succinct, with the result

that not every religious group (or even every Christian theology) in North America is represented. Adherents of Islam, Hinduism, and Buddhism in particular will note that only simplistic beliefs from these religions—ones most likely to be familiar to the greatest number of Americans—are included in the VOSS. In light of this fact, one avenue for future research will be to expand the VOSS's applicability by adding additional subscales elaborating on more nuanced beliefs particularly relevant to other regions or religious groups. Additional studies examining the VOSS in a variety of North American populations will also be important to ensure its usefulness among different belief systems.

References

Akaike, H. (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control, 19,* 716–723. doi:10.1109/TAC.1974.1100705

Aldwin, C. (2007). *Stress, coping, and development: An integrative perspective* (2nd ed.). New York, NY: Guilford Press.

Anantharaman, T. (2001). The Hindu view on suffering, rebirth, and the overcoming of evil. In P. Koslowski (Ed.), *The origin and the overcoming of evil and suffering in the world religions* (pp. 100–112). Norwell, MA: Kluwer Academic.

Aquinas. (1944). Summa contra gentiles. In A. C. Pegis (Ed.), *Basic writings of St. Thomas Aquinas* (Vol. 2, pp. 3–224). New York, NY: Random House.

Arbuckle, J. L. (2008). *Amos 17.0 user's guide.* Chicago, IL: SPSS.

Aslan, A. (2001). The Fall and the overcoming of evil and suffering in Islam. In P. Koslowski (Ed.), *The origin and the overcoming of evil and suffering in the world religions* (pp. 24–47). Norwell, MA: Kluwer Academic.

Astin, A. W., Astin, H. S., Lindholm, J. A., Bryant, A. N., & Szelenyi, K. (2005). *The spiritual life of college students: A national study of college students' search for meaning and purpose.* Los Angeles, CA: Higher Education Research Institute, University of California, Los Angeles.

Aten, J. D., Moore, M., Denney, R. M., Bayne, T., Stagg, A., Owens, S., . . . Jones, C. (2008). God images following Hurricane Katrina in south Mississippi: An exploratory study. *Journal of Psychology and Theology, 36,* 249–257.

Augustine. (1937). *On free will* (F. S. Tourscher, Trans.). Philadelphia, PA: Reilly.

Augustine. (1948). The enchiridion. In W. J. Oates (Ed.), *Basic writings of Saint Augustine* (Vol. 1, pp. 548–732). New York, NY: Random House.

Avants, S. K., Marcotte, D., Arnold, R., & Margolin, A. (2003). Spiritual beliefs, world assumptions, and HIV risk behavior among heroin and cocaine users. *Psychology of Addictive Behaviors, 17,* 159–162. doi:10.1037/0893-164X.17.2.159

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16,* 74–94. doi:10.1007/BF02723327

Bearden, W., & Netemeyer, R. (1998). *Handbook of marketing scales: Multi-item measures for marketing and consumer behavior research* (2nd ed.). Thousand Oaks, CA: Sage.

Berger, P. L. (1967). *The sacred canopy.* Garden City, NY: Doubleday.

Bernstein, I. H., & Nunnally, J. C. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

Bollen, K. A. (1989). *Structural equations with latent variables.* New York, NY: Wiley.

Boyd, G. A. (2000). *God of the possible: A biblical introduction to the open view of God.* Grand Rapids, MI: Baker Books.

Brown, R. F. (1999). Theodicy. In E. Fahlbusch & G. Bromiley (Eds.), *The encyclopedia of Christianity* (Vol. 5, pp. 353–356). Grand Rapids, MI: Eerdmans.

Brown, T. A. (2006). *Confirmatory factor analysis for applied research.* New York, NY: Guilford Press.

Büssing, A., Ostermann, T., & Matthiessen, P. F. (2005). The role of religion and spirituality in medical patients in Germany. *Journal of Religion and Health, 44,* 321–340. doi:10.1007/s10943-005-5468-8

Comrey, A. L. (1988). Factor-analytic methods of scale development in personality and clinical psychology. *Journal of Consulting and Clinical Psychology, 56,* 754–761. doi:10.1037/0022-006X.56.5.754

Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation, 10,* 1–9.

Daugherty, T., West, A., Williams, M., & Brockman, J. (2009). Measuring theodicy: Individual differences in the perception of divine intervention. *Pastoral Psychology, 58,* 43–47. doi:10.1007/s11089-008-0164-8

DeVellis, R. (1991). *Scale development.* Newbury Park, CA: Sage.

Diesendruck, G., & Haber, L. (2009). God's categories: The effect of religiosity on children's teleological and essentialist beliefs about categories. *Cognition, 110,* 100–114. doi:10.1016/j.cognition.2008.11.001

Edmondson, D., Chaudoir, S. C., Mills, M. A., Park, C. L., Holub, J., & Bartkowiak, J. M. (2011). From shattered assumptions to weakened worldviews: Trauma symptoms signal anxiety buffer disruption. *Journal of Loss and Trauma, 16,* 358–385.

Edmondson, D., Park, C. L., Chaudoir, S. R., & Wortmann, J. (2008). Death without God: Religious struggle, death concerns, and depression in the terminally ill. *Psychological Science, 19,* 628–632.

Ellison, C. G., & George, L. K. (1994). Religious involvement, social ties, and social support in a southeastern community. *Journal for the Scientific Study of Religion, 33,* 46–61. doi:10.2307/1386636

Exline, J. J., Yali, A. M., & Lobel, M. (1999). When God disappoints: Difficulty forgiving God and its role in negative emotion. *Journal of Health Psychology, 4,* 365–379. doi:10.1177/135910539900400306

Eysenck, M. W. (1999). A response to Christopher Alan Lewis (1999), "Is the relationship between religiosity and personality 'contaminated' by social desirability as assessed by the Lie Scale?" *Mental Health, Religion and Culture, 2,* 115–116. doi:10.1080/13674679908406339

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4,* 272–299. doi:10.1037/1082-989X.4.3.272

Fetzer Institute & National Institute on Aging. (1999). *Multidimensional measurement of religiousness/spirituality for use in health research: A report of the Fetzer Institute/National Institute on Aging Working Group.* Kalamazoo, MI: Fetzer Institute.

Finch, J. F., & West, S. G. (1997). The investigation of personality structure: Statistical models. *Journal of Research in Personality, 31,* 439–485. doi:10.1006/jrpe.1997.2194

Floyd, F., & Widaman, K. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment, 7,* 286–299. doi:10.1037/1040-3590.7.3.286

Francis, L. J. (1997). The psychology of gender differences in religion: A review of empirical research. *Religion, 27,* 81–96. doi:10.1006/reli.1996.0066

Furnham, A., & Brown, L. B. (1992). Theodicy: A neglected aspect of the psychology of religion. *International Journal for the Psychology of Religion, 2,* 37–45. doi:10.1207/s15327582ijpr0201_4

Gallup Poll. (2010). *Religion.* Retrieved from http://www.gallup.com/poll/1690/Religion.aspx

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.

Gorsuch, R. L., & McPherson, S. E. (1989). Intrinsic/extrinsic measurement: I/e-revised and single-item scales. *Journal for the Scientific Study of Religion, 28,* 348–354. doi:10.2307/1386745

Haber, J. R., Jacob, T., & Spangler, D. J. C. (2007). Dimensions of religion/spirituality and relevance to health research. *International Jour-*

nal for the Psychology of Religion, 17, 265–288. doi:10.1080/10508610701572770

Hagin, K. E. (1966). *Right and wrong thinking.* Tulsa, OK: Kenneth Hagin Ministries.

Hair, J. F., Anderson, R. E., Tatham, T. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hall, M. E., & Johnson, E. L. (2001). Theodicy and therapy: Philosophical/theological contributions to the problem of suffering. *Journal of Psychology and Christianity, 20,* 5–17.

Hick, J. (1966). *Evil and the God of love.* New York, NY: Harper & Row.

Hill, P. C. (in press). Measurement assessment and issues in the psychology of religion and spirituality. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (2nd ed.). New York, NY: Guilford Press.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1–55. doi:10.1080/10705519909540118

Hunsberger, B. (1989). A short version of the Christian Orthodoxy Scale. *Journal for the Scientific Study of Religion, 28,* 360–365. doi:10.2307/1386747

Idler, E. L., Boulifard, D. A., Labouvie, E., Chen, Y. Y., Krause, T. J., & Contrada, R. J. (2009). Looking inside the black box of "attendance at services": New measures for exploring an old dimension in religion and health research. *International Journal for the Psychology of Religion, 19,* 1–20. doi:10.1080/10508610802471096

Idler, E. L., Musick, M. A., Ellison, C. G., George, L. K., Krause, N., Ory, M. G., . . . Williams, D. R. (2003). Measuring multiple dimensions of religion and spirituality for health research: Conceptual background and findings from the 1998 General Social Survey. *Research on Aging, 25,* 327–365. doi:10.1177/0164027503025004001

Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social Cognition, 7,* 113–136. doi:10.1521/soco.1989.7.2.113

Kaler, M. E., Frazier, P. A., Anders, S. L., Tashiro, T., Tomich, P., Tennen, H., & Park, C. (2008). Assessing the psychometric properties of the World Assumptions Scale. *Journal of Traumatic Stress, 21,* 326–332. doi:10.1002/jts.20343

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York, NY: Guilford Press.

Koenig, H. G. (2004). Religion, spirituality, and medicine: Research findings and implications for clinical practice. *Southern Medical Journal, 97,* 1194–1200. doi:10.1097/01.SMJ.0000146489.21837.CE

Kosmin, B., & Keysar, G. (2009). *American Religious Identification Survey 2008: Summary report.* Hartford, CT: Trinity College.

Krause, N., Liang, J., Shaw, B. A., Sugisawa, H., Kim, H., & Sugihara, Y. (2002). Religion, death of a loved one, and hypertension among older adults in Japan. *Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 57,* S96–S107. doi:10.1093/geronb/57.2.S96

Lachman, M. E. (2006). Perceived control over aging-related declines: Adaptive beliefs and behaviors. *Current Directions in Psychological Science, 15,* 282–286. doi:10.1111/j.1467-8721.2006.00453.x

Ladd, K. L., & Spilka, B. (2006). Inward, outward, upward prayer: Scale reliability and validation. *Journal for the Scientific Study of Religion, 45,* 233–251. doi:10.1111/j.1468-5906.2006.00303.x

Lautenschlager, G. J., & Flaherty, V. L. (1990). Computer administration of questions: More desirable or more social desirability? *Journal of Applied Psychology, 75,* 310–314. doi:10.1037/0021-9010.75.3.310

Lawrence, R. T. (1997). Measuring the image of God: The God Image Inventory and the God Image Scales. *Journal of Psychology and Theology, 25,* 214–226.

Leak, G., & Fish, S. (1989). Religious orientation, impression management, and self-deception: Toward a clarification of the link between religiosity and social desirability. *Journal for the Scientific Study of Religion, 28,* 355–359. doi:10.2307/1386746

Leaman, O. (2001). Job and suffering in Talmudic and Kabbalistic Judaism. In P. Koslowski (Ed.), *The origin and the overcoming of evil and suffering in the world religions* (pp. 80–99). Norwell, MA: Kluwer Academic.

Lee, B. Y., & Newberg, A. B. (2005). Religion and health: A review and critical analysis. *Zygon, 40,* 443–468. doi:10.1111/j.1467-9744.2005.00674.x

Lewis, C. A. (2000). The religiosity-psychoticism relationship and the two factors of social desirability: A response to Michael W. Eysenck (1999). *Mental Health, Religion and Culture, 3,* 39–45. doi:10.1080/13674670050002090

Masters, K., & Hooker, S. (in press). Religion, spirituality, and health. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (2nd ed.). New York, NY: Guilford Press.

Metz, J. B., & Ashley, J. M. (1994). Suffering unto God. *Critical Inquiry, 20,* 611–622. doi:10.1086/448730

Moltmann, J. (1993). *The crucified God: The cross of Christ as the foundation and criticism of Christian theology.* Minneapolis, MN: Fortress Press.

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scale development: Issues and applications.* Thousand Oaks, CA: Sage.

Newman, G. E., Blok, S. V., & Rips, L. J. (2006). Beliefs in afterlife as a by-product of persistence judgments. *Behavioral and Brain Sciences, 29,* 480–481. doi:10.1017/S0140525X06429101

Pargament, K. I., Cole, B., Vandecreek, L., Belavich, T., Brant, C., & Perez, L. (1999). The vigil: Religion and the search for control in the hospital waiting room. *Journal of Health Psychology, 4,* 327–341. doi:10.1177/135910539900400303

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology, 46,* 598–609. doi:10.1037/0022-3514.46.3.598

Paulhus, D. L. (1998). *Paulhus Deception Scales: The Balanced Inventory of Desirable Responding (BIDR-7).* North Tonawanda, NY: Multi-Health Systems.

Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, 19,* 2–21. doi:10.2307/2136319

Pew Forum on Religion & Public Life. (2008). *The U.S. Religious Landscape Survey reveals a fluid and diverse pattern of faith.* Retrieved from http://pewresearch.org/pubs/743/united-states-religion

Piper, J., & Ergenbright, R. (2002). *The misery of Job and the mercy of God.* Wheaton, IL: Crossway.

Providence. (2000). In J. Bowker (Ed.), *The Concise Oxford Dictionary of World Religions.* Retrieved from http://www.oxfordreference.com

Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 1–15). San Diego, CA: Academic Press.

Rohrbaugh, J., & Jessor, R. (1975). Religiosity in youth: A personal control against deviant behavior. *Journal of Personality, 43,* 136–155. doi:10.1111/j.1467-6494.1975.tb00577.x

Savelle, J. (1982). *If Satan can't steal your joy.* Tulsa, OK: Harrison House.

Shim, J. R. (2001). Evil and suffering in Buddhism. In P. Koslowski (Ed.), *The origin and the overcoming of evil and suffering in the world religions* (pp. 8–23). Norwell, MA: Kluwer Academic.

Spilka, B., Shaver, P., & Kirkpatrick, L. (1997). A general attribution theory for the psychology of religion. In B. Spilka & D. McIntosh (Eds.), *The psychology of religion: Theoretical approaches* (pp. 153–170). Boulder, CO: Westview Press.

Strawbridge, W. J., Shema, S. J., Cohen, R. D., & Kaplan, G. A. (2001). Religious attendance increases survival by improving and maintaining

good health behaviors, mental health, and social relationships. *Annals of Behavioral Medicine, 23,* 68–74. doi:10.1207/S15324796ABM2301_10

Taylor, R. J., Chatters, L. M., Jayakody, R., & Levin, J. S. (1996). Black and white differences in religious participation: A multisample comparison. *Journal for the Scientific Study of Religion, 35,* 403–410. doi:10.2307/1386415

Uecker, J. E., Regnerus, M. D., & Vaaler, M. L. (2007). Losing my religion: The social sources of religious decline in early adulthood. *Social Forces, 85,* 1667–1692. doi:10.1353/sof.2007.0083

Watson, P. J., Morris, R. J., Foster, J. E., & Hood, R. W. (1986). Religiosity and social desirability. *Journal for the Scientific Study of Religion, 25,* 215–232. doi:10.2307/1385478

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Call for Nominations

The Publications and Communications (P&C) Board of the American Psychological Association has opened nominations for the editorships of **Behavioral Neuroscience, Journal of Applied Psychology, Journal of Educational Psychology, Journal of Personality and Social Psychology: Interpersonal Relations and Group Processes, Psychological Bulletin,** and **Psychology of Addictive Behaviors** for the years 2015–2020. Mark S. Blumberg, PhD, Steve W. J. Kozlowski, PhD, Arthur Graesser, PhD, Jeffry A. Simpson, PhD, Stephen P. Hinshaw, PhD, and Stephen A. Maisto, PhD, ABPP, respectively, are the incumbent editors.

Candidates should be members of APA and should be available to start receiving manuscripts in early 2014 to prepare for issues published in 2015. Please note that the P&C Board encourages participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. Self-nominations are also encouraged.

Search chairs have been appointed as follows:

- **Behavioral Neuroscience,** John Disterhoft, PhD
- **Journal of Applied Psychology,** Neal Schmitt, PhD
- **Journal of Educational Psychology,** Neal Schmitt, PhD, and Jennifer Crocker, PhD
- **Journal of Personality and Social Psychology: Interpersonal Relations and Group Processes,** David Dunning, PhD
- **Psychological Bulletin,** Norman Abeles, PhD
- **Psychology of Addictive Behaviors,** Jennifer Crocker, PhD, and Lillian Comas-Diaz, PhD

Candidates should be nominated by accessing APA's EditorQuest site on the Web. Using your Web browser, go to http://editorquest.apa.org. On the Home menu on the left, find "Guests." Next, click on the link "Submit a Nomination," enter your nominee's information, and click "Submit."

Prepared statements of one page or less in support of a nominee can also be submitted by e-mail to Sarah Wiederkehr, P&C Board Search Liaison, at swiederkehr@apa.org.

Deadline for accepting nominations is January 11, 2013, when reviews will begin.