

# Meaning in Life Moderates the Relationship Between Sacred Loss/Desecration and Health

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*According to sanctification theory, religious people tend to imbue certain aspects of their lives with spiritual character and significance. Moreover, they take active steps to preserve and protect sacred aspects of their lives that might be threatened. If they are successful, they derive a deep sense of satisfaction and well-being. However, when stressful events arise, some individuals are not able to preserve and protect the facets of their lives that they have come to view as sacred. The resulting sacred loss/desecration can be associated with physical and mental health problems. The purpose of the current study is to see if a sense of meaning in life buffers (i.e., moderates) the relationship between sacred loss/desecration and four measures of health: physical functioning, the number of chronic conditions, symptoms of physical illness, and self-rated health. Data from a recent nationwide survey (N = 2,104–2,107) suggest that the negative relationship between sacred loss/desecration and each health outcome is lower for people who have a stronger sense of meaning in life.*

**Keywords:** *sacred loss, meaning in life, physical health status.*

## INTRODUCTION

In the discussion that follows, we develop the theoretical underpinnings of our study hypotheses by exploring two issues. The first deals with sanctification theory while the second has to do with meaning in life.

### Sanctification Theory

Although a considerable number of researchers have empirically assessed the relationship between religion and health (see Koenig, King, and Carsen 2012, for a review of this research), theoretical explanations for their findings remain underdeveloped (Krause 2011). A notable exception to this state of affairs is the sanctification theory, which was devised by Pargament et al. (2005). According to this perspective, people who are religiously oriented often imbue many aspects of their lives with spiritual character and significance. Moreover, they take active steps to preserve and protect sacred aspects of their lives that might be threatened. If they are successful, they derive a deep sense of satisfaction and well-being. However, Pargament et al. (2005) go on to note that some individuals are not able to preserve and protect the facets of their lives that they have come to view as sacred. When this occurs, they are likely to experience a deep and

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disturbing sense of sacred loss and sacred desecration. Stated more formally: "A sacred loss . . . involves the perception that something once viewed as a manifestation of God or endowed with sacred qualities is lost, while a desecration . . . occurs when the individual perceives the sacred aspect of life as violated . . ." (Hawley et al. 2015:146).

A straightforward example helps to bring the core elements of sanctification theory into sharper focus. As research by Krumrei, Mahoney, and Pargament (2011) reveals, some people view their marriages in sacred ways and, as a result, they take active steps to preserve and protect this important source of the sacred in their lives. Unfortunately, not all marriages are successful and some end in a divorce. If individuals who view their marriage as sacred experience a divorce, they are at risk for being overwhelmed by a sense of sacred loss and desecration.

Sanctification theory has been used to explore a wide range of issues that have been of longstanding interest to social and behavioral scientists who study religion. For example, this theoretical perspective has been evoked to study negative attitudes toward Muslims (Abu-Raiya et al. 2008), negative attitudes toward Jews (Pargament et al. 2007), and negative attitudes toward gays and lesbians (Trevino et al. 2012). In addition, sanctification theory has been used to illuminate the forgiveness process (Davis, Hook, and Worthington 2008).

### **Meaning in Life as a Coping Resource**

A key issue that arises in the study of sanctification theory has to do with specifying why some people are able to successfully defend the things they define as sacred while others are unable to do so. As Pargament et al. (2005) report, some individuals rely on religious coping responses that offset the effects of sacred loss and desecration on health and psychological well-being. The purpose of the current study is to pursue this issue further by building upon the work of Pargament and his colleagues in three potentially important ways (Pargament et al. 2005).

First, most of the research on sanctification theory has been conducted with special populations, such as patients in medical rehabilitation (Magyar-Russell et al. 2013), college students who have experienced a romantic breakup (Hawley and Mahoney 2013; Hawley et al. 2015), college students who experienced a traumatic life event (Park, Mills, and Edomson 2012), or Muslims residing in the United States shortly after the 9-11 tragedy (Abu-Raiya, Pargament, and Mahoney 2011). This makes it difficult to determine whether the findings can be generalized to the wider population. In fact, we were able to locate only one study that examined issues involving sacred loss and desecration in a community sample (Pargament et al. 2005). Even so, the sample in this study was fairly small ( $N = 117$ ), which raises statistical power concerns. As discussed below, we aim to address these issues by assessing sacred losses with data from a large nationally representative sample of adults ( $N = 2,107$ ).

Second, as noted above, Pargament et al. (2005) assess whether religious coping responses mediate the relationship between sacred loss/desecration and health-related outcomes. However, there is another way to specify the relationships among these constructs. More specifically, coping responses may moderate the relationship between sacred loss and desecration and health-related outcomes. It is important to briefly reflect on the differences between the two. In mediation analyses, researchers assume that the relationships among the core variables are additive and linear. This means that the relationship between sacred loss/desecration and some health-related outcome is constant across all levels of religious coping responses. In contrast, tests of moderating relationships assume that a statistic interaction effect is present in the data. This means that the relationship between sacred loss/desecration on a health-related outcome varies across the level of a religious coping response: when religious coping is low, the magnitude of the relationship between sacred loss/desecration is large, but when the use of religious coping responses is high, the magnitude of the relationship between sacred loss/desecration is smaller. As Wheaton (1985) demonstrated decades ago, both mediation and moderation effects can be present at the same time, so neither model is "incorrect." Viewed from this perspective, the goal of the current study is to

round out the literature on sacred loss/desecration by bringing potentially important moderating effects of coping resources to the foreground.

The third way in which we hope to contribute to sanctification theory has to do with the choice of coping responses. As the findings from the study by Pargament et al. (2005) reveal, religious coping responses play an important role in the process of dealing with sacred loss/desecration. However, as researchers have known for some time, people who are faced with stressful experiences may choose to rely on a number of other coping resources, as well. The focal coping response in the analyses that are provided below is a sense of meaning in life. Before turning to the study findings, it is important to define a sense of meaning in life and discuss why it may play a role in the process of coping with sacred loss/desecration.

Defining a sense of meaning in life has been a notoriously difficult task. Consequently, no effort is made to resolve this long-standing issue in the current study. Instead, we rely on the definition of meaning that is provided by Reker (2000). He argues that meaning is “the cognizance of order, coherence, and purpose in one’s existence, the pursuit and attainment of worthwhile goals, and an accompanying sense of fulfillment” (Reker 2000:41).

At first, it may be somewhat difficult to see why a strong sense of meaning in life may moderate the relationship between sacred loss/desecration and health. Part of the problem arises from the fact that some researchers have gone to great lengths to argue that stress tends to erode a person’s sense of meaning in life (e.g., Janoff-Bullman 1992). We will address this issue empirically in the analyses that are provided below. But for the moment, it is important to delve more deeply into the reasons why meaning may operate as a coping resource, as well.

The intellectual roots of the notion that meaning is a coping resource may be traced back to the classic work of Victor Frankl. He argued that “suffering ceases to be suffering at the moment it finds a meaning” ([1946] 1984:135). But more than this, Frankl saw meaning as being one of the most important resources for coping with adversity: “There is nothing in the world, I would venture to say, that would so effectively help one to survive even the worst conditions as the knowledge that there is a meaning in one’s life” ([1946] 1984:126). Consistent with the views of Frankl ([1946] 1984), findings from a number of studies suggest that a sense of meaning in life moderates the effects of stress on health (e.g., Haynes et al. 2015; Krause 2007; Krause, Pargament, and Ironson 2017; Krok 2016).

There are five reasons why people who have a strong sense of meaning in life may be able to cope more effectively with a sacred loss/desecration. First, based on evidence from a diary study, Maio, Zhang, and Gan (2016) report that people with a strong sense of meaning in life are more likely to engage in proactive coping behaviors. This means that they take active steps to avoid or alter the course of an unwanted event before the stressor actually occurs. So, for example, individuals who are having difficulty in their marriages may seek assistance from a marital counselor in order to avoid a divorce.

Second, as Park (2010) argues, a sense of meaning in life may play an important role in the way stressful events are appraised. This happens because the event can be folded into a preexisting interpretive framework that provides an explanation for what has happened. So, for example, an individual may have developed a view of life that specifies that stress is an inevitable part of living that will ultimately dissipate with time or he or she may reframe the event from a religious perspective that says the stressor is an opportunity to grow spiritually or in one’s faith.

Third, as Linley and Joseph (2011) demonstrate, people with a strong sense of meaning are more likely to search for the positive aspects of an otherwise negative event thereby enabling them to experience growth in the face of adversity. This is important because a well-developed literature indicates that people who experience growth in the face of adversity tend to enjoy better physical and mental health (e.g., Joseph and Linley 2006).

Krause (2007) provides the fourth reason why a sense of meaning in life may be an important resource for dealing with stress. He maintains that a sense of meaning is composed, in part, of having a core set of values as well as a clear sense of purpose in life. The following example shows

why these components of meaning are important for coping with stress. Assume, for example, that an older man values the role of being a grandfather highly. Assume further that this role provides him with a deep sense of purpose in life because it provides the opportunity to nurture members of the next generation. Consequently, when stressors arise in other areas of life, being able to retain a valued sense of purpose is an important source of comfort that provides a secure base for dealing with the vicissitudes created by the stressor.

The fifth reason why meaning in life may be a beneficial coping resource is also found in the work of Krause (2007). He argues that in addition to being composed of values and a sense of purpose, meaning in life also involves having goals, which are plans for the future. When stressors are encountered in life, having goals that can be attained provides a sense of hope and instills a realization that even though things may seem bleak at the moment, there are still reasons to carry on.

Based on the theoretical rationale that is provided above, the purpose of the current study is to empirically evaluate the following hypotheses:

- H1: People who experience a sacred loss/desecration will report having more physical health problems than individuals who have not be confronted by a sacred loss/desecration.
- H2: The magnitude of the negative relationship between a sacred loss/desecration and health will be smaller (i.e., it will be moderated) among study participants who have a stronger sense of meaning in life.

## DATA AND METHODS

### Sample

The data for this study come from the Landmark Spirituality and Health Survey, which is a nationwide, face-to-face, random probability survey of people age 18 and older who live in the coterminous United States. This study was funded by the John Templeton Foundation. The interviews, which were completed in 2014, were conducted by the National Opinion Research Center (NORC). The response rate for this study was 50 percent. A total of 3,010 interviews were completed successfully. The sample was stratified into the following age groups: age 18–40 ( $N = 1,000$ ), age 41–64 ( $N = 1,002$ ), and age 65 and older ( $N = 1,008$ ).

Two groups of study participants were excluded from the analyses that are provided below. The first has to do with the way in which the questions on sacred loss/desecration were administered. The participants in the current study were presented with a checklist that was composed of 12 life events they may have encountered in the past 18 months. The respondents were asked to identify the life event that was most stressful for them. Following this, study participants were told to keep this event in mind as they answer the questions on sacred loss/desecration. A total of 707 study participants were excluded from the current study because they did not encounter a major stressor in the previous 18 months. In addition, a second group of study participants were excluded because they self-identified as atheists ( $N = 78$ ). Questions on sacred loss/desecration were not administered to them. After using listwise deletion to deal with missing values, between 2,104 and 2,107 cases were left for the analyses that are provided below (i.e., the item nonresponse rate was approximately 5 percent).

Preliminary analyses reveal that the average age of the study participants is 45.8 years ( $SD = 17.2$  years), 42.6 percent are men, 44.1 percent were married at the time of the interview, and the study participants completed an average of 13.5 years of schooling ( $SD = 3.1$  years). This descriptive profile, as well as the findings that are presented below, are based on data that have been weighted.

## Measures

### *Functional Disability*

Four measures of health served as outcome measures in the analyses that are provided below. Using a full spectrum of indicators provides an opportunity to see if the findings from the current study are robust.

The first health measure consisted of 14 indicators of functional disability that was taken from the work of Liang (1990). This scale consisted of instrumental activities of daily living (IADL) (e.g., the ability to use a telephone; the ability to stoop, crouch, or kneel) as well as activities of daily living (ADL) (e.g., the ability to dress and undress oneself; the ability to get out of bed). A high score on this measure stands for greater difficulty with ADL and IADL tasks ( $M = 1.3$ ;  $SD = 2.7$ ; range = 0–14).

### *Chronic Conditions*

The second health measure consisted of a 13-item checklist of chronic health problems that was taken from the work of Liang (1990). Included in this list are asthma, hypertension, and diabetes. A high score represents more chronic conditions ( $M = 1.4$ ;  $SD = 1.7$ ; range = 0–10).

### *Symptoms of Physical Illness*

The third measure of health consisted of an index of symptoms of physical illness that was devised by Magaziner et al. (1996). Among the symptoms in this scale are frequent headaches, shortness of breath, pains in the back or spine, and dizziness. A count was obtained of the number of symptoms that was experienced by study participants in the six months prior to the interview ( $M = 2.1$ ;  $SD = 2.3$ ; range = 0–11). A high score denotes more physical symptoms.

### *Self-Rated Health*

The fourth health outcome asks study participants to rate their overall health at the time of the interview (i.e., How would you rate your overall health at the present time?) (Idler, Hudson, and Leventhal 1999). A high score denotes a more favorable health rating ( $M = 2.9$ ;  $SD = .7$ ; range = 1–4).

### *Sacred Loss/Desecration*

Four items were taken from the work of Pargament et al. (2005) to assess sacred loss/desecration. The four items are: “Something I held sacred was threatened”; “Something that came from God was torn from my life”; “Something of sacred importance in my life was lost”; and “A sacred part of my life was violated.”

Pargament et al. (2005) created separate scales to measure sacred losses and sacred desecrations. There are three closely related reasons why this strategy was not followed in the current study. First, an exploratory factor analysis (not shown here) suggests that all four indicators loaded highly on a single factor. The Eigenvalue for the single factor solution was 2.686, which is above the recommended value of 1.0. The factor loadings, which ranged from .605 to .843, were sufficiently large. Second, as the reliability estimate for the four-item composite reveals ( $\alpha = .835$ ), the average intercorrelation among the indicators was quite high. The mean sacred loss/desecration score was 6.4 ( $SD = 3.1$ ; range = 4–16). Third, other researchers have combined the two indices in the past (e.g., Krumrie et al. 2011; Warner, Mahoney, and Krumrie 2009).

Because the current study is the first to assess sacred loss/desecration with nationwide data, it would be helpful to provide a little more information on the distribution of this religiously oriented challenge. A score of 4 on this composite index means that a study participant never encountered this type of problem. Preliminary analyses revealed that 41.2 percent of study participants had a score of 4. Put another way, this means that 58.8 percent of study participants reported that, to

varying degrees, they experienced a sacred loss/desecration. Viewed more generally, these data reveal that a sacred loss/desecration is not an uncommon response to a stressful life event.

### ***Meaning in Life***

Six items were taken from research by Krause (2004) to measure a sense of meaning in life. A high score represents a stronger sense of meaning ( $M = 24.4$ ;  $SD = 3.9$ ; range = 6–30). The reliability estimate for this scale is .836.

### ***Religion Control Variables***

Two additional indicators of religion were included in this study to help insure that the observed effects were due to a sacred loss/desecration per se rather than some other dimension of religion that is associated with it. These religion control variables assess the frequency of church attendance and the frequency of private prayer. These items were taken from research by the Fetzer Institute/National Institute on Aging Working Group (1999). A high score on these items reflects more frequent church attendance ( $M = 4.8$ ;  $SD = 2.7$ ; range = 1–9) and more frequent private prayer ( $M = 6.1$ ;  $SD = 2.4$ ; range = 1–8), respectively.

### ***Demographic Control Variables***

The relationships among the measures that are discussed above were evaluated after the effects of age, sex, education, and marital status were controlled statistically. Age and education were scored continuously in years whereas sex (1 = men; 0 = women) and marital status (1 = married; 0 = otherwise) were coded in a binary format.

### **Data Analysis Strategy**

The second study hypothesis predicts that the relationship between sacred loss/desecration and health will be lower for study participants who have a strong sense of meaning in life. This means we expect to find a statistical interaction between a sacred loss/desecration and meaning in life on health. Tests for this interaction were performed with ordinary least squares multiple regression analyses that follow the procedures recommended by Aiken and West (1991). All of the independent variables were centered on their means. Following this, a multiplicative term was created by multiplying the centered values of the sacred loss/desecration measure by the centered values of meaning in life. Then, tests were performed for the proposed interaction in two steps. First, the additive relationships between the independent variables and health were estimated in Model 1. Estimating the relationship between the sacred/loss desecration measure and health at this stage provides a test of the first study hypothesis. Second, the cross-product term was entered into the model in the second step (Model 2). This step provides a test of the second study hypothesis.

If the regression coefficient associated with the multiplicative term is statistically significant, then it is important to perform some additional calculations to see if the proposed interaction effect is in the hypothesized direction. These additional computations are performed with a formula that is provided by Aiken and West (1991:12). Support for the second study hypothesis would be found if the relationship between sacred loss/desecration becomes progressively weaker at successively higher levels of meaning in life. Although any meaning in life value can be used for this purpose, we selected one standard deviation below the mean, the mean value, and one standard deviation above the mean. Once estimates have been derived at these data points, an additional formula that is provided by Aiken and West (1991:16) can be used to see if these coefficients are statistically significant.

## RESULTS

Tests of the two study hypotheses are provided in Table 1. Model 1 contains the coefficients that were derived in the first data analytic step that was discussed above whereas Model 2 contains the estimates that were derived at the second step, when the multiplicative term was added to the study model. As shown in Table 2, age, sex, education, and marital status are included as control variables in all of these analyses.

The data in the first column of Table 1 (see Model 1) provide support for the first study hypothesis. More specifically, focusing on the analyses of functional disability, the results indicate that people who experience a sacred loss/desecration encounter more functional disability than individuals who have not experienced a sacred loss/desecration ( $\beta = .095$ ;  $p < .001$ ). However, the magnitude of this relationship is fairly modest. It is also important to note that the results from estimating Model 1 further reveal that having a stronger sense of meaning in life is associated with fewer problems with physical functioning ( $\beta = -.142$ ;  $p < .001$ ).

The findings provided in column two (see Model 2) are of greater interest. These data suggest that there is a significant statistical interaction effect in the data ( $b = -.012$ ;  $p < .01$ ; unstandardized estimates are presented when discussing statistical interaction effects because standardized coefficients are meaningless in this context). Following the data analysis strategy that was discussed above, the procedures recommended by Aiken and West (1991) were implemented in order to see if the interaction is in the hypothesized direction. The results of these additional computations are provided in Table 2. These data suggest that among study participants who have a relatively low sense of meaning in life (i.e., those with scores that are  $-1$  *SD* below the mean), a sacred loss/desecration is associated with more problems with physical functioning ( $\beta = .142$ ;  $p < .001$ ). The additional tests further indicate that at average levels of meaning in life (i.e., at the mean), a sacred loss/desecration is still associated with physical functioning, but the relationship is not as strong ( $\beta = .090$ ;  $p < .001$ ). In fact, the magnitude of the relationship has declined by about 36.6 percent (i.e.,  $(.142 - .090)/.142 = .366$ ). The data in Table 2 reveal that among study participants with a stronger sense of meaning in life (i.e., those with scores at  $+1$  *SD* above the mean) a sacred loss/desecration is not significantly associated with physical functioning ( $\beta = .033$ ; *ns.*). Taken as a whole, the data in Table 2 provide support for the second study hypothesis: a strong sense of meaning in life fully moderates the relationship between a sacred loss/desecration and functional disability.

The next set of analyses were performed when the number of chronic conditions served as the outcome measure. The results suggest that a greater sense of sacred loss/desecration is associated with more chronic conditions ( $\beta = .097$ ;  $p < .001$ —see Model 1) whereas a stronger sense of meaning in life is associated with fewer chronic conditions ( $\beta = -.127$ ;  $p < .001$ ).

The data provided by Model 2 indicate that there is a significant statistical interaction between a sacred loss/desecration and meaning in life on the number of chronic conditions ( $b = -.006$ ;  $p < .01$ ). The results that are provided in Table 2 suggest that the interaction is in the hypothesized direction: as we move from lower to higher levels of meaning in life, the magnitude of the relationship between sacred loss/desecration becomes progressively weaker. At one standard deviation below the mean, the relationship between sacred loss/desecration is:  $\beta = .134$ ;  $p < .001$ . But the size of this relationship is lower for study participants with scores that fall at the mean ( $\beta = .092$ ;  $p < .001$ ), and it is no longer significant for respondents with meaning scores that are one standard deviation above the mean ( $\beta = .050$ ; *ns.*).

Essentially the same pattern of findings emerges when symptoms of physical illness serve as the dependent variable. As the data provided by Model 1 in Table 2 suggest, experiencing a greater sense of sacred loss/desecration is associated with more symptoms of physical illness ( $\beta = .097$ ;  $p < .001$ ) whereas a stronger sense of meaning in life is associated with fewer symptoms of physical illness ( $\beta = -.228$ ;  $p < .001$ ).

Table 1: Ordinary least squares multiple regression analysis of the relationships among sacred loss/desecration, meaning in life, and health

	Functional disability		Chronic conditions		Symptoms of physical illness		Self-rated health	
	(N = 2,107)		(N = 2,107)		(N = 2,107)		(N = 2,104)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>Independent variables</b>								
Age	.423*** <sup>a</sup> (.067) <sup>b</sup>	.420*** (.067)	.511*** (.051)	.508*** (.051)	.185*** (.025)	.182*** (.025)	-.103*** (-.004)	-.100*** (-.004)
Sex	-.043* (-.238)	-.042* (-.235)	-.030 (-.156)	-.030 (-.103)	-.096*** (-.455)	-.096*** (-.452)	.003 (.004)	.002 (.003)
Education	-.124*** (-.110)	-.125*** (-.111)	-.081*** (-.045)	-.082*** (-.046)	-.142*** (-.107)	-.142*** (-.108)	.168*** (.045)	.189*** (.045)
Marital status	-.072*** (-.399)	-.073*** (-.404)	-.034* (-.117)	-.035* (-.119)	-.036 (-.171)	-.037 (-.175)	.031 (.046)	.031 (.046)
Church attendance	-.032 (-.032)	-.033 (-.033)	.011 (.007)	.011 (.007)	-.062** (-.053)	-.062** (-.053)	.020 (.005)	.020 (.006)
Private prayer	.081*** (.094)	.079*** (.092)	.076*** (.056)	.075*** (.054)	.139*** (.138)	.137*** (.137)	-.093*** (-.029)	-.091*** (-.026)
Sacred loss/desecration	.095*** (.084)	.089*** (.079)	.097*** (.054)	.093*** (.051)	.097*** (.073)	.092*** (.069)	-.083*** (-.019)	-.079*** (-.019)
Meaning in life	-.142*** (-.101)	-.139*** (-.099)	-.127*** (-.056)	-.124*** (-.055)	-.228*** (-.138)	-.225*** (-.136)	.186*** (.035)	.184*** (.035)
(Meaning × Sacred loss)	—	—	—	—	—	—	—	—
Multiple R <sup>2</sup>	.233	.236	.299	.301	.155	.158	.107	.108

<sup>a</sup>Standardized regression coefficient.

<sup>b</sup>Metric (unstandardized) regression coefficient.

\* p < .05; \*\* p < .01; \*\*\* p < .005; \*\*\*\* p < .001.



Table 2: Illustrating the nature of the statistical interaction between sacred loss/desecration and meaning in life on health

	Outcome measure			
	Functional disability	Chronic conditions	Symptoms of physical illness	Self-rated health
Effect of sacred loss at:				
-1 <i>SD</i> of meaning	.142*** <sup>a</sup> (.125) <sup>b</sup>	.134*** (.074)	.138*** (.104)	-.114*** (-.027)
<i>M</i> of meaning	.090*** (.079)	.092*** (.051)	.092*** (.069)	-.081*** (-.019)
+1 <i>SD</i> of meaning	.037 (.033)	.050 (.028)	.045 (.034)	-.048 (-.011)

Note: The coefficients in this table were derived from hand calculations that were performed with ordinary least squares multiple regression analyses.

<sup>a</sup>Standardized regression coefficient.

<sup>b</sup>Metric (unstandardized) regression coefficient.

\*\*\*  $p > .001$ .

As with the other health outcomes, the findings in Table 1 reveal that there is a statistically significant interaction effect between a sacred loss/desecration and meaning in life on symptoms of physical illness ( $b = -.009$ ;  $p < .01$ ). The additional computations in Table 2 suggest that, once again, this interaction effect is in the hypothesized direction. Moving from lower to higher levels of meaning is associated with a progressively weaker relationship between a sacred loss/desecration and symptoms of physical illness:  $\beta = .138$  ( $p < .001$ ) at  $-1$  *SD*;  $\beta = .092$  ( $p < .001$ ) at *M*; and  $\beta = .045$  (*ns.*) at  $+1$  *SD*.

Self-rated health served as the final health outcome in the current study. When viewed in the context of the findings that have been presented up to this point, the results involving self-rated health add to the notion that there is a clear pattern of findings across all the health outcomes. The data in Table 1 indicate that a stronger sense of sacred loss/desecration is associated with less favorable health ratings ( $\beta = -.083$ ;  $p < .001$ ) while a greater sense of meaning in life is associated with more favorable health ratings ( $\beta = .186$ ;  $p < .001$ ).

The results provided by estimating Model 2 indicate that a significant interaction effect between sacred loss/desecration and self-rated health is present in the data ( $b = .002$ ;  $p < .05$ ). As the data in Table 2 suggest, this interaction effect is in the hypothesized direction. Moving from lower to higher levels of meaning in life suggests that the relationship between sacred loss/desecration and self-rated health is fully moderated:  $\beta = -.114$  ( $p < .001$ ) at  $-1$  *SD*;  $\beta = -.081$  ( $p < .001$ ) at *M*; and  $\beta = -.048$  (*ns.*) at  $+1$  *SD*.

### Supplementary Analyses

The purpose of this section is to present some additional analyses that have not been discussed up to this point. The goal is to provide additional findings that bring the main study findings into sharper focus. Earlier we noted that some investigators report that stress tends to erode a person's sense of meaning in life (Krause 2004). If this is true, then both conceptual as well as statistical problems may be encountered. The conceptual problem involves the following issue. If a sacred loss/desecration erodes a person's sense of meaning in life, then he or she should encounter greater difficulty using a sense of meaning to cope with the event. In fact, if the magnitude of the sacred loss/desecration is strong enough, a sense of meaning may be completely compromised

(Janoff-Bulman 1992). With respect to statistical issues, the stronger the magnitude of the relationship between a sacred loss/desecration and meaning, the more difficult it becomes to distinguish between the effects of a sacred loss/desecration on meaning and the statistical interaction between a sacred loss/desecration and meaning on health.

There is a straightforward way to address these conceptual and statistical issues. This involves regressing meaning in life on sacred loss/desecration in order to examine the magnitude of the relationship between them. We conducted this additional set of analyses after including age, sex, education, and marital status as well as the frequency of church attendance and private prayer as control variables. The results (not shown here) suggest that a sacred loss/desecration is significantly associated with diminished sense of meaning in life, but the magnitude of the relationship is quite modest ( $\beta = -.068$ ;  $p < .001$ ). This suggests that neither the conceptual nor the statistical problems that are discussed above are likely to have influenced our study findings.

### DISCUSSION AND CONCLUSIONS

The purpose of this study was to test two hypotheses. The first specified that people who have encountered a sacred loss/desecration will report having more physical health problems. The data provide support for this hypothesis. The second hypothesis specified that the negative relationship between sacred losses/desecrations and health will be buffered (i.e., moderated) by a strong sense of meaning in life. Once again, the data provide support for this hypothesis.

There are three reasons why the findings from the current study are noteworthy. First, a highly consistent pattern of findings emerged across four different ways of measuring physical health. In fact, the four measures that are used in this study arguably represent the most common ways in which health is assessed in survey research. It is remarkable that the magnitude of the relationships were highly similar across all four health outcomes. This was true with respect to the additive effects of sacred loss/desecration and meaning on health as well as the proposed interactions between sacred loss/desecration and meaning on the four health outcomes. Taken as a whole, this highly consistent pattern of findings speaks directly to the robustness of the results. Second, our study is the first attempt to assess the potentially important role that meaning in life plays as a coping resource in research on a sacred loss/desecration. Third, the data come from a large, nationally representative sample of adults of all ages. To the best of our knowledge, a sample of this scope and size has not been evaluated previously in studies of a sacred loss and sacred desecration.

Although this study may have contributed to the literature, a considerable amount of additional research needs to be conducted. In an effort to move the literature forward, we provide two examples here. First, our study suggests that people with a stronger sense of meaning in life are able to cope more effectively with sacred losses. But we need to know more about how meaning operates in this context. We need to identify the specific behaviors and cognitions that people with a strong sense of meaning employ when they are confronted by sacred losses and desecrations. They may, for example, be more likely to collaborate with God in an effort find ways to reconcile and move beyond a sacred loss/desecration (Pargament 1997). Alternatively, people may turn to religious others for help in finding ways to recover from a sacred loss/desecration in order to develop a greater sense of meaning in life (Krause 2008). Or, people may assimilate stressors (and their meaning) into their existing meaning systems (Park 2010).

Another way to flesh out models that focus on meaning in life, sacred loss/desecration, and health has to do with an issue we raised earlier. Research by Linley and Joseph (2011) was cited in order to suggest that some people who have a strong sense of meaning in life are able to grow in the face of the adversities that confront them. We need to know more about the nature and form this growth may take. One intriguing possibility was raised over two centuries ago by David Hartley, who was a leading philosopher in his day. He argued that "those who have experienced

great trials and afflictions are, in general, more disposed to compassion for others . . .” ([1749] 2013:475). Perhaps individuals with a greater sense of meaning in life are more likely to develop the virtue that Hartley ([1749] 2013) discusses. These observations are important because the growing research in the positive psychology field suggests that character strengths and virtues, like compassion, may be associated with better health and well-being (Peterson and Seligman 2004).

In the process of constructing more well developed conceptual models of how people cope with a sacred loss/desecration, researchers should take steps to address the limitations in the work we have done. One shortcoming is especially in need of attention. The data for this study are cross-sectional and, as result, we made a number of assumptions about the causal ordering among the constructs in our analyses. For example, we assumed that a strong sense of meaning in life leads to better health, but one might just as easily argue that better health promotes a stronger sense of meaning. Clearly, the causal assumptions we have made need to be examined rigorously with data that have been gathered at more than one point in time.

Experiencing a sacred loss/desecration puts an individual up on an emotional high wire because the loss may either wreak havoc in his or her life or create the opportunity for personal and spiritual growth (Pargament et al. 2005). We hope the findings from our study encourage researchers to probe more deeply into the factors that nudge these individuals in one direction or the other. Doing so holds out the promise of providing yet another way to explain the intriguing relationship between religion and health.

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