

# Examining the Relation of Religion and Spirituality to Subjective Well-Being Across National Cultures

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Religion and spirituality have often been associated with the higher subjective well-being of individuals, but departures from this relationship have also been noted in previous research. We identified two important issues that may affect this relationship: the various measurements of religion, spirituality, and subjective well-being used, and the national cultural contexts in which the relationship is examined. Using the World Values Survey (World Values Survey Association, 2009, *World Values Survey: 1981–2008. Official Aggregate*, Version 20090901, ASEP/JDS, Madrid, Spain, <http://www.wvsevsdb.com/wvs/WVSitalic/Data.jsp>), we found that both life satisfaction and happiness were positively associated with many measures of religion and spirituality, except for that of spiritual practice in different national contexts. In national cultures in which socialization for religious faith is more common, spiritual practice was positively related to subjective well-being, whereas in cultures where religious socialization is less prevalent, the relationship between spiritual practice and subjective well-being was reversed. In nations where social hostility toward religious groups is more intense, the positive association between belief in the authority of religious leaders and subjective well-being was stronger than in nations where such hostility was weaker. Different measures of religion and spirituality thus have varying relationships with measures of subjective well-being in different national contexts. Future research must accommodate this variability in conceptualizing the interface between cultural contexts and the psychology of religion and spirituality.

**Keywords:** religion and spirituality, subjective well-being, measures, cultural contexts, World Values Survey

Truth on one side of the Pyrennes is falsehood on the other—Pascal, Pensees.

The proposition that religion and spirituality contribute to an individual's self-perceived psychological and physical well-being has been repeatedly demonstrated in empirical research (e.g., Krause, 2010; Levin & Chatters, 1998; see also Mueller, Plevak, & Rummins, 2001). However, religion and spirituality do not always significantly and positively relate to an individual's subjective well-being (Eichhorn, 2011; Leondari & Gialamas, 2009). We note from surveying the literature that two issues may introduce variation to the relationship: (a) the cultural contexts in which the relationship is examined (Diener, Tay, & Myers, 2011) and (b) the measures of religion and spirituality and that of subjective well-being being used (Poloma & Pendleton, 1990). In this paper, we aim to achieve a better understanding of the association of religion and spirituality with subjective well-being by simultaneously tak-

ing cultural context and measurement of the key variables into account.

## Cultural Contexts

Different features of national cultural contexts have been found to strengthen or attenuate the relationship of religion and spirituality with subjective well-being (Bond, Lun, & Li, 2012; Diener et al., 2011; Eichhorn, 2011). Diener et al. (2011) reported that people in societies with more difficult living situations (e.g., widespread hunger and low life expectancy) tend to be more religious, and the link between religiousness and well-being was stronger in these societies than in those with less difficulty. Apart from socioeconomic development, Eichhorn (2011) showed that societal-level religiosity moderates the link between a person's attitude toward religion (i.e., the importance of God in one's life) and his or her satisfaction with life. Specifically, the relationship between religiosity and life satisfaction was found to be stronger in societies with a higher average level of religiousness, suggesting that person–culture fit enhances the contribution of an individual's religiosity to life satisfaction. Thus, these studies generally showed a positive relationship of religion and spirituality with subjective well-being, but that the strength of this relationship would vary as a function of the cultural contexts.

Culture is often conceptualized as a system of shared meaning that differentiates groups of people. Although the concept of culture may be applied to groups differentiated by racial, ethnic, or language differences (Frisby, 1998), the focus of the present study

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is on national culture. Apart from socioeconomic development or person–culture fit, we argue that there are religion-specific features of a nation that are shared by its members, regardless of their religious affiliations. These features could play an important role in how the religious and spiritual experiences of a nation’s members relate to their sense of well-being. At the most basic level, a national cultural context could either be challenging or supportive to its individual members’ religious practices; the relationship between religion and spirituality and subjective well-being could thus vary across these different contexts.

In terms of challenges arising from within a given cultural context, social hostility toward religion may constitute an obstacle that hinders individuals from engaging religiously. Social hostility refers to concrete, hostile actions initiated by private individuals and organizations that effectively hinder the religious activities of targeted individuals or groups (Pew Forum on Religion & Public Life, 2009). Thus, a high level of social hostility toward religion would entail a higher level of religious opposition and conflict in a society.

We find it surprising, however, that a stronger positive correlation between religious participation and life satisfaction among young people has been found in cultural contexts with higher levels of social hostility toward religion (Bond et al., 2012). This counterintuitive finding suggested that a cultural context with more religious tension may encourage those individuals who do participate to be even more engaged in their affiliated religious groups to deriving social support and hence greater life satisfaction. This social dynamic may explain the positive association of social hostility with the relationship between religious participation and well-being.

Aside from imposing challenges, a cultural context may provide support to religious practices by sustaining the continuation of religious values and practices across generations. Past research on intergenerational transmission of religiosity shows that parental socialization exercises an important influence on adolescents’ acquisition of religiosity (Boehnke, 2009; Martin, White, & Perlman, 2003). Religiosity among young people has been found to be a protective factor against problems, such as substance abuse resulting from life stress (Wills, Yaeger, & Sandy, 2003) and dysfunctional parenting styles (Shek, 1999). Such protective functions of religion can be expected to be associated with higher levels of subjective well-being.

A national culture that regularizes the socialization of religion among younger people enables and promotes intergenerational continuation of religion-related values within that nation (Knafo, Daniel, Gabay, Ziber, & Shir, 2012). Prevalence of religious socialization in a culture indicates normative social support for, or at least acceptance of, individual religious practices. The support for continuing one’s religious faith in the generations to come may also enhance one’s subjective well-being derived from engaging in religious practice.

### Measures of Religion, Spirituality and Subjective Well-Being

Religion, spirituality and subjective well-being are complex concepts. Emmons, Cheung, and Tehrani (1998) suggested that, whether religiosity would be found to show positive, negative, or no relationships with well-being depends crucially on the instru-

ments used to measure these concepts. An example demonstrating such varying effects is Poloma and Pendleton’s (1990) study, in which multiple indicators of religiosity and well-being were examined. In their study (in the U.S.), different domains of religiousness were captured by indices measuring an individual’s satisfaction with his or her religious life, religious experiences in prayer, closeness to God, identification of oneself as a “born-again” Christian, satisfaction with church activities, orthodoxy of belief, frequency of prayer, and church attendance. These eight domains of religiousness showed varying, even opposing, relationships to an individual’s well-being along the dimensions of life satisfaction, negative affect, existential well-being, and happiness. For example, an individual’s life satisfaction was positively predicted by his or her satisfaction with religious life (e.g., how boring or interesting it is) and experiences in prayer (e.g., feeling of a strong presence of God during prayer), but negatively by the frequency of prayer. A similar pattern was observed with happiness as an outcome, except that satisfaction with religious experiences was no longer a significant predictor. Negative affect, a measure including items such as loneliness and sadness, was not predicted by any of those measures of religiousness. This empirical example illustrates the complexity of the relationship between religiousness and subjective well-being, underscoring how their positive or negative relationships may be complicated by the nature of the measures involved.

To measure subjective well-being, Emmons et al. (1998) suggested that a distinction could be made between the presence of positive well-being (e.g., happiness and life satisfaction) and the absence of negative affect (e.g., depression); a distinction could also be drawn between affective well-being (e.g., happiness) and cognitive well-being (e.g., life satisfaction). It is possible to argue that these simple distinctions are not sophisticated enough to capture the wide-ranging experiences that relate to an individual’s quality of life, but they provide ready markers of the general well-being of an individual in terms of their feeling and thinking (e.g., Argyle & Martin, 1991; Layard, 2010).

Measuring religion and spirituality is an even more complex problem. It has been suggested that differentiation may be made between extrinsic (i.e., religion as a means to an end) and intrinsic (i.e., religion as a way of life) religiousness, but as Emmons et al. (1998) argued, “even a rudimentary distinction between intrinsic and extrinsic religiousness fails to begin capturing the complexity inherent in the construct of religiosity or spirituality” (p. 404). Others have suggested differentiating religion and spirituality, the former representing institution and community activity that connects people together in religious practice and the latter representing an individual’s subjective experiences in religious search. However, as Hill and Pargament (2008) pointed out, the conceptual distinction between religion and spirituality has ignored the social reality that “all forms of spiritual expression unfold in a social context and that virtually all organized faith traditions are interested in the ordering of personal affairs” (p. 4). Therefore, even such a basic distinction may also not be helpful for understanding how religion and spirituality differ in their associations with subjective well-being.

In the search of a definition for religion, Pargament (1997) noted that “religion means different things to different people” (p. 23) and “no single definition is likely to be completely adequate” (p. 24). Despite these challenges, he suggested that it is still important

“to construct a definition of religion that is relevant to the phenomena of interest” (p. 24). In relation to the study of the relationship between religion and psychological coping, he highlighted two distinctive characteristics of religion: (a) the idea of the sacred, which includes concepts such as God, deities, supernatural beings, or any form of “higher power;” and (b) the special function served by religion in life, which involves answering fundamental existential questions, such as those surrounding death, suffering, pain, and evil. Accordingly, he conceptualized religion as “a search for significance in ways related to the sacred” (p. 32). He argued that such a definition best suits the psychological quest for understanding religion by excluding unrelated discussion about issues of a theological nature and psychological issues that are not specific to religion.

From a social psychological point of view, which we believe to be consistent with Pargament’s (1997) conceptualization of the problem, we propose that religion and spirituality may be understood in terms of the individual’s values, beliefs, behaviors and identity, which may focus on either the sacred or the functional aspects of religion. Values concern the importance or worth that an individual attaches to matters concerning religion and spirituality. Sagiv and Schwartz (2000) showed that the value attached to tradition, which concerns the respect, concern, and acceptance of the customs and ideas that traditional culture or religion provide the self, was negatively related to affective well-being, but not to cognitive well-being, in both Israel and Germany. These findings showed that the personal value one attaches to religion and spirituality may be an important predictor of subjective well-being.

Beliefs represent the basic assumptions held by individuals about how the world functions. Religiosity beliefs involve an individual’s expectation about the positive social functions served by religious institutions and the existence of spiritual forces that influence the world (Leung & Bond, 2004). Past research showed no significant relation between religiosity and life satisfaction (Mak, Han, You, Jin, & Bond, 2010), although religiosity does buffer death anxiety (Hui, Bond, & Ng, 2006-2007), at least among Hong Kong Chinese samples. Whether the same patterns of relationship to religiosity beliefs will be found in other cultural contexts is not yet known.

Behavioral indicators of religiosity, such as frequency of participation in religious services or engagement in prayers or meditation, have often been used as a global measure of religion and spirituality (e.g., Diener et al., 2011; Fincham, Lambert, & Beach, 2010; Krause, 2010). Despite their limited scope, such behavioral indices showed consistent positive associations with both psychological and physical well-being (Hill & Pargament, 2008). It is again important to note that the relationship between practices and well-being may differ across cultural contexts (see, e.g., Eichhorn, 2011).

Drawing on social identity theory, Hogg, Adelman, and Blagg (2010) conceptualized religions as social groups which offer structure and behavioral guidelines to their members. Using this conceptualization, religion and spirituality may be construed in terms of an individual’s identification with a religious group. Such social identification with religious groupings has been found to relate to a higher level of affective and cognitive well-being, at least in America (Greenfield & Marks, 2007).

If we measure religion and spirituality using the above social psychological perspective, we have the advantage of including

general measures for individuals across the various religious affiliations and backgrounds found in different nations. We consider it a useful approach for providing more comprehensive measures of religion and spirituality, while at the same time catering to variations in theologies and philosophies across individuals and cultures.

## The Present Study

We aim to examine the relation of religion and spirituality to subjective well-being by simultaneously taking into account the above two issues of cultural context and measures. To do so, we will analyze data from the *World Values Survey* (WVS, 2009). The WVS is a multinational survey aiming to investigate the basic values and beliefs of the public, and to monitor changes in these values and beliefs in different countries around the globe (WVS, 2009). Among the various measures of different sociopolitical values and beliefs in the WVS, we identified a number of measures pertaining to religion-related values, beliefs, behaviors, and identity for use in the present investigation. The multinational composition of the dataset also offers the crucial opportunity to examine how different national-cultural factors characterizing nations associate with the relation of religion and spirituality to subjective well-being.

## Extraction of Measures

We identified two measures of subjective well-being in the WVS, namely, satisfaction with life and happiness. These measures capture the presence of cognitive and affective well-being, respectively (Emmons et al., 1998). There have been attempts to combine the two indices to form a single measure of subjective well-being (e.g., Inglehart, Foa, Peterson, & Welzel, 2008), but we support the idea that the two concepts should be examined separately; Pittau, Zelli, and Gelman (2010) pointed out that, “when asked how happy they are, people tend to consider the more volatile concept of current emotional state, while life satisfaction is closer to the concept of an overall and more stable living, flourishing and actualizing the best potential within oneself” (p. 341). Unfortunately, however, there was no relevant measure for negative affect such as depression in the WVS, and therefore this aspect of subjective well-being will not be examined in the present analysis.

Six measures were identified from the WVS to capture religion and spirituality as described above, namely, belief in religious authorities, the value ascribed to religion, the value ascribed to supreme being(s), social religious practices, spiritual practice, and religious identity. However, no measure relevant to an individual’s belief about spiritual matters (e.g., belief in the existence of a supreme being controlling the universe; Leung & Bond, 2004) could be identified from the WVS for examining the relationship between such a belief and subjective well-being.

## General Hypotheses

Based on the pattern of previous research findings, we expected that there would generally be a positive relationship of religion and spirituality with subjective well-being. However, given that almost all past research has focused on only a few cultures, has usually been monocultural in focus, and has used only limited measures of

religion, spirituality, and subjective well-being in any given study, we will not speculate further about the relationship between specific constructs. Instead, we expected that the relationships between each measure of religion and spirituality and subjective well-being in each specific kind of cultural context would be revealed in this analysis. As Pargament (1997) argued, “admittedly, the study of religion ‘in context’ can be complex and ‘messy,’ and yet it may hold a key to religious understanding” (p. 12). Given the advancement in statistical techniques and the availability of multinational datasets such as the WVS, we can start venturing into such “messy” areas to identify the role of national cultures on religious matters.

In addition to the previously identified cultural effect of difficult life situations in a society (Diener et al., 2011), we examined national cultures’ roles of social hostility toward religion and of socialization for religious faith and their effect on the relationship of religion and spirituality with well-being. Based on past findings, we expected that difficult life situations (Diener et al., 2011) and social hostility (Bond et al., 2012) would be associated with stronger links of religion and spirituality to well-being. To the best of our knowledge, there has not yet been any attempt to look at the role of cultural norms for religious socialization in the strength of the relationship between religiousness and subjective well-being. However, we expected that the stronger endorsement of religious socialization would enhance the positive associations.

## Method

### Participants

We analyzed the Wave-5 (2005–2008) data set of the WVS (2009), composed of responses from 82,982 participants in 57 countries. According to the WVS documentation, data were collected by means of interviews in each country. In some countries, however, some of the variables of interest were not included during the data collection. Moreover, due to missing data on some questionnaire items of interest (including the covariates), the final data set we used in the current analysis consists of the responses from 49,943 participants in 42 nations.

In terms of the sample with missing data, no participant in any nation missed more than three (out of 12) items; and in most nations except Mali, over 94% of the sample provided complete data. In the case of Mali, 12.3% of the sample missed one to two items of interest, and those items were demographics such as age, education level, and social class, which we used as covariates. In view of these statistics, we considered that there is no systematic cultural factor that would account for such a pattern of missing values. Hence, we included all 49,943 participants in the analysis.

The average age of the final sample was 41.92 ( $SD = 16.56$ ), with a range from 15 to 98. The sample was comprised of 23,915 (47.9%) males and 26,028 (52.1%) females. Table 1 shows the list of the nations involved, the demographic information on each sample, and the scores for each social indicator.

### Individual Measures

Eight, individual-level variables substantive to the research question were extracted from the WVS data set. Other demographic variables including age (in years), the squared value of age, gen-

der, education level, and self-rated social class of the participants were included as covariates in the analysis. Gender was coded with female = 0 and male = 1; education level referred to respondent’s self-reported highest level of education obtained, ranging from 1 (*inadequately completed elementary education*) to 8 (*university with degree/higher education*); self-rated social class was captured by a 5-point measure ranging from 1 (*lower class*) to 5 (*upper class*). Except for the measure of belief in religious authorities, all variables were measured with a single item. Despite concerns about low reliability for single-item measures, research has shown that multiple-item scales do not necessarily outperform single-item measures (Gardner, Cummings, Dunham, & Pierce, 1998), especially when the single item is theoretically appropriate for the intended construct or attribute (Bergkvist & Rossiter, 2007).

Given that the WVS was administered to large samples in many different societies, the use of single-item measures for capturing narrowly focused and straightforward concepts is justifiable and practicable. Single-item measures have shown to be acceptable for measuring psychological concepts, such as self-esteem (Robins, Hendin, & Trzesniewski, 2001) and job satisfaction (Wanous, Reichers, & Hudy, 1997). The present list of individual-level measures extracted from the WVS involved relatively straightforward concepts, so we consider it acceptable to use a single item to capture each of these constructs.

**Satisfaction with life.** Participants answered the question, “All things considered, how satisfied are you with your life as a whole these days?” using a 10-point scale anchored by 1, *completely dissatisfied* and 10, *completely satisfied*.

**Happiness.** Participants indicated their happiness by responding to the item, “Taking all things together, would you say you are . . .” using a 4-point scale. Participants’ scores on this item were reversed to enable easy interpretation of the data, so that in our analysis, scores ranged from 1, *not at all happy*, to 4, *very happy*.

**Belief in religious authorities.** Participants were asked to indicate whether they support a set of four questions relating to a question stem: “Generally speaking, do you think that the ‘religious authorities’ in your country are giving adequate answers to (a) the moral problems and needs for the individual; (b) the problems of family life; (c) people’s spiritual needs; and (d) the social problems facing our society?” Participants were required to give a “yes” or “no” response to each item. Responses to these four items were combined to form a measure of an individual’s belief in religious authorities providing adequate answers to various problems in life. The internal consistency of this measure ranged between .55 (Indonesia) and .92 (Argentina), with an average of .77 ( $SD = .08$ ). In no nation was there a negative item-whole correlation for this 4-item measure. Given the brevity of the scale and the number of societies involved in the analysis, the figures are considered indicative of an acceptable level of internal consistency for this measure.

**Value of God or of the gods.** The importance of God (or of gods in nations with a nonmonotheistic religious tradition) to the participants was assessed by the item, “How important is God (or are the gods) in your life?” Participants were required to indicate the level of importance by a 10-point scale, with “1” denoting not at all important and “10” denoting very important.

**Value of religion.** In a list of six items, one of which was *religion*, participants were asked, “For each of the following, indicate how important it is in your life. Would you say it is . . .?”

Table 1  
*Demographics and National Indicators for Each Nation*

Society	Sample size	Mean age (SD)	% Male	HDI	SHI	Support for religious socialization (%)
Andorra	843	40.41 (13.71)	49.6	.84	0.1	7.1
Argentina	829	42.51 (17.27)	45.1	.79	0.8	24.9
Australia	1198	49.15 (16.43)	45.8	.93	1.9	21.4
Brazil	1422	39.77 (15.57)	41.4	.72	1.2	56.7
Bulgaria	713	47.20 (16.11)	45.6	.77	2.7	19.4
Canada	1864	48.48 (17.64)	41.3	.91	1.7	31.7
Chile	868	43.24 (16.87)	43.7	.80	0.7	38.2
Taiwan	1186	43.59 (16.00)	50.3	.87	0	8.7
Cyprus	1008	41.58 (16.03)	48.7	.84	1.7	32.9
Ethiopia	1298	30.11 (10.23)	50.6	.36	4.2	42.0
Finland	909	47.42 (17.24)	47.6	.88	0.7	12.7
Georgia	1199	45.20 (17.21)	45.3	.73	4.2	70.5
Germany	1690	50.70 (17.46)	43.4	.90	2.5	10.2
India	1434	40.87 (14.65)	60.8	.54	8.8	38.8
Indonesia	1671	36.00 (13.75)	52.4	.61	7.8	92.3
Iran	2381	32.92 (12.91)	50.8	.71	5.2	71.6
Italy	831	45.37 (15.64)	49.6	.87	2.1	36.3
Japan	557	48.16 (15.38)	49.2	.90	1.5	8.1
South Korea	1166	41.16 (13.95)	50.2	.89	0	20.8
Mali	835	36.71 (14.82)	48.9	.36	0.3	61.2
Moldova	920	42.71 (16.77)	48.0	.64	3.5	42.4
Norway	945	45.65 (16.00)	50.5	.94	1.0	8.7
Peru	1315	37.52 (14.52)	49.4	.72	0.3	46.3
Poland	767	45.42 (17.13)	51.5	.81	1.3	49.3
Romania	1419	48.27 (17.18)	45.1	.78	4.7	62.8
Rwanda	1353	34.42 (13.70)	50.5	.43	0	37.8
Viet Nam	1324	40.65 (15.74)	52.5	.59	1.9	6.1
Slovenia	804	45.66 (17.27)	47.8	.88	1.0	17.4
South Africa	2686	38.94 (16.47)	49.2	.62	2.5	56.4
Spain	1012	45.82 (18.20)	49.7	.88	1.8	11.1
Sweden	776	47.71 (16.81)	50.6	.90	1.2	6.4
Switzerland	1111	52.35 (16.08)	45.6	.90	1.9	12.9
Thailand	1479	45.39 (15.73)	48.8	.68	2.7	29.3
Trinidad & Tobago	962	42.46 (17.31)	45.1	.76	1.4	67.5
Turkey	1180	36.26 (13.67)	51.8	.70	4.9	42.0
Ukraine	672	42.28 (16.25)	33.0	.73	2.6	15.9
Egypt	2845	40.91 (14.53)	38.9	.64	6.5	90.4
United States	1152	48.09 (16.94)	50.5	.91	1.9	51.4
Burkina Faso	1122	34.47 (13.98)	52.8	.33	2.0	69.1
Uruguay	410	49.89 (18.69)	35.6	.78	0.6	27.6
Zambia	981	29.43 (10.99)	51.7	.43	0	62.6
Serbia	806	42.27 (14.70)	50.5	.76	3.3	28.0

Note. HDI = Human Development Index; SHI = Social Hostilities Index.

Participants would then give ratings using a 4-point scale, with 1 indicating *very important* and 4 indicating *not at all important*. The variable was reverse-coded in the subsequent analysis, so that a higher score indicates a higher value of religion.

**Spiritual practice.** Spiritual practice was captured by the question, "Do you take some moments of prayer, meditation, or contemplation or anything like that?" Participants gave a dichotomous answer of either "yes" or "no" to indicate whether they engage in such activities.

**Social religious practice.** A person's level of social religious practice was captured by the question, "Apart from weddings and funerals, about how often do you attend religious services these days?" Participants responded using a 7-point scale, with 1 representing *more than once a week*, 2 *once a week*, 3 *once a month*, 4 *only on special holy days/Christmas/Easter days*, 5 *once a year*, 6 *less than once a year*, and 7 *never/practically never*.

Since the question did not include equally spaced anchor points as in the usual format of a Likert item, we transformed the scale based on Eichhorn's (2011) precedent of differentiating the participants in terms of their relative frequency of attending religious services. Using "attendance of religious services at *least once a month*" as a cut-off point, we grouped those who attend religious services at least monthly as "frequent attendees," and those who attend religious services, but less often than once a month as "infrequent attendees." The measure was coded with two dummy variables so that the infrequent attendees and the frequent attendees were contrasted with nonattendees (i.e., respondents who answered *never/practically never* to this question) as the reference group in the analysis.

**Religious identity.** Participants indicated their membership in a church or a religious organization using a 3-point scale. The measure was coded such that 1 represented *not belonging to any*

church or religious organization, 2, being an inactive member, and 3, being an active member in the current analysis. We recoded the measure into a dichotomous variable so that the active members were differentiated from the inactive members and nonmembers, based on the assumption that active members are those who strongly identify with a particular religious organization.

## Indices of National Cultures

**Human Development Index (HDI).** The HDI is a composite index measuring average achievement in a nation across three basic components of human development: longevity, level of education, and amount of income (U.N. Development Programme, 2010). Taiwan was not included in the official report of the HDI. In our analysis, we replaced the missing value with the estimate constructed by the Taiwanese government based on the new methodology used in the 2010 HDI report.

**Social Hostilities Index (SHI).** Multiple indicators, based on data drawn between mid-2006 and mid-2008, were used to capture the level of social hostility toward religions across different nations (Pew Forum on Religion & Public Life, 2009). The information sources involve 16 frequently cited reports, including reports of the U.N. Special Rapporteur on freedom of religion or belief, the Human Rights Watch topical reports, and the Council of the European Union's annual report on human rights, which have documented religion-related social hostilities in different societies around the world. These involve acts of violence and intimidation initiated by private individuals or groups in an attempt to hinder the religious activities of targeted individuals or groups. The SHI has range of 0 and 10, with 10 indicating the highest level of social hostilities in a society (Pew Forum on Religion & Public Life, 2009).

**Support for religious socialization.** In the WVS, participants were asked the question, "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five." Among a list of 10 qualities, there is one item on *religious faith*, which participants may choose if they consider it an important quality for children to learn at home. We calculated the endorsement rate of religious faith as a socialization goal in each national culture by calculating the percentage of each national sample mentioning *religious faith* as important. A higher endorsement rate is considered as indicating a higher level of social normative support for religious socialization in that national cultural context.

## Analytic Strategy

Hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992) was used to test the mixed-level models for the two measures of well-being. As the proposed Level-2 variables could vary (a) in their level (or strength) and (b) in their influence on the Level-1 predictors of the dependent variables, we specified a random-slope model for the coefficient of every individual-level predictor (Snijders & Bosker, 1999). Given that the major goals of this study are to identify how different measures of religion and spirituality predict subjective well-being, and how different national cultures moderate the relationships of religion and spirituality to subjective well-being at the individual level, group-mean centering of the individual-level predictors was considered the most appropriate for

this analysis (Enders & Tofighi, 2007). Grand-mean centering was applied to the national-level variables to alleviate the potential problem of multicollinearity at this level. Robust standard errors (RSE) were used to examine the significance of the parameter estimates, because they are relatively insensitive to violation of distributional assumptions at each level (Raudenbush, 1988).

We note that both dependent variables of satisfaction with life and happiness are technically ordinal in their level of measurement, but we applied linear modeling in this analysis. As suggested by Eichhorn (2012), these measures have frequently been used to quantitatively measure subjective well-being (see also Veenhoven, n.d.), and linear modeling on these measures has been shown to be robust. For example, Ferrer-i-Carbonell and Frijters (2004) and Frey and Stutzer (2002) showed that applying ordinal and linear modeling on such measures of subjective well-being made little difference in their results. Even in the case of a 4-point scale, Pittau et al. (2010) still found that ordinal and linear modeling do not differ substantively in terms of identifying individual predictors of life satisfaction. Ferrer-i-Carbonell and Frijters (2004) also highlighted that when respondents answer this kind of survey question, they are likely to interpret the question in a cardinal sense (i.e., assuming equal distance between anchor points). Therefore the use of linear modeling is considered appropriate for the current analysis.

## Results

### Descriptive Statistics and Zero-Order Correlations

Except for the two dummy variables of social religious practice and the two dichotomous variables of spiritual practice and religious identity, responses on each variable were averaged within each country to create a national-level score for each individual-level measure. Table 2 shows the descriptive statistics and Pearson correlations at both individual and national levels.

**Satisfaction with life.** With the exception of religious identity and belief in religious authorities, satisfaction with life was negatively correlated with most measures of religion and spirituality at the individual level. However, it is important to note that the effect sizes of all individual-level correlations between satisfaction with life and the different measures of religiousness were close to zero, despite the statistical significance attained due to this large sample size. This observation is consistent with previous findings on the weak individual-level correlations between measures of religiousness and life evaluation (Diener et al., 2011).

At the national level, satisfaction with life was positively correlated with the HDI of the society, a finding consistent with the observation by Diener et al. (2011) about the general negative relationship between difficult societal circumstances and national-level subjective well-being. However, the other religion-related national indicators were all negatively related to satisfaction with life, echoing the negative correlations between the national-level aggregates of the different measures of religion and spirituality and life satisfaction.

**Happiness.** The correlations between happiness and the six different measures of religion and spirituality were likewise close to zero at the individual level. This pattern of correlation is again consistent with previous findings on the weak relationship between positive affect and measures of religiousness (Diener et al., 2011).

Table 2  
Means, Standard Deviations, and Pearson Correlations Between the Two Measures of Well-Being and Different Measures of Religiousness

Variable	Individual-level mean	Individual-level SD	National-level mean	National-level SD	1	2	3	4	5	8	9	10
1. Satisfaction with life	6.72	2.26	6.77	.87		.78**	-.34*	-.35*	-.42**	.62**	-.36*	-.38*
2. Happiness	3.07	.71	3.07	.23	.48**		-.23	-.18	-.18	.29	-.26	-.20
3. Belief in religious authorities	2.19	1.52	2.10	.63	.007	.03**		.74**	.80**	-.58**	.28	.69**
4. Value of God or the gods	7.89	2.86	7.64	1.80	-.04**	-.003	.36**		.94**	-.58**	.30	.86**
5. Value of religion	3.13	1.02	3.02	.63	-.06**	.01**	.39**	.68**		-.68**	.43**	.91**
6. Spiritual practice <sup>1</sup>					-.03**	.007	.28**	.57**	.48**			
7. Religious identity <sup>1</sup>					.07**	.09**	.19**	.26**	.29**			
8. HDI (National)			.74	.17							-.25	-.54**
9. SHI (National)			2.26	2.07								.48**
10. Support for religious socialization (%; National)			36.83	23.81								

Note. The two dummy codes of social religious practice were excluded from the correlation analysis. Values above the diagonal show the national-level correlations ( $N = 42$ ); values below the diagonal show the individual-level correlations ( $n = 49,943$ ).

<sup>1</sup> Point-biserial correlations of spiritual practice and religious identity with the other variables at the individual-level are shown here.

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

Happiness did not show any significant correlation with any of the national-level variables except for the national average of satisfaction with life. There was a marginally significant ( $p = .07$ ) correlation between happiness and HDI, echoing the negative correlation between positive affect and difficult life circumstances at the country level observed in Diener et al.'s (2011) study.

Upon examining the correlation matrices, we noted that there are moderate to strong correlations between the various measures of religion and spirituality. Such a pattern of relations in the data would typically require special attention, because linear regression analysis with highly correlated predictors is susceptible to the problem of multicollinearity. The usual procedure would either be discarding some of the predictors or combing highly correlated predictors into a single construct. However, we note that the correlation between these different measures actually varies substantially across national cultures. Taking the correlation between value of God (or the gods) and value of religion as an example, although the individual-level correlation in the overall sample is .68, the correlation in each nation ranged from .00 (Egypt) to .74 (Australia). This variation in the correlations reveals that the various measures of religiousness may be conceptualized somewhat differently within each national culture; this variability underscores why it is important to take into consideration cultural contexts and the various measures used in this kind of analysis.

Nevertheless, to address the potential problem of multicollinearity, we conducted multiple regression analyses on satisfaction with life and happiness, respectively, with the covariates and predictors of interest in each national culture. Using the variance-inflation factor (VIF) to indicate serious problems of multicollinearity, it was found that the largest value of VIF was 3.15 for importance of religion in Australia, a value which is acceptable according to convention (e.g., Hair, Black, Babin, Anderson, & Tatham, 2006). In view of this finding and the theoretical importance of differentiating the various measures of religion and spirituality, we decided to keep each measure separate in the HLM analysis.

## Hierarchical Linear Modeling Analysis

Following the practice of HLM analysis of subjective well-being, we included the demographics of age, age<sup>2</sup>, gender, education level, and self-rated social class of the participants as covariates in the analysis (see, e.g., Diener et al., 2011; Eichhorn, 2012). To reduce Type I errors in the conclusions drawn about the main effects and cross-level interactions obtained, we adopted an alpha level of .01 to determine statistical significance.

**Satisfaction with life.** Table 3 summarizes the findings of the HLM analysis on satisfaction with life. Among the three national indicators, only HDI was significant in predicting life satisfaction, showing that the relative development of a society contributed to individual satisfaction with life in that nation, a finding consistent with previous national-level research (e.g., Inglehart & Klingemann, 2000).

At the individual level, it was found that the values and belief measures of religion and spirituality were significant and positive predictors of life satisfaction in the HLM analysis. The main effects of spiritual practice and the two dummy codes of social religious practice were not significant. However, spiritual practice interacted with the prevalence of religious socialization to predict individual satisfaction with life. Figure 1 shows that in a society in which socialization of children for religious faith is prevalent, a person who prays, contemplates, or meditates reports higher satisfaction with life than someone who does not; in contrast, in a society in which socialization of religious faith is less emphasized, individuals engaging in spiritual practice show a lower level of life satisfaction than those who do not engage in such behaviors. This pattern suggests that a person's spiritual practice would only be associated with his or her satisfaction with life if the practice matches a cultural context that emphasizes religious socialization, demonstrating a person-culture fit on the prediction of life satisfaction from religiousness (Eichhorn, 2011).

In addition to the significant main effect, belief in religious authorities interacted significantly with SHI in predicting individual satisfaction with life (see Figure 2). The positive association

Table 3  
*Hierarchical Linear Modeling Analysis of Satisfaction With Life*

Main effects	<i>b</i>	<i>RSE</i>	<i>t</i>
Covariates			
Age	-.02	.004	-3.59***
Age <sup>2</sup>	.0001	.00005	2.24
Gender	.04	.03	1.33
Education level	.03	.008	4.52***
Social class	.46	.03	14.62***
Individual level			
Belief in religious authorities	.05	.01	5.75***
Value of God or the gods	.05	.01	4.52***
Value of religion	.09	.03	3.40**
Spiritual practice	-.03	.05	-.73
Social-religious practice (infrequent attendees)	.08	.04	1.91
Social-religious practice (frequent attendees)	.06	.06	1.03
Religious identity	.17	.05	3.60***
National level			
HDI	3.00	.66	4.54***
SHI	-.10	.05	-1.97
Support for religious socialization	.002	.006	.33
Cross-level interactions <sup>a</sup>			
Belief in religious authorities × SHI	.02	.005	4.38***
Spiritual practice × Support for religious socialization	.007	.002	3.60***

Note. *RSE* = robust standard error; HDI = Human Development Index; SHI = Social Hostilities Index.

<sup>a</sup> All the other cross-level interaction terms were statistically nonsignificant ( $p > .05$ ).

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

between belief in religious authorities and satisfaction with life is the strongest in nations with a higher level of social hostility toward religion, again underscoring the importance of considering cultural context in the psychological processes informing religion and spirituality.

**Happiness.** The HLM analysis for happiness is summarized in Table 4. No nation-level predictor was a significant predictor of individual happiness within that nation.

Similar to the pattern observed for satisfaction with life, spiritual practice and the two dummy codes of social religious practice are not significant in predicting happiness at the individual level. The main effect of the value of God or of the gods is marginal at the alpha level of .01. The other aspects of religion and spirituality, including belief in religious authorities, value of religion, and

religious identity, are all significant individual-level predictors in the model. As was found for the model of satisfaction with life, spiritual practice significantly interacted with religious socialization to predict happiness (see Figure 3); belief in religious authorities significantly interacted with SHI (see Figure 4). These interaction effects are similar to those in the model for satisfaction with life as an outcome.

Overall, with the exception of spiritual practice, most measures of religion and spirituality were positively related to the two measures of subjective well-being. In the case of the belief in religious authorities, the higher the level of social hostility toward religious groups in a national culture, the stronger the correlation between such belief and subjective well-being. However, a reversal of relationship is observed with spiritual practice and subjective

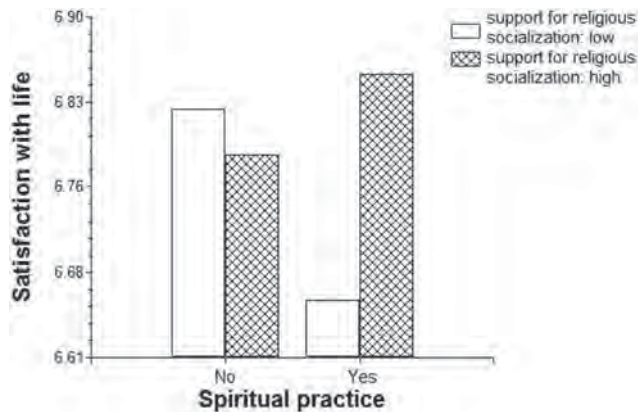


Figure 1. Interaction between spiritual practice and cultural support for religious socialization on the prediction of life satisfaction.

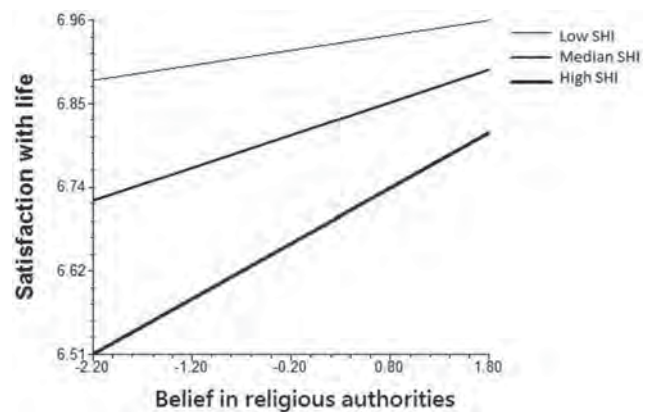


Figure 2. Interaction between belief in religious authorities and social hostility on the prediction of life satisfaction.



Table 4  
Hierarchical Linear Modeling Analysis of Happiness

Main effects	<i>b</i>	<i>RSE</i>	<i>t</i>
Covariates			
Age	-.01	.002	-3.87***
Age <sup>2</sup>	.00003	.00002	1.60
Gender	.01	.01	.58
Education level	.009	.003	2.75**
Social class	.12	.01	9.75***
Individual level			
Belief in religious authorities	.01	.003	5.21***
Value of God or the gods	.007	.003	2.26 <sup>b</sup>
Value of religion	.05	.01	4.84***
Spiritual practice	-.02	.01	-1.61
Social-religious practice (infrequent attendees)	.02	.02	1.27
Social-religious practice (frequent attendees)	.04	.02	1.67
Religious identity	.07	.01	4.37***
National level			
HDI	.35	.19	1.83
SHI	-.02	.02	-1.29
Sort for religious socialization	.0005	.002	.26
Cross-level interactions <sup>a</sup>			
Belief in religious authorities × SHI	.006	.002	2.71**
Spiritual practice × Support for religious socialization	.003	.0006	4.20***

Note. *RSE* = robust standard error; HDI = Human Development Index; SHI = Social Hostilities Index.  
<sup>a</sup> All the other cross-level interaction terms were statistically non-significant ( $p > .05$ ). <sup>b</sup>  $p = .03$ .  
 \*\*  $p < .01$ . \*\*\*  $p < .001$ .

well-being: Spiritual practice shows a positive relationship with satisfaction with life and happiness in nations with a higher level of religious socialization, but the relationship is reversed in nations where religious socialization is less commonly endorsed.

**Discussion**

The present analysis showed that the relationship of religion and spirituality with aspects of subjective well-being varies according to the way that religiousness is measured, as well as to the national

cultural contexts in which those relationships are examined. With the exception of spiritual practice, different measures of religiousness were found to be positively related to the two measures of subjective well-being. Some of these correlations were found to be moderated by certain features of the sociocultural contexts, however. Given the range of measures used and national cultures examined, the present study can thus be considered as an empirical integration of previous research (Diener et al., 2011; Poloma & Pendleton, 1990).

**Predicting Subjective Well-Being From Religion and Spirituality**

By looking at the different aspects of religion and spirituality in terms of their connection to different aspects of subjective well-



Figure 3. Interaction between spiritual practice and cultural support for religious socialization on the prediction of happiness.



Figure 4. Interaction between belief in religious authorities and social hostility on the prediction of happiness.

being, the present analysis yielded interesting patterns of results. Both life satisfaction and happiness concern the well-being of an individual. Although the two constructs are positively related to one another at both individual and societal levels, they show somewhat different correlation patterns with different measures of religion and spirituality.

As revealed by the HLM analyses, life satisfaction, a measure of one's cognitive well-being, was more strongly associated with the values and belief, but not the behaviors, of religion and spirituality. Happiness, a measure of one's affective well-being, showed a similar pattern, except with the value of God (or the gods) which did not show a strong main effect in the HLM analysis. These findings not only highlight the importance of making finer conceptualizations around the domains of subjective well-being and religiousness, but also suggest possible mechanisms behind the observed relationships between religiousness and subjective well-being.

Pittau et al. (2010) argued that life satisfaction involves peoples' lives flourishing and their best potential being actualized. Such a deep level of evaluation about one's life would be more strongly associated with one's assessment of his or her achieved religious or spiritual values, beliefs, and identity than their religious practice. As an affective reaction to life, however, happiness may rely more on the social structure provided by religious affiliation. Thus, measures related to the less tangible "sacred" aspect of religious experience (Pargament, 1997), such as the value of God (or the gods), may not be as relevant in the prediction of emotional experiences, such as happiness or negative affect.

However, it should be noted that these correlations may still vary across different cultural contexts. Although the cross-level interactions involving values and religious identity were not statistically significant, there could be sociocultural variables other than those being examined in current study that would vary the relation of these measures of religion and spirituality to subjective well-being. These speculations derived from the present findings are worthy of consideration in future investigations.

Most measures of religiousness in the present study showed a positive relationship with both satisfaction with life and happiness, replicating many past findings about the positive relationship of religion and spirituality with subjective well-being. However, we note that in certain cultural contexts, spiritual practice is negatively related to individual's life satisfaction and happiness. This finding echoes Poloma and Pendleton's (1990) finding that life satisfaction and happiness were related negatively to prayer frequency, but positively to prayer experience (e.g., feeling connected with or inspired by the divine).

In the present study, spiritual practice was operationalized in terms of whether a person engages in activities such as prayers, meditation, or contemplation. We found that in societies where religious socialization is more prevalent, people who engage in spiritual practice show a higher level of subjective well-being than those who do not; in contrast, in societies where religious socialization is less common, people who engage in spiritual practice report a lower level of well-being.

The mechanism underlying this pattern of correlations may be understood in terms of the various functions served by spiritual practice. Scarlett and Perriello (1991) empirically demonstrated that as individuals mature, the functions served by praying progress from objective concerns (i.e., asking God for things) to sub-

jective issues (i.e., coping with one's feelings) and then to becoming closer to God. It is possible that, in societies where religious socialization is the norm, members of those societies are more likely to engage in spiritual practice for the sake of experiencing closeness with the divine, which in turn leads to a higher level of subjective well-being. In contrast, in societies where religious socialization is less supported, individuals may be more likely to engage in spiritual practice for the sake of meeting material needs or coping with significant life challenges, a dynamic which is reflected in the negative association between spiritual practice and well-being in the analysis.

Belief in religious authorities is positively related to both life satisfaction and happiness, suggesting that being able to find answers through religion and its institutionalized authorities may be an important support to an individual's subjective well-being. However, the strength of this correlation varies as a function of the level of social hostility toward religion in a society. Although social hostilities were construed as a measure of societal restriction on religious freedom, we found that the relationship between belief in religious authorities and subjective well-being was stronger in societies with higher SHI, a finding which is consistent with previous research (Bond et al., 2012). One possible interpretation could be that in societies where people's life satisfaction or happiness is more strongly tied to their belief in religious institutions giving adequate answers to various problems, the more likely it is that perceived incompatibilities between religions would result in lower tolerance between different religious groups with different ideologies, a consequence which is reflected by the higher SHI in those nations. This proposed interpretation does not treat social hostilities in a society as a context which imposes influence on individual-level processes, but instead it suggests a possible mechanism of how individual-level dynamics might be conducive to societal-level outcomes.

### Moving Beyond the Present Investigation

The present study addressed two issues crucial for the understanding of the relationship between religion and spirituality and subjective well-being. Further fine-tuning of the present investigation would benefit research in these areas. Due to the correlational nature of the data, cautions are required in the interpretation of the relationships among the variables as observed in the current research. To examine the effects of religion and spirituality on well-being, different research design, such as longitudinal observation, will be required.

In terms of the measurement issue, the measures of religion and spirituality and subjective well-being available in the World Values Survey are not exhaustive. For example, measures about an individual's belief in the existence of a supernatural world or the absence of negative affect have not been included. Including such measures could further improve our prediction of subjective well-being from religiousness.

Concerning the various measures, we are also aware that the design of the various measures is not psychometrically ideal. More sophisticated design of the content and scaling of the constructs of interest would undoubtedly improve our understanding of the relationship of religion and spirituality with well-being. Given a multinational database such as the WVS, it is inevitable that we will have to fit the investigation to what is available. Future research

aiming to look more specifically into how religiousness relates to subjective well-being will benefit from adopting better constructed measures of religiousness (see Cotton, McGrady, & Rosenthal, 2010) and subjective well-being (e.g., Diener, Emmons, Larsen, & Griffin, 1985; Watson, Clark, & Tellegen, 1988).

In the present study, we have taken an “individual-focused and religion-general” approach to examine the relationship between general religious experiences and individual’s well-being. It was designed in a way that enables precise understanding about religion, or at least some aspects of religion, as a general phenomenon among individuals coming from different religious heritages—denominations, theologies, and/or philosophies about the relationship between human beings and nature. We acknowledge that different religious orientations involve ideologies or social practices that could associate differentially with people’s subjective well-being. Therefore, interested researchers are encouraged to take a religion-specific perspective to look at how different theologies or philosophies associated with various religious denominations would affect the relationship of religion and spirituality with well-being.

Another interesting possibility is to look at culture in terms of the political dynamics involved (Olson, 2011). In the WVS, there are individual-level measures concerning people’s attitude toward the separation of religion and government in their countries. Given the scope of our current study, these measures were not included, but these variables probably also show some correlation with individuals’ well-being. In addition, in nations where different religions are differentially favored or oppressed by the government, it is possible that government favoritism toward particular religious groups would create different religious experiences for individuals of different religious denominations within the nation. This line of research will broaden our understanding of the interplay between religion and culture.

The present study contributes to the literature by examining the cultural factors that moderate the relationship between religious experience and subjective well-being. In particular, we included religion-specific national indicators, namely social hostilities and religious socialization to supplement what we have already known about the context effects of difficult life situations (Diener et al., 2011) and person-culture fit (Eichhorn, 2011).

The inclusion of these religion-specific indicators revealed interesting correlation patterns at the national level. The average scores of most individual-level measures of religion and spirituality are positively and significantly correlated with both SHI and religious socialization, with religious socialization being the stronger correlate. These results suggest the importance of socialization for religious faith as a predictor of various measures of religiousness at the national level. When we also look at the development of a society, HDI was negatively related to both SHI and religious socialization, but its relationship with religious socialization was stronger. These correlation patterns seem to suggest that religious socialization may be a useful link between the “hard” measures of a society, such as its level of development, and “soft” measures of a society, such as the average of its members’ scores on psychological variables.

These nation-level findings look promising in revealing the dynamics between aggregates of individual psychological measures and different national indicators. However, readers are reminded that nationology is a different discipline from psychology,

and that our primary focus is on the latter. There could be considerable variability in the responses across age, education level, and social class, for example. So, depending on which national subset of respondents has been chosen in any particular within-nation study, results could vary, or even reverse, when compared to results from a different subset in a different nation. This probable outcome across studies indicates the importance of conducting multicultural studies like this one, and future research may be designed to examine the association between different subcultures and individual experiences of religion within a nation.

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