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Daily Spiritual Experiences and Prosocial Behavior

Christopher J. Einolf

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Abstract This paper examines how the Daily Spiritual Experiences Scale (DSES) relates to range of prosocial behaviors, using a large, nationally representative U.S. data set. It finds that daily spiritual experiences are a statistically and substantively significant predictor of volunteering, charitable giving, and helping individuals one knows personally. Daily spiritual experiences better predict helping to distant others than to friends and family, indicating that they may motivate helping by fostering an extensive definition of one's moral community. The relationship between the DSES and helping is not moderated by sympathy and is robust to the inclusion of most religiosity measures. However, the relationship becomes non-significant for most helping behaviors when measures of meditation, prayer, and mindfulness are included in a regression equation. The DSES is particularly effective in predicting helping behaviors among people who do not belong to a religious congregation, indicating that it may measure spiritual motivations for helping among people who are not conventionally religious.

Keywords Daily spiritual experiences · Prosocial behavior · Volunteering · Charitable giving · Internal religiosity

1 Introduction

A large number of studies have shown that spirituality (Sawatzky et al. 2005), volunteering (Musick and Wilson 2008), and other types of prosocial behavior (Einolf 2011; Portes 1998; Putnam 2000) are associated with a higher quality of life, both for individuals and for societies. Other studies have found associations between spirituality, religiosity, and prosocial behavior (Musick and Wilson 2008; Saroglou 2006). A better understanding of the relationship between religiosity, spirituality, and prosocial behavior is an important concern to scholars of well-being from a range of societies and academic disciplines. This paper examines the relationship between a relatively new measure of spirituality, the Daily

C. J. Einolf (✉)
DePaul University School of Public Service, 1 E. Jackson, Chicago, IL 60604, USA
e-mail: ceinolf@depaul.edu

Spiritual Experiences Scale, and prosocial behaviors, and distinguishes these effects from those of sympathy and more conventional religiosity.

The Daily Spiritual Experiences Scale (DSES), developed by Lynne Underwood in 1999 (Fetzer Institute 1999; Underwood 2006; Underwood and Teresi 2002), measures an aspect of spirituality and religiosity that has not been measured by earlier scales. It asks respondents how often they feel connected with a larger world outside of themselves, which could either be expressed by the term "God" or as a non-personal spiritual transcendence. To date, most studies using the Daily Spiritual Experiences Scale have focused on health, linking the scale to a number of positive outcomes. The current paper examines the connection between the DSES and prosocial behaviors. After documenting that there is a link between daily spiritual experiences and helping others, it examines the nature of that link. Does the DSES predict helping behaviors independently of other religiosity measures? Does the DSES motivate helping through the development of empathic concern, or by creating extensive circles of moral concern? Finally, are daily spiritual experiences particularly important in motivating prosocial behavior among people who are not conventionally religious?

2 Background

The Daily Spiritual Experiences Scale (DSES) is designed to measure "ordinary or 'mundane' spiritual experiences," as opposed to "the more dramatic mystical experiences such as near death experiences or hearing voices or seeing visions." The DSES "measures experiences of relationship with and awareness of the divine or transcendent," and "how beliefs and understandings are part of moment-to-moment features of life from a spiritual or religious perspective" (Underwood 2006:2). Underwood developed the DSES through extensive qualitative research, and tested the measure for validity and reliability (Underwood 2006). Follow-up studies have confirmed the reliability and validity of the measure among diverse populations, including non-white, non-US and non-Christian respondents (Bailly and Roussiau 2010; Kalkstein and Tower 2009; Loustalot et al. 2006; Mayoral et al., in press; Ng et al. 2009). Over sixty-five studies have used the DSES, but most have examined the scale's relationship to physical health outcomes and psychological well-being (Underwood 2010).

The DSES is a recent development in a long history of social science attempts to conceptualize, define, and measure religiosity. Some researchers distinguish between "intrinsic" religiosity, or religion as a goal in itself, and "extrinsic" religiosity, or religious participation motivated by non-religious goals (Hoge 1972). Some distinguish between "religiosity," or involvement with organized religion, and "spirituality," or an individual's personal relationship with God, a higher power, or some other sense of the transcendent (Neff 2006; Schlehofer et al. 2008). Some distinguish between religiosity that is internal, or within the minds of individuals, and religiosity that is external, or expressed through action (Idler et al. 2003).

While the DSES is internally valid, with a high correlation among the items that make up the scale, scholars disagree over whether it measures a separate and independent aspect of religiosity. One test of the DSES on a large, nationally representative U.S. sample (Idler et al. 2003) found that its items had a high internal correlation, but that it also correlated highly with measures of prayer, meditation, positive religious coping, and religious values. Another found that the DSES loaded on the same factor as many other measures of religiosity (Neff 2006). While the DSES seems to measure something that is conceptually

different from other types of religiosity, the evidence from these two studies suggests that most of the people who have daily spiritual experiences are also religious in other ways.

An extensive body of research has found that religiosity measures tend to correlate with prosocial behavior, suggesting that daily spiritual experiences would probably correlate with helping behaviors as well. The reasons for the link between religiosity and helping are disputed. Sociologists who study this issue tend to explain the connection between religion and helping by reference to the social networks that come with religious participation (Becker and Dhingra 2001; Cnaan et al. 1993; Musick and Wilson 2008; Musick et al. 2000; Park and Smith 2000; Wilson 2000). Psychologists tend to focus on subjective aspects of religiosity, such as values, motivations, attitudes, and beliefs (Clary and Snyder 1991; Clary et al. 1998; Cnaan and Goldberg-Glen 1991; Omoto et al. 2000; Saroglou 2006). In studies containing both subjective and behavioral measures of religiosity, behavioral measures have stronger correlations, and subjective measures sometimes become non-significant in statistical models containing behavioral measures, leading some scholars to argue that external religiosity is more important than internal religiosity in motivating helping (Wilson 2000; Musick and Wilson 2008).

As the DSES measures a purely internal aspect of religiosity that is different from typical questions about the subjective intensity or importance of religion, measuring the correlation between daily spiritual experiences and helping may shed new light on the ongoing debate about the relationship between religion and prosocial behaviors. A few studies have begun to explore this question. Using a reduced version of the DSES that was included on the 1998 General Social Survey, Houston and Cartwright (2007) found that people in public service careers scored higher on measures of daily spiritual experiences, as well as other religiosity measures, than people in non-service careers. Stewart et al. (2006) found that social workers who scored high on the DSES were more likely to use religious-based intervention practices. Zemore and Kaskutas (2004) found that recovering alcoholics who scored high on the DSES were more likely to help other recovering alcoholics and engage in other prosocial activities.

While the three studies mentioned above have found a correlation between the DSES and helping, they use non-representative samples, examine a limited range of helping behaviors, and do not discuss why the DSES predicts helping. This study uses a representative random sample, examines many helping behaviors, and tests how daily spiritual experiences may motivate helping through the development of empathic concern and extensivity.

Empathic concern, or "the tendency to experience feelings of sympathy and compassion for those in need" (Davis 1994:57), has been the subject of extensive study over the last 20 years, and numerous studies have found a connection between empathic concern and prosocial behaviors (Bekkers 2005, 2006; Davis 1994; Davis et al. 1999, 2003; Einolf 2010; Penner et al. 1995; Penner and Finkelstein 1998; Penner 2002). One reason that daily spiritual experiences may cause individuals to help others is that they may encourage the development of empathy. If a person feels a spiritual connection or oneness with other people, that person is more likely to be emotionally affected by the suffering of others and motivated to help them.

Extensivity is less well-studied than empathic concern, but a few studies have documented its validity and connection with prosocial behavior. Oliner and Oliner (1988) developed the concept of extensivity their study of individuals who rescued Jews in Nazi-controlled Europe. While both rescuers and non-rescuers had a sense of moral responsibility to help others, non-rescuers drew their circle of moral obligation narrowly, encompassing only family and friends, while rescuers drew their circle of moral obligation

widely, encompassing all humankind. Monroe (1996) reached a similar conclusion in her study of Holocaust rescuers, and a recent study (Einolf 2010) has connected extensivity with more ordinary helping behaviors, such as volunteering and charitable giving.

Finally, the DSES may be particularly useful in predicting helping behavior among people who think of themselves as spiritual, but not conventionally religious (Fuller 2001; Marler and Hadaway 2002; Saucier and Skrzypinska 2006; Zinnbauer et al. 1997). Underwood carefully designed the language of the DSES items to allow people to report having experiences of transcendence, a connection with other people, and a connection with nature, even if those people were not conventionally religious or did not believe in God. If the DSES measures an aspect of spirituality independent of religiosity, it may be particularly effective in predicting helping behaviors among people who are not conventionally religious.

In summary, current research shows that the DSES is a valid, reliable, and cross-culturally useful scale that accurately measures religiosity and correlates with good health and psychological well-being. However, a small amount of research has been done on the relationship between the DSES and outcomes other than health or well-being measures, and there have been only three studies on the relationship between the DSES and helping behaviors. While these studies found a connection between DSES and helping, they did not distinguish the DSES from other religiosity measures or examine why the DSES predicted helping. This study examines the relationship between the DSES and prosocial behaviors in depth, using a data set that has multiple measures of religiosity, helping behaviors, and other causal variables, and uses a large, representative sample.

3 Theory and Hypotheses

Daily spiritual experiences may affect involvement in prosocial behavior in several ways. First, daily spiritual experiences give people a feeling of connection with God, nature, and all humankind, which may cause people to draw the boundaries of their moral community more extensively. Second, the feelings of connectedness that go with daily spiritual experiences may contribute to a sense of empathic concern for others' well-being. Third, it may be that the relationship between the DSES and helping is spurious. Because the DSES correlates with other religiosity measures, it may be that these other aspects of religiosity, such as religious values or the social networks that come with religious attendance, are the actual explanations of a correlation between the DSES and helping. On the other hand, if the DSES truly measures a type of spirituality independent of other aspects of religiosity, it may be a particularly effective predictor of helping behaviors among people who are not conventionally religious. The MIDUS data set allows for direct and indirect tests of these possibilities, which are formally stated below as four hypotheses.

H1 The DSES will have a stronger correlation with formal volunteering, charitable giving, and helping strangers than with helping friends and family members.

While the 2005 wave does not contain variables that allow one to directly test the extensivity of a respondent's circle of moral obligations, it is possible to indirectly test the extensivity hypothesis by comparing the DSES's ability to predict helping close versus distant others. MIDUS measures giving time and money to family members, friends, neighbors and strangers, and institutions through formal giving and volunteering. If the DSES motivates helping by increasing extensivity, one would expect it to correlate more with helping distant others than close others.

H2 Sympathy will mediate the relationship between the DSES and prosocial behaviors.

MIDUS measures sympathy, a construct similar to empathic concern, using a scale developed by Uchida and Kitayama (2001). If daily spiritual experiences lead to helping by increasing one's capacity for sympathy, one would expect a positive correlation between the DSES and the sympathy scale, and that sympathy would mediate the relationship between DSES and helping in multivariate regression analysis.

H3 The DSES will remain a statistically significant predictor of prosocial behaviors in models that include other religiosity measures.

The relationship between the DSES and prosocial behaviors may be the spurious result of the correlation between the DSES and other religiosity measures. In this case the true cause of prosocial behaviors would be religious prosocial values or the recruitment networks and external norms that come with religious attendance. To test for this possibility, I examine whether any correlation between the DSES and helping behaviors remains significant in multivariate regression models containing other religiosity measures.

H4 The DSES will have a stronger correlation among people who do not belong to a congregation and people who do not report a religious denomination.

Finally, this study examines the possibility that daily spiritual experiences might be particularly important motivators of helping among people who are not conventionally religious. As the DSES is designed to capture spirituality even among non-religious people, it may also capture how spirituality motivates helping among people who score low on conventional religiosity measures. This study compares how well the DSES predicts helping among people who do and do not belong to a religious congregation, and among people who do and do not report being a member of a religious denomination, with the prediction that the DSES will be a better predictor of helping among those individuals who do not belong to a congregation or a denomination.

4 Data and Methods

4.1 The 2005 Midlife in the United States Survey

The DSES, along with many other religiosity measures, was included on the second, 2005 wave of the MacArthur Foundation's Midlife in the United States (MIDUS) study. MIDUS surveyed a nationally representative random-digit dialing sample of non-institutionalized, English-speaking adults, born between 1920 and 1970. Both telephone and written survey questionnaires were used, and the estimated overall response rate to the first wave of the study, taken in 1995, was 60.8%. With the variable weights included, the MIDUS sample is representative of the United States population in 1995 of adults born between 1920 and 1970 on race, sex, urban/rural, geographic region, education, and marital status. Full information about the sample, response rate, weighting, and survey design for the first wave of MIDUS are contained in the MIDUS I codebook, available from the MIDUS I website at midmac.med.harvard.edu/research.html.

Only 1,490 of the 3,032 respondents to the original survey responded to both the telephone and written questionnaire in the 2005 wave. Three hundred and fifty-five respondents completed only the phone survey in the second wave, 212 died, and 735 either could not be located or refused to respond. Those who responded to both the survey and the

telephone questionnaire in the second wave differed from non-responders in several ways which may correlate with religiosity and prosocial behaviors. Responders in 2005 were slightly older than non-responders, had higher incomes and more education, and were more likely to be white and female. They were more likely to be donors to religious and secular charities in the 1995 wave of the survey, but were not more likely to be volunteers. There was no statistically significant difference in their 1995 religious attendance, or their 1995 response to how important they felt religion to be in their lives. Respondents who died between 1995 and 2005 were older than the rest of the sample, had lower education and incomes, were less likely to volunteer in 1995, and were more likely to be male.

The MIDUS dataset contains weights to account for differences between the sample and the population on age, race, gender, and region of residence, and these weights were used in the calculations for this paper. However, there are no weights to account for attrition between the two waves. While the large attrition between the two waves limits the representativeness of the sample, it was necessary to use the 2005 data because the first wave did not incorporate the DSES.

4.2 Variables

The 2005 wave of MIDUS had thirty-eight questions about religious behaviors and subjective religiosity, which the study authors divided into eight scales: spirituality, religious identification, private religious practices, public religious behaviors, religious beliefs, religious and spiritual coping, daily spiritual experiences, and mindfulness. Question wordings, means, standard deviations, and Cronbach's alpha measures of reliability for these measures are presented in Table 1. Cronbach's alpha scores were above .60 for all of the MIDUS scales except public religious practices (alpha = .088).

4.2.1 Daily Spiritual Experiences

The daily spiritual experiences scale for MIDUS consists of five descriptions of subjective experiences, and respondents are asked how often they experience these states on a scale of one ("never") to four ("often"). These subjective experiences are "A feeling of deep inner peace or harmony," "A feeling of being deeply moved by the beauty of life," "A feeling of strong connection to all of life," "A sense of deep appreciation," and "a profound sense of caring for others." The mean for the combined scale is 3.1, the standard deviation is .6, and the Cronbach's alpha measure of reliability is .88.

The MIDUS survey also asked respondents about their religious denomination and beliefs. The majority of respondents, 85.7%, reported a religious affiliation, and 44.7% belonged to a religious congregation. Most respondents (59.7%) were Protestant Christians, followed by Catholics (22.0%) and Jews (1.9%). I coded Jehovah's Witnesses, Seventh Day Adventists, and members of the Church of the Latter Day Saints (Mormons) into a separate category, with 2.2% of all respondents, as members of these religions tend to do large amounts of volunteering and charitable giving. Of the Christian respondents, 34.2% were Biblical literalists, who agreed with the statement, "The Bible is the actual Word of God and is to be taken literally, word for word."

Before examining the relationship between daily spiritual experiences and prosocial behaviors, I used factor analysis to examine whether the DSES questions measured a facet of religiosity independent of the other religion questions. In principal components analysis,

Table 1 Descriptive statistics—religiosity questions

MIDUS scale and question:	Answers	Mean	SD
Spirituality (1–2):			
1. How spiritual are you?	1–4[a]	3.1	.8
2. How important is spirituality in your life?	1–4[a]	3.3	.8
Cronbach's alpha for spirituality = .91			
Religious identification (3–9)	1–4[a]		
3. How religious are you?	1–4[a]	2.8	.9
4. How important is religion in your life?	1–4[a]	3.1	.9
5. How important is it for you—or would it be if you had children now—to send your children for religious or spiritual services or instruction?	1–4[a]	3.2	.9
6. How closely do you identify with being a member of your religious group?	1–4[a]	2.7	1.1
7. How much do you prefer to be with other people who are the same religion as you?	1–4[a]	2.4	1.0
8. How important do you think it is for people of your religion to marry other people who are the same religion?	1–4[a]	2.2	1.1
9. How important is it for you to celebrate or practice on religious holidays with your family, friends, or members of your religious community?	1–4[a]	3.0	1.0
Cronbach's alpha for religious identification = .90			
Private religious practices (10–12)			
Preface: Within your religious or spiritual tradition, how often do you…			
10. Pray in private?	1–6[b]	4.6	1.8
11. Meditate or chant?	1–6[b]	2.0	1.7
12. Read the Bible or other religious literature?	1–6[b]	2.9	1.8
Cronbach's alpha for private religious practices = .71			
Public religious practices			
13. Within your religious or spiritual tradition, how often do you attend religious or spiritual services?	1–6[b]	2.7	1.5
14. Within your religious or spiritual tradition, how often do you attend/ participate in church/temple activities (e.g. dinners, volunteer work, church related organizations)?	1–6[b]	2.2	1.3
15. Do you have a religious community or congregation?	Yes/no	55.5% yes	n/a
Cronbach's alpha for public religious practices = .088			
Religious beliefs			
16. Which of the following do you believe: that it is good to explore many different religious or spiritual teachings, or that one should stick to a particular faith?	1–3[c]	1.8	.9
Religious/Spiritual Coping (17–24)			
Preface: Think about how you try to understand and deal with major problems in your life. Please answer the following questions according to the way you cope.			
17. When you have problems or difficulties in your family, work, or personal life, how often do you seek comfort through religious or spiritual means such as praying, meditating, attending a religious or spiritual service, or talking to a religious or spiritual advisor?	1–4[e]	2.9	1.1
18. When you have decisions to make in your daily life, how often do you ask yourself what your religious or spiritual beliefs suggest you should do?	1–4[e]	2.7	1.1
19. I try to make sense of the situation and decide what to do without relying on God.	1–4[f]	2.4	1.1

Table 1 continued

MIDUS scale and question:	Answers	Mean	SD
20. I wonder whether God has abandoned me	1–4[f]	1.3	.7
21. I feel God is punishing me for my sins or lack of spirituality.	1–4[f]	1.3	.6
22. I look to God for strength, support, and guidance.	1–4[f]	3.1	1.1
23. I work together with God as partners.	1–4[f]	2.6	1.1
24. I think about how my life is part of a larger spiritual force.	1–4[f]	2.7	1.1
Cronbach's alpha for religious coping = .65			
Daily Spiritual Experiences (25–29)			
Preface: On a daily basis, how often do you experience the following?			
25. A feeling of deep inner peace or harmony.	1–4[e]	2.9	.8
26. A feeling of being deeply moved by the beauty of life.	1–4[e]	3.1	.8
27. A feeling of strong connection to all of life.	1–4[e]	3.0	.8
28. A sense of deep appreciation.	1–4[e]	3.3	.7
29. A profound sense of caring for others.	1–4[e]	3.3	.7
Cronbach's alpha for daily spiritual experiences = .88			
Mindfulness (30–38)			
Preface: In the following items, please indicate how much you agree or disagree. Because of your religion or spirituality, do you try to be…			
30. More engaged in the present moment.	1–5[d]	3.5	.8
31. More sensitive to the feelings of others.	1–5[d]	4.0	.8
32. More receptive to new ideas.	1–5[d]	3.7	.8
33. A better listener.	1–5[d]	3.9	.8
34. A more patient person.	1–5[d]	4.0	.8
35. More aware of small changes in my environment.	1–5[d]	3.6	.8
36. More tolerant of differences.	1–5[d]	3.8	.8
37. More aware of different ways to solve problems.	1–5[d]	3.8	.8
38. More likely to perceive things in new ways.	1–5[d]	3.7	.8
Cronbach's alpha for mindfulness = .94			

[a] 1 = Not at all, 2 = Not very, 3 = Somewhat, 4 = Very

[b] 1 = Never, 2 = Less than once per month, 3 = 1–3 times per month, 4 = Once a week, 5 = A few times a week, 6 = Once a day or more

[c] 1 = Stick to one faith, 2 = Neither, 3 = Explore different teachings

[d] 1 = Strongly disagree, 2 = Somewhat disagree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree

[e] 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often

[f] 1 = None, 2 = A little, 3 = Some, 4 = A great deal

most of the religion variables loaded on a single factor, but Varimax rotation showed that all the daily spiritual experiences loaded on a single factor, independent of the other variables. While this supports the claim that daily spiritual experiences measure an independent aspect of religiosity, the DSES correlates significantly ($p < .001$) with all the other religiosity scales. It correlates most with positive religious coping ($R = .544$), mindfulness ($R = .544$), spirituality ($R = .475$), and prayer ($R = .411$), and with the other variables at Pearson's R values that range from .175 to .401.

4.2.2 Prosocial Behaviors

The MIDUS survey had questions measuring both volunteering and charitable giving. For volunteering, MIDUS asked respondents how many hours they spend each month, on average, in three types of volunteer work: "hospital, nursing home, or other health-related work," "school or other youth-related volunteer work," and work for "any other organization, cause, or charity," with the exception of political organizations or causes. For charitable giving, the survey asked how many dollars respondents contribute each month, on average, to "religious groups," and "any other organizations, causes, and charities (including donations made through monthly payroll deductions)," again with political contributions excepted.

While the MIDUS survey had separate questions about secular and religious giving, it did not have separate questions about secular and religious volunteering. However, other research shows that the single largest site of most Americans' volunteer work is their church or religious organization (Wilson 2000; Musick and Wilson 2008), so it seems likely that much of the "other" volunteering reported in the study is actually religious volunteering. Accordingly, I combined the education/youth and the health questions into a single measure of purely secular volunteering, and treated the "other" category as a measure of primarily religious volunteering. Other researchers studying the effects of religiosity measures on volunteering using the MIDUS sample have followed the same strategy (Taniguchi and Thomas 2011).

The MIDUS survey also had many questions about helping behaviors directed towards individuals. The survey asked how many hours respondents spent in a typical month doing work to help individuals and providing counseling and emotional support to individuals, and also how much money they gave to individuals. The survey divided these individuals into parents, children not living with the respondent, in-laws, friends and distant relatives, and any other individuals. For helping and counseling other individuals, the survey prompted people to think about helping "neighbors and people at church," while for giving money to other individuals, the survey gave the example of "people on the street asking for money." I combined helping parents and helping children into a single measure of helping close family. I excluded helping in-laws, as their status was unclear, given that they are a distant relative to one spouse, but a close relative to another. This left three categories: close others (parents and children), moderately close others (friends and other relatives), and distant others (neighbors, people at church, strangers, people asking for money on the street, and others).

The most common helping behavior was providing emotional counseling and support to close family, which 87.4% of respondents did in a typical month, followed by emotional support to friends and distant family (77.2%), and helping neighbors and others (67.2%). For emotional support and giving money, people were more likely to help close others than distant ones, and helped in larger amounts. For person to person volunteering, people were more likely to help distant others, but spent more hours helping close family. More people engaged in person to person helping than formal giving or volunteering (Table 2).

Among those who did engage in a helping behavior, the majority gave only a few dollars or hours, while a few respondents gave large amounts. As these extreme outliers would bias the regression results, I truncated each variable at 200 h or $2000, which was between the 95th and 99th percentile for most measures. No respondent reported more than 80 h of secular volunteering or gave more than $800 to close family, so I did not have to truncate these variables (Table 2).

Table 2 Descriptive statistics for prosocial behavior measures

	Scale	Mean	SD	Percent who engage in the behavior
Formal prosocial behaviors				
Religious and other volunteering	0–200	3.0	8.5	29.0
Secular volunteering	0–80	2.6	7.5	24.5
Religious giving	0–2000	105.21	264.97	48.1
Secular giving	0–2000	44.86	173.85	47.5
Informal prosocial behaviors				
Helping close family	0–200	15.3	31.6	56.7
Helping friends and distant family	0–200	9.8	26.0	59.3
Helping neighbors, people at church, and others	0–200	7.2	18.3	67.2
Giving to close family	0–800	16.71	45.24	57.5
Giving to friends and distant family	0–2000	25.06	130.84	47.5
Giving to others, including people on the street	0–1000	5.60	34.34	18.4
Emotional support to close family	0–200	27.8	42.2	87.4
Emotional support to friends and distant family	0–200	9.6	19.9	77.2
Emotional support to neighbors, people at church, and others	0–200	5.5	16.1	58.2

4.2.3 Sympathy

The 2005 MIDUS survey used a measure of sympathy developed by Uchida and Kitayama (2001). This scale presents four statements and asks respondents to agree or disagree on a 1–7 scale, with seven representing "strongly agree." The statements are, "Even when things are going well for me, I can't be happy if I have a friend who is in trouble," "I am moved when I hear of another person's hardship," "I think nothing is more important than to be sympathetic to others," and "My sympathy has its limit" (reverse coded). The scale has only a moderate reliability, with Cronbach's alpha equal to .48. The scale adds together the four items, with a mean of 18.9 and a standard deviation of 3.8.

4.2.4 Control Variables

In multivariate regression analyses I included age in years, household income in dollars, and a twelve point ordinal scale measuring education. I also included dummy variables for gender and race (non-white).

4.3 Statistical Methods

Most of the prosocial behaviors are not normally distributed, with the majority or large minorities of respondents reporting no activity on each variable in a typical month, and this makes the data unsuitable for Ordinary Least Squares regression. Instead, I used Tobit regression on the truncated interval variables, and logistic regression on dichotomized variables (0 = no activity, 1 = any activity). To test the first hypothesis, that the DSES will better predict helping among distant others than close others, I used bivariate regressions. I then used stepwise Tobit regressions to test for the mediating effect of sympathy (Hypothesis Two) and to test whether the DSES was robust to the inclusion of

other religiosity measures (Hypothesis Three). Finally, I ran bivariate logistic regression models on a split sample, distinguishing between those respondents who do and do not belong to a religious congregation and those who do and do not report a religious denomination, to examine whether the DSES better predicted helping behaviors among those who are not conventionally religious (Hypothesis Four). I used logistic regression in bivariate regressions because logistic regression allows for the use of the Nagelkerke pseudo-R squared statistic as a measure of substantive significance (Nagelkerke 1991). I used Tobit regression in multivariate analysis because one cannot easily test for mediating or spurious effects in multivariate logistic regression (Mood 2010).

5 Results

The data strongly supported the first hypothesis, as the DSES predicted helping distant others better than helping close others. The Tobit and logistic regression results (Table 3) show that the DSES had statistically significant ($p < .001$), positive, and substantive relationships with many behaviors directed at non-kin, including religious and other volunteering (Nagelkerke pseudo R-squared = .039), secular volunteering (.024), religious giving (.064), helping neighbors and others (.023), giving money to others (.024), and providing emotional support to others (.053). Only secular volunteering had a weak relationship with the DSES ($p < .01$, $R^2 = .007$). The DSES was a statistically significant but weaker predictor of helping friends and cousins through donations of time ($p < .001$, $R^2 = .021$), money ($p < .10$, $R^2 = .004$), and emotional support ($p < .001$, $R^2 = .013$). The DSES had no significant relationship with giving time or emotional support to close family, and a marginally significant relationship with giving money to close family ($p < .10$, $R^2 = .003$).

Table 3 Bivariate logistic and Tobit regressions of the DSES on prosocial behaviors

	Logistic		Tobit
	Exp(B)	R^2	b
Formal			
Religious and other volunteering	1.831***	.039	5.81***
Secular volunteering	1.631***	.024	3.37**
Religious giving	2.064***	.064	145.89***
Secular giving	1.261**	.007	27.90*
Informal			
Helping close family	1.125	.002	3.21
Helping friends and distant family	1.486***	.021	5.25***
Helping neighbors, people at church, and others	1.533***	.023	3.41***
Giving to close family	1.152^	.003	4.26
Giving to friends and distant family	1.224^	.004	34.67
Giving to others, including people on the street	1.676***	.024	15.34*
Emotional support to close family	1.091	.001	.000
Emotional support to friends and distant family	1.394***	.013	3.01**
Emotional support to neighbors, people at church, and others	1.913***	.053	5.60***

^ $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Table 4 Coefficient and statistical significance of the slope of the DSES, Tobit regression

	Model 1: DSES only	Model 2: Sympathy	Model 3: Controls	Model 4: Some religiosity measures	Model 5: All religiosity measures
Formal					
Religious and other volunteering	5.81***	6.36***	5.57***	3.97**	3.79**
Secular volunteering	3.37**	3.56**	4.45***	3.19*	2.40
Religious giving	145.89***	145.21***	158.66***	−1.57	8.91
Secular giving	27.90*	37.33***	36.87**	39.24*	27.63
Informal					
Helping close family	3.21	1.90	5.83*	11.25*	7.00*
Helping friends and distant family	5.25***	4.59**	5.03**	2.63	.99
Helping neighbors, people at church, and others	3.41***	2.97**	3.84***	3.40*	2.70
Giving to close family	88.93*	79.87^	72.43^	65.69	36.84
Giving to friends and distant family	34.67	33.27	62.01*	62.14	48.63
Giving to others, including people on the street	15.34*	11.97^	24.77***	27.00*	17.90
Emotional support to close family	−.88	−.20	2.27	−2.53	−.56
Emotional support to friends and distant family	3.01**	2.51*	3.56***	2.55	1.45
Emotional support to neighbors, people at church, and others	5.60***	5.11***	6.62***	4.19**	2.52

^ $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Model 1 contains only the DSES

Model 2 adds sympathy

Model 3 does not contain sympathy, but adds controls for sex, race, age, income, and education

Model 4 includes controls and adds measures of religious denomination, congregation membership, subjective religiosity and spirituality, religious identification, scripture reading, services attendance, religious meeting attendance, Biblical literalism, positive religious coping, and negative religious coping

Model 5 includes all variables from Model 4 and adds measures of mindfulness, prayer, and meditation

There was little support for the second hypothesis, that sympathy would mediate the relationship between the DSES and helping. Sympathy correlated positively with the DSES ($R = .283$, $p < .001$), but did not correlate with most helping measures. Sympathy only correlated positively and significantly with providing emotional support to neighbors and others, giving money to strangers, and doing work to help friends and cousins. Including sympathy in a multivariate Tobit regression equation decreased the slope coefficient of the DSES only slightly, and only for five behaviors: helping and providing emotional support to friends and cousins, helping and providing emotional support to neighbors and others, and giving to others (Table 4, Model 2). For religious and other volunteering, secular volunteering, and secular giving, including the sympathy variable actually caused the slope coefficient for the DSES to increase.

There was partial support for hypothesis three, that the DSES was an independent predictor of helping, robust to the inclusion of other religiosity measures. Adding all of the other religiosity measures eliminated the relationship between the DSES and helping behaviors for all variables except religious and other volunteering (Table 4, Model 5).

By running a series of stepwise regressions with different variables included each time, I determined that the key intervening variables were mindfulness, prayer, and meditation. Prayer and meditation are similar to the DSES in that they measure private religious practices, and mindfulness is similar in that it measures a feeling of spiritual awareness and connection with others. These variables also correlate the DSES at $R = .544$ for mindfulness, $R = .411$ for prayer, and $R = .290$ for meditation. In regression models containing all the religiosity variables except these three, the DSES remains a significant predictor of most prosocial behaviors (Table 4, Model 4). Interestingly, the DSES is not a significant predictor of donating money or time to close family members by itself, but becomes significant in models containing control variables (Table 4, Model 3), and its slope becomes larger in models that add the other religiosity variables to the controls (Table 4, Model 5).

As hypothesis four would predict, dividing the sample did find that the DSES was a better predictor of some helping behaviors among people who did not belong to a religious congregation (Table 5). In bivariate logistic regression, the DSES was a significant ($p < .05$) predictor of secular volunteering, secular giving, and providing emotional support to friends for people who did not belong to a congregation, but not for people who did. The results for denominational affiliation were mixed. The DSES was a significant ($p < .05$) predictor of secular giving only for those who reported no denominational affiliation, and the slope coefficient for giving money to strangers was much higher among those who reported no denomination. However, the DSES was a significant predictor at $p < .05$ for religious and other volunteering, religious giving, helping neighbors, people at church, and others, and providing emotional support to friends and distant family only among people who did report a denominational affiliation, which is the opposite of what Hypothesis Four would predict.

6 Discussion

This study examined the relationship between daily spiritual experiences and a wide range of prosocial behaviors, using a large, random sample of U.S. residents. It found that daily spiritual experiences predicted helping behaviors, even in models containing many other religiosity measures, although the relationship became non-significant for most helping behaviors when measures of mindfulness, prayer, and meditation were included in the model. The DSES better predicted helping distant others than close others, supporting the hypothesis that daily spiritual experiences promote helping through the development of extensivity. Sympathy did not mediate the relationship between daily spiritual experiences and helping. Daily spiritual experiences correlated more with helping among those who did not belong to a religious congregation, but there was no consistent pattern of difference among respondents who did and did not report a denominational affiliation.

Why does the DSES correlate with involvement in prosocial behavior? While many scholars explain the connection between religion and helping through external norms and social networks, the purely private nature of daily spiritual experiences supports the view that one's internal religious life plays a significant and independent role in motivating helping behaviors. Prior research has focused on the role of religion in encouraging altruistic values or a sense of moral obligation, and it may be that daily spiritual experiences support their development. It was not possible to test this hypothesis directly, as the MIDUS survey had no direct measure of prosocial religious values, but there was some indirect evidence to support this in the fact that the DSES sometimes became non-

Table 5 Logistic regression of helping behaviors on the DSES, sample split by denominational affiliation and congregational membership

	Congregation member		Not a congregation member		Denominational affiliation		No denominational affiliation	
	Exp(B)	R^2	Exp(B)	R^2	Exp(B)	R^2	Exp(B)	R^2
Formal								
Religious and other volunteering	1.462**	.015	1.780***	.031	1.763***	.034	1.692^	.030
Secular volunteering	1.301^	.007	1.760***	.030	1.564***	.020	1.844*	.043
Religious giving	1.518**	.017	1.609**	.022	1.982***	.056	1.728	.026
Secular giving	.956	0	1.496***	.023	1.174^	.003	1.760**	.050
Informal								
Helping close family	.967	0	1.146	.003	1.103	.001	1.179	.005
Helping friends and distant family	1.342*	.009	1.411**	.017	1.469***	.018	1.490*	.027
Helping neighbors, people at church, and others	1.532**	.018	1.452**	.020	1.566***	.024	1.322	.013
Giving to close family	.986	0	1.157	.003	1.133	.002	1.158	.004
Giving to friends and distant family	1.092	.001	1.380^	.010	1.165	.002	1.417	.014
Giving to others, including people on the street	1.504*	.013	1.856***	.035	1.597***	.019	2.326***	.069
Emotional support to close family	.788	.003	1.095	.001	1.090	.001	1.111	.001
Emotional support to friends and distant family	1.177	.002	1.505**	.021	1.388**	.011	1.218	.006
Emotional support to neighbors, people at church, and others	1.908***	.042	1.539***	.026	1.874***	.047	1.750**	.050

^ $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

significant in models containing measures of prayer and meditation. These three private religious practices may encourage the development of prosocial religious values, or may be a proxy measure for them.

A second possible explanation for the connection between daily spiritual experiences and helping lies with their role in promoting greater awareness of the needs of others. One item on the DSES measures to what extent individuals feel "a profound sense of caring" for others. While sympathy did not mediate the relationship between the DSES and helping, the mindfulness scale did mediate the relationship. Perhaps daily spiritual experiences encourage helping not through the development of sympathy for others' suffering, but by making it more likely that an individual will notice another person's suffering.

A second possibility is that the DSES motivates prosocial behavior through its promotion of extensive moral obligations. Oliner and Oliner (1988); Monroe (1996); Einolf (2010) have shown that people who draw extensive boundaries around their moral communities, feeling morally connected with all people rather than just their family and friends, are more likely to help others. The DSES may measure an even more expanded sense of what Oliner and Oliner term "extensivity," in that the DSES measures not only

one's connection with other people, but also one's connection with the natural and supernatural world.

I had hypothesized that the DSES would motivate helping more among people who consider themselves spiritual but not religious, but the test of this hypothesis led to ambiguous results. The DSES correlated more with helping among people who do not belong to a congregation, but not among people who do not report a denominational affiliation. The DSES may measure spiritual commitment among people who are spiritual but not religious, but might instead simply measure religious commitment among people who do consider themselves religious, but do not belong to a congregation at that point in their lives.

While this study suggests that daily spiritual experiences hold an important relationship with helping behaviors, several methodological limitations make its conclusions tentative. First, the study used cross-sectional data, so that it is impossible to say whether the correlation between the DSES and helping behaviors is causal. The survey used a large, random, and representative sample, but was limited to residents of the United States, the majority of whom were Christians. Self-reported survey data are subject to social desirability bias, and the tendency to report socially desirable responses may correlate both with the DSES and with measures of helping. It was not possible to test directly whether daily spiritual experiences motivated helping through their influence on altruistic values, moral obligation, awareness of need, or extensivity. Finally, the MIDUS survey employed a little-used measure of sympathy that was originally developed for use in Japan (Uchida and Kitayama 2001), instead of the more commonly used measure of empathic concern developed by Davis (1994). The failure of sympathy to mediate the relationship between the DSES and helping may be a result of flaws in the measure of sympathy, not the lack of a relationship in reality.

The main significance of this study is that it suggests a new explanation for the connection between religiosity and prosocial behavior. Prior studies have proposed a dichotomy between social factors, such as networks and external norms, and psychological factors, which are usually taken to mean altruistic values and internal norms of moral obligation. This study shows a connection between a new measure of internal religiosity and helping, arguing in favor of the importance of psychological factors independent of external norms and social networks. It also suggests that spirituality may influence helping not only through internal norms and values, but also through fostering greater awareness of the needs of others and a sense of moral extensivity. These are both psychological traits, but are not related to the sense of values or duty that psychologists of religion consider the main reason for the connection between religiosity and helping.

The link between the DSES and helping deserves further investigation. Research using longitudinal data would provide a better test of causality, and research outside the U.S. would help establish whether the relationship is universal. Survey research using better measures of empathic concern, awareness of need, and extensivity might clarify the means by which daily spiritual experiences motivate helping. Qualitative interview research would also help describe the nature of the connection. Do people draw a causal link between their own daily spiritual experiences and their prosocial behaviors? Or are both daily spiritual experiences and prosocial behaviors caused by some unknown third factor? While Underwood and Teresi developed the DSES for use in health research, the current study shows that daily spiritual experiences correlate with helping others, and may correlate with many other aspects of personal and social well-being. Further research should investigate the sources, correlates, and outcomes of this important new measure of religious experience.

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