A Multilevel Analysis of
Spirituality and Personality in Daily Life

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Abstract

Most existing research and theory have concerned spirituality as a trait, an individual difference that is presumed to be relatively stable across time and situations. The present study examined the state variability of spirituality: How does spirituality vary within an individual? Every day for two weeks, 127 participants provided measures of the strength of their spiritual beliefs and other measures of psychological states including, self-esteem, depressive thinking, and self-focused thinking, and they described the events that occurred each day. Multilevel random coefficient modeling analyses found that at the within-person level, spirituality was positively related to daily positive events and was positively related to daily reflection about the self, i.e., adaptive self-focused attention. Participants also provided dispositional (trait) measures of the same constructs, and trait spirituality was positively related to agreeableness, conscientiousness, and reflection, and was negatively related to rumination. Overall, the results suggested that it is useful to distinguish state and trait spirituality and that at both level of analysis, spirituality is associated with beneficial intra- and interpersonal characteristics.
A Multilevel Analysis of Spirituality and Personality in Daily Life

Embedding the spiritual and religious aspects of people’s lives within the larger framework of personality theory and the study of individual differences per se should improve our understanding of spirituality and religiosity. The present study was designed to do this by examining the relationships between spirituality and various individual differences reflecting broad theories of personality (i.e., the Five Factor Model), individual differences in self focused thinking and self-evaluation (e.g., self-esteem), and psychological adjustment (e.g., depression). Although previous research has examined some of these relationships at the between person level (i.e., relationships among traits), to my knowledge, no previous study has examined within-person relationships among these constructs. For example, are daily changes in thoughts and feelings of depression related to daily changes in spirituality?

Spirituality has been defined in various ways, including “that vast realm of human potential dealing with ultimate purposes, with higher entities, with God, with love, with compassion, with purpose” (Tart, 1975). Although they are related constructs, it is important to distinguish spirituality from religiosity. Generally speaking, religiosity refers to the endorsement of organized religion (attending a worship service, observing a particular religious doctrine or tradition, etc.), whereas spirituality is a broader term that focuses on relationship between individuals and some sort of transcendent force. Furthermore, spirituality may consist of heterogeneous practices not necessarily connected to organized religious institutions but to personal beliefs and experiences of the sacred (Turner, Lukoff, Barnhouse, & Lu, 1995). Therefore, it is possible to be spiritual while not being religious, although the two may be related. See Zinnbauer and Pargament (2005) for a discussion of the evolving nature of the constructs of spirituality and religiosity and the implications of this evolution for studying these topics.

The present study concerned daily changes in spirituality and is part of series of studies examining within-person variability in psychological states (e.g., Nezlek, 2005). The primary assumption underlying this study was that spirituality has both a trait and state component. That is, although people can be classified as being spiritual or not (or spiritual to varying degrees), a
trait component, it is also likely that people vary across time or situations in how spiritual they are, a state component. Although there is no consensus regarding the period of time over which a state is defined, for present purposes, changes in spirituality were examined across days because the day is a psychologically meaningful unit of time.

In addition to examining state variability in spirituality, the present study had a broader goal of integrating the study of spirituality more closely with the study of personality and other individual differences. This was done by collecting measures representing a range of psychological constructs. Although as discussed by Nezlek (2005), there is no agreed-upon collection of psychological characteristics defining the universe of daily psychological states, there are some broad categories that can be used. For present purposes, spirituality was examined in combination with measures of basic personality (the Five Factor Model, FFM), psychological well-being (e.g., depression), and self-focused attention (self-consciousness). More detailed explanations for the inclusion of these measures and for the hypotheses that guided the study are provided below.

The design of the study was similar to the design used in a growing body of research that is sometimes referred to as “intensive repeated measures” research. In the present study, participants provided data once a day for two weeks. Each day they provided a measure of how spiritual they felt that day, they described the events they had experienced that day, and they provided other state level measures. In addition, they provided trait level measures of the constructs that were measured on a daily basis.

These data provided the opportunity to examine within-person relationships between spirituality and external conditions (i.e., daily events) and between spirituality and other psychological states (e.g., self-esteem). Moreover, between-person differences in such within-person relationships could be examined. For example, does the daily spirituality of some people fluctuate more in response to external events than the daily spirituality of others? Finally, these data allowed comparisons of within- and between-person relationships between spirituality and other constructs. Such a distinction is critical because relationships between the same
constructs at different levels of analysis are mathematically independent (e.g., Nezlek, 2001) and may represent different psychological processes (e.g., Tennen, Affleck, & Armeli, 2005).

Although there may not be a consensus regarding a “best” model for personality, there is broad agreement that what has become known as the Five Factor Model (FFM) is a useful conceptual framework for studying personality. The FFM provides a template that can be used to understand a construct more fully. In the present study, the five factors comprising the FFM were measured at both the trait and state levels. This provided the opportunity to examine relationships between spirituality and the FFM at both the within- and between-person levels.

There is little research on state variability in the FFM factors, and so my expectations were based primarily on trait level research. Given the definitions of the constructs comprising the FFM, openness was the construct that I thought would be related most closely to spirituality at both the state and trait levels. This hypothesis was based on the assumption that openness, which is defined in terms of imaginativeness and creativity, intellectual and aesthetic interests, and broad-mindedness and unconventionality, overlaps conceptually with spirituality. For example, Tart’s (1975) definition of spirituality emphasizes broad ideas and the meaning of life. Individuals who are more open intellectually would seem to be people who are more interested in such matters. In contrast, individuals who are less concerned with issues such as the meaning of life would seem to be less interested in intellectual pursuits and examining new ideas. Moreover, as summarized by Piedmont (2005), various studies have found positive relationships between openness and different measures of spirituality.

The other factor from the FFM that has been found to correlate (positively) with measures of religiosity and spirituality is agreeableness (e.g., Piedmont, 2005). Piedmont suggests that such a relationship is due to the fact that a compassionate attitude toward others is a component of spirituality. It should be noted however, that agreeableness tended to correlate more with measures of religiosity more than it did with measures of spirituality.

In contrast, none of the conceptual definitions of the other factors seemed to be related to spirituality. For example, although some might argue that neuroticism should be negatively related to spirituality because less distressed people have a firmer base from which to consider
spiritual matters, it is possible that more distressed people think more about life and its meaning as they attempt to deal with their problems. Similar contradictory arguments can be made for the other factors. In light of this, I expected spirituality to be related to openness and agreeableness, and I examined relationships between spirituality and the other FFM constructs on an exploratory basis. See Piedmont (2005) for a discussion of relationships between spirituality and the FFM.

The second group of constructs that was included in the study were measures of self-focused attention. Self-focused attention was chosen because to some extent, spirituality involves thinking about one’s self and one’s relationship to the world. The specific constructs that were measured were reflection and rumination and public self-consciousness. Initially, self-focused attention was conceptualized in terms of two dimensions, private and public self-consciousness (e.g., Feningstein, Scheier, & Buss, 1975). Research on private self-consciousness was somewhat contradictory however. For example, some studies found that increased private self-consciousness was associated with poorer psychological functioning, whereas other studies found that increased private self-consciousness was associated with better psychological adjustment. This inconsistency has been discussed as part of the "self-absorption paradox" (e.g., Trapnell & Campbell, 1999).

To resolve this paradox, Trapnell and Campbell (1999) demonstrated that there are two separate types of private self-consciousness, which they labeled as reflection and rumination. They defined reflection as “intellectual self-attentiveness”, whereas rumination was defined as ”neurotic self-attentiveness”. Although Trapnell and Campbell found that reflection and rumination were not correlated, they found that reflection was positively related to psychological well-being, whereas rumination was negatively related. Of these two, reflection has the most conceptual overlap with spirituality, and I expected that reflection and spirituality would be positively related, whereas I expected that spirituality and rumination would be unrelated. I also expected that public self-consciousness, the extent to which people think about what others think of them, would be unrelated to spirituality because there is very little, if any, conceptual overlap between the two constructs.
The third construct that was measured at both the trait and state levels was psychological well-being. For present purposes, well-being was operationally defined in terms of self-esteem and depression. Similar to forming a hypothesis regarding relationships between spirituality and neuroticism (a construct that is frequently thought of a measure of well-being), it was difficult to form a strong hypothesis regarding relationships between spirituality and self-esteem or depression. On the one hand, some research suggests that there is a positive relationship between well-being and religiosity, whereas other research suggests the opposite (e.g., Miller & Kelley, 2005). Nonetheless, religiosity and spirituality are not the same construct, and individuals may be spiritual as a means to find solutions to their problems. Given, this, relationships between spirituality and well-being were examined on a somewhat exploratory basis.

Finally, one construct was measured at only the daily (state) level, daily events. One of the assumptions underlying the present study was that spirituality has a state component. If this is so, then spirituality may change in response to external circumstances such as daily events. Relationships have been found between daily events and other psychological states such as self-focused attention that might be related to spirituality (e.g., Nezlek, 2002). Nevertheless, given the lack of existing research and theory on the situational influences on spirituality, it was difficult to form specific hypotheses about relationships between daily spirituality and daily events.

Method

Participants

Participants were undergraduates who volunteered for the study in fulfillment of class requirements. They were introduced to the study in groups of 15-25. They were told that the study concerned their daily lives and how they felt each day, and that they would need to provide data each day for two weeks. To ensure that their responses represented their reactions to the entire day, they were also told to respond just before going to bed. If they missed a day, they were told not to try to recreate it but to add a day at the end of the study.

Data were collected via the internet, and participants were told how to access the website to provide their responses. They were also told that the date and time of all their responses would
be recorded, something I believe motivated them to comply with instructions more closely. Inspection of the date and time stamps of participants’ data lead to the deletion of all the data for 4 participants, leaving 127 participants (79 women and 48 men) who provided 1645 days of data ($M = 13.0, SD = 2.84$). In addition to the daily measures, participants provided various trait level measures via the internet.

**Measures**

Participants provided both state (daily) and trait (dispositional) measures of spirituality. Trait spirituality was measured using the Spiritual Involvement and Beliefs Scale – Revised (SIBS-R; Hatch, Burg, Naberhaus, & Hellmich, 1998). The SIBS-R is a 22-item scale that measures core spirituality, spiritual perspective/existential, personal application/humility, and acceptance/insight. The items were presented on a 7-point scale, ranging from 1 = strongly disagree to 7 = strongly agree.

Core spirituality is the central subscale of the SIBS-R, and it contains 15 of the 22 items. In light of this, daily spirituality was measured with three questions taken from this subscale and reworded for daily administration. These were: the spiritual part of my life was very important to me; I had joy in my life because of my spirituality; my personal relationship with a power greater than myself was important to me. Participants responded to these questions on 7-point scales with endpoints labeled “very uncharacteristic of me today” and “very characteristic of me today”. This strategy of rewording items from trait level measures for daily administration has been used successfully in numerous previous studies (e.g., Nezlek, 2002; Nezlek & Gable, 2001).

In addition to daily spirituality, participants also provided a three item daily measure Beck’s depressogenic triad (Beck, 1967), a four item daily measure of self-esteem (Rosenberg, 1965), and three item measures of daily self-focused thinking (reflection, rumination, and public self-consciousness) from Trapnell and Campbell (1999) and Feningstein et al. (1975). Participants responded using 7-point scales. Detailed descriptions of all of these measures can be found in Nezlek (2005). The items measuring each of these construct were averaged to create a daily score.
The factors of the Five Factor Model of personality were also measured on a daily basis. Each of the five factors was measured with 3 items adapted from the BFI-44, a widely used measure of the FFM (John & Srivastava, 1999). For agreeableness, participants indicated how trusting, considerate, and fault-finding (reversed) they had been during the day. For extroversion, they indicated how introverted (reversed), talkative, and assertive they had been. For neuroticism, they indicated how moody, emotionally stable (reversed), and calm (reversed) they had been. For conscientiousness they indicated how careless (reversed), disorganized (reversed), and efficient they had been. For openness, they indicated how creative, imaginative, and preferring routine they had been. Daily measures of the FFM were defined as the mean response to the items for each factor. Similar to the other measures, responses were made on 1-7 point scales.

Participants also described the events that occurred each day. Daily events were measured using 22 of the 40 items from the Daily Events Survey (DES; Butler, Hokanson, & Flynn, 1994). Twelve positive and 10 negative events were measured, with equal numbers of social and achievement events. These events included: "Went out to eat with a friend/date" (social positive), "Tried to do homework and couldn't understand it" (achievement negative), "Did well on a school or work task (e.g. test, assignment, job duty)" (achievement positive), "Had plans fall through to spend time with someone special" (social negative). In addition to items from the DES, four items, each representing a combination of positive-negative and social-achievement, were created to measure other events that may have occurred. For example, other positive social events were measured using the item "Had other type of pleasant event (not listed above) with friends, family, or date".

Each day, participants rated each event using the following scale: 0 = did not occur, 1 = occurred and not important, 2 = occurred and somewhat important, 3 = occurred and pretty important, 4 = occurred and extremely important. For each day, ratings of the 14 positive events were averaged to create a positive event composite score, and ratings of the 12 negative events were averaged to create a negative event composite score. This measure of daily events has been used successfully in numerous previous studies (e.g., Nezlek, 2002; Nezlek & Gable, 2001).
In addition to the daily measures and the SIBS-R, participants completed the following trait level questionnaires: the BFI-44, the Center for Epidemiological Studies Depression scale (Radloff, 1977), the Rosenberg Self-Esteem scale (Rosenberg, 1965), the reflection-rumination scale (Trapnell, & Campbell, 1999), the public self-consciousness scale (Feningstein et al., 1975), and a measure of intrinsic and extrinsic religiosity (Gorsuch & McPherson, 1989).

Results

Overview of Analyses

The data collected in this study comprised what is commonly referred to as a multilevel or hierarchically nested data structure. Within the terminology of multilevel analysis, days were nested within individuals. There is an emerging consensus (e.g., Bryk & Raudenbush, 1992; Kreft & de Leeuw, 1998) that hierarchically nested data should be analyzed with techniques specifically designed for such data structures, techniques that are generally referred to as MRCM (multilevel random coefficient models) or MLM (multilevel models). MRCM provides more accurate estimates of relationships than comparable ordinary least squares (OLS) techniques. Accordingly, the present data were analyzed with a series of multilevel random coefficient models using the program HLM (Bryk, Raudenbush, & Congdon, 1998). An introduction to using MRCM to analyze daily data such as those collected in this study can be found in Nezlek (2001). In addition to these multilevel analyses, correlations among trait level measures were examined.

The first set of analyses examined the reliability and validity of the day level measure of spirituality. Unlike all the two level models that follow, the first model was a three level model in which items were nested within days and days were nested within people. There were no predictors at any level of this analysis. See Nezlek and Gable (2001) for a rationale for such analyses. These analyses found that the three daily spirituality items were reliable (.87).

The validity of the daily measure of spirituality was determined by examining the relationships between trait measures of spirituality mean daily spirituality. This was done with a model in which mean daily spirituality was modeled (at level 3) as a function of the trait core subscale of the SIBS-R:
\[ \beta_{00j} = \gamma_{000} + \gamma_{001}(\text{Core}) + u_{00j}. \]

The maximum-likelihood procedures used by HLM provide separate estimates of fixed effects and random effects. The fixed effect part of this analysis found that the daily spirituality and the Core measure were positively related. The \( \gamma_{001}(\text{Core}) \) coefficient of 1.45 was significantly different from 0 (p < .001). For every 1.0 increase in the Core measure (corresponding to 1 SD because the Core measure was standardized) mean daily spirituality increased 1.45. Mean daily spirituality was not significantly related to the other subscales of the SIBS-R (all ps > .15).

The validity of the daily measures was also examined by estimating the correlation between mean daily spirituality and the Core subscale. This was done by comparing the residual variance (the random error) from the original unconditional analysis to the residual variance from the model in which the Core measure was included. The residual variance from the unconditional analysis was 3.11, and the residual variance from the second analysis in which the Core measure was included was .96, a reduction of 69%. This corresponds to a person level correlation of .83 (the square root of .70) between daily spirituality and the Core subscale of the SIBS-R, an acceptable level of agreement. See Nezlek (2002) and Nezlek and Gable (2001) for other applications and a more detailed description of this procedure.

Given the high reliability of the daily spirituality items and the high validity of these items when treated as a single scale, for the sake of simplicity, all of the following analyses were two level models in which daily spirituality was defined as the mean of the three daily items. Across all participants, the mean for daily spirituality was 3.10. The total variance of 3.99 was divided into 3.12 at the between person level and .77 at the within person level. Although approximately 75% of the variance was between-persons, suggesting that there were meaningful individual differences in mean spirituality, there was sufficient within-person variance to suggest that within-person analyses would also be productive.

The primary analyses were 2-level models in which measures for days were nested within people. Some of these analyses estimated daily means for spirituality and examined relationships between daily spirituality and trait level variables. Other analyses examined day-to-day
relationships between spirituality, daily events, and the other daily measures. For example, did daily spirituality fluctuate with the negative events that occurred each day? In addition, analyses were done to determine if these within-person relationships varied as a function of trait level individual differences. For example, did within-person relationships between events and daily spirituality vary as a function of trait spirituality?

To provide a context to help interpret the results, summary statistics for all the daily measures are presented in Table 1. These summary statistics were taken from what are called "totally unconditional" or "null" models, i.e., models in which there are no predictors at level-1 or level-2. These analyses estimated the mean for each measure, the level-2 (between-person) variance, and the level-1 (within-person) variance.

**Relationships between Daily Spirituality and Other Traits**

Relationships between daily spirituality and traits other than Core Spirituality were examined with two level models that were unconditional at the within-person level (i.e., there were no predictors at level 1) and had predictors at level 2 (the between person level) representing the three primary constructs of the study: well-being, self-focused thinking, and general personality. For example, relationships between daily spirituality and well-being, which was operationally defined in terms of reports of depressive symptoms (the CESD), and self-esteem (the RSE), were examined with the following model:

**Level 1:** \( y_{ij} = \beta_{0j} + r_{ij} \)

**Level 2:** \( \beta_{0j} = \gamma_{00} + \gamma_{01} (\text{CESD}) + \gamma_{02} (\text{RSE}) + u_{0j} \)

In the level 1 model, \( \beta_{0j} \) is a random coefficient representing the mean of \( y \) (daily spirituality) for person \( j \) (across the \( i \) days for which each person provided data), \( r_{ij} \) represents the error associated with each measure of spirituality, and the variance of \( r_{ij} \) constitutes the day level residual variance. In the level 2 model, \( \gamma_{00} \) represents the grand mean of the person level means (\( \beta_{0j}s \)) from the day level model, the \( \gamma_{01} \) is the coefficient describing the relationship between mean daily spirituality and CESD scores, the \( \gamma_{02} \) is the coefficient describing the relationship between mean daily spirituality and RSE scores, \( u_{0j} \) represents the error of \( \beta_{0j} \), and the variance of \( u_{0j} \) constitutes the Level-2 residual variance.
A summary of the results of these analyses is presented in Table 2. In terms of the FFM of personality, mean daily spirituality was positively related to agreeableness and extraversion but was unrelated to conscientiousness, neuroticism, or openness to experience. In terms of self-focused thinking, mean daily spirituality was positively related to reflection, negatively related to rumination, and unrelated to public self-consciousness. Mean daily spirituality was not significantly related to either measure of psychological well-being. All trait level measures were standardized prior to analysis (Nezlek, 2001), and so the coefficients in the table represent the change in mean daily spirituality associated with a 1 SD increase in a trait. For example, the coefficient for agreeableness was .53. For every 1 SD increase in agreeableness, mean daily spirituality increased .53.

Within-person Relationships between Daily Spirituality and Daily States

Relationships between daily spirituality and daily states were examined with two level models that were conditional at the within-person level (i.e., there were predictors at level 1) and unconditional at level 2. The three primary constructs of the study: well-being, self-focused thinking, and general personality were entered separately. For example, relationships between daily spirituality and daily self-focused thinking, which was operationally defined in terms of reflection (REF), rumination (RUM), and public self-consciousness (PUB) were examined with the following model:

Level 1: \[ y_{ij} = \beta_{0j} + \beta_{1j}(\text{REF}) + \beta_{2j}(\text{RUM}) + \beta_{3j}(\text{PUB}) + r_{ij}. \]

Level 2:

\[ \beta_{0j} = \gamma_{00} + u_{0j}. \]
\[ \beta_{1j} = \gamma_{10} + u_{1j}. \]
\[ \beta_{2j} = \gamma_{20} + u_{2j}. \]
\[ \beta_{3j} = \gamma_{30} + u_{3j}. \]

In this level 1 model, \( \beta_{1j} \) is a random coefficient representing the relationship between daily spirituality and daily reflection for person j, \( \beta_{2j} \) is a random coefficient representing the relationship between daily spirituality and daily rumination, and \( \beta_{3j} \) is a random coefficient representing the relationship between daily spirituality and daily public self-consciousness. The level 2 coefficients, \( \gamma_{10}, \gamma_{20}, \) and \( \gamma_{30} \), represent the mean level 1 coefficients of the respective
predictors, and these coefficients are tested for statistical significance. Is the mean coefficient different from 0?

To eliminate the influence on parameter estimates of individual differences in mean levels of predictors, all predictors in all analyses were group-mean centered. This meant that an individual's coefficients described relationships between deviations from his or her mean scores (on the predictors) and deviations from his or her mean daily spirituality. This is the option in multilevel modeling that is the closest to conducting a within-person regression analysis for each person and then analyzing the resulting coefficients. See Nezlek (2001) for a discussion of centering options in studies involving daily data collection.

A summary of the results of these analyses is presented in Table 3. As is the case for multilevel random coefficient models, these coefficients are unstandardized. In terms of the FFM of personality, daily spirituality was positively related only to daily openness; it was unrelated to the other measures. On days when people felt more spiritual they also felt more open. For each one point increase in openness, spirituality increased .08. In terms of self-focused thinking, mean daily spirituality was positively related to daily reflection, and was unrelated to daily rumination and daily public self-consciousness. On days when people felt more spiritual they also reflected more. For each one point increase in daily reflection, daily spirituality increased .15. Mean daily spirituality was not significantly related to either daily self-esteem or the daily measure of depressogenic adjustment (the triad measure), although the coefficient for the triad measure approached conventional levels of significance, $p = .08$. This coefficient was positive, and given the scale used (positively valent), this coefficient means that on days when people felt more spiritual, they also felt better in terms of the constructs underlying Beck’s Triad.

**Daily Spirituality and Daily Events**

The next analysis examined the within-person relationships between daily events and daily spirituality. Such relationships were examined using a model similar to that described above, except that there were four predictors corresponding to the four types of events that were measured: positive social, positive achievement, negative social, and negative achievement. In this analysis, the $\gamma_{10}$ coefficient representing the mean within-person relationship between daily
spirituality and daily positive social events was significantly different from 0 ($\gamma_{10} = .09, p < .05$), and the $\gamma_{20}$ coefficient (for positive achievement events) approached significance ($\gamma_{30} = .07, p = .06$). Across all participants, daily spirituality tended to be higher on days when positive event scores were higher. The coefficients for negative social and negative achievement events were not significant ($p > .30$).

**Individual Differences in Within-person Relationships**

The preceding analyses estimated the mean within-person relationships between daily spirituality and other constructs and did not examine individual differences in such relationships. Such differences were examined via a series of analyses that used the level-1 models described above and included Core Spirituality at level-2 as a predictor of these level-1 relationships. For example, to examine individual differences in within-person relationships between daily spirituality and daily self-focused thinking, the following model was used:

**Level 1:**

$$ y_{ij} = \beta_{0j} + \beta_{1j}(\text{REF}) + \beta_{2j}(\text{RUM}) + \beta_{3j}(\text{PUB}) + r_{ij}. $$

**Level 2:**

$$ \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Core}) + u_{0j}. $$

$$ \beta_{1j} = \gamma_{10} + \gamma_{11}(\text{Core}) + u_{1j}. $$

$$ \beta_{2j} = \gamma_{20} + \gamma_{21}(\text{Core}) + u_{2j}. $$

$$ \beta_{3j} = \gamma_{30} + \gamma_{31}(\text{Core}) + u_{3j}. $$

In this model, individual differences in the within-person relationships between daily spirituality and self-focused thinking are represented by the three Core coefficients at level 2 ($\gamma_{11}, \gamma_{21},$ and $\gamma_{31}$).

These analyses found that trait Core Spirituality moderated relationships between daily spirituality and social negative events ($\gamma_{21} = -.12, p < .06$). Keeping in mind the fact that trait level measures were standardized prior to analysis, the nature of this moderating relationship can be understood by estimating predicted scores for those high (+1 SD) and low (-1 SD) in Core Spirituality. The mean coefficient for social negative events was .07 (not significantly different from 0). For a person low in Core Spirituality, the predicted slope for negative social events was .07 - (-.12) = +.19. In contrast, for a person high in Core Spirituality, the predicted slope for negative social events was .07 + (-.12) = -.05. For individuals low in Core Spirituality, their daily
spirituality increased when they experienced negative social events such as rejection. In contrast, for those high in Core Spirituality, daily spirituality was not related to the negative social events they experienced.

The only other significant moderating effect was in the analysis of daily well-being. Although as described above, daily spirituality was not, on average, significantly related to daily self-esteem ($\gamma_{10} = .00$), this within-person relationship was moderated by trait Core Spirituality ($\gamma_{11} = .08, p < .05$). Once again, the nature of this moderating relationship can be understood by estimating predicted scores for those high (+1 $SD$) and low (-1 $SD$) in Core Spirituality. For a person low in Core Spirituality, the within-person relationship between daily spirituality and self-esteem was negative (-.08), whereas for someone high in Core Spirituality, it was positive (.08).

**Trait Level Relationships**

As noted in the introduction, differences between state and trait level relationships have become an important focus of contemporary research about personality. Consistent with this focus, trait level relationships between spirituality and the other constructs included in this study were examined. A summary of these results, including scale reliabilities and correlations between all trait level measures, is presented in Table 4. As can be seen from these data, trait Core spirituality was positively correlated with Agreeableness and Conscientiousness from the FFM (.40 and .30 respectively), was weakly correlated with Reflection (.15), was negatively and weakly correlated with depression as measured by the CESD (-.16), and was correlated with Intrinsic and Extrinsic religiosity (.78 and .52 respectively).

**Discussion**

The primary goal of the present study was to demonstrate the utility of conceptualizing spirituality as a psychological state, and the results appear to demonstrate that it is useful to consider spirituality as a state. There was meaningful within-person variability in daily spirituality, and within-person relationships between daily spirituality and other daily measures provided insights into the nature of spirituality that complement our understanding of spirituality conceptualized as a trait. The results suggest that state spirituality is similar to, but distinct from
trait spirituality. Moreover, the results suggest that at both levels of conceptualization spirituality has both inter- and intrapersonal components and that greater spirituality is beneficial.

The similarities between trait and state spirituality are suggested by similarities in the relationships between state and trait measures of spirituality and other measures. Trait Core spirituality and mean daily spirituality were positively related to trait agreeableness and to trait reflection. Consistent with this, at the state (within-person) level, daily spirituality was also positively related to daily reflection.

The distinctiveness of trait and state spirituality is suggested by differences in the correlations of these measures with other trait level measures. Trait Core spirituality was related to trait conscientiousness whereas mean daily spirituality was not, and mean daily spirituality was negatively related to trait rumination, whereas trait Core spirituality was not related to trait rumination. At the within-person level, spirituality was positively related to openness, whereas these two constructs were not related at the trait level. The within-person relationship with openness is consistent with the results of previous trait level research (e.g., Piedmont, 2005).

Although these results suggest that trait and state spirituality are not identical constructs, at both the within- and between-person levels (i.e., state and trait), it appears that spirituality is associated with beneficial interpersonal and intrapersonal characteristics. People who were more spiritual were more agreeable interpersonally, and when they thought of themselves, they tended to reflect more than they ruminated, and as discussed by Trapnell and Campbell (1999), reflection tends to be more adaptive than rumination.

Spirituality was also positively associated with psychological well-being. At the trait level, Core spirituality was negative related to reports of depressive symptoms, and at the state level, daily spirituality was positively related to a measure of well-being based on Beck’s triad. It should be noted however, that these relationships were not that strong, a weakness that is consistent with the conclusion reached by Miller and Kelley (2005) in their discussion of relationships between mental health and spirituality and religiosity.

The within-person relationships between daily spirituality and daily events found in this study also highlight the positive nature of spirituality. People felt more spiritual on days when
there were more positive events (both social- and achievement-related) than on days when there were fewer positive events. When people's lives are "going better" this may allow or inspire them to be more spiritual, to think about higher purposes, the meaning of life, and so forth. Spirituality appears to be a positive force in people's lives, and when people's lives are more positive, spiritual concerns seem to be more salient.

It is noteworthy that on average, daily spirituality was not related to daily negative events (achievement or social). The lack of such relationships represents a departure from the results of much of the research on daily events that has found that negative events are more influential than positive events (e.g., Nezlek & Plesko, 2003). Moreover, the greater influence of negative events on well-being is generally considered to be an extension of a general principle that negative stimuli are more influential than positive stimuli (e.g., REF). The fact that daily spirituality was not related to daily negative events highlights the positive nature of spirituality and suggests that variability in spirituality represents variability within a positive evaluative space.

Having noted this, daily spirituality was related (positively) to negative social events but only for individuals low in trait level Core spirituality. (When a within-person relationship varies as a function of a between-person characteristic, this is sometimes called a cross-level interaction or a moderated relationship.) For individuals who are not dispositionally inclined to be spiritual, rejection and interpersonal difficulties may cause them to think in spiritual terms, perhaps as a means of coping with these difficulties. In contrast, individuals who are dispositionally inclined to be spiritual do not appear to do this. It is important to note that the lack of such a relationship is not the result of a statistical artifact, i.e., a ceiling effect for daily spirituality. In terms of the scales that were used, the daily mean for people high in trait Core spirituality (+1 SD) was 4.55, well below the scale maximum of 7.

The possibility that the function or meaning of state spirituality varies as a function of trait (or dispositional) spirituality was also suggested by the cross-level interaction between trait Core spirituality and the within-person relationship between daily spirituality and self-esteem. For those low in trait spirituality the relationship was negative, whereas for those high in trait spirituality it was positive. This suggests that for those low in trait spirituality, state spirituality
increases when people feel less positively about themselves, increases that may represent some type of coping or search for meaning. In contrast, for those high in trait spirituality, state spirituality increases when people feel more positively about themselves, increases that may represent a type of affirmation of self and self-definition.

Regardless, the fact that spirituality covaried with social experiences represents an important extension of previous work in which the primary emphasis has been on the intrapersonal nature of spirituality -- e.g., how people think about their relationship to a higher power, etc. The present results suggest that such thoughts are influenced by people's social environments. Moreover, a follow-up analysis that included reflection and daily events as predictors of spirituality did not find that reflection mediated relationships between events and spirituality or vice-versa. The interpersonal and interapersonal aspects of spirituality appear to be unrelated.

This study is the first to examine short term, naturally occurring variability in spirituality, and as such, the present results can be considered as only preliminary. For example, it would be useful to examine how daily spirituality covaries with daily religious belief and how such covariation complements the present results. The strong trait level relationships between spirituality and religiosity suggest they should covary at the state level, and disentangling the roles of these two constructs is important. As a first study, the present study focused on spirituality because it was believed to be a more inclusive construct than religiosity. I expected that more people would report meaningful levels of spirituality compared to levels of religious beliefs because being spiritual does not require the endorsement of a religious ideology per se.

It would also be important to examine spirituality within a context that is meaningfully different from the context within which the present study was conducted. The present study was conducted in the US, which is a predominantly Judeo-Christian culture. Consistent with this, two-thirds of participants described themselves as Protestant or Catholic, whereas only 2 participants described themselves as Hindu or Buddhist. Although spirituality is not limited to a specific culture or cultures, it cannot be assumed that spiritual concerns and their correlates and
roles are similar cross-culturally, and so future research will need to examine state spirituality within cultures other than the Judeo-Christian cultures of the West.

Despite these limitations, the results of the present study suggest that over short periods of time individuals vary in how spiritual they feel, and that understanding such variability will provide valuable insights into the roles that spirituality plays in people's lives.
References


Authors’ notes

Correspondence regarding this article should be sent to John B. Nezlek, College of William & Mary, Department of Psychology, PO Box 8795, Williamsburg, VA, email: jbnezl@wm.edu. I am grateful to John Simanski for his help collecting the data described in this paper.
### Table 1

**Descriptive Statistics for Daily Measures**

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<th>Within-person Variance</th>
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### Relationships between Mean Daily Spirituality and Trait Level Measures

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Note: Coefficients accompanied by * were significant at p < .05, and those accompanied by ** were significant at p < .01. Coefficients accompanied by a were significant at p < .10.
Table 3

Within-person Relationships between Daily Spirituality and Daily Measures

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See note for Table 1.
Table 4

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Note: Correlations with an absolute value of more than .17 were significant at p < .05, and those with an absolute value of .23 were significant at p < .01. Correlations with an absolute value of less than .15 are not tabled.