



# Self, struggle, and soul: Linking personality, self-concept, and religious/spiritual struggle



Joshua B. Grubbs<sup>a,b,\*</sup>, Joshua Wilt<sup>a</sup>, Nicholas Stauner<sup>a</sup>, Julie J. Exline<sup>a</sup>, Kenneth I. Pargament<sup>b</sup>

<sup>a</sup> Case Western Reserve University, United States

<sup>b</sup> Bowling Green State University, United States

## ARTICLE INFO

### Article history:

Received 7 April 2016

Received in revised form 25 May 2016

Accepted 28 May 2016

Available online 4 June 2016

### Keywords:

Big five

Self compassion

Self esteem

Entitlement

Religion

Spirituality

Self concept

## ABSTRACT

Religious and spiritual (r/s) struggles are common experiences and robust predictors of poor mental and physical health outcomes. The present study sought to examine the role of personality and self-concept in predicting r/s struggles both concurrently and longitudinally. Four samples were collected (*total N* = 5015), involving three cross-sectional samples of undergraduates and a cross-sectional and 1-month longitudinal sample of adult web-users. Across samples, aspects of personality (e.g., low self-esteem, high entitlement, high neuroticism) consistently predicted the concurrent experience of r/s struggles. Longitudinally, facets of self-concept (e.g., low self-esteem, low agreeableness) also predicted r/s struggle, even when baseline levels of r/s struggle were controlled, further demonstrating that personality and self-concept likely play a role in the experience of r/s struggles.

© 2016 Elsevier Ltd. All rights reserved.

## 1. Introduction

Although religious (organized and often communal strivings for the sacred; Hill & Pargament, 2003) and spiritual (personal and less structured strivings for the sacred; Hill & Pargament, 2003) beliefs and practices may serve as coping resources (see Ano & Vasconcelles, 2005, for a review), many people experience struggles around religion and spirituality (e.g., Exline, Pargament, Grubbs, & Yali, 2014). Recent research has highlighted the importance of r/s struggles in the lives of individuals (for reviews, see Exline & Rose, 2013; Pargament, 2007; Pargament, Murray-Swank, Magyar, & Ano, 2005). Despite being distinct from other forms of psychological distress, these struggles have been linked with a wide range of negative emotional and physical outcomes (for a review, see Exline, 2013). Moreover, longitudinal research suggests that r/s struggles can predict subsequent declines in physical and mental health (Harris et al., 2012; Pargament, Koenig, Tarakeshwar, & Hahn, 2004). As such, there is a general need to understand r/s struggle more fully and a specific need to pinpoint factors that predispose people to the experience of struggle.

Past research indicates that both situational factors (e.g., personal suffering, injustice; Exline, Park, Smyth, & Carey, 2011) and individual-difference factors (e.g., neuroticism, Ano & Pargament, 2013;

entitlement, Grubbs, Exline, & Campbell, 2013; Wood et al., 2010) can contribute to the experience of r/s struggles. Within the present work, we examined how certain aspects of basic personality structure (e.g., Big Five Factors of personality) and self-concept (e.g., self-esteem, self-compassion, entitlement) may differentially predict specific r/s struggles. Given the novelty of this area of research, we aimed to both test proposed relationships and explore the presence of other possible relationships, as delineated later.

### 1.1. Religious/spiritual (r/s) struggles

Although r/s struggles have been described in sacred texts for millennia (e.g., Psalms 51, Jewish Publication Society, 1985; Surah 42, Quran, Khān & Khānam, 2009) and in philosophical and theological writings for centuries (e.g., *Dark Night of the Soul* by St. John of the Cross; John & Peers, 1990), systematic attempts to define and measure such struggles have only occurred recently (e.g. Pargament et al., 2005). In a recent work, Exline et al. (2014) developed and validated a new measure, the Religious and Spiritual Struggles (RSS) Scale, examining six types of r/s struggle. First, *divine struggles* involve conflict with or around the concept of a deity (e.g., anger at God). *Demonic struggles* involve perceived conflict with evil supernatural forces (e.g., feeling attacked or deceived by demons or evil spirits). *Interpersonal struggles* involve conflict with other people in a r/s context (e.g., feeling misunderstood by r/s people or being angry at organized religion). *Moral struggles* involve internal conflict about inconsistencies between one's

\* Corresponding author at: Department of Psychological Sciences, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106-7123, United States.  
E-mail address: [Joshua.Grubbs@case.edu](mailto:Joshua.Grubbs@case.edu) (J.B. Grubbs).

actions and spiritual values (e.g., guilt or shame over a committed transgression). *Struggles of ultimate meaning* involve questioning life's deeper purpose (e.g., wondering whether one's life will make any difference in the world). Finally, *doubt-related struggles* involve distress around r/s doubts or questions (e.g., feeling upset or disturbed by religious doubt). In short, r/s struggles represent a long-recognized but only recently researched form of distress that some individuals might encounter in their r/s lives.

### 1.2. R/S struggle and well-being

Rather than being domain-specific manifestations of emotional distress, r/s struggles are unique predictors of and risk factors for a wide range of mental health concerns including anxiety, depression, and stress (e.g. Ano & Vasconcelles, 2005, Harris et al., 2012, Wilt, Grubbs, Exline, & Pargament, 2016, Wilt, Grubbs, Pargament, & Exline, 2016), as well as suicidality (Exline, Yali, & Sanderson, 2000; Rosmarin, Bigda-Peyton, Öngur, Pargament, & Björqvinnsson, 2013). Longitudinal work in chronically-ill, medical populations has linked r/s struggles to higher mortality rates over time (Pargament et al., 2004), poorer recovery from illness (Fitchett, Rybarczyk, DeMarco, & Nicholas, 1999), and increased mental health symptoms (Harris et al., 2012). In sum, unresolved r/s struggles, while distinct from traditional psychological distress indicators (e.g., depression and anxiety) are both concurrently and longitudinally associated with poor emotional and physical well-being.

Given the links between r/s struggle and various indicators of poor well-being, there is a present need to understand factors that might cause such struggles. Some research has linked struggles to stressful life events. For example, divine struggle can develop in response to difficult life circumstances such as personal failures and disappointments, interpersonal conflicts, or the death of a loved one (Exline et al., 2011). However, our emphasis here was on the role of individual-difference variables in predicting r/s struggles.

### 1.3. Personality and r/s struggle

Why might personality predict r/s struggle? A great deal of research shows connections between r/s broadly and various aspects of personality (MacDonald, 2000; for reviews, see Rose & Exline, 2012). Many aspects of r/s beliefs are related to major traits such as the Big Five factors (for reviews, see Saroglou, 2002, 2009), and facets of personality such as entitlement (Wood et al., 2010), self-esteem (Sherkat & Reed, 1992), and self-compassion (Birnie, Speca, & Carlson, 2010) have also been linked with aspects of r/s functioning. Similarly, developmental work (e.g., Denton, Pearce, & Smith, 2008) provides evidence for notions of r/s as core aspects of identity, reiterating the relatedness of personality and r/s.

Collectively, then, a body of research suggests that there are intricate and important relationships between personality and r/s identity. The aim in the present work was to examine how those links might extend to the experience of r/s struggle. Given the robust body of research regarding essential personality structure in the form of the Big Five Factors of personality (see John & Srivastava, 1999; McCrae & Costa, 2008), examining how these factors relate to r/s struggles seems to be a logical starting point.

The Big Five represent fundamental individual differences in patterns of affect, behavior, and cognition across time and situation (Johnson, 1997). That is, they encompass the basic ways in which people differ from each other with respect to their routine, everyday functioning. In contrast, r/s struggles, while not uncommon (Bryant & Astin, 2008), are a departure from ordinary life. R/s struggles indicate the presence of tensions and conflicts around questions of ultimate concern (Exline, 2013), and may suggest a deep level of existential unrest and disorientation in one's worldview (Pargament, 2007). Thus, examining the links between personality traits and r/s struggles has the

potential to bridge the gap between one's typical mode of being and the issues of extraordinary significance that different people are likely to encounter. In so doing, this research represents another step in line with work focused on predicting consequential outcomes from personality traits (Ozer & Benet-Martinez, 2006; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Further, understanding these relationships at the broad, domain level of the Big Five will provide a basis of knowledge and point of departure for further research into more specific links with narrower personality facets.

### 1.4. Big five factors of personality and r/s struggle

Prior studies suggest links between the Big Five Factors of personality and specific forms of r/s struggle. Agreeableness, characterized by pleasantness and a desire to preserve interpersonal harmony (John & Srivastava, 1999), has been linked with lower levels of anger at God (Grubbs et al., 2013; Wood et al., 2010). Conscientiousness, which entails impulse control, rule conformity, and consistency (John & Srivastava, 1999), also correlates negatively with anger at God (Wood et al., 2010). These findings parallel the negative correlations that agreeableness and conscientiousness show with interpersonal aggression and conflict (Graziano, Jensen-Campbell, & Hair, 1996; Jensen-Campbell, Knack, Waldrup, & Campbell, 2007).

Neuroticism, a propensity toward negative emotional states (John & Srivastava, 1999), is also related to various struggles, such as divine struggles (Ano & Pargament, 2013; Grubbs et al., 2013; Wood et al., 2010) and difficulty finding meaning or purpose in life (Ciarrocchi & Brelsford, 2009). These links are consistent with literature linking neuroticism to interpersonal and emotional distress (e.g., Barlow, Sauer-Zavala, Carl, Bullis, & Ellard, 2014). As such, to the extent that r/s struggles involve the experience of distress (e.g., Exline et al., 2014), it is logical to assume that neuroticism relates to the experience of r/s struggle in general, and particularly struggles with ultimate meaning, divine figures, and other people.

Extraversion, characterized by a propensity toward social interaction and positive affect (Wilt & Revelle, 2009), has not been previously linked to r/s struggle. Similarly, openness to experience, characterized by curiosity, independent thought, and adaptability (John & Srivastava, 1999), has not been specifically tied to r/s struggle. Even so, openness is associated with greater levels of spiritual maturity and lower levels of fundamentalism (Saroglou, 2009), as well as a general propensity to question ideas and beliefs. As such, openness might predict higher levels of religious doubt. Similarly, openness's inverse association with fundamentalism may imply the possibility of interpersonal r/s struggle. Past research has linked open spirituality to conflict with less open individuals (Batson, Denton, & Vollmecke, 2008; Goldfried & Miner, 2002), suggesting that openness could be associated with more interpersonal r/s struggle.

In sum, prior studies have linked some basic personality traits with specific types of r/s struggle. Many of these connections are consistent with broader research in personality linking traits such as agreeableness, neuroticism, and conscientiousness to indicators of psychological and social well-being. However, to date, there have been no systematic examinations of the manner in which basic personality traits may collectively predict a variety of r/s struggles. Similarly, there have been no examinations of the role of personality in predicting r/s struggle over time.

### 1.5. Self-concept and r/s struggle

In addition to considering basic personality traits, it may also be helpful to consider more specific features of personality, such as facets of self-concept, as potential predictors of struggle. Theoretically, aspects of self-concept may be conceived at a level of personality structure that is distinct from fundamental personality traits (McAdams & Pals, 2006; McCrae & Costa, 2008). Empirically, in many life domains, more specific

facets of personality often emerge as predictors of specific outcomes, above and beyond the contributions of basic personality structure (e.g., Paunonen & Ashton, 2001). Although a plethora of facet-level traits could be considered as predictors of r/s struggle, we chose to focus on three basic measures of self-concept that may have particular relevance for the experience of r/s struggle based on prior research related to the topic.

### 1.5.1. Psychological entitlement

Characterized by a sense of unmerited deservingness in life and pervasive demandingness for desired gains, entitlement often predicts a range of difficulties and struggles, such as relationship conflicts and aggression (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004; for a review, see Grubbs & Exline, in press). In terms of r/s struggle, entitlement has been shown to be a consistent predictor of divine struggles, including anger at God (Wood et al., 2010), even when controlling for the Big Five (Grubbs & Exline, 2014; Grubbs et al., 2013). Also, given the tendency of entitled people to feel victimized and angry, we expected to see positive associations with interpersonal and demonic struggles, both of which convey a sense of being opposed or treated unfairly.

### 1.5.2. Self-esteem

In contrast to pathological aspects of self-concept such as entitlement, self-esteem refers to an adaptive, positive self-conception or the ability to see the self in a positive light (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004; Rosenberg, 1979). Unlike the positive association between entitlement and r/s struggle, lower levels of self-esteem have been associated with greater r/s struggle and lower levels of spiritual well-being (Bryant & Astin, 2008; Trevino et al., 2010). Prior works have framed r/s well-being as a predictor of self-esteem (e.g., Bryant & Astin, 2008). However, longitudinal research with chronically ill populations revealed that r/s struggles, particularly divine struggles, do not predict changes in self-esteem over time (Trevino et al., 2010). Although such a finding casts doubt on the notion of r/s struggle driving lowered self-esteem, it does leave open the possibility of the converse—namely that self-esteem may be an inverse predictor of or insulating factor against r/s struggle in general, both cross-sectionally and over time.

### 1.5.3. Self-compassion

Self-compassion is an adaptive aspect of self-concept that entails viewing the self in gentle and forgiving terms, even in the wake of perceived failures (Neff, 2003). Self-compassion correlates highly with self-esteem (Neff, 2003) and shows positive associations with mental health (Allen & Leary, 2010) and spiritual well-being (Birmie et al., 2010). Because of these connections, we expected to see a broad pattern in which self-compassion predicts less r/s struggle. Some more specific, subscale-level predictions could also be made: By definition, self-compassion involves a tendency to be gentle with the self in the face of personal limitations, which should translate into less moral struggle and less divine struggle (i.e., concern about God's punishment). In addition, the emphasis on shared humanity should work against struggles of ultimate meaning.

## 1.6. The present study

The aim of the present work was to examine how aspects of personality may collectively predict the experience of diverse r/s struggles. We chose to focus on personality traits that have been linked to r/s struggles in the past (e.g., Big Five Factors) and elements of self-concept that have either shown links to r/s functioning in the past (e.g., entitlement, self-esteem) or those for which a compelling argument could be made for links with r/s struggle (e.g., self-compassion). In addition to examining the relationships between personality and struggle cross-sectionally, we examined how personality might predict struggle over time. Given the complexity of the present work (e.g., examination of eight trait

predictors of six specific struggles), we have summarized our hypotheses in Table 1. Beyond these specific hypotheses, we also sought to evaluate how personality and self-concept may be broadly related to the total experience of r/s struggle and the extent to which such aspects of personality may predict specific struggles (ie., how much variance in specific struggles is accounted for by personality?).

## 2. Method

### 2.1. Participants and procedure

Participants for Sample 1a-c were undergraduates in several sections of introductory psychology courses at three universities in the U.S. ( $N = 3964$ ) a private university in the Midwest, a public university in the Midwest, and a religiously affiliated university in the Southwest. Data were collected over 6 semesters. Prior to all analyses, we conducted a MANOVA, which revealed multivariate differences between universities on key variables (Wilk's  $\lambda = 826$ ,  $F(12) = 66.2$ ,  $p < 0.001$ , partial  $\eta^2 = 0.09$ ). Given differences in demographics (see Table 2), religious affiliation, and scores on key variables (see Table 3), the three samples were analyzed separately.

Participants for our second sample were adults recruited through Amazon's Mechanical Turk (MTurk) online workforce database ( $N = 1047$ ). Previous analyses have found that samples recruited from MTurk are suitable for a wide range of social science research and may provide advantages over undergraduate sampling in terms of geographic and age diversity (e.g., Shapiro, Chandler, & Mueller, 2013).

Potential participants were invited to complete a survey entitled, "Personality, Beliefs, & Behavior – Part 1," in exchange for a \$3.00 credit in their MTurk account. Those who successfully completed the initial survey (T1) were eligible to participate in a follow up survey one month later (T2). A follow-up of one month was chosen to allow for sufficient time to detect shifts in struggle while maximizing retention. Those who completed the second survey were compensated with a \$2.00 credit. Of the 1047 eligible to complete T2, 521 (response rate = 49.7%; 58% women) participated. MANOVA revealed no significant multivariate differences on any key variables (at T1) for those who completed the second survey and those who did not.

### 2.2. Measures

#### 2.2.1. Big five factors of personality

We included the Big Five Personality Inventory-44 (John, Donahue, & Kentle, 1991), as it is both brief and well validated. Participants rate agreement from 1 (*strongly disagree*) to 5 (*strongly agree*) with 44 items that reflect the five factors of personality. Sample items include, "I have an active imagination" (openness), "I do a thorough job" (conscientiousness), "I am talkative" (extraversion), "I have a forgiving nature" (agreeableness), and, "I worry a lot" (neuroticism).

**Table 1**

Summary of hypotheses regarding the relationships between personality and r/s struggle.

	Divine	Demonic	Interpersonal	Moral	Meaning	Doubt
Openness	∅	∅	+ <sup>a,b</sup>	∅	∅	+ <sup>b</sup>
Conscientiousness	- <sup>a</sup>	∅	- <sup>a</sup>	∅	∅	∅
Extraversion	∅	∅	∅	∅	∅	∅
Agreeableness	- <sup>a</sup>	∅	- <sup>a,b,c</sup>	∅	∅	∅
Neuroticism	+ <sup>a</sup>	+ <sup>a</sup>	+ <sup>a</sup>	+ <sup>a</sup>	+ <sup>a,b</sup>	+ <sup>a,b</sup>
Entitlement	+ <sup>a,b</sup>	+ <sup>a,b</sup>	+ <sup>a</sup>	∅	∅	∅
Self-esteem	- <sup>a,b</sup>	- <sup>a,b</sup>	- <sup>a,b</sup>	- <sup>a,b,c</sup>	- <sup>a,b,c</sup>	- <sup>a,b</sup>
Self-compassion	- <sup>a</sup>	∅	∅	- <sup>a,b</sup>	- <sup>a,b</sup>	∅

Note: ∅ no hypothesis about relationship; + positive hypothesized relationship; - negative hypothesized relationship.

<sup>a</sup> Hypothesis supported in aggregate Pearson correlations.

<sup>b</sup> Hypothesis supported in at least 3 of 4 Cohen's set correlations.

<sup>c</sup> Hypothesis supported longitudinally.

**Table 2**  
Racial identity and religious affiliation for samples 1a–c & 2<sup>a</sup>.

	Sample 1a (N = 942)	Sample 1b (N = 1927)	Sample 1c (N = 1095)	Sample 2, T1 (N = 1047)
Mean age (SD)	19.1 (2.0)	19.2 (2.2)	18.8 (1.8)	34.1 (11.0)
Gender	62% women	66% women	63% women	59% women
Race				
White/Caucasian	56%	83%	62%	79%
Asian/Pacific Islander	34%	2%	23%	6%
Black/African American	7%	13%	3%	10%
Latino/Hispanic	4%	5%	18%	7%
Middle Eastern	3%	1%	1%	1%
American Indian	1%	2%	1%	3%
Prefer not to say	2%	1%	3%	1%
Religious affiliation				
Christian	45%	70%	97%	45%
Atheist/Agnostic	22%	11%	–	32%
No affiliation	15%	14%	2%	15%
Hindu	5%	–	–	1%
Jewish	4%	1%	–	1%
Muslim	2%	–	–	1%
Buddhist	2%	–	–	1%
Other	3%	4%	1%	4%

<sup>a</sup> Percentages may exceed 100% due to the selection of multiple racial or religious affiliations by participants.

2.2.2. Psychological entitlement

We used the Psychological Entitlement Scale (Campbell et al., 2004). On this 9-item measure, participants rate items such as, “If I were on the Titanic, I would deserve to be on the first life boat!” from 1 (*strongly disagree*) to 7 (*strongly agree*).

2.2.3. Self-esteem

We included the Rosenberg Self-Esteem Scale (Rosenberg, 1979). This widely-used 10-item measure requires participants to respond on a scale of 1 (*strongly disagree*) to 4 (*strongly agree*) to items such as, “I take a positive attitude toward myself.”

2.2.4. Self-compassion

Participants completed the Self-Compassion Scale (Neff, 2003). This 12-item measure requires participants to respond to prompts such as, “When something upsets me, I try to keep my emotions in balance,” on a scale of 1 (*almost never*) to 5 (*almost always*).

**Table 3**  
Descriptive statistics for included variables.

	Range	Sample 1a (N = 942)		Sample 1b (N = 1927)		Sample 1c (N = 1095)		Sample 2, Time 1 (N = 1047)		Sample 2, Time 2 (N = 521)	
		M (SD)	α	M (SD)	α	M (SD)	α	M (SD)	α	M (SD)	α
Openness	1–5	3.5 (0.5) <sup>a</sup>	0.77	3.4 (0.5) <sup>b</sup>	0.73	3.5 (0.5) <sup>a</sup>	0.74	3.7 (0.7) <sup>d</sup>	0.85	–	–
Conscientiousness	1–5	3.4 (0.6) <sup>a</sup>	0.81	3.4 (0.5) <sup>b</sup>	0.75	3.5 (0.6) <sup>c</sup>	0.78	3.8 (0.7) <sup>d</sup>	0.87	–	–
Extraversion	1–5	3.1 (0.8) <sup>a</sup>	0.88	3.4 (0.7) <sup>b</sup>	0.85	3.3 (0.8) <sup>ab</sup>	0.87	2.9 (0.9) <sup>d</sup>	0.90	–	–
Agreeableness	1–5	3.6 (0.6) <sup>a</sup>	0.77	3.7 (0.6) <sup>b</sup>	0.76	3.7 (0.6) <sup>b</sup>	0.77	3.7 (0.7) <sup>c</sup>	0.83	–	–
Neuroticism	1–5	3.0 (0.7) <sup>a</sup>	0.82	3.1 (0.7) <sup>a</sup>	0.78	2.9 (0.7) <sup>a</sup>	0.79	2.8 (0.9) <sup>b</sup>	0.89	–	–
Entitlement	1–7	2.9 (1.2) <sup>a</sup>	0.91	3.1 (1.2) <sup>b</sup>	0.90	2.7 (1.1) <sup>c</sup>	0.91	2.8 (1.3) <sup>b</sup>	0.91	–	–
Self-esteem	1–4	3.0 (0.5) <sup>a</sup>	0.90	3.0 (0.6) <sup>a</sup>	0.88	2.9 (0.5) <sup>a</sup>	0.89	3.1 (0.6) <sup>b</sup>	0.92	–	–
Self-compassion	1–5	2.9 (0.6) <sup>a</sup>	0.83	2.9 (0.6) <sup>a</sup>	0.79	2.9 (0.6) <sup>a</sup>	0.78	3.2 (0.8) <sup>b</sup>	0.87	–	–
Religiousness	0–10	8.9 (1.7) <sup>a</sup>	0.94	4.8 (3.5) <sup>a</sup>	0.97	3.8 (3.8) <sup>b</sup>	0.97	4.3 (4.3) <sup>b</sup>	0.98	–	–
Religious participation	0–5	2.9 (0.9) <sup>a</sup>	0.80	1.2 (1.0) <sup>b</sup>	0.87	1.0 (1.0) <sup>c</sup>	0.87	1.1 (1.1) <sup>b</sup>	0.88	–	–
RSS divine	1–7	1.4 (0.7) <sup>a</sup>	0.90	1.5 (0.8) <sup>b</sup>	0.91	1.7 (0.8) <sup>c</sup>	0.88	1.4 (0.7) <sup>a</sup>	0.92	1.2 (0.6)	0.92
RSS demonic	1–7	1.3 (0.7) <sup>a</sup>	0.89	1.6 (0.9) <sup>b</sup>	0.92	2.2 (1.0) <sup>c</sup>	0.87	1.4 (0.8) <sup>a</sup>	0.93	1.3 (0.7)	0.93
RSS interpersonal	1–7	1.6 (0.7) <sup>a</sup>	0.79	1.7 (0.9) <sup>b</sup>	0.85	2.0 (0.9) <sup>c</sup>	0.82	1.7 (0.9) <sup>b</sup>	0.83	1.5 (0.7)	0.83
RSS moral	1–7	2.2 (1.0) <sup>a</sup>	0.88	2.3 (1.1) <sup>a</sup>	0.88	2.9 (1.0) <sup>b</sup>	0.86	1.9 (0.9) <sup>c</sup>	0.88	1.7 (0.9)	0.90
RSS ultimate meaning	1–7	2.0 (1.0) <sup>a</sup>	0.87	2.0 (1.1) <sup>a</sup>	0.89	1.9 (1.0) <sup>a</sup>	0.86	2.0 (1.1) <sup>a</sup>	0.89	1.8 (1.0)	0.89
RSS doubt	1–7	1.8 (0.9) <sup>a</sup>	0.91	1.8 (1.0) <sup>b</sup>	0.90	2.0 (1.0) <sup>c</sup>	0.88	1.6 (0.9) <sup>a</sup>	0.91	1.4 (0.8)	0.91

Note: differing superscripts indicate mean difference at  $p < 0.05$  level for Bonferroni corrected post-hoc comparisons.

2.2.5. R/S struggles

We included the Religious and Spiritual Struggles Scale (RSS; Exline et al., 2014). Participants read the prompt, “Over the past few months I have...” followed by 26 items tapping six domains of struggle: Divine (e.g., “felt angry at God”), Demonic (e.g., “felt attacked by the devil or evil spirits”), Interpersonal (e.g., “felt angry at organized religion”), Moral (e.g., “felt torn between what I wanted and what I knew was morally right”), Ultimate Meaning (e.g., “felt as though my life had no deeper meaning”), and Doubt (e.g., “felt confused about my religious/spiritual beliefs”). Responses are rated from 1 (*not at all*) to 5 (*a great deal*). For Sample 2, T2 the prompt was modified from “Over the past few months, I have...” to “Over the past month, I have...”.

2.2.6. Religiousness

A modified version of the Religious Belief Salience Scale (Blaine & Crocker, 1995) was included. This 5-item measure requires participants to respond to prompts such as “Being a religious/spiritual person is important to me” on a scale of 0 (*strongly disagree*) to 10 (*strongly agree*). Religious participation was also assessed using a modified version of an existing 5-item measure (Exline et al., 2000). Participants indicated weekly frequency of religious activities such as prayer and reading of sacred texts on a scale of 0 (*not at all*) to 5 (*more than once per day*).

2.3. Statistical considerations

To examine the hypothesized relationships, a multi-phase data-analytic strategy was used. All analyses were conducted using the pwr package (Champlsey, 2015), the psych package (Revelle, 2014), and the multicon package (Sherman, 2015) for R Statistical Software (R Development Core Team, 2015).

Basic relationships were tested using Pearson correlations with Holm adjusted test statistics. This is a sequentially rejective version of the simple Bonferroni correction for multiple comparisons and strongly controls the family-wise error rate at level alpha. We set alpha = 0.01 for this set of analyses. Additionally, rather than exclusively relying on traditional null-hypothesis significance testing methods, we also calculated 95% confidence intervals for all Pearson correlations. In keeping with current recommendations for estimating total effect sizes over multiple studies (i.e., aggregation of findings; Maner, 2014), aggregate effects were computed using Fisher’s Z transformation and weighted averages across Samples 1a–c and Sample 2 (total N = 5015).

To determine the unique relationships between r/s struggle and personality traits as well as the total association between the included



personality traits and struggle more generally, each included trait was entered into set correlation predicting each r/s struggle (Cohen, 1982; Cohen, Cohen, West, & Aiken, 2003). An extension of multivariate regression, set correlation provides information regarding the individual relationships ( $\beta$  values) between multiple predictor variables (e.g., personality traits) and single outcome variables (e.g., individual r/s struggles) as well as information regarding the total relatedness (shared variance,  $R^2$ ) of two groups of measures (e.g., personality traits and r/s struggles collectively). Additionally, set correlations allow for the introduction of control variables to account for shared variance due to these variables. More simply, set correlations compute both the individual variance accounted for in each r/s struggle and the total variance shared between both sets of variables.

Because of the novelty of the present study, we were explicitly interested in detecting even small effects of personality on struggle. Given the number of independent variables (i.e., 8 personality traits) and our interest in establishing even small effect sizes (e.g.,  $r = 0.10$ ,  $f^2 = 0.02$ ), we conducted a-priori power analyses to determine the necessary sample size. We determined that, to have sufficient power (power  $\geq 0.80$ ; Cohen, 1992) to detect simple correlations of small effect ( $r = 0.10$ ), sample sizes of at least 781 would be needed. Additionally, we determined that in order to be sufficiently powered to find small effects in regression analyses ( $f^2 = 0.02$ ) with 8 predictor variables, a sample size of 750 would be needed.

Prior to testing hypotheses, power analyses for each sample were conducted. We focused on the power of the obtained samples to detect even small effect sizes in correlation (e.g.,  $r = 0.1$ ; Cohen, 1988). In each sample, we found that our sample size was sufficient to provide adequate power for our analyses (Sample 1a, power = 0.867, Sample 1b, power = 0.993; Sample 1c, power = 0.913, Sample 2a, power = 0.900). We also tested the power of our analyses to detect small effects in set correlations as well (e.g.,  $f^2 = 0.02$ ; Cohen, 1988). Again, results suggested that our sample sizes were sufficiently powered to detect even small effect sizes in set-correlations with 8 predictors (Sample 1a [ $N = 942$ ], power = 0.896; Sample 1b [ $N = 1927$ ], power = 0.999;

Sample 1c [ $N = 1095$ ], power = 0.945; Sample 2, Time 1 [ $N = 1927$ ], power = 0.929).

Given the smaller sample size ( $N = 521$ ) in our longitudinal follow-up, we also conducted power analyses to determine what size of effect our results were sufficiently powered to detect (i.e., power = 0.80; Cohen, 1988). Using the pwr package for R (Champlsey, 2015), we found that our sample size would allow for sufficiently powered detection of relatively small effect sizes ( $f^2 = 0.029$ ).

### 3. Results

#### 3.1. Time 1 analyses

To establish that associations between our included variables were not due to random chance or method error, we performed a randomization test (Sherman & Funder, 2009) on each sample that would evaluate the probability of the observed number of statistically significant correlations and the average absolute correlation of each matrix. In each sample, we found that the average number and magnitude of correlations far exceeded that which would be expected by chance alone (Sample 1a: Observed # = 41,  $p < 0.001$ ,  $r_{\text{average}} = 0.133$ ,  $p < 0.001$ ; Sample 1b: Observed # = 41,  $p < 0.001$ ,  $r_{\text{average}} = 0.151$ ,  $p < 0.001$ ; Sample 1c: Observed # = 39,  $p < 0.001$ ,  $r_{\text{average}} = 0.193$ ,  $p < 0.001$ ; Sample 2: Observed # = 35,  $p < 0.001$ ,  $r_{\text{average}} = 0.160$ ,  $p < 0.001$ ). Collectively, this strongly indicated that there were indeed a number of meaningful associations between personality and struggle.

Across all samples, Pearson correlations revealed consistent support for a number of our hypotheses (See Table 1 for hypotheses and Tables 4 & 5 for correlations). Additionally, for most of the observed associations, there was substantial overlap of confidence intervals across four large and diverse samples.

Following Pearson correlations, all variables were entered into a set correlation (Cohen, 1982). Our set correlations controlled for religiousness and religious participation. Using this method, we found consistent support for the overarching hypothesis that personality is related to

**Table 4**  
Samples 1a–c: Pearson correlations between personality variables and r/s struggle measures with Holm adjusted test statistic and 95% CI.

		Divine	Demonic	Interpersonal	Moral	Ult. meaning	Doubt
		$r$ [95% CI]	$r$ [95% CI]	$r$ [95% CI]	$r$ [95% CI]	$r$ [95% CI]	$r$ [95% CI]
O	1	−0.01 [−0.07, 0.06]	0.01 [−0.06, 0.07]	<b>0.12 [0.06, 0.19]</b>	0.06 [−0.01, 0.12]	<b>0.11 [0.04, 0.17]</b>	0.07 [0.01, 0.14]
	2	−0.06 [−0.10, −0.02]	−0.02 [−0.06, 0.03]	<b>0.15 [0.10, 0.19]</b>	0.02 [−0.03, 0.06]	0.07 [0.03, 0.11]	0.03 [−0.02, 0.07]
	3	−0.06 [−0.12, 0.00]	0.05 [0.00, 0.11]	0.08 [0.02, 0.14]	0.05 [−0.01, 0.11]	−0.02 [−0.08, 0.04]	0.01 [−0.05, 0.07]
C	1	<b>−0.12 [−0.19, −0.06]</b>	−0.05 [−0.12, 0.01]	−0.08 [−0.14, −0.02]	−0.10 [−0.17, −0.04]	<b>−0.18 [−0.24, −0.12]</b>	−0.09 [−0.15, −0.02]
	2	<b>−0.19 [−0.23, −0.15]</b>	−0.08 [−0.13, −0.04]	<b>−0.17 [−0.22, −0.13]</b>	−0.10 [−0.14, −0.05]	<b>−0.24 [−0.28, −0.19]</b>	<b>−0.16 [−0.21, −0.12]</b>
	3	<b>−0.23 [−0.28, −0.17]</b>	<b>−0.15 [−0.21, −0.09]</b>	<b>−0.21 [−0.26, −0.15]</b>	<b>−0.21 [−0.27, −0.16]</b>	<b>−0.29 [−0.35, −0.24]</b>	<b>−0.28 [−0.33, −0.23]</b>
E	1	−0.03 [−0.10, 0.03]	0.04 [−0.02, 0.11]	0.00 [−0.06, 0.06]	0.08 [0.02, 0.14]	<b>−0.11 [−0.17, −0.05]</b>	−0.03 [−0.10, 0.03]
	2	−0.06 [−0.11, −0.02]	−0.04 [−0.09, 0.00]	−0.05 [−0.09, 0.00]	0.00 [−0.04, 0.04]	<b>−0.21 [−0.25, −0.16]</b>	−0.08 [−0.13, −0.04]
	3	−0.05 [−0.11, 0.01]	0.00 [−0.06, 0.06]	−0.04 [−0.10, 0.02]	−0.05 [−0.11, 0.01]	<b>−0.14 [−0.20, −0.09]</b>	<b>−0.14 [−0.19, −0.08]</b>
A	1	<b>−0.17 [−0.23, −0.11]</b>	−0.06 [−0.12, 0.01]	<b>−0.12 [−0.18, −0.06]</b>	−0.04 [−0.11, 0.02]	<b>−0.16 [−0.22, −0.10]</b>	−0.08 [−0.14, −0.02]
	2	<b>−0.22 [−0.26, −0.18]</b>	<b>−0.15 [−0.19, −0.10]</b>	<b>−0.23 [−0.28, −0.19]</b>	−0.07 [−0.11, −0.02]	<b>−0.22 [−0.26, −0.18]</b>	<b>−0.18 [−0.22, −0.14]</b>
	3	<b>−0.26 [−0.32, −0.20]</b>	−0.08 [−0.14, −0.02]	<b>−0.27 [−0.32, −0.21]</b>	<b>−0.18 [−0.24, −0.13]</b>	<b>−0.28 [−0.33, −0.22]</b>	<b>−0.26 [−0.31, −0.20]</b>
N	1	<b>0.23 [0.17, 0.29]</b>	0.09 [0.03, 0.16]	<b>0.18 [0.11, 0.24]</b>	<b>0.24 [0.18, 0.30]</b>	<b>0.41 [0.36, 0.46]</b>	<b>0.26 [0.20, 0.32]</b>
	2	<b>0.21 [0.17, 0.25]</b>	0.08 [0.03, 0.12]	<b>0.16 [0.12, 0.21]</b>	<b>0.16 [0.12, 0.21]</b>	<b>0.32 [0.28, 0.36]</b>	<b>0.21 [0.17, 0.25]</b>
	3	<b>0.30 [0.24, 0.35]</b>	<b>0.18 [0.12, 0.24]</b>	<b>0.24 [0.18, 0.29]</b>	<b>0.19 [0.14, 0.25]</b>	<b>0.35 [0.30, 0.40]</b>	<b>0.29 [0.23, 0.34]</b>
PE	1	<b>0.14 [0.07, 0.20]</b>	0.10 [0.04, 0.17]	0.02 [−0.04, 0.09]	−0.07 [−0.13, −0.01]	−0.01 [−0.08, 0.05]	−0.02 [−0.08, 0.04]
	2	<b>0.18 [0.14, 0.23]</b>	<b>0.17 [0.12, 0.21]</b>	0.06 [0.01, 0.10]	−0.01 [−0.06, 0.03]	0.06 [0.01, 0.10]	0.09 [0.04, 0.13]
	3	<b>0.26 [0.20, 0.31]</b>	0.10 [0.04, 0.16]	<b>0.19 [0.14, 0.25]</b>	0.01 [−0.05, 0.06]	<b>0.20 [0.14, 0.25]</b>	<b>0.14 [0.08, 0.20]</b>
SE	1	<b>−0.28 [−0.34, −0.22]</b>	<b>−0.14 [−0.20, −0.07]</b>	<b>−0.18 [−0.24, −0.12]</b>	<b>−0.22 [−0.28, −0.15]</b>	<b>−0.42 [−0.47, −0.36]</b>	<b>−0.22 [−0.28, −0.15]</b>
	2	<b>−0.36 [−0.39, −0.32]</b>	<b>−0.17 [−0.22, −0.13]</b>	<b>−0.29 [−0.33, −0.25]</b>	<b>−0.18 [−0.23, −0.14]</b>	<b>−0.48 [−0.52, −0.45]</b>	<b>−0.28 [−0.32, −0.24]</b>
	3	<b>−0.40 [−0.45, −0.35]</b>	<b>−0.23 [−0.29, −0.17]</b>	<b>−0.36 [−0.41, −0.31]</b>	<b>−0.24 [−0.30, −0.18]</b>	<b>−0.49 [−0.54, −0.45]</b>	<b>−0.37 [−0.42, −0.32]</b>
SC	1	<b>−0.19 [−0.25, −0.13]</b>	−0.05 [−0.12, 0.01]	<b>−0.13 [−0.19, −0.06]</b>	<b>−0.26 [−0.32, −0.20]</b>	<b>−0.40 [−0.45, −0.34]</b>	<b>−0.20 [−0.26, −0.14]</b>
	2	<b>−0.18 [−0.22, −0.14]</b>	−0.03 [−0.08, 0.01]	<b>−0.14 [−0.18, −0.09]</b>	<b>−0.17 [−0.21, −0.12]</b>	<b>−0.31 [−0.35, −0.27]</b>	<b>−0.18 [−0.22, −0.13]</b>
	3	<b>−0.25 [−0.30, −0.19]</b>	<b>−0.12 [−0.17, −0.06]</b>	<b>−0.21 [−0.26, −0.15]</b>	<b>−0.25 [−0.30, −0.19]</b>	<b>−0.31 [−0.36, −0.26]</b>	<b>−0.22 [−0.28, −0.17]</b>

Note: all correlations for which  $|r| \geq 0.11$  differ from zero significantly with Holm-adjusted test statistic of  $p < 0.01$ ; these correlations are in bold type-face.

O = openness, C = conscientiousness, E = extraversion, A = agreeableness, N = neuroticism, PE = psychological entitlement, SE = self-esteem, SC = self-compassion.

1 = sample 1a ( $N = 942$ ).

2 = sample 1b ( $N = 1927$ ).

3 = sample 1c ( $N = 1095$ ).

**Table 5**

Sample 2: Pearson correlations between Time 1 personality variables and Time 1 r/s struggle measures with Holm adjusted test statistic, 95% C.I., and aggregate correlations across all samples (N = 5015).

Sample 2 (N = 1047)						
	Divine	Demonic	Interpersonal	Moral	Meaning	Doubt
	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]	r [95% CI]
O	-0.08 [-0.14, -0.02]	-0.07 [-0.13, -0.01]	<b>0.17 [0.11, 0.22]</b>	0.05 [-0.01, 0.11]	0.00 [-0.06, 0.06]	0.00 [-0.06, 0.06]
C	<b>-0.16 [-0.22, -0.10]</b>	-0.03 [-0.09, 0.03]	<b>-0.19 [-0.25, -0.13]</b>	<b>-0.27 [-0.33, -0.21]</b>	<b>-0.30 [-0.36, -0.25]</b>	<b>-0.19 [-0.25, -0.13]</b>
E	-0.02 [-0.08, 0.04]	0.04 [-0.02, 0.10]	-0.02 [-0.08, 0.04]	-0.02 [-0.08, 0.04]	<b>-0.18 [-0.23, -0.12]</b>	-0.03 [-0.09, 0.03]
A	<b>-0.20 [-0.26, -0.14]</b>	-0.06 [-0.12, 0.00]	<b>-0.21 [-0.27, -0.16]</b>	<b>-0.18 [-0.24, -0.12]</b>	<b>-0.26 [-0.32, -0.20]</b>	<b>-0.17 [-0.22, -0.11]</b>
N	<b>0.25 [0.19, 0.30]</b>	<b>0.13 [0.07, 0.18]</b>	<b>0.18 [0.12, 0.24]</b>	<b>0.23 [0.17, 0.28]</b>	<b>0.45 [0.40, 0.49]</b>	<b>0.23 [0.17, 0.28]</b>
PE	<b>0.18 [0.12, 0.24]</b>	<b>0.10 [0.04, 0.16]</b>	0.06 [0.00, 0.12]	0.02 [-0.04, 0.08]	0.07 [0.01, 0.13]	0.08 [0.02, 0.14]
SE	<b>-0.29 [-0.34, -0.23]</b>	-0.04 [-0.10, 0.02]	<b>-0.15 [-0.21, -0.09]</b>	<b>-0.25 [-0.30, -0.19]</b>	<b>-0.51 [-0.55, -0.46]</b>	<b>-0.20 [-0.26, -0.14]</b>
SC	<b>-0.23 [-0.29, -0.17]</b>	<b>-0.10 [-0.16, -0.04]</b>	<b>-0.19 [-0.25, -0.13]</b>	<b>-0.25 [-0.31, -0.19]</b>	<b>-0.44 [-0.49, -0.39]</b>	<b>-0.20 [-0.26, -0.14]</b>
Aggregate correlation data (N = 5015)						
O	-0.05 [-0.08, -0.02]	-0.01 [-0.04, 0.02]	<b>0.13 [0.11, 0.16]</b>	0.04 [0.01, 0.07]	0.04 [0.02, 0.07]	0.03 [0.00, 0.05]
C	-0.21 [-0.24, -0.18]	-0.08 [-0.11, -0.05]	<b>-0.17 [-0.19, -0.14]</b>	<b>-0.16 [-0.19, -0.13]</b>	<b>-0.25 [-0.28, -0.23]</b>	<b>-0.18 [-0.21, -0.15]</b>
E	-0.06 [-0.09, -0.04]	0.00 [-0.03, 0.03]	-0.03 [-0.06, 0.00]	0.00 [-0.03, 0.03]	<b>-0.17 [-0.20, -0.14]</b>	-0.07 [-0.10, -0.05]
A	<b>-0.23 [-0.26, -0.21]</b>	<b>-0.10 [-0.13, -0.07]</b>	<b>-0.21 [-0.24, -0.19]</b>	<b>-0.11 [-0.14, -0.08]</b>	<b>-0.23 [-0.26, -0.20]</b>	<b>-0.18 [-0.20, -0.15]</b>
N	<b>0.25 [0.23, 0.28]</b>	<b>0.11 [0.09, 0.14]</b>	<b>0.19 [0.16, 0.21]</b>	<b>0.20 [0.17, 0.22]</b>	<b>0.37 [0.35, 0.40]</b>	<b>0.24 [0.22, 0.27]</b>
PE	<b>0.19 [0.16, 0.22]</b>	<b>0.13 [0.10, 0.15]</b>	<b>0.08 [0.05, 0.11]</b>	-0.01 [-0.04, 0.02]	0.08 [0.05, 0.11]	0.08 [0.05, 0.11]
SE	<b>-0.36 [-0.38, -0.33]</b>	<b>-0.15 [-0.18, -0.12]</b>	<b>-0.26 [-0.28, -0.23]</b>	<b>-0.22 [-0.24, -0.19]</b>	<b>-0.48 [-0.50, -0.46]</b>	<b>-0.27 [-0.30, -0.25]</b>
SC	<b>-0.21 [-0.24, -0.19]</b>	-0.07 [-0.10, -0.04]	<b>-0.16 [-0.19, -0.14]</b>	<b>-0.22 [-0.25, -0.19]</b>	<b>-0.36 [-0.38, -0.33]</b>	<b>-0.16 [-0.18, -0.13]</b>

Note: all correlations for which |r| ≥ 0.09 differ from zero significantly with Holm-adjusted test statistic of p < 0.01; these correlations are in bold type-face. O = openness, C = conscientiousness, E = extraversion, A = agreeableness, N = neuroticism, PE = psychological entitlement, SE = self-esteem, SC = self-compassion.

**Table 6**

Study 1: set correlations predicting r/s struggle in samples 1a–c, controlling for religiousness and religious participation.

	Divine			Demonic			Interpersonal			Moral			Ultimate meaning			Doubt		
	1a	1b	1c	1a	1b	1c	1a	1b	1c	1a	1b	1c	1a	1b	1c	1a	1b	1c
	β	β	β	β	β	β	β	β	β	β	β	β	β	β	β	β	β	β
O	0.01	-0.05	-0.01	-0.03	-0.02	0.09	0.16*	0.27*	0.22*	0.05	0.04	0.13*	0.28*	0.25*	0.11*	0.14*	0.10*	0.14*
C	-0.03	-0.02	0.01	-0.05	0.00	-0.13*	-0.02	-0.04	0.01	-0.17*	-0.12*	-0.23*	-0.07	-0.03	-0.07	-0.06	-0.05	-0.14
E	0.00	0.10*	0.13	0.02	0.00	0.08	0.00	0.07	0.09	0.10	0.09	0.06	-0.08	-0.05	0.05	-0.03	0.04	0.01
A	-0.08	-0.10*	-0.05	-0.06	-0.19*	0.03	-0.10*	-0.26*	-0.18*	-0.06	-0.10*	-0.19*	-0.04	-0.09	-0.04	-0.06	-0.13*	-0.09
N	0.10*	0.07	0.15*	0.03	0.00	0.14*	0.09	0.04	0.06	0.12*	0.07	0.01	0.26*	0.13*	0.15*	0.22*	0.14*	0.17*
PE	0.16*	0.10*	0.13*	0.08*	0.10*	0.08*	0.02	0.00	0.08	-0.02	-0.03	-0.04	0.03	0.03	0.09	0.01	0.05	0.04
SE	-0.22*	-0.49*	-0.46*	-0.18*	-0.31*	-0.40*	-0.16*	-0.39*	-0.47*	-0.16*	-0.28*	-0.20*	-0.42*	-0.74*	-0.66*	-0.18*	-0.38*	-0.39*
SC	0.00	0.01	-0.05	0.06	0.05	0.04	0.01	0.02	-0.03	-0.23*	-0.17*	-0.29*	-0.24*	-0.10*	-0.08	-0.04	-0.02	0.00
R <sup>2</sup>	0.16	0.17	0.18	0.05	0.08	0.09	0.07	0.13	0.16	0.10	0.07	0.11	0.26	0.24	0.22	0.09	0.10	0.13
F	17.5*	48.2*	29.3*	6.6*	21.7*	13.1*	8.2*	36.2*	25.5*	12.6*	19.5*	16.4*	41.3*	77.9*	38.9	10.8*	26.9*	20.8*
f <sup>2</sup>	0.19	0.20	0.22	0.05	0.09	0.10	0.08	0.15	0.19	0.11	0.08	0.12	0.35	0.32	0.28	0.10	0.11	0.15

O = openness, C = conscientiousness, E = extraversion, A = agreeableness, N = neuroticism, PE = psychological entitlement, SE = self-esteem, SC = self-compassion. Cohen's set correlation.

Sample 1a (n = 942), R<sup>2</sup> = 0.37, F<sub>(48)</sub> = 9.45, p < 0.001, f<sup>2</sup> = 0.59.

Sample 1b (n = 1927), R<sup>2</sup> = 0.39, F<sub>(48)</sub> = 20.99, p < 0.001, f<sup>2</sup> = 0.64.

Sample 1c (n = 1095), R<sup>2</sup> = 0.37, F<sub>(48)</sub> = 11.03, p < 0.001, f<sup>2</sup> = 0.59.

\* p < 0.01.

struggle above and beyond any shared associations with religiousness and religious participation. Across all four samples (See Tables 6 & 7), Cohen's set correlation value indicated that the shared variance between struggle and personality is substantial, with large<sup>1</sup> effect sizes across all samples. Across all four samples, personality had consistently moderate-sized effects on divine struggle (f<sup>2</sup> = 0.16–0.22; R<sup>2</sup> = 0.16–0.18) and moderate-to-large effects on Ultimate Meaning (f<sup>2</sup> = 0.28–0.35; R<sup>2</sup> = 0.22–0.29). Weak-to-moderate effects were found with these struggle types: Moral (f<sup>2</sup> = 0.08–0.10; R<sup>2</sup> = 0.07–0.17), Interpersonal (f<sup>2</sup> = 0.08–0.19; R<sup>2</sup> = 0.07–0.16), and Doubt (f<sup>2</sup> = 0.05–0.10; R<sup>2</sup> = 0.09–0.13). Only weak effects were observed for demonic struggles (f<sup>2</sup> = 0.10–0.15; R<sup>2</sup> = 0.05–0.09).

### 3.2. Sample 2, time 2 analyses

We performed a randomization test on the sample in order to establish that the associations between T1 Personality and T2 Struggle were not the result of chance or shared method error. Results again indicated that the number and magnitude of correlations far exceeded that expected by chance (Observed # = 30, p < 0.001, r<sub>average</sub> = 0.136, p < 0.001).

Pearson correlations with Holm adjusted test statistics were computed between T1 and T2 r/s struggles. Results revealed a high degree of correlation between both instances of each struggle: Divine (T1/T2 r = 0.72, p < 0.001; 95% CI [0.68, 0.76]), Demonic (T1/T2 r = 0.74, p < 0.001; 95% CI [0.70, 0.77]), Interpersonal (T1/T2 r = 0.70, p < 0.001; 95% CI [0.61, 0.70]), Moral (T1/T2 r = 0.65, p < 0.001; 95% CI [0.60, 0.70]), Meaning (T1/T2 r = 0.68, p < 0.001; 95% CI [0.63, 0.72]), and Doubt (T1/T2 r = 0.72, p < 0.001; 95% CI [0.68, 0.76]). Collectively these findings pointed to the relative stability of r/s struggle over a one-month time period.

<sup>1</sup> By conventional standards, f<sup>2</sup> > 0.02 = small, f<sup>2</sup> > 0.15 = medium, f<sup>2</sup> > 0.35 = large (Cohen, 1992).

**Table 7**  
Sample 2: set correlation predicting r/s struggle at T1 in a web-based sample of adults (N = 1047), controlling for religiousness and religious participation.

	Divine β	Demonic β	Interpersonal β	Moral β	Meaning β	Doubt β
O	0.08*	0.04	0.01	0.05	0.03	0.05
C	-0.13**	-0.09*	-0.19**	-0.17**	-0.09**	-0.12**
E	0.03	0.03	-0.11**	-0.24**	-0.02	-0.12**
A	0.07	0.10**	0.05	-0.02	0.17**	0.09
N	-0.06	-0.08*	0.25**	0.14**	0.11**	0.04
PE	0.09**	0.04	0.02	-0.01	-0.05*	0.04
SE	-0.34**	-0.03	-0.02	-0.26**	-0.59**	-0.15*
SC	-0.01	-0.08	-0.09**	-0.15**	-0.14**	-0.06
R <sup>2</sup>	0.16	0.06	0.11	0.17	0.29	0.09
F	24.94**	7.60**	15.93**	27.03**	53.44**	13.40**
f <sup>2</sup>	0.19	0.06	0.12	0.20	0.41	0.10

O = openness, C = conscientiousness, E = extraversion, A = agreeableness, N = neuroticism, PE = psychological entitlement, SE = self-esteem, SC = self-compassion. Cohen's set correlation (n = 1047): R<sup>2</sup> = 0.46, F<sub>(48)</sub> = 13.87, p < 0.001, f<sup>2</sup> = 0.85.

\* p < 0.05.

\*\* p < 0.01.

To examine the unique contribution of personality to struggle over time, we entered T1 personality variables and T2 struggles into a set correlation, controlling T1 struggles as well as T1 religious belief salience and religious participation. Table 8 reports these results. Given the power of our sample size, only effect sizes greater than the previously delineated cutoff (f<sup>2</sup> = 0.029) were deemed interpretable (interpersonal, moral, and ultimate meaning struggles). We noted that agreeableness was predictive of lower levels of interpersonal struggle over time, and that self-esteem was predictive of lower levels of moral and meaning struggles. Additionally, entitlement predicted less interpersonal and less moral struggle over time.

Moving beyond specific associations, Cohen's set correlation demonstrated that the shared variance between T1 personality and T2 struggle while controlling for T1 struggle was moderate-to-large (R<sup>2</sup> = 0.23, F<sub>(48)</sub> = 5.64, p < 0.001, f<sup>2</sup> = 0.30; Cohen, 1992), indicating that personality does have a notable relationship to the experience of individual r/s struggles over time, above and beyond the initial influence of baseline struggles themselves. Furthermore, given the strong associations between struggle at T1 and struggle at T2 and the relatively short time frame (e.g., 1 month), even small associations between personality and struggle point to a unique relationship between the two constructs.

**Table 8**  
Sample 2: set correlations predicting r/s struggle at T2 while controlling for religiousness, religious participation, and r/s at T1.

	Divine β	Demonic β	Interpersonal β	Moral β	Ultimate meaning β	Doubt β
O	0.00	0.02	0.06	0.02	0.10*	0.09*
C	0.04	0.08*	0.06	0.08	0.08	-0.02
E	-0.02	-0.03	0.02	-0.02	-0.06	-0.01
A	0.06*	0.02	-0.20*	-0.13*	-0.04	-0.01
N	-0.01	0.04	0.04	0.04	-0.04	0.03
PE	0.01	-0.01	-0.06*	-0.07*	-0.04	-0.04
SE	-0.11*	-0.11*	0.01	-0.13*	-0.31*	0.01
SC	-0.03	-0.02	0.03	-0.08	-0.05	0.00
R <sup>2</sup>	0.02	0.02	0.04	0.04	0.04	0.01
F	2.17*	2.49*	5.00**	5.59**	5.16**	1.22
f <sup>2</sup>	0.02	0.02	0.04	0.04	0.04	0.01

O = openness, C = conscientiousness, E = extraversion, A = agreeableness, N = neuroticism, PE = psychological entitlement, SE = self-esteem, SC = self-compassion. Cohen's set correlation (n = 521): R<sup>2</sup> = 0.23, F<sub>(48)</sub> = 5.64, p < 0.001, f<sup>2</sup> = 0.30.

\* p < 0.05.

\*\* p < 0.01.

#### 4. Discussion

Across the six domains of struggle examined, we found general support for the hypothesis that personality is related to the experience of r/s struggles. Given the number of hypotheses, the results are summarized in Table 1. In general, we considered a hypothesis supported in Pearson correlation if it was in the expected direction in aggregate correlations with a 95% CI that did not include 0. We considered a hypothesis supported in Cohen's set correlations if it was significant and in the expected direction in at least 3 of 4 samples. Finally, we considered a hypothesis supported longitudinally if the relationship in the longitudinal set correlation was significant, in the expected direction, and the total effect size was greater than 0.029. Below, we briefly summarize our findings and point toward the implications of these results.

##### 4.1. Personality and r/s struggle cross-sectionally

Cross-sectional analyses using three large and diverse samples of undergraduates and a large web-based sample of adults revealed that personality is related to struggle, as personality traits and r/s struggles often shared substantial total variance (e.g., Cohen's set correlation, R<sup>2</sup> = 0.37–0.46). Furthermore, through direct replication across four large data sets, we found that many specific personality traits are related to specific r/s struggles, although these associations were most often small-to-moderate in magnitude. Across both studies, certain struggles (Divine, Ultimate Meaning) demonstrated consistent and non-negligible (e.g., f<sup>2</sup> > 0.15) associations with personality variables, whereas others (Interpersonal, Moral, Doubt) displayed less consistency, but still notable amounts of shared variance.

We also noted that there were some unpredicted cross-sectional associations in Pearson correlations (e.g., negative relationship between conscientiousness and ultimate meaning struggles), in set correlations (e.g., greater openness and greater ultimate meaning struggles), or in both (e.g., lower conscientiousness and higher moral struggles). Although these findings (particularly lower conscientiousness and higher moral struggles) received good support, we are hesitant to interpret them substantively as we had not hypothesized in either direction regarding the possibility of such relationships.

##### 4.2. R/S struggle over time

This project represents one of the first attempts to examine the experience of r/s struggle longitudinally. All six of the examined struggles substantial consistency over time. Rather than large amounts of r/s struggle over time being accounted for by facets of personality, our findings strongly suggest that r/s struggles seem to be relatively stable over small periods of time.

Our findings also indicate that personality may predispose some individuals to higher levels of certain struggles over time. Although many of the direct effects of personality at T1 on struggle at T2 were small when T1 struggles were controlled, for three struggles (interpersonal, moral, and ultimate meaning) there were large enough effects so as to be interpretable. Over time, openness positively predicted ultimate meaning and doubt struggles. Agreeableness predicted fewer moral struggles. Self-esteem predicted fewer moral and ultimate-meaning struggles. Additionally, the set correlation for personality predictors and struggles at T2, even when controlling for baseline struggles at T1, was substantive, indicating that there is shared variance in baseline personality and struggle over time. Collectively, these findings imply the possibility of a unique role of personality in predicting struggle over time, as these associations were observed even when the unique and substantial role of struggle itself at an earlier time was controlled.

### 4.3. Implications

From a research perspective, the findings of the present work suggest that personality should be considered when evaluating factors that might contribute to the development and maintenance of certain r/s struggles. Many of the relationships between struggle and personality also suggest that a constellation of factors may be related to the experience of struggle, with many traits accounting for unique variance. For example, maladaptive self-concept (e.g., high entitlement, low self-esteem, low self-compassion) and neuroticism seem to be particularly related to divine struggles cross-sectionally. These results are consistent with a larger body of research that links maladaptive self-concept to a range of psychological difficulties (e.g. Allen & Leary, 2010, Grubbs & Exline, in press) and the general body of research surrounding neuroticism and psychological distress (Barlow et al., 2014).

In clinical settings, this work helps to expand understandings of the etiology and experience of r/s struggle. Not only do some aspects of personality present individuals with a potential increase in odds of certain r/s struggle (e.g., low self-esteem and high entitlement being associated with greater divine struggles), but also, other aspects of personality may act as insulators against such struggles (e.g., high self-esteem being associated with lower levels of ultimate meaning struggles and high agreeableness being associated with lower levels of interpersonal struggles). Furthermore, the chronicity of these struggles may be particularly salient in clinical contexts. Chronic unresolved struggle is a known risk factor for poor wellbeing in both physical and psychological realms (Exline et al., 2011; Pargament et al., 2004; for a review, see Exline, 2013).

Moving beyond simple consideration of vulnerabilities, the present study also informs applied work in coping with and resolving struggles. Although personality and self-concept are largely stable, interventions designed to help people anticipate and address struggle may be beneficial. Regarding the specific traits considered in this work, interventions already exist to enhance adaptive self-concept (e.g., increased self-compassion and self-esteem; Neff & Germer, 2013). Such interventions may be useful in resolving r/s struggles as well. By enhancing adaptive self-concepts, the buffering effects of such traits might also be enhanced, leading to reduced struggle or more effective ways to deal with struggles. Given the predictive links between struggle and psychopathology over time, such changes may also ultimately prove useful in averting increases in distress.

### 4.4. Limitations and future directions

The present research is vulnerable to many of the same limitations encountered in a wide variety of r/s research. Chiefly, the present work relied exclusively on self-report data. Although much research suggests the utility of self-report data for a wide variety of research applications (for a review, see Chan, 2009), future work should seek to include alternative data sources, such as informant report or implicit measures. Also, the present research was conducted in a Western sample that was predominantly Christian. Obviously, this demographic constraint limits the generalizability of our findings to other samples (e.g., non-Western, non-Christian). Future work should examine these predictive relationships between personality and struggle in a diverse set of religious affiliations to determine whether personality impacts r/s struggle differently in different faith traditions (or between religious and non-religious people). Future work should also consider the developmental implications of these findings among adolescents and children.

Although our research was both cross-sectional and longitudinal, we still advise caution when inferring causal links. Some longitudinal findings were very clear (e.g., agreeableness predicting less interpersonal struggle; low self-esteem predicting greater struggles of ultimate meaning). However, the most substantial associations between struggle and personality were cross-sectional, rather than longitudinal, in nature.

Such associations may theoretically be understood in causal terms, as personality is likely much more stable than the experience of struggle. Even so, further work, both longitudinal and experimental, is needed before making such inferences. We also noted that the stability of struggles over a one-month time period likely overshadowed any contributions of personality to shifts in struggle, chiefly because such shifts seemed to be very small over a one-month time period. As such, there is a need for future research examining the experience of struggle at multiple time points over a greater period of time. Such analyses would provide more substantive data regarding the any causal relationships between personality and struggle. There is a need for future research explicitly examining how r/s struggle, personality, and psychological distress more generally co-occur and influence one another over time. Although prior work has substantively shown that r/s struggles do predict poor mental and physical health outcomes, determining how personality, struggle, and well-being are related over time will likely provide greater insight into the nature of struggle itself.

Finally, we noted that some of our predicted associations were contradicted by the results of certain analyses. For example, whereas agreeableness was negatively related to divine struggles (as predicted) in the majority of analyses, a positive beta value was found in longitudinal set correlation. Although the total effect size was not interpretable ( $f^2 < 0.029$ ), future longitudinal work is needed in diverse samples to determine if this finding was spurious, a suppression effect secondary to the large overlap between T1 and T2 struggle, or indicative of an actual relationship.

## 5. Conclusion

This project examined the manner in which various aspects of personality predict r/s struggle both cross-sectionally and longitudinally. Through a cross-sectional examination of three diverse samples of undergraduates, several links between r/s struggle and personality were documented and directly replicated. Using both a cross-sectional and longitudinal examination of adults, several of these initial findings were again replicated and extended. Various aspects of personality, such as neuroticism and agreeableness, as well as self-esteem and entitlement, emerged as direct, cross-sectional predictors of struggle. Over time, some aspects of personality emerged as direct predictors of struggle above and beyond the influence of baseline struggles themselves. Collectively, these findings point to the intricate relationship between personality and struggle and suggest the need to understand personality as a contributing factor to r/s struggle.

## Acknowledgements

Funding: This work was supported by the John Templeton Foundation (Grant: 36094).

## References

- Allen, A. B., & Leary, M. R. (2010). Self-compassion, stress, and coping. *Social and Personality Psychology Compass*, 4, 107–118.
- Ano, G. G., & Pargament, K. I. (2013). Predictors of spiritual struggles: An exploratory study. *Mental Health, Religion and Culture*, 16, 419–434.
- Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology*, 61, 461–480.
- Barlow, D. H., Sauer-Zavala, S., Carl, J. R., Bullis, J. R., & Ellard, K. K. (2014). The nature, diagnosis, and treatment of neuroticism: Back to the future. *Clinical Psychological Science*, 2, 344–365.
- Batson, C. D., Denton, D. M., & Vollmecke, J. T. (2008). Quest religion, anti-fundamentalism, and limited versus universal compassion. *Journal for the Scientific Study of Religion*, 47, 135–145.
- Birnie, K., Speca, M., & Carlson, L. E. (2010). Exploring self-compassion and empathy in the context of mindfulness-based stress reduction (MBSR). *Stress and Health*, 26, 359–371.
- Bryant, A. N., & Astin, H. S. (2008). The correlates of spiritual struggle during the college years. *Journal of Higher Education*, 79, 1–27.
- Campbell, W. K., Bonacci, A. M., Shelton, J., Exline, J. J., & Bushman, B. J. (2004). Psychological entitlement: Interpersonal consequences and validation of a self-report measure. *Journal of Personality Assessment*, 83, 29–45.



- Champlsey, S. (2015). pwr: Basic functions for power analysis (R package version 1.1–2). (Retrieved from) <http://CRAN.R-project.org/package=pwr>
- Chan, D. (2009). So why ask me? Are self-report data really that bad. In C. E. Lance, & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences* (pp. 309–336). New York, NY: Routledge.
- Ciarrocchi, J. W., & Brelsford, G. M. (2009). Spirituality, religion, and substance coping as regulators of emotions and meaning making: Different effects on pain and joy. *Journal of Addictions & Offender Counseling*, 30, 24–36.
- Cohen, J. (1982). Set correlation as a general multivariate data-analytic method. *Multivariate Behavioral Research*, 17, 301–341.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155–159.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). L. Erlbaum Associates: Hillsdale, NJ.
- Denton, M. L., Pearce, L. D., & Smith, C. (2008). Religion and spirituality on the path through adolescence. *National Study of Youth and Religion*, 22, 2010.
- Exline, J. J. (2013). Religious and spiritual struggles. In K. I. Pargament (Editor-in-Chief), J. J. Exline, & J. W. Jones (Associate Eds.), *APA handbook of psychology, religion, and spirituality* (volume 1: Context, theory, and research; pp. 459–475). Washington, DC: American Psychological Association.
- Exline, J. J., Pargament, K. I., Grubbs, J. B., & Yali, A. M. (2014). The religious and spiritual struggles scale: Development and initial validation. *Psychology of Religion and Spirituality*, 6, 208–222.
- Exline, J. J., Park, C. L., Smyth, J. M., & Carey, M. P. (2011). Anger toward God: Social-cognitive predictors, prevalence, and links with adjustment to bereavement and cancer. *Journal of Personality and Social Psychology*, 100, 129–148.
- Exline, J. J., Yali, A. M., & Sanderson, W. C. (2000). Guilt, discord, and alienation: The role of religious strain in depression and suicidality. *Journal of Clinical Psychology*, 56, 1481–1496.
- Fitchett, G., Rybarczyk, B. D., DeMarco, G. A., & Nicholas, J. J. (1999). The role of religion in medical rehabilitation outcomes: A longitudinal study. *Rehabilitation Psychology*, 44, 1–22.
- Goldfried, J., & Miner, M. (2002). Quest religion and the problem of limited compassion. *Journal for the Scientific Study of Religion*, 41, 685–695.
- Graziano, W. G., Jensen-Campbell, L. A., & Hair, E. C. (1996). Perceiving interpersonal conflict and reacting to it: The case for agreeableness. *Journal of Personality and Social Psychology*, 70, 820–835.
- Grubbs, J. B., & Exline, J. J. (2014). Humbling yourself before God: Humility as a reliable negative predictor of spiritual struggle. *Journal of Psychology and Theology*, 42, 41–49.
- Grubbs, J. B., & Exline, J. J. (2016). Trait entitlement: A cognitive-personality source of vulnerability to psychological distress. *Psychological Bulletin* (provisionally accepted).
- Grubbs, J. B., Exline, J. J., & Campbell, W. K. (2013). I deserve better and God knows it! Psychological entitlement as a robust predictor of anger at God. *Psychology of Religion and Spirituality*, 5, 192–200.
- Harris, J. I., Erbes, C. R., Engdahl, B. E., Ogden, H., Olson, R. H., Winkowski, A. M. M., ... Mataas, S. (2012). Religious distress and coping with stressful life events: A longitudinal study. *Journal of Clinical Psychology*, 68, 1276–1286.
- Hill, P. C., & Pargament, K. I. (2003). Advances in the conceptualization and measurement of religion and spirituality. Implications for physical and mental health research. *The American Psychologist*, 58, 64–74.
- Jensen-Campbell, L. A., Knack, J. M., Waldrup, A. M., & Campbell, S. D. (2007). Do big five personality traits associated with self-control influence the regulation of anger and aggression? *Journal of Research in Personality*, 41, 403–424.
- Jewish Publication Society (1985). *Tanakh* =: [Tanakh]: A new translation of the Holy Scriptures according to the traditional Hebrew text. Philadelphia, PA: Jewish Publication Society.
- John, C., & Peers, E. A. (1990). *Dark night of the soul*. Grand Rapids, MI: Christian Classics Ethereal Library.
- John, O. P., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138) (2nd ed.). New York: Guilford.
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The big five inventory: Versions 4a and 54*. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.
- Johnson, J. A. (1997). Units of analysis for the description and explanation of personality. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 73–93). San Diego, CA: Academic Press.
- Khān, V., & Khānam, F. (2009). *The Quran*. New Delhi, India: Goodword Books.
- MacDonald, D. A. (2000). Spirituality: Description, measurement, and relation to the five factor model of personality. *Journal of Personality*, 68, 153–197.
- Maner, J. K. (2014). Let's put our money where our mouth is: If authors are to change their ways, reviewers (and editors) must change with them. *Perspectives on Psychological Science*, 9, 343–351.
- McAdams, D. P., & Pals, J. L. (2006). A new big five: Fundamental principles for an integrative science of personality. *American Psychologist*, 61(3), 204–217.
- McCrae, R. R., & Costa, P. T. (2008). The five-factor theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 159–181) (3rd ed.). New York, NY: Guilford Press.
- Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity*, 2, 223–250.
- Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of Clinical Psychology*, 69, 28–44.
- Ozer, D. J., & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology*, 57, 401–421.
- Pargament, K. I. (2007). *Spiritually integrated psychotherapy: Understanding and addressing the sacred*. New York: Guilford.
- Pargament, K. I., Koenig, H. G., Tarakeshwar, N., & Hahn, J. (2004). Religious coping methods as predictors of psychological, physical and spiritual outcomes among medically ill elderly patients: A two-year longitudinal study. *Journal of Health Psychology*, 9, 713–730.
- Pargament, K. I., Murray-Swank, N., Magyar, G. M., & Ano, G. G. (2005). Spiritual struggle: A phenomenon of interest to psychology and religion. In W. R. Miller, & H. Delaney (Eds.), *Judeo-Christian perspectives on psychology: Human nature, motivation, and change* (pp. 245–268). Washington, DC: APA Books.
- Pauonen, S. V., & Ashton, M. C. (2001). Big five factors and facets and the prediction of behavior. *Journal of Personality and Social Psychology*, 81, 524–539.
- Pyszczynski, T., Greenberg, J., Solomon, S., Arndt, J., & Schimel, J. (2004). Why do people need self-esteem? A theoretical and empirical review. *Psychological Bulletin*, 130, 435–468.
- R Development Core Team (2015). *R: A language and environment for statistical computing*. Vienna, Austria: R foundation for statistical computing 3-900051-07-0 (URL <http://www.R-project.org>).
- Revelle, W. (2014). *Psych: Procedures for personality and psychological research*. Northwestern University, Evanston. R package version 1.4.5.
- Roberts, B. W., Kuncel, N. R., Shiner, R., Caspi, A., & Goldberg, L. R. (2007). The power of personality: The comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Perspectives on Psychological Science*, 2, 313–345.
- Rose, E. D., & Exline, J. J. (2012). Personality, spirituality, and religion. In L. Miller (Ed.), *Oxford handbook of the psychology of religion and spirituality* (pp. 85–103). New York: Oxford University Press.
- Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.
- Rosmarin, D. H., Bigda-Peyton, J. S., Öngür, D., Pargament, K. I., & Björgvinsson, T. (2013). Religious coping among psychotic patients: Relevance to suicidality and treatment outcomes. *Psychiatry Research*, 210, 182–187.
- Saroglou, V. (2002). Religion and the five factors of personality: A meta-analytic review. *Personality and Individual Differences*, 32, 15–25.
- Saroglou, V. (2009). Religiosity as a cultural adaptation of basic traits: A five-factor model perspective. *Personality and Social Psychology Review*, 14, 108–125.
- Shapiro, D. N., Chandler, J., & Mueller, P. A. (2013). Using mechanical Turk to study clinical populations. *Clinical Psychological Science*, 1, 213–220.
- Sherkat, D. E., & Reed, M. D. (1992). The effects of religion and social support on self-esteem and depression among the suddenly bereaved. *Social Indicators Research*, 26, 259–275.
- Sherman, R. A. (2015). Multicon: An R package for the analysis of multivariate constructs (version 1.6). <http://CRAN.R-project.org/package=multicon>
- Sherman, R. A., & Funder, D. C. (2009). Evaluating correlations in studies of personality and behavior: Beyond the number of significant findings to be expected by chance. *Journal of Research in Personality*, 43, 1053–1063.
- Trevino, K. M., Pargament, K. I., Cotton, S., Leonard, A. C., Hahn, J., Caprini-Faigin, C. A., & Tsevat, J. (2010). Religious coping and physiological, psychological, social, and spiritual outcomes in patients with HIV/AIDS: Cross-sectional and longitudinal findings. *AIDS and Behavior*, 14, 379–389.
- Wilt, J., & Revelle, W. (2009). Extraversion. In M. R. Leary, & R. H. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 27–45). New York: Guilford.
- Wilt, J. A., Grubbs, J. B., Exline, J. J., & Pargament, K. I. (2016a). Personality, religious and spiritual struggles, and well-being. *Psychology of Religion and Spirituality*. <http://dx.doi.org/10.1037/rel0000054>.
- Wilt, J. A., Grubbs, J. B., Pargament, K. I., & Exline, J. J. (2016b). Religious and spiritual struggles, past and present: Relations to the big five and well-being. *The International Journal for the Psychology of Religion*. <http://dx.doi.org/10.1080/10508619.2016.1183251>.
- Wood, B. T., Worthington, E. L., Jr., Exline, J. J., Yali, A. M., Aten, J. D., & McMinn, M. R. (2010). Development, refinement, and psychometric properties of the Attitudes toward God Scale (ATGS-9). *Psychology of Religion and Spirituality*, 2, 148–167.