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Spiritual Struggles among Atheists: Links to Psychological Distress and Well-Being

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Received: 13 July 2018; Accepted: 7 August 2018; Published: 9 August 2018



Abstract: Religious and spiritual struggles (R/S struggles)—tension or conflicts regarding religious or spiritual matters—have been robustly linked to greater psychological distress and lower well-being. Most research in this area has relied on samples consisting predominantly of participants who believe in god(s). Limited research has examined R/S struggles among atheists, generally conflating them with agnostics and other nontheists. This study investigated the prevalence of R/S struggles among atheists and compared atheists to theists in two samples (3978 undergraduates, 1048 Internet workers). Results of a multilevel model showed that atheists experience less demonic, doubt, divine, moral, and overall R/S struggles than theists, but similar levels of interpersonal and ultimate meaning struggles. Correlation and regression analyses among atheists demonstrated links between moral, ultimate meaning, and overall R/S struggles and greater distress (depression and anxiety symptoms) as well as lower well-being (life satisfaction and meaning in life). Even after controlling neuroticism, ultimate meaning struggles continued to predict lower well-being and higher distress across samples; moral struggles also predicted distress independently. This study demonstrates the relevance of R/S struggles to atheists and reinforces the applicability of previous results to atheist samples, but also highlights substantial differences between atheists and theists in certain R/S struggles.

Keywords: atheism; religion; spirituality; depression; anxiety; spiritual struggles

Though religion and spirituality have been linked positively to well-being (Ellison and Fan 2008; Exline et al. 2000; Pargament et al. 2013) and physical health (George et al. 2002; Seybold and Hill 2001), there is also a negative side to religion and spirituality. Religious and spiritual (R/S) struggles represent a potentially problematic aspect of religious and spiritual life. R/S struggles are defined as tensions, conflicts, and concerns about sacred matters (Exline 2013; Pargament et al. 2005). A significant body of literature has shown that R/S struggles are not unusual and are robustly linked to greater psychological distress and lower well-being (for reviews, see Ano and Vasconcelles 2005; Exline 2013; Exline and Rose 2005). The majority of this research has been conducted among theists (i.e., people who espouse some level of belief in god(s)). This study seeks to determine the experience of R/S struggles and their connections to distress and well-being among atheists.

1. Religious and Spiritual Struggles

Types of R/S struggles. Because R/S struggles refer to conflict and tensions around sacred matters—and the sacred can take many forms—R/S struggles take many forms as well. Three overarching categories of R/S struggles have been described: supernatural struggles, interpersonal struggles, and intrapersonal struggles (Exline et al. 2014). There are two types

of supernatural struggles. The first, divine struggles, involve perceived tensions or conflicts with a deity as defined by one's belief system (Exline 2013; Pargament et al. 2005). Demonic struggles (Exline and Rose 2005) are characterized by concerns that malevolent supernatural agents (e.g., the devil, demons, evil spirits) are active in one's life. The second overarching category, interpersonal struggles (Exline 2013; Pargament et al. 2005), refer to conflict or negative experiences about R/S issues with theists, nonbelievers, groups, or institutions, whether they share one's own faith or not. The third overarching category of struggle, intrapersonal struggles, is marked by tensions focused on one's own R/S beliefs, thoughts, or behaviors. Intrapersonal struggles include three specific types of R/S struggle. Moral struggles involve conflicts within oneself over meeting moral standards in one's life that may be imbued with sacred qualities, such as truth and transcendence (see Davis et al. 2012; Pargament and Mahoney 2005; Todd et al. 2014). These conflicts often result in guilt, shame, and regret. Doubt struggles focus on troubling questions about one's own religious views or beliefs. Finally, ultimate meaning struggles concern a perceived lack of one's own deep meaning or purpose in the world. It is important to note that although R/S struggles can take these specific forms, these struggles can also be measured together as a global index of total struggle (Exline et al. 2014). This general factor of R/S struggles coexists with unique latent factors that are specific to the six types of R/S struggles (Stauner et al. 2016).

Links between R/S struggles and well-being. R/S struggles are not at all unusual among college students (Bryant and Astin 2008; Johnson and Hayes 2003) or the general U.S. population (Abu-Raiya et al. 2015; Ellison and Lee 2010; McConnell et al. 2006). Furthermore, a myriad of cross-sectional research suggests that experiences of R/S struggles relate to negative life outcomes (e.g., Abu-Raiya et al. 2015; Wilt et al. 2017; for reviews, see Exline 2013; Exline and Rose 2005; Pargament et al. 2005; Wilt et al. 2018a). R/S struggles have been linked to greater depression (for a review, see Ano and Vasconcelles 2005), anxiety (e.g., McConnell et al. 2006), and suicidal ideation (e.g., Exline et al. 2000; Rosmarin et al. 2013). Longitudinal studies have also linked R/S struggles to increased depressive symptoms (Park et al. 2009; Pirutinsky et al. 2011), poorer physical health (Fitchett et al. 1999; Trevino et al. 2010), and even increased mortality rates among elderly patients (Pargament et al. 2001).

Atheist R/S struggles. Though there is ample evidence of the association between R/S struggles and poorer psychological functioning among theists, little attention has been given to R/S struggles among atheists (for a review of existing literature, see Bradley et al. 2016). Some of the previously mentioned studies included participants who did not endorse any religious affiliation, did not express any belief in god(s), or self-identified as nonreligious or nonspiritual, but they were not the focus of these studies. An atheist is someone who does not believe in a god or gods (Nielsen 2013). Not included in this definition are agnostics, who think it is impossible to know the truth of whether god or gods exist or otherwise refrain from belief and disbelief in god(s) (Le Poidevin 2010). Although it may seem counterintuitive that an atheist—an individual who, by definition, does not believe in a higher power—may experience R/S struggles, a close examination of the different types of R/S struggles suggests that they may be relevant to atheists' experiences.

For atheists, interpersonal struggles may be common, as they reflect conflict with others regarding religious and spiritual issues regardless of religious affiliation (Exline et al. 2014). Much research supports the idea that atheists face significant stigma and prejudice. One study found that 42% of Americans believe atheists do not share their vision of America, and 44% would disapprove of their child marrying an atheist (Edgell et al. 2016). A wide variety of immoral acts (e.g., murder, cannibalism) are also rated as more representative of atheists than other groups (Gervais 2014). Additionally, a recent Pew Research Center (2017) poll found that atheists received the lowest "feelings thermometer" score next to Muslims, indicating that the general American public does not have very warm feelings toward atheists. Because atheists are viewed so negatively by so many, they may be likely to experience conflict with others regarding their non-belief in god(s), and therefore may be vulnerable to the experience of interpersonal R/S struggles.

All three types of intrapersonal struggle—moral, ultimate meaning, and doubt struggles—are relevant for atheists as well. Regarding moral struggles, it is a commonly held belief among Americans that without belief in god(s) one cannot have deep-seated morals (Pew Research Center 2014; Shermer and McFarland 2004). But the absence of belief in god(s) does not imply the absence of morality (Shariff et al. 2014). Indeed, many prominent atheist scholars have made significant efforts at creating or identifying ways to be moral without belief in a god or gods (Epstein 2009; Harris 2011; Zuckerman 2015), and the philosophical domain of ethics includes a rich tradition of nontheistic perspectives that vary as widely as theistic ethics.

Several theories focus on evolution as the primary mechanism through which morals developed in the absence of divine guidance. Evolutionary psychologists have demonstrated that moral behavior predated the development of religion and may have developed through reciprocal altruistic tendencies that increased reproductive fitness and success (Rossano 2010). De Waal (2013) argues that moral behavior is advantageous in a species as social as humans and uses examples from nature to argue that capacities for empathy and altruism are innate in humans and some other animal species. Others have made similar theoretical arguments that prosocial and moral behaviors evolved to engender more harmonious interactions and functional societies among humans (Pyysiäinen and Hauser 2010).

Atheists, like their theist counterparts, may struggle with living up to their own moral standards and values. Previous research suggests that atheists, agnostics, and those who do not endorse a religion (when analyzed together as one group) experience lower levels of moral struggles than self-identified Christians (Exline et al. 2014). Also, religiousness (which correlates strongly with belief in God) positively predicted change in moral struggles over four years in the samples presented in this study (Stauner et al. 2017), which further suggests that atheists and nonreligious people in general may experience fewer moral struggles than Christians over time. Even though atheists may experience lower levels of moral struggles than theists, tensions and conflicts about living up to one's higher moral code can lead to guilt and sadness among atheists, as they do among believers.

Atheists can also experience ultimate meaning struggles. In the USA, religiousness relates positively to meaning in life, which may mediate the relationship of religiousness to well-being (Steger and Frazier 2005); hence less religious people may have lower well-being for lack of meaning in life. Religious adherents across many cultures identify belief in a god or gods as a significant source of meaning in their lives (for a review, see Park et al. 2013). However, just as belief in god(s) is not necessary for the experience of a spiritual component to life, it is also not necessary to experience a sense of ultimate meaning. Research has identified many different areas in which individuals find a sense of meaning in their lives, including self-transcendence (i.e., concerns beyond the self), self-actualization (i.e., achievement), order (i.e., values and decency), and well-being/relatedness (i.e., enjoying life's pleasures) (Schnell 2009). Each of these sources of meaning have been included in previous definitions of spirituality and meaning in general is often considered to be an inherently spiritual part of human existence (Eisenmann et al. 2016). According to research by Schnell and Keenan (2011), these sources of meaning are open to atheists, who experience each of these types of meaning to some extent, though typically to a lesser extent than religious participants. Notably, in this study atheists were as likely as religious participants and "nones" to experience a crisis of meaning. This suggests that ultimate meaning struggles are important to study among atheists.

Previous work (drawing from an earlier, partial version of one of the datasets used in this paper) has shown that college students who identify as atheists, agnostics, or having no religion experienced higher levels of ultimate meaning struggles than Christians (Exline et al. 2014). A reanalysis of this dataset expanded this comparison to include a subsample of nontheistic Internet workers; their latent mean for ultimate meaning struggles exceeded all other subsamples (Stauner et al. 2016). This study and another independent study (Uzdavines et al. 2015) established that all factors of the RSS (with the possible exception of demonic struggles) can be measured similarly among theists and nontheists. However, given the heterogeneity of the samples used in these analyses, it is unclear to what extent atheists experience ultimate meaning struggles, because previous analyses grouped them

with agnostics and others with no religious affiliation. Because atheism is a more conclusive stance on the question of whether a god exists, atheists might experience less ultimate meaning struggle than agnostics. That is, a lack of closure on this issue may cause more ultimate meaning struggles for agnostics than for atheists.

Recent research has shown that ultimate meaning struggles distinctly contribute to the prediction of well-being over and above the effects of presence of life meaning or search for life meaning, suggesting that ultimate meaning struggles are distinct from presence of meaning in life (Wilt et al. 2018b). Earlier analyses of the dataset used in this paper indicated that struggles with ultimate meaning relate negatively to a sense of meaning in life, a form of existential well-being (Stauner et al. 2015; Stauner et al. 2015/2016). This effect appeared to be equal for participants regardless of whether they identified as religious, spiritual, both, or neither. Ultimate meaning struggles also predicted lower meaning in life and satisfaction with life independently of, and much more strongly than religiousness and the five other types of R/S struggles (Stauner et al. 2015, March/July). Though these analyses did not directly focus on the issue of belief in god(s), they emphasize the relevance of ultimate meaning struggles to the well-being of all people, including atheists.

Doubt struggles concern deep questions regarding one's own religious beliefs and convictions, or lack thereof. Though many atheists believe with certainty that no god(s) exists, some atheists may have questions or doubts regarding their nonbelief. Atheists are not free from doubt simply because they do not believe in god(s). Indeed, previous research suggests that general nonbeliever samples and Christians experience similar levels of doubt-related struggles (Exline et al. 2014; Stauner et al. 2016). Among believers, religious doubt is not an uncommon phenomenon, and it is linked to poorer mental health (Galek et al. 2007; Krause 2003) and physical health (Krause and Wulff 2004) outcomes. However, analyses of a subset of the samples analyzed in the present study indicated that doubt struggles predict higher life satisfaction and lower levels of depression after controlling for other types of R/S struggles (with theists and atheists pooled as one sample; Exline et al. 2014). Some research has supported the idea that certainty in one's worldview—whether a religious or non-religious worldview—predicts better mental health (Galen and Kloet 2011). Given the nuanced conclusions in this area, the association between doubt struggles and well-being among atheists needs to be examined to develop a better understanding of this relationship.

Since atheists do not believe in god(s), and therefore do not believe that such beings can influence their lives, it might seem counterintuitive that atheists would experience divine or demonic struggles. However, past research has indicated that groups of atheists, agnostics, and those who do not endorse a specific religion report experiencing divine struggles (Exline 2012; Exline et al. 2014; Exline et al. 2011; Stauner et al. 2016) and demonic struggles (Stauner et al. 2016), albeit usually at low levels.

One potential reason for this seemingly contradictory finding could be that some nonbelievers are former believers whose reported struggles that reflect their past feelings toward god(s) when they believed that god(s) existed. Consistent with this logic, some atheists endorse a history of negative emotions toward god(s) as a reason for their nonbelief (Bradley et al. 2017; Bradley et al. 2018). Along similar lines, in his writings about beliefs in God, Barrett (2004) has distinguished between reflective beliefs that are formed slowly, deliberately, and consciously, and nonreflective beliefs that are produced automatically and may be less explicit and less conscious. Applying this theory to atheism, it is possible that some atheists may hold reflective nonbelief in god(s) while simultaneously maintaining some degree of nonreflective belief in god(s). In addition, atheists and agnostics often hold hypothetical images of god(s) (Bradley et al. 2015), which could create the potential for struggle when the idea of god(s) is raised (e.g., anger around this idea; Exline 2012). Regarding demonic struggles, hyperactive agency detection—the tendency to over-detect conscious agents, supernatural or otherwise, in potentially threatening scenarios (Barrett 2000; Guthrie 1980)—may account partially for atheists' experience of demonic struggles. Given the links between supernatural struggles, well-being, and distress among theists, supernatural struggles might be important to well-being among atheists as well.

2. The Current Study

This study is designed to investigate the experience of the R/S struggles among atheists and their connections to distress and well-being. In studies of nonreligious people, atheists tend to be grouped in with agnostics and “nones” (i.e., others who report no religious affiliation, but may still believe in god(s)). Because atheist and agnostic philosophies differ, and nonreligious people are heterogeneous in general, analysis of these groups together may fail to yield a clear or accurate picture of any group. Multiple papers have suggested that including atheists, agnostics, and nonreligious people in a catch-all group is theoretically and statistically problematic (Hwang et al. 2011; Streib and Klein 2013). As noted, there are valid reasons to believe that the experience of R/S struggles among atheists is unique compared to theists, agnostics, and other nonreligious people. In the current study, the prevalence of R/S struggles among atheists will be assessed and compared to those of larger samples of theists. Additionally, we will investigate the relationship between R/S struggles, two indicators of distress (anxiety and depression symptoms), and two indicators of well-being (life satisfaction and meaning in life) in two samples of atheists. Three main hypotheses will be tested:

Hypothesis 1. *On average, atheists will report significantly lower levels of R/S struggles than theists, overall and for each subscale of the RSS except for the interpersonal struggles subscale.*

Hypothesis 2. *Higher R/S struggles among atheists will be associated with greater anxiety and depressive symptoms. The R/S struggle subscales as a block will predict levels of anxiety and depression over and above the effect of neuroticism.*

Hypothesis 3. *Higher R/S struggles among atheists will be associated with lower life satisfaction and lower presence of meaning in life. The R/S struggle subscales as a block will predict levels of life satisfaction and meaning in life over and above the effect of neuroticism.*

3. Method

3.1. Participants and Procedure (Samples 1 and 2)

The first sample consisted of undergraduates attending two universities in Ohio. One is a large public university, and the other is a private research university. Participants completed an online survey for partial course credit in an introductory psychology class. In total, the sample consisted of 3978 students. Portions of this dataset were analyzed in prior publications involving the Religious and Spiritual Struggles Scale (Exline et al. 2014; Stauner et al. 2016; Wilt et al. 2017). The sample used for this study focused on those students identified as atheists. Participants who answered I don't believe in God to the question, “Which statement comes closest to expressing what you believe about God?” were considered atheists. As an additional screening measure, among those who reported no belief in God, we examined their answer to an alternative question, “To what extent do you believe that God exists?” which was rated on a scale of 0–10. If a participant responded with higher than a 3, they were excluded from analyses. In total, 224 atheists were present in the dataset (105 were from the public university, 119 were from the private university). The mean age of participants in Sample 1 was 19.39 years (SD = 1.65), and 54.5% of participants were men, 44.6% were women, and 0.8% chose not to provide their gender. See Table 1 for additional demographic data.

For analyses comparing atheists and theists, a sample of 2160 theists was used. Participants who responded While I have doubts, I feel I do believe in God or I know that God exists and I have no doubts about it were considered theists. Participants who answered I don't know whether there is a God, and I don't believe there is a way to find out or I find myself believing in God at some of the time, but not at others to a question about their beliefs were considered agnostic and were excluded from analyses. Based on these criteria, a total of 498 participants were excluded in Sample 1.

Table 1. Demographic Variables: Atheist Samples 1 and 2.

	Sample 1 (Undergraduates) (N = 224)	Sample 2 (Adult Web) (N = 95)
Ethnicity *		
White	176 (78.6%)	86 (90.5%)
Asian/Pacific Islander	35 (15.6%)	3 (3.1%)
African American/Black	2 (0.9%)	2 (2.1%)
Latino/Hispanic	6 (2.7%)	4 (4.2%)
Native American/Amer. Indian/Alaska Native	0 (0.0%)	3 (3.2%)
Middle Eastern	1 (0.4%)	0 (0.0%)
Other	4 (1.8%)	1 (1.1%)
Sexual Orientation		
Heterosexual	194 (86.6%)	80 (84.2%)
Homosexual	8 (3.6%)	5 (5.3%)
Bisexual	12 (5.4%)	7 (7.4%)
Asexual	3 (1.3%)	1 (1.1%)
Prefer not to say	5 (2.2%)	0 (0.0%)
Other	2 (0.9%)	2 (2.1%)

* Note. Participants were encouraged to select all ethnicity categories that apply to them, so Sample 2's column total exceeds the total number of participants.

The second sample was comprised of adult Internet users in the U.S. recruited through the Amazon Mechanical Turk online workforce database (MTurk). Previous research has demonstrated that MTurk is suitable for a range of social science research applications (Buhrmester et al. 2011). In total, 1048 adults completed the survey. Those who responded I know that no God or gods exist, and I have no doubts about it to a question about their beliefs about God were considered atheists. The same screening question as Sample 1 ("To what extent do you believe that God exists?") was used in this sample as well, but it did not eliminate any participants. In total, 95 atheists were identified ($M_{\text{age}} = 36.60$ years, $SD_{\text{age}} = 12.08$). Of these, 43.1% were men, 55.7% were women, and 1% were transgender men. Additional demographic variables can be seen in Table 1. For analyses comparing atheist and believer prevalence of R/S struggles, a sample of 522 theists was used. The same criterion from Sample 1 was used to identify believers in Sample 2. In addition to the questions identifying agnostics in Sample 1, participants who answered While it is possible that a God or gods exist, I do not believe in the existence of a God or gods or I don't know whether there is a God or gods, and I don't believe there is any way to find out were considered agnostic in Sample 2 and excluded. In total, 431 participants were excluded based on these criteria.

3.2. Measures

Religious and spiritual struggles. R/S struggles were measured by the 26-item Religious and Spiritual Struggles Scale (RSS; Exline et al. 2014). Participants were asked to rate how much they experienced R/S struggles in six domains: divine (e.g., "felt as though God was punishing me"), demonic (e.g., "felt attacked by the devil or by evil spirits"), interpersonal (e.g., "felt rejected or misunderstood by religious/spiritual people"), moral (e.g., "felt guilty for not living up to my moral standards"), ultimate meaning (e.g., "had concerns about whether there is any ultimate purpose to life or existence"), and doubt (e.g., "felt confused about my religious/spiritual beliefs"). Participants rated how much they had experienced R/S struggles in the past month on a five-point scale from 1 = not at all/does not apply to 5 = A great deal. Subscale scores were calculated by averaging items within subscales; a total score was created by averaging all items (Sample 1 total score $\alpha = 0.90$ for atheists, $\alpha = 0.94$ for believers; Sample 2 total score $\alpha = 0.93$ for atheists, $\alpha = 0.89$ for believers). The RSS has shown evidence of good reliability and validity in previous analyses of an earlier, smaller portion of the Sample 1 dataset (Exline et al. 2014). More recent analyses of the complete dataset have established

strict measurement invariance across these samples and another consisting exclusively of nonreligious participants (Stauner et al. 2016). Means and standard deviations for the RSS are in Table 2.

Table 2. RSS Scale Descriptive Statistics.

Sample 1							
	Atheist			Theist			r
	Mean (SD)	Skew	Kurtosis	Mean (SD)	Skew	Kurtosis	
Total	1.42 (0.47)	2.80	14.72	1.84 (0.70)	1.07	0.86	0.15
Moral ^a	1.61 (0.83) ^{abc}	1.59	2.07	2.42 (1.05) ^h	0.47	−0.57	0.18
Ultimate Meaning ^{ab}	1.86 (1.12) ^{def}	1.31	0.60	2.01 (1.02) ^d	0.96	0.16	0.05
Interpersonal ^c	1.71 (0.79) ^{de}	1.20	1.25	1.66 (0.81) ^{ae}	1.38	1.33	−0.02
Doubt ^d	1.20 (0.49) ^g	3.81	19.29	1.89 (1.00) ^e	1.06	0.31	0.18
Demonic ^e	1.04 (0.32) ^g	9.99	113.38	1.61 (0.91) ^{bf}	1.60	1.90	0.15
Divine ^e	1.09 (0.40) ^g	6.37	48.82	1.55 (0.79) ^c	1.73	2.66	0.15
Sample 2							
	Atheist			Theist			r
	Mean (SD)	Skew	Kurtosis	Mean(SD)	Skew	Kurtosis	
Total	1.34 (0.39)	2.60	10.93	1.69 (0.63)	1.40	2.07	0.16
Moral ^{bc}	1.39 (0.58) ^{abc}	1.46	1.13	2.08 (1.02) ^h	0.88	0.08	0.16
Ultimate Meaning ^{bc}	1.75 (1.00) ^{def}	1.54	2.04	1.82 (0.99) ^d	1.26	0.67	0.07
Interpersonal ^{bc}	1.74 (0.91) ^{de}	1.59	2.45	1.62 (0.82) ^{ae}	1.63	2.21	−0.01
Doubt ^e	1.08 (0.39) ^g	6.69	49.14	1.64 (0.90) ^e	1.60	2.03	0.19
Demonic ^e	1.02 (0.16) ^g	8.59	77.12	1.66 (0.99) ^{bf}	1.62	1.82	0.14
Divine ^e	1.03 (0.25) ^g	9.21	87.45	1.41 (0.77) ^c	2.44	5.93	0.14

Note. Subscales with shared superscripts differ insignificantly (Tukey-adjusted $p > 0.05$) using marginal mean ranks predicted from a multilevel model. Leftmost superscripts compare RSS subscales across Samples 1 and 2 after averaging the predicted marginal mean ranks of atheists and theists. Superscripts comparing atheists to theists within samples are identical for Samples 1 and 2 because the three-way interaction was insignificant. Effect size r s compared raw scores of atheists and theists within samples without controlling main effects or interactions.

Depressive symptoms. Depressive symptoms were assessed using the 10-item form of the Center for Epidemiologic Studies Depression Scale (CES-D-10; Andresen et al. 1994). The CES-D-10 was developed as a screening scale for depressive symptoms for epidemiological investigations. Items assessing depressive symptoms during the past week (e.g., “felt depressed,” “could not ‘get going.’”) were rated on a four-point scale from Rarely or none of the time less than 1 day (0), to Most or all of the time, 5–7 days (3). Scores were calculated by summing responses (Sample 1 $M = 10.97$, $SD = 6.13$, $\alpha = 0.84$; Sample 2 $M = 8.78$, $SD = 6.96$, $\alpha = 0.90$). The CES-D-10 has been established as a reliable and valid measure of depressive symptoms (Björngvinsson et al. 2013; Andresen et al. 1994).

Generalized anxiety. Generalized anxiety symptoms were measured using the Generalized Anxiety Disorder 7-item scale (GAD-7; Spitzer et al. 2006). Participants were asked to rate how often they experienced various anxiety symptoms over the past two weeks on a four-point scale from not at all (0) to nearly every day (3). Scores were calculated by summing individual items (Sample 1 $M = 6.50$, $SD = 5.06$, $\alpha = 0.90$; Sample 2 $M = 5.30$, $SD = 5.68$, $\alpha = 0.94$). This seven-item measure has demonstrated strong criterion validity, with higher scores predicting greater functional impairment (Spitzer et al. 2006).

Life meaning. The Presence subscale of the Meaning in Life Questionnaire (MLQ; Steger et al. 2006) was used to measure meaning in life. This subscale includes five items that measure presence of meaning (e.g., “I understand my life’s meaning”). Items were rated on a seven-point scale from absolutely untrue (1) to absolutely true (7). Scores were calculated as averages (Sample 1 $M = 4.19$, $SD = 1.42$, $\alpha = 0.88$; Sample 2 $M = 4.39$, $SD = 1.74$, $\alpha = 0.96$). The presence construct has been validated in multiple samples (Steger et al. 2006; Steger and Kashdan 2007).

Life satisfaction. Life satisfaction was measured by the Satisfaction with Life Scale (SWLS; Diener et al. 1985), a five-item measure that evaluates how content people are with their lives (e.g., “I am satisfied with my life”). People responded on a seven-point scale from strongly

disagree (1) to strongly agree (7). Scores were calculated by averaging across items (Sample 1 $M = 4.16$, $SD = 1.39$, $\alpha = 0.89$; Sample 2 $M = 4.22$, $SD = 1.83$, $\alpha = 0.96$). The SWLS has evidence of reliability and validity (Pavot et al. 1991).

Neuroticism. Neuroticism was measured using the neuroticism subscale of the Big Five Inventory (BFI; John et al. 1991). Participants responded to BFI questions on a five-point scale from strongly disagree (1) to strongly agree (5) and items were averaged together (Sample 1 $M = 3.03$, $SD = 0.67$, $\alpha = 0.80$; Sample 2 $M = 2.80$, $SD = 0.90$, $\alpha = 0.89$). Neuroticism was used as a control variable in analyses to account for general negative affect. People who experience more depression, anxiety, or stress and people with higher neuroticism are more likely to experience R/S struggles in general (Stauner et al. 2016), so neuroticism was included to account for this effect.

4. Results

Prevalence of R/S struggles. To assess the prevalence of R/S struggles among atheists, means of RSS subscales and total scores were calculated. Three of the RSS subscales (Divine, Demonic, and Doubt) were substantially, positively skewed (see Table 2). Therefore, to test differences in level of R/S struggles between atheists and theists, scores for all subscales (not total scores) for all individuals from both samples of both atheists and theists were transformed into ranks prior to estimating a multilevel model of these ranked scores. This procedure reduced the nonnormality of all subscale distributions, which were combined for the purpose of the rank transformation, then separated again for the purpose of further analysis (Baguley 2012).

The multilevel model (i.e., mixed effects or hierarchical linear model) of rank-transformed RSS subscale scores estimated a separate intercept for each participant to control the random effect of individual differences in overall R/S struggles or other response tendencies (e.g., acquiescence bias). A three-way, $2 \times 2 \times 6$ predictor design tested the fixed (i.e., one parameter estimate for all participants) main effects and all interactions of two dichotomous variables indicating whether each score was from Sample 1 or 2 and from an atheist or theist, and one variable indicating which of the six RSS subscales was scored. This analysis was conducted in R (R Core Team 2018) using the lme4 package (Bates et al. 2015) for model estimation, the car package (Fox and Weisberg 2011) for effect-coded type III Wald F tests, and the lsmeans package (Lenth 2016) for post hoc pairwise comparisons using the Tukey adjustment of the familywise error rate (pairwise test statistics and p values omitted for brevity).

Overall amounts of R/S struggle differed among RSS subscales (main effect $F_{(5, 14975)} = 235.07$, $p < 0.001$). Moral and ultimate meaning struggles exceeded interpersonal struggles significantly, which also exceeded doubt struggles; divine and demonic struggles occurred least. Sample 1 (undergraduates) reported significantly more R/S struggles than Sample 2 (MTurk) overall ($F_{(1, 2995)} = 10.62$, $p = 0.001$), but only more Moral and Doubt struggles in terms of individual subscales (interaction $F_{(5, 14975)} = 6.44$, $p < 0.001$). The multilevel model controlled these effects when testing the following differences between atheists and theists. See Table 2 for means, compact letter displays of pairwise comparisons for differences by subscale, and effect size r s for differences between atheists and theists based on raw scores within samples.

As predicted, atheists reported significantly less R/S struggles than theists overall ($F_{(1, 2995)} = 141.61$, $p < 0.001$). This effect interacted significantly with RSS subscale ($F_{(5, 14975)} = 73.95$, $p < 0.001$). Atheists reported less moral, doubt, divine, and demonic struggles than theists, but they differed insignificantly in interpersonal and ultimate meaning struggles. These differences between atheists and theists were similar in both samples (interaction $F_{(1, 2995)} = 0.57$, $p = 0.449$) regardless of RSS subscale (three-way interaction $F_{(5, 14975)} = 0.68$, $p = 0.640$).

Given the significant interaction between (a)theism and RSS subscale, we also examined differences between atheists and theists in the differences between RSS subscales. Atheists reported significantly more interpersonal and ultimate meaning struggles than moral struggles, which also exceeded doubt, divine, and demonic struggles. It should be noted that 95.8% of atheists in Sample 2 reported no divine struggles, while 97.9% reported no demonic struggles. The Mann–Whitney location

parameters also differed insignificantly from one (the lowest scale point; Divine $U_{(94)} = 10, p = 0.098$; Demonic $U_{(94)} = 3, p = 0.371$). In Sample 1, 92.0% of atheists reported no experience of divine struggles, and 96.4% reported no demonic struggles, but the Mann–Whitney location parameters differed significantly from one (Divine $U_{(223)} = 171, p < 0.001$; Demonic $U_{(223)} = 36, p = 0.014$). For theists in both samples, all subscales except Interpersonal and Doubt differed significantly. Theists reported moral struggles most of all, followed by ultimate meaning, doubt and interpersonal, demonic, and finally divine struggles.

Correlations among major study variables. First, to determine relations among the RSS subscales in the atheist samples, bivariate correlations were calculated among these variables. Kendall’s τ was used due to nonnormality of the RSS scores. These were adjusted to the scale of r for ease of interpretation using Gilpin (1993) formula: $r = \sin(\tau \times \pi \div 2)$. Correlations among RSS scores appear in Table 3. In Sample 1, all correlations were significant and positive except the correlation between interpersonal and demonic struggles. In Sample 2, all RSS subscales were positively related to each other except the Demonic subscale, which did not demonstrate a significant relationship with any other RSS subscale, likely due to the floor effect (93 out of 95 scores were one). To determine the relationship among the various R/S struggles subscales and outcomes of interest, we calculated bivariate correlations (see Table 4). Moral, ultimate meaning, and total struggles were all significantly and positively correlated with depression and anxiety symptoms across both samples. Interpersonal struggles were associated with depression and anxiety in Sample 1 and with Anxiety in Sample 2. Ultimate meaning, moral, and total struggles were significantly, negatively associated with presence of life meaning and life satisfaction in both samples. Additionally, in Sample 2, interpersonal struggles were negatively associated with life satisfaction.

Table 3. Correlations among RSS Subscales.

	1	2	3	4	5	6	7
1. Total	—	0.81 ***	0.76 ***	0.88 ***	0.58 ***	0.44 ***	0.31 ***
2. Interpersonal	0.84 **	—	0.33 ***	0.52 ***	0.35 ***	0.23 *	0.18 †
3. Moral	0.71 **	0.28 *	—	0.61 ***	0.47 ***	0.28 **	0.33 ***
4. Ultimate Meaning	0.86 **	0.45 **	0.60 **	—	0.43 ***	0.37 ***	0.22 **
5. Doubt	0.43 **	0.29 *	0.18	0.31 *	—	0.49 ***	0.36 ***
6. Divine	0.37 **	0.21	0.37 **	0.33 *	0.79 **	—	0.69 **
7. Demonic	0.28 *	0.24	0.25	0.21	−0.06	−0.05	—

Note. Calculated as Kendall’s τ and adjusted to the scale of r (Gilpin 1993). Sample 1: Above diagonal, Sample 2: Below diagonal. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4. Correlations between RSS Subscales and Variables of Interest among Atheist Samples.

	CESD-10	GAD-7	MLQ-Presence	Life Satisfaction
Sample 1				
Total	0.34 ***	0.35 ***	−0.20 **	−0.25 **
Interpersonal	0.19 *	0.19 *	−0.02	−0.13
Moral	0.32 ***	0.31 ***	−0.11 *	−0.20 **
Ultimate Meaning	0.43 ***	0.38 ***	−0.37 ***	−0.32 **
Doubt	0.13	0.20 *	−0.11	−0.05
Divine	0.16	0.14	−0.16	−0.13
Demonic	0.08	0.13	−0.02	−0.02
Sample 2				
Total	0.50 ***	0.52 ***	−0.35 **	−0.41 ***
Interpersonal	0.22	0.25 *	−0.17	−0.23 *
Moral	0.47 ***	0.45 ***	−0.29 *	−0.35 **
Ultimate Meaning	0.55 ***	0.60 ***	−0.43 ***	−0.45 ***
Doubt	0.02	0.06	0.06	0.09
Divine	0.05	0.11	0.14	0.11
Demonic	0.19	0.02	0.11	−0.20

Note. Correlations calculated as Kendall’s τ and adjusted to the scale of r (Gilpin 1993). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

R/S struggles and distress. To rule out confounded effects of ethnicity, gender, and neuroticism in the association between R/S struggles and distress factors (depression and anxiety symptoms), a series of hierarchical multiple regressions were calculated among the atheist samples. To assess for violated assumptions of regression analyses, we calculated the tolerance and VIF statistics for regression analyses. There are various guidelines for acceptable VIF and tolerance, typically suggesting that VIF values should be less than 5 and tolerance levels should be greater than 0.1 (Hair et al. 1995; O'Brien 2007). In our analyses, none of our values violated these thresholds.

Because we were interested in the unique variance explained by the six types of R/S struggles over and above demographic variables and neuroticism, first a hierarchical regression model was calculated in which demographic variables (gender and ethnicity) and trait neuroticism were entered as control variables in step 1 and the six types of R/S struggles were entered as a block in step 2. In all regression analyses, ethnicity and gender were dichotomized (white = 0, nonwhite = 1; women = 0, not women = 1) due to a lack of ethnic diversity and gender diversity outside of the man/woman binary. Notably, in this regression model, the types of R/S struggles as a block continued to explain unique variance in depression over and above demographics and neuroticism in both Sample 1 ($R^2 = 0.39$, $\Delta R^2 = 0.08$, $p < 0.001$) and Sample 2 ($R^2 = 0.52$, $\Delta R^2 = 0.13$, $p = 0.003$). R/S struggles also explained unique variance in anxiety in Sample 1 ($R^2 = 0.40$, $\Delta R^2 = 0.05$, $p = 0.007$) and Sample 2 ($R^2 = 0.62$, $\Delta R^2 = 0.09$, $p = 0.004$).

We were also interested in the effects of the demographic and neuroticism control variables on the relations between the specific R/S subscales and distress, so a second, three-step regression model was calculated. Results can be viewed in Table 5. In the first step, demographic factors (ethnicity and gender) were entered. In step two, the six types of R/S struggles were entered as a block. R/S struggles explained unique variance in depression and anxiety in both samples, with medium effect sizes found in Sample 1 and large effect sizes found in Sample 2. Specifically, after controlling for the demographic variables, moral and ultimate meaning struggles positively and independently predicted depressive symptoms in both samples. Notably, doubt struggles negatively predicted depressive symptoms in Sample 1, a pattern demonstrated in analyses of an earlier, partial version of the Sample 1 dataset used here (Exline et al. 2014). Ultimate meaning struggles predicted greater anxiety in both samples, and moral struggles independently predicted greater anxiety in Sample 1.

In the third step of the regression model, we entered trait neuroticism. This was intended as a very rigorous test of the independent effects of the specific R/S struggles subscales, since neuroticism focuses on emotional distress at the trait level and thus explains substantial variance in anxiety and depression. Even after controlling for neuroticism, moral struggles significantly predicted higher depression in both samples, and ultimate meaning struggles predicted greater depression in Sample 1. Moral struggles independently predicted higher anxiety in Sample 1, and ultimate meaning struggles predicted greater anxiety in Sample 2. Including neuroticism substantially decreased all predictive effects of ultimate meaning struggle on anxiety and depression.

Table 5. Hierarchical Multiple Regressions Predicting Distress from R/S Struggles among Atheists.

	Sample 1						Sample 2					
	Depression			Anxiety			Depression			Anxiety		
	1	2	3	1	2	3	1	2	3	1	2	3
	β	β	β	β	β	β	β	β	β	β	β	β
Ethnicity	0.03	0.11	0.07	0.01	0.08	0.04	0.04	0.08	0.11	0.00	0.04	0.08
Gender	−0.01	−0.01	0.06	−0.16 *	−0.18 **	−0.09	−0.04	−0.08	−0.02	−0.05	−0.05	0.02
RSS		0.02	0.06		0.06	0.11		−0.03	0.06		−0.04	0.07
Interpersonal												
RSS Moral		0.19 *	0.15 *		0.25 **	0.20 **		0.31 **	0.26 *		0.17	0.11
RSS Ultimate Meaning		0.38 ***	0.20 **		0.24 **	0.03		0.45 ***	0.17		0.61 ***	0.28 *
RSS Doubt		−0.15	−0.18 *		−0.08	−0.12		−0.05	−0.04		−0.06	−0.05
RSS Divine		0.08	0.08		0.04	0.03		−0.14	−0.14		−0.04	−0.04
RSS Demonic		−0.11	−0.08		−0.11	−0.08		0.03	0.07		−0.09	−0.04
Neuroticism			0.45 ***			0.51 ***			0.45 ***			0.52 ***
R ²	0.00	0.23 ***	0.39 ***	0.03	0.19 ***	0.40 ***	0.00	0.41 ***	0.52 ***	0.00	0.46 ***	0.62 ***
ΔR^2		0.23 ***	0.16 ***		0.17 ***	0.21 ***		0.40 ***	0.12 ***		0.46 ***	0.16 ***
F		7.82	15.08		6.37	15.76		7.15	10.07		9.04	15.23
f ²		0.30	0.64		0.23	0.67		0.69	1.08		0.85	1.63

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Note. Ethnicity: white = 0, not white = 1; gender: women = 0, not women = 1.

R/S struggles and well-being. Again, to assess the unique variance explained by R/S struggles over and above other important variables, we ran a regression model in which ethnicity, gender, and neuroticism were entered in step 1 of the regression and R/S struggles as a block were entered in step 2. After controlling for ethnicity, gender, and neuroticism, the types of R/S struggles explained unique variance in presence of meaning in Sample 1 ($R^2 = 0.17$, $\Delta R^2 = 0.10$, $p < 0.001$) and Sample 2 ($R^2 = 0.30$, $\Delta R^2 = 0.13$, $p = 0.023$). R/S struggles did not explain unique variance in life satisfaction over and above control variables in either Sample 1 ($R^2 = 0.20$, $\Delta R^2 = 0.02$, $p = 0.442$) or Sample 2 ($R^2 = 0.32$, $\Delta R^2 = 0.09$, $p = 0.103$).

To assess whether neuroticism explains or suppresses the relations between the specific subtypes of R/S struggle and well-being, another series of hierarchical multiple regressions were calculated (see Table 6). As in the prior regression analyses, demographics were included in step one of the regression. In step two, the six types of R/S struggles were entered as a block. Results showed that the combined set of R/S struggle subscales predicted unique variance in presence of life meaning in both samples. The effect size of R/S struggles on meaning in life was medium in Sample 1 and large in Sample 2. The combined set of R/S struggles also predicted unique variance in life satisfaction in both samples. The effect size of R/S struggles on life satisfaction was small in Sample 1 and large in Sample 2. In both samples, higher levels of ultimate meaning struggles were associated with lower meaning in life and life satisfaction.

In step three of the model, neuroticism was entered. In both samples step three accounted for unique variance in the measure of satisfaction with life but not meaning in life. After entering neuroticism in step three, ultimate meaning struggles significantly predicted lower presence of meaning in life across both samples, but no longer predicted life satisfaction. None of the other types of R/S struggles significantly predicted life satisfaction scores.

Table 6. Hierarchical Multiple Regression Predicting Well-being from R/S Struggles Among Atheists.

	Sample 1						Sample 2					
	MLQ (Presence)			Life Satisfaction (SWLS)			MLQ (Presence)			Life Satisfaction (SWLS)		
	1	2	3	1	2	3	1	2	3	1	2	3
	β	β	β	β	B	β	β	β		β	β	β
Ethnicity	0.04	0.02	0.03	-0.12	-0.17 *	-0.14 *	0.14	0.11	0.10	-0.03	-0.05	-0.07
Gender	-0.05	-0.08	-0.10	0.00	-0.01	-0.08	-0.14	-0.13	-0.15	-0.15	-0.14	-0.18
RSS		0.16 *	0.15		-0.03	-0.07		-0.03	-0.06		0.01	-0.06
Interpersonal												
RSS Moral		0.09	0.10		-0.06	-0.02		-0.07	-0.06		-0.18	-0.15
RSS Ultimate Meaning		-0.47 ***	-0.43 ***		-0.22 *	-0.07		-0.45 **	-0.34 *		-0.36 **	-0.15
RSS Doubt		-0.03	-0.02		0.11	0.14		0.07	0.07		0.13	0.12
RSS Divine		-0.06	-0.06		-0.13	-0.13		0.22	0.22		-0.04	-0.04
RSS Demonic		0.10	0.09		0.12	0.09		0.15	0.14		-0.09	-0.13
Neuroticism			-0.11			-0.39 ***			-0.17			-0.32 **
R ²	0.01	0.16 ***	0.17 ***	0.01	0.09 *	0.20 ***	0.03	0.29 ***	0.30 ***	0.02	0.26 ***	0.32 ***
ΔR^2		0.15 ***	0.01		0.07 *	0.12 ***		0.25 ***	0.02		0.24 **	0.06 **
F		5.04	4.80		2.54	6.14		4.22	4.00		3.73	4.40
f ²		0.19	0.20		0.10	0.25		0.40	0.43		0.35	0.47

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Note. Ethnicity: white = 0, not white = 1; gender: women = 0, not women = 1.

5. Discussion

The aim of the current study was to assess the prevalence of R/S struggles and to investigate the links between R/S struggles, distress, and well-being among atheists. We hypothesized that atheists would self-report lower R/S struggles than theists and that R/S struggles would be positively related to distress and negatively related to well-being. Partial support was found for these hypotheses. Additionally, hierarchical regressions generally suggested that moral and ultimate meaning struggles predict higher levels of anxiety and depression, while ultimate meaning struggles predicted lower levels of meaning in life among atheists. These effects were partially independent of neuroticism, a powerful trait predictor of these outcomes.

Prevalence of R/S struggles. Results indicated that atheists experienced less overall R/S struggles than theists. More specifically, atheists in both samples experienced less moral, doubt, divine, and demonic struggles. No statistically significant differences were observed in levels of interpersonal or ultimate meaning struggles. Overall, these results indicate that atheists may be less likely to experience R/S struggles than theists, with the exceptions of interpersonal and ultimate meaning struggles. The lack of belief in God may reduce atheists' vulnerability to the tensions, strains, and conflicts that can accompany a relationship with supernatural forces, such as fears of divine or demonic punishment or anger towards a higher power that has disappointed the individual. Similarly, atheists may be less prone to moral struggles either because they have more permissive moral codes (such as around the consumption of pornography; [Grubbs et al. 2015](#)) or because they do not feel the sting of guilt as sharply as theists who believe they have disappointed their deity or transgressed against a moral code they may hold sacred. In terms of doubt struggle, atheists may be spared these questions about profound matters of faith to a greater extent than theists because they have achieved some degree of closure about these issues; their lack of belief in god(s) may enable them to steer further away from the faith-related conflicts and contentions that can plague believers. Generally, atheists' tendency to be nonreligious may grant the struggles they do experience a greater degree of independence from each other, which was evident in this sample's weaker correlations among RSS factors as compared to more religious or mixed samples (cf. [Stauner et al. 2016](#)). Whereas a belief in god(s) or religious group membership might cause one struggle to lead to another (e.g., a perceived sin causing fear of punishment from a god or church), atheists' R/S struggles in one domain might run less risk of disrupting other domains if they are not connected by religious ideology. In sum, by virtue of their nonbelief in god(s), atheists may experience a greater degree of protection against R/S struggles than their theistic counterparts.

Among atheists, the highest means were observed for interpersonal and ultimate meaning struggles. Indeed, atheists' experiences might very well produce struggles in these areas, especially where atheists are a minority. Regarding interpersonal struggles, studies using U.S. participants have found that atheists are consistently rated as immoral (e.g., [Gervais 2014](#)), uncaring ([Simpson and Rios 2017](#)), and even un-American ([Edgell et al. 2006](#); [Edgell et al. 2016](#)). These attitudes may lead to anti-atheist behavior, as many atheists report experiences of anti-atheist discrimination (e.g., [Brewster et al. 2016](#)). In more extreme cases, atheism and apostasy are punishable by death or jail sentences in many countries ([Churchill 2017](#)). Though the participants in our studies would not have faced this level of discrimination, these laws demonstrate the severity of discrimination and violence atheists face around the world. It follows that atheists would frequently experience struggles with others regarding their own views on faith and spirituality.

Future studies should investigate risk and protective factors for interpersonal struggles. It may be that atheists who interact more frequently with religious individuals experience more interpersonal struggles or that atheists who are more forthcoming or assertive about their atheism experience more conflict with others. Another potential avenue of inquiry is family of origin religiosity: do atheists who come from highly religious families experience more familial interpersonal struggle? Do atheists from non-religious families experience more interpersonal struggles with non-family members because they are open about expressing their atheism? Further research on the relationships among family of origin

beliefs and interpersonal struggles may be relevant to establishing why interpersonal struggles are one of the most commonly reported types of struggle among atheists. Research on adolescents has found that R/S struggles specifically involving conflicts with parents and families relate negatively to religious commitment (Homolka 2017), which supports the hypothesis that atheists and others without religious commitments may face more R/S conflicts within their families.

Regarding ultimate meaning struggles, since atheists lack a religiously based source of value, purpose, and meaning, they may be more prone to spiritual struggles in this realm if they must create their own sources of ultimate purpose (Baumeister 1991). Past investigations of these data have found that nontheists experience more ultimate meaning struggles than theists (Exline et al. 2014; Stauner et al. 2016), but the nontheistic samples in those analyses included agnostics and other nonreligious people, many of whom reported belief in god(s). Post hoc analyses completed on both of the current datasets revealed that agnostics experienced significantly more ultimate meaning struggles than atheists, Sample 1, $t_{(717)} = -3.84, p < 0.001$; Sample 2, $t_{(504)} = -4.09, p < 0.001$, so they likely inflated the level of ultimate meaning struggle in previous analyses. This highlights the importance of examining atheists specifically, rather than grouping them with agnostics and other nonreligious people.

Given the results of the current study, ultimate meaning struggle is clearly an important aspect of many atheists' experiences. Several important questions deserve consideration. How do atheists make sense of questions like, "Why am I here?" or "What is my life's purpose?" To what extent do atheists believe they need an ultimate purpose? Do atheists who believe their life requires a deeper purpose, but feel it lacks one, experience more distress than atheists who lack deeper purpose in life but do not feel a deeper purpose is necessary? How do atheists cope with ultimate meaning struggles? Theists may turn to a spiritual leader, or their holy book when confronted with ultimate meaning struggles. Given that these resources are not generally applicable for atheists, where do atheists turn when they feel that their life lacks meaning? Do other, nonreligious group affiliations and ideologies provide as much meaning as religions? In fact, there is some evidence that atheists endorse greater belief in extraterrestrial intelligence in the presence of lower meaning in life (Routledge et al. 2017). This suggests that the search for meaning among atheists may entail more openness to supernatural sources of meaning. Overall, questions posed here may guide future investigations of atheists' ultimate meaning struggles.

R/S struggles, distress, and well-being. Results provided evidence that the moral, ultimate meaning, and to some extent, interpersonal struggles of atheists are linked to both greater distress and lower levels of well-being. Though previous publications drawing from the same datasets used for this study (Exline et al. 2014; Stauner et al. 2016; Wilt et al. 2017) came to similar conclusions using theistic and general nontheistic samples, this study verified that those conclusions apply to atheists as a distinct group. Additionally, some of these effects are independent of ethnicity, gender, and neuroticism. These findings present compelling evidence of the relation between R/S struggles and important psychological outcomes among atheists. Results are also consistent with previous analyses of these data that demonstrate a relationship between ultimate meaning, interpersonal, and moral struggles and distress and well-being outcomes (Exline et al. 2014; Stauner et al. 2016; Wilt et al. 2017). These subscales of R/S struggles among atheists specifically have similar associations with distress and well-being when compared to larger samples including primarily theists. However, Exline et al. (2014) found that all types of R/S struggles independently predicted distress outcomes in an earlier analysis that used an earlier, partial version of the Sample 1 dataset used here, which included theists, agnostics, those with no religious affiliation, and atheists.

At present, it is unclear why ultimate meaning and moral struggles were the only subscales to predict anxiety and depression in this sample of atheists. This study's results also suggested that doubt, divine, and demonic struggles correlate less strongly with distress among atheists than among more theistic or mixed populations (cf. Stauner et al. 2016). It is possible that demonic and divine struggles were not associated with distress due to the very low frequency with which the atheists reported these

struggles in our samples. Regarding doubt struggles, it may be that atheists view doubting more positively than theists, perhaps as a less threatening form of questioning and exploring beliefs. In fact, doubt struggles were associated with less depression in one sample after controlling for other types of struggles, a pattern which was found when including theists and agnostics in an earlier, partial version of the Sample 1 dataset (Exline et al. 2014).

Limitations. There are a few limitations to the current study. The main limitation is in the cross-sectional methodology. On the basis of these cross-sectional analyses, we cannot determine whether R/S struggles are a primary cause of distress and lower well-being, or secondary to the experience of distress and lower well-being (Pargament and Lomax 2013). Future studies should investigate the effects of R/S struggles on distress and well-being among atheists longitudinally to begin to clarify directionality of effects, though this approach will require careful control of potentially confounded factors that also change over time. Additionally, creative and carefully designed experimental manipulations that induce mild levels of R/S struggles or temporarily affect state-level distress or well-being could test causality in these relationships.

A second limitation is the relatively small sample sizes used in this study: Both samples had fewer than 300 atheists. Future studies should attempt to replicate the current findings in larger samples of atheists now that they have been observed in relatively small samples. The same methods could also be applied fruitfully to the study of agnostics, the spiritual but not religious, and other groups with nontheistic or nontraditional ideologies.

Additionally, our sample was relatively homogenous ethnically. Future investigations should attempt to include more ethnically diverse groups of atheists to investigate their experience of R/S struggles. Data were also based on self-report measures, the limitations of which are well-known (Paulhus and Vazire 2007). Future work would benefit by attempts to measure such struggles via other methods, such as implicit associations or physiological measures, as well as other indirect techniques.

Overall, the current study builds on prior work that demonstrates the associations of R/S struggles with important life outcomes, reinforcing the applicability of previous findings to atheists. Analyses were completed on two separate samples of atheists—one of college students and one of adults from the general population—to replicate key findings and strengthen confidence in the results. All hypotheses were partially supported in both samples of atheists. Further, many effects on depression, anxiety, and meaning in life were independent of neuroticism. This study confirms that it is not necessary to believe in any god, gods, or higher power to experience struggle with one's system of ultimate values, beliefs, and practices. Results of this study encourage a broadening of the study of R/S struggles to better represent the specific experiences of atheists and catalogue their similarities and differences relative to theists. We hope future research into the study of R/S struggles continues to examine atheists as a distinct group.

Author Contributions: Conceptualization, A.E.S. and K.I.P.; Methodology, A.E.S., N.S., K.I.P., J.J.E., J.B.G., and D.F.B.; Investigation, K.I.P., J.J.E., J.B.G.; Data Curation, N.S., J.J.E., J.B.G.; Formal Analysis, A.E.S., N.S., K.I.P., J.J.E., J.B.G., D.F.B.; Writing – Original Draft Preparation, A.E.S., K.I.P.; Writing – Review & Editing, A.E.S., N.S., K.I.P., J.J.E., and D.F.B.; Funding Acquisition, N.S., K.I.P., J.J.E., J.B.G.; Visualization, A.E.S., N.S., K.I.P., J.J.E., J.B.G., and D.F.B.

Funding: This research was funded by John Templeton Foundation grant numbers 36094 and 59916.

Conflicts of Interest: The authors declare no conflict of interest.

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