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Religious Fundamentalism and How it Relates to Personality, Irrational Thinking, and Defense Mechanisms

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Abstract

This study explored how religious fundamentalism related to irrational beliefs and primitive defense mechanisms. We also explored how the personality factors of openness to experience and neuroticism moderated these relations. Participants (N = 120) were recruited in an urban area from a Northeastern university, a psychotherapy center, and through Internet advertising. The results demonstrated that religious fundamentalism predicted irrationality after controlling for degree of neuroticism. The results suggest that the degree of religious belief may be an important aspect of assessment when commencing psychotherapy because it relates to irrationality, which is the basis for psychopathology according to Rational Emotive Behavior Therapy. Therefore, rigidly held religious beliefs may predict psychopathology.

Introduction

[1] Historians and religious scholars have told us much about the phenomenon of religious fundamentalism, but the question remains as to how psychology can increase our understanding of this phenomenon. Is religious fundamentalism cultural, a form of psychopathology, or dimension of normal personality? Are there personality dimensions related to fundamentalist thinking? What does psychology tell us and how can we improve our understanding of the phenomenon of religious fundamentalism?

[2] Altemeyer and Hunsberger defined religious fundamentalism as "the belief that there is one set of religious teachings that clearly contains the fundamental, basic, intrinsic, essential,

inerrant truth about humanity and deity; that this essential truth is fundamentally opposed by forces of evil which must be vigorously fought; that this truth must be followed today according to the fundamental, unchangeable practices of the past; and that those who believe and follow these fundamental teachings have a special relationship with the deity" (1992: 118).

[3] Little empirical research has explored how religious fundamentalism relates to psychological constructs other than prejudice. Researchers have argued about how religious fundamentalism is related to prejudice by appealing to sub-constructs of fundamentalism like authoritarianism and orthodoxy (Altemeyer; Altemeyer and Hunsberger 1992, 2004 Hunsberger, Owusu, and Duck; Laythe et al.; Laythe, Finkel, and Kirkpatrick). Sethi and Seligman explored fundamentalism differently, evaluating how it related with optimism. They found that people from fundamentalist groups reported significantly more optimism than both religious moderates and religious liberals. The researchers attributed this result to fundamentalist groups' supposed engendering of more hope and influence upon members' daily lives through their teachings and by the greater optimism within their religious services.

[4] Despite not using the term religious fundamentalism, Albert Ellis' and Sigmund Freud's theories of religion appear to be related to this construct. Ellis (1980) argued that religion and religiosity, when characterized by devoutly and absolutely held beliefs, are associated with mental disturbance. He claimed religious devoutness is typically associated with irrational beliefs, which are the basis for psychopathology, as conceptualized by his theory of psychological disturbance. Ellis (1962) argued that devoutly religious individuals are not open to change and tend to be narrow-minded and bigoted. Sigmund Freud speculated that religion is the social-cultural manifestation of a psychological defense aimed at fostering feelings of safety and controllability in the face of the traumatic forces of nature. By holding on to religious beliefs more strongly, it would likely relate to greater use of defense mechanisms to assuage anxiety. Freud's theory assumes that religion serves to reduce tension (Pargament). Generally, Freud's and Ellis' theories suggest that religious thinking could be related to psychopathology.

[5] Many researchers have empirically explored associations between religious constructs and psychopathology even though none explicitly used religious fundamentalism as their religious construct. Generally, results tend to be mixed except in terms of religious orientation. Results suggest a positive correlation between an intrinsic orientation and psychological well being, whereas, an extrinsic orientation tends to inversely correlate with well-being (Park, Cohen, and Herb; Rowatt and Kirkpatrick; Salsman et al.). Organizational religiosity (operationalized as the attendance of religious services) tended to positively correlate with well-being (Fitchett et al.; Frazier, Mintz, and Mobley; McIntosh, Silver, and Wortman); however, Schnittker reported that organizational religiosity did not significantly relate with depression. A meta-analytical study (Bergin) provided no support for a link between religiosity and psychopathology, where religiosity was measured in various manners such as denomination and degree to which one engaged in private religious behaviors (e.g., scripture reading). Yet the results also did not support a protective function of religion.

[6] Some researchers explored associations between defense style and religious constructs. Bylski and Westman reported that defense style was uncorrelated with attitude toward

religion and Maltby reported that defense style did not correlate with religious orientation. Despite the lack of empirical support, Pargament theorized that though there may be a grain of truth to Freud's defense theory of religion, its significance is exaggerated, and ultimately religion is more than just a psychological defense.

[7] It seems incomplete to explore religious fundamentalism and psychological maladjustment without taking into account what is known about personality more generally. Many researchers have explored relations between religious constructs and personality, in particular the five-factor model of personality (Costa and McCrae). This model of personality has been validated across international samples and claimed to be universal. According to the five-factor model, personality can be understood as composed of five dimensions: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Shermer reported religiosity inversely related with openness to experience and positively correlated with agreeableness. Other researchers found that openness to experience inversely correlated with religious belief as a means to an end (i.e., extrinsic religiosity; Taylor and McDonald) and with religious fundamentalism (Saroglou). Additionally, neuroticism positively correlated with religious fundamentalism (Saroglou) and religious orthodoxy (Laythe, Finkel, and Kirkpatrick; Rowatt and Kirkpatrick).

[8] Considering all the reviewed literature, the current study sought to explore the relation between religion, personality, irrationality, and defense mechanism functioning. Specifically, religious fundamentalism will be measured because the dogmatic style of thinking appears related to Ellis' (1980) and Sigmund Freud's conceptualizations of religious thinking. The criterion variables were irrational thinking and immature defense mechanisms. Irrational beliefs pertain to evaluative cognitions that are associated with emotional disturbance (Walen, DiGuiseppe, and Dryden). Anna Freud claimed that defense mechanisms, which can be either adaptive (mature) or maladaptive (immature), are methods to relieve displeasure or anxiety and control impulsivity. We expected that religious fundamentalism would positively correlate with both irrational beliefs and immature defense functioning, as implicated by Ellis' and Freud's theories, respectively. Furthermore, we expected that the personality dimensions of openness to experience and neuroticism would moderate these relations. We expected that as neuroticism increased, so would the relation between religious fundamentalism and the criterion variables. We attributed this expectation to neuroticism's positive correlation with both irrational thinking (Davies) and the use of immature defense mechanisms (Leichsenring, Kunst, and Hoyer), which is consistent with Ellis' and Freud's theories of religion, respectively. Contrarily, we expected that as openness to experience increased, the relation would weaken between religious fundamentalism and the criterion variables. We attributed this expectation to established inverse associations between religious constructs and openness to experience (Saroglou; Shermer; Taylor and McDonald), which is consistent with Ellis' (1980) theory of religion.

Method

Participants

[9] The sample consisted of 120 participants, 71 who completed diagnostic interviews and self-report questionnaires, and 49 who completed only self-report questionnaires. They

participated as part of a larger study and the following information pertained specifically to the current study. The researchers recruited undergraduate participants from their university's subject pool. The researchers recruited the remainder of the participants through Internet solicitations and word-of-mouth at an outpatient psychotherapy center in New York City. Participants recruited through the Internet and psychotherapy center (n = 63) were intended to serve as a clinical sample. The undergraduates (n = 57) were intended to serve as the nonclinical sample. Overall, participants' mean age in years was 29 (SD = 13.4) and more than half the participants were female (n = 69; See Table 1). Participants reported various racial identities, predominantly 37% (n = 44) identified themselves as White/Non-Hispanic and 21% (n = 25) as African American. They also reported various religious affiliations; approximately 34% (n = 41) of participants identified themselves as Roman Catholic, 12% (n = 14) as Protestant, and 28% (n = 34) as "Other." Furthermore, participants reported various degrees of religious practice on a 10-point scale (1 = *not at all*, 10 = *very active daily religious involvement*) with a mean endorsement of 5 (SD = 2.76).

Measures

[10] *Defense Mechanisms.* The Defense Style Questionnaire–40 (Andrews, Singh, and Bond) is a 40-item self-report measure of consciously held defense mechanisms. The authors based the conceptualizations of defense mechanisms primarily upon the DSM-III-R definitions (American Psychiatric Association). The items load on to three factors that represent types of defenses: mature (e.g., sublimation and humor), neurotic (e.g., idealization and reaction formation), and immature (e.g., projection and passive aggression). Participants rated each item on a 9-point scale, where one represents *strongly disagree* and nine represents *strongly agree*. Coefficient alpha values ranged from -0.01 to 0.89 and test-retest correlations ranged from 0.38 to 0.85.

[11] *Irrational Beliefs.* The Shortened General Attitude and Belief Scale (Linder et al.) is a 26-item self-report measure. Items comprise six irrational belief scales: self-downing, need for achievement, need for comfort, demand for fairness, need for approval, and other downing. The latter refers to irrational thoughts about others' behavior; for example, one item states *If people treat me without respect, it goes to show how bad they really are*. Participants rated each item on a 5-point scale, where one represents *strongly disagree* and five represents *strongly agree*. Scale scores and the total score are the sum of the items that comprise it. Scales' alpha coefficients ranged from .79 to .84. Scales' test-retest correlations ranged from .65 to .87 and the total score test-retest correlation was .91.

[12] *Religious Fundamentalism.* The Revised Religious Fundamentalism Scale (Altemeyer and Hunsberger 2004) is a 12-item self-report measure based upon the authors' definition of religious fundamentalism stated earlier (Altemeyer and Hunsberger 1992). Participants rated each item on an 8-point scale, which does not include zero, that ranges from -4 (*very strongly disagree)* to +4 (*very strongly agree*). The authors reported reasonable psychometric properties, such as an alpha coefficient of .91.

Table 1. Demographic Data (n=120)

	Mean	*SD*
Age	29.0	13.4
	n	%
Gender		
Male	51	43
Female	69	57
Race		
American Indian/Alaskan Native	1	0.8
Black/African American	25	20.8
White/Non-Hispanic	44	36.7
Middle Eastern	1	0.8
Pacific Islander	1	0.8
South Asian	7	5.8
East Asian	12	10
Hispanic/Latino	19	15.8
Other	6	5
(missing)	4	3.3
Religion		
Roman Catholicism	41	34.2
Protestantism	14	11.7
Greek Orthodox	1	0.8
Judaism	11	9.2
Islam	5	4.2
Buddhism	4	3.3
Hinduism	4	3.3
Other	34	28.3
(missing)	6	5

[13] *Personality*. Form S of the Revised NEO Personality Inventory (Costa and McCrae) is a 240-item self-report measure. This measure is based upon the five-factor model of personality; therefore, the scales measure neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Participants rated each item on a 5-point scale where 1 represents *strongly disagree* and 5 represents *strongly agree*. The authors reported psychometric properties, such as alpha coefficients for the factors ranging from .86 to .92. Furthermore,

this scale is widely used and other researchers demonstrated the psychometric soundness of the five-factor model across international populations (e.g., Narayanan, Menon, and Levine; Paunonen et al.).

Procedure

[14] Participants were recruited by advertising on a popular Internet website, by word-of-mouth to clients at an outpatient psychotherapy center, or through the research subject pool at a large private university in New York City. The participants from the Internet advertisement and the psychotherapy center were considered the clinical sample because they were required to be receiving psychotherapy at the time of their participation. They were informed that they would be required to complete questionnaires and interviews and would be compensated $10 per hour of study participation. The student participants comprised the nonclinical sample and they were informed that they would be required to complete questionnaires and would receive class credit for their participation. Participants contacted doctoral students or the principal investigator affiliated with the study by e-mail or phone to schedule an appointment for participation. When participants from the clinical sample arrived for the session, they completed informed consent forms, questionnaires, and interviews in a private room. Participants from the nonclinical sample arrived at a conference room for the session, which was group-administered to approximately four to seven students at a given time. All participants also completed a demographic form that requested information about age, gender, race, religious affiliation, organizational religiosity, and private religiosity.

Data Analysis

[15] The basic data analytic technique was linear hierarchical regression and analyses were done using SPSS 15.0. The moderational analyses were analyzed based on Baron and Kenny's model. The experimenters conducted data analytic diagnostic tests prior to the primary analyses. For example, missing data were treated with maximum likelihood estimation, specifically with the expectation maximization algorithm, and stem-and-leaf plots were used to evaluate for the presence of skewness or kurtosis. Semi-partial correlations served as effect size measurements.

Results

[16] Mean scores on the criterion measures (i.e., the Defense Style Questionnaire–40 and Shortened General Attitude and Belief Scale) did not differ significantly across demographic variables. Age correlated neither with irrationality (r = -0.04, p = 0.72) nor with immature defense functioning (r = 0.04, p = 0.70). Mean differences between gender and irrationality were not statistically significant, F (1, 116) = 2.74, p = 0.10. Females reported a mean irrationality score of 2.84 (SD = 0.50) and males reported a mean score of 2.67 (SD = 0.59). Mean differences between gender and immature defense functioning were not significant, F (1, 109) = 0.02, p = 0.89. Females reported a mean immature defense mechanism score of 3.91 (SD = 0.96) and males reported a mean score of 3.94 (SD = 1.05). Mean differences between samples (i.e., clinical and student) on irrationality were not statistically significant, F (1, 116) = 0.02, p = 0.89. Participants in the clinical sample reported a mean irrationality score of 2.78 (SD = 0.62) and participants in the student sample reported a mean score of

2.80 (*SD* = 0.42). Mean differences between samples (i.e., clinical and student) on immature defense mechanism functioning were not statistically significant, F (1, 115) = 0.37, p = 0.54. Participants in the clinical sample reported a mean immature defense mechanism score of 4.00 (*SD* = 1.03) and participants in the student sample reported a mean score of 3.89 (*SD* = 0.98). The regression analyses did not control for demographic variables due to the lack of significant relations with the criteria variables.

Table 2. Internal Consistency Reliabilities for the Scales Used in the Primary Analyses (n=120)

Scale	Subscale (# items)	Coefficient Alpha
1. Religious Fundamentalism - Revised	Total Religious Fundamentalism (12)	0.91
2. Defense Style Questionnaire–40	Immature (24)	0.80
3. Shortened General Attitude and Belief Scale	Total Irrationality (22)	0.88
4. NEO Personality Inventory - Revised	Neuroticism (48)	0.90
	Openness (48)	0.87

[17] Coefficient alpha values for the scales analyzed can be seen in Table 2. Descriptive information and correlations among all variables may be seen in Table 3. Religious fundamentalism inversely correlated with both neuroticism (r = -0.19, p = .03) and openness to experience (r = -0.38, p < .01). Religious fundamentalism correlated neither with irrationality (r = 0.11, p = 0.26) nor with immature defense functioning (r = 0.06, p = 0.56).

[18] The expectation that religious fundamentalism predicted irrationality was supported, but only after controlling for the effect of neuroticism (see Table 4, Analysis 4); that is, after partialling out the redundancy between neuroticism and irrationality, religious fundamentalism significantly predicted irrationality. The expectation that religious fundamentalism was related to immature defense mechanism functioning was not supported. The other a priori hypothesis was that the personality factors neuroticism and openness to experience would moderate the relation between religious fundamentalism and both irrationality and immature defense functioning (Analyzes 3-6). Results failed to support these moderational models but some main effects were demonstrated. Neuroticism significantly predicted immature defense functioning and irrationality, while openness to experience significantly predicted irrationality.

[19] To further explore the relation between religious fundamentalism and irrationality, post-hoc analyses were computed controlling for neuroticism, with specific irrational beliefs as criterion measures (see Table 5). To control for the increased likelihood of Type I error, alpha was set at p < .01. Religious fundamentalism predicted only the irrational belief related to a need for comfort (Analysis 4).

Table 3. Summary of Two-Tailed Pearson Correlations, Means, and Standard Deviations

	1	2	3	4	5	6	7	8	9	10
1. Religious Fundamentalism	–									
2. Neuroticism	-.19*	–								
3. Extraversion	-.08	0.09	–							
4. Openness to Experience	-0.38**	0.04	0.29**	–						
5. Agreeableness	0.17*	0.15	-0.16	0.04	–					
6. Conscientiousness	0.09	0.00	0.40**	-0.05	-0.04	–				
7. Irrational Thinking	0.11	0.30**	-0.08	-0.23*	-0.15	-0.12	–			
8. Immature Defense Functioning	0.06	0.34**	-0.02	0.07	-0.14	-0.23*	0.46**	–		
9. Mature Defense Functioning	-0.13	-0.23*	0.22*	0.23*	0.09	0.38**	-0.12	0.30**	–	
10. Neurotic Defense Functioning	0.12	.0.25**	0.09	0.04	0.15	0.00	0.27**	0.57**	0.36**	–
Mean	51.80	153.31	158.69	167.65	162.17	155.04	61.33	94.75	42.29	38.06
SD	24.55	22.29	20.62	19.44	17.71	21.92	12.04	24.11	10.25	10.63

*$p < .05$; **$p < .01$

*Table 4. Hierarchical Multiple Regression Results for the Primary Analyzes**

	Model	*B*	95% CI for *B*	β	*t*	*p*	sr^2	R^2
1	RF and Immature Defense Functioning	0.03	-0.07 – 0.12	0.06	0.59	0.56	0.00	0.00
2	RF and Irrational Thinking	0.03	-0.02 – 0.08	0.11	1.126	0.26	0.01	0.01
3	RF, Neuroticism, and Immature Defense Functioning							
	Step 1							0.13
	RF	0.06	-0.03 – 0.16	0.13	1.35	0.18	0.02	
	Neuroticism	0.76	0.36 – 1.16	0.36	3.77	0.00	0.12	
	Step 2							0.13
	RF × Neuroticism	-0.06	-0.26 – 0.15	-0.05	-0.57	0.57	0.00	
4	RF, Neuroticism, and Irrational Thinking							
	Step 1							0.14
	RF	0.05	0.00 – 0.10	0.19	2.05	0.04	0.03	
	Neuroticism	0.42	0.21 – 0.63	0.37	3.91	0.00	0.13	
	Step 2							0.15
	RF × Neuroticism	0.05	-0.06 – 0.15	0.08	0.85	0.40	0.01	
5	RF, Openness, and Immature Defense Functioning							
	Step 1							0.01
	RF	0.05	-0.06 – 0.15	0.09	0.88	0.38	0.01	
	Openness	0.26	-0.26 – 0.78	0.11	1.00	0.32	0.01	
	Step 2							0.01
	RF × Openness	-0.02	-0.28 – 0.23	-0.02	-0.17	0.87	0.02	
6	RF, Openness, and Irrational Thinking							
	Step 1							0.06
	RF	0.01	-0.05 – 0.06	0.02	0.22	0.83	0.00	
	Openness	-0.31	-0.58 – -0.04	-0.24	-2.30	0.02	0.05	
	Step 2							0.06
	RF × Openness	0.03	-0.10 – 0.17	0.05	0.51	0.62	0.00	

* RF = Religious Fundamentalism; CI = Confidence Interval.

*Table 5. Hierarchical Regression Results for the Exploratory Analyses**

	Model	*B*	95% CI for *B*	β	*t*	*p*	*sr2*	*R2*
1	RF, Neuroticism, and Self Downing							
	Step 1							0.15
	RF	0.07	0.00 – 0.12	0.20	2.10	0.04	0.04	
	Neuroticism	0.54	0.28 – 0.81	0.37	4.02	0.00	0.13	
	Step 2							0.15
	RF × Neuroticism	0.03	-0.11 – 0.16	0.04	0.41	0.69	0.00	
2	RF, Neuroticism, and Need for Achievement							
	Step 1							0.06
	RF	0.01	-0.08 – 0.11	0.03	0.27	0.79	0.00	
	Neuroticism	0.51	0.11 – 0.92	0.25	2.52	0.01	0.06	
	Step 2							0.06
	RF × Neuroticism	-0.06	-0.27 – 0.14	-0.06	-0.59	0.55	0.00	
3	RF, Neuroticism, and Need for Approval							
	Step 1							0.09
	RF	0.05	-0.02 – 0.13	0.13	1.36	0.18	0.02	
	Neuroticism	0.52	0.19 – 0.85	0.30	3.15	0.00	0.09	
	Step 2							0.10
	RF × Neuroticism	0.10	-0.07 – 0.26	0.11	1.19	0.24	0.01	
4	RF, Neuroticism, and Need for Comfort							
	Step 1							0.14
	RF	0.11	0.04 – 0.19	0.27	2.88	0.00	0.07	
	Neuroticism	0.58	0.25 – 0.92	0.32	3.47	0.00	0.10	
	Step 2							0.14
	RF × Neuroticism	-0.02	-0.19 – 0.15	-0.03	-0.29	0.78	0.00	
5	RF, Neuroticism, and Demanding of Fairness							
	Step 1							0.03
	RF	0.04	-0.03 – 0.11	0.12	1.19	0.24	0.01	
	Neuroticism	0.24	-0.08 – 0.54	0.15	1.50	0.14	0.02	
	Step 2							0.07
	RF × Neuroticism	0.16	0.01 – 0.31	0.20	2.05	0.04	0.04	
6	RF, Neuroticism, and Other Downing							
	Step 1							0.01
	RF	0.05	-0.04 – 0.13	0.10	1.04	0.30	0.01	
	Neuroticism	0.03	-0.34 – 0.40	0.02	0.16	0.87	0.00	
	Step 2							0.05
	RF × Neuroticism	0.19	0.01 – 0.38	0.20	2.08	0.04	0.04	

* RF = Religious Fundamentalism; CI = Confidence Interval.

Discussion

[20] Based on predictions of psychodynamic and cognitive theories of psychological maladjustment, this study examined how religious fundamentalism related to irrational thinking and the use of immature defense mechanisms. The current study was novel in that it was the first study the authors were aware of that tested theoretically derived hypotheses of the association between religious fundamentalism and predictors of psychopathology.

[21] Results showed that religious fundamentalism predicted irrational thinking, but only after controlling for the effect of neuroticism. It appeared that neuroticism suppressed the relation between religious fundamentalism and irrational thinking because religious fundamentalism alone did not predict irrational thinking. The significant relation between religious fundamentalism and irrational thinking emerged only after the analysis partialled out the negative affect that appeared to overlap between neuroticism and irrational thinking. That is, negative affect is both part of neuroticism and reflected in words used on several items of the irrational belief scale (e.g., "terrible" and "awful"). Therefore, after partialling out negative affect from neuroticism and irrational thinking, the cognitive aspect of irrational thinking remained and was significantly predicted by religious fundamentalism, yet the effect remained weak.

[22] The findings also showed that religious fundamentalism did not predict immature defense mechanism functioning. This finding is consistent with previous research, which also failed to find a relation between defense style and religiosity (Bylski and Westman; Maltby), and suggests that there may not be a link between immature defense functioning and religious fundamentalism. Alternatively, religious fundamentalism may not be the most appropriate religious construct when examining Freud's theory of religion.

[23] The results did not support the proposed moderational influence of personality factors on the relation between religious fundamentalism and the criterion variables (i.e., irrationality and immature defense functioning). This suggests that perhaps any relation between religious fundamentalism and the criterion variables may be explained by other personality factors, which were not studied by these authors. It may be possible that personality affects this relation more for people of certain faiths (e.g., Judaism) than for others (e.g., Christianity). Perhaps personality does not even affect the relation between religious fundamentalism and the criterion variables. Further research is needed to explore such ideas.

[24] Correlational analyzes revealed that religious fundamentalism was inversely related with both neuroticism and openness to experience. Previous researchers also reported inverse associations between religious fundamentalism or religiosity and openness to experience (Saroglou; Shermer). Shermer suggested that this inverse relation is intuitive, considering that most people in the world believe in a god, therefore, people who have less conventional thoughts about religion would be open to experiences. Akrami and Ekehammar reported that authoritarianism, a construct of religious fundamentalism, also inversely correlated with openness to experience. Previous research with neuroticism appeared more mixed, compared to the clearer results with openness to experience. For example, Bourke and Francis reported that degree of religious practice did not relate with neuroticism, whereas other researchers (Costa et al.) reported that religious orthodoxy inversely correlated with the

neuroticism facet of impulsiveness. Therefore, considering the current study and previous research, it remains unclear, as to how neuroticism relates to religiosity.

[25] To further explore how religious fundamentalism related to irrationality, the authors ran regressions with different irrational beliefs as criteria measures. Religious fundamentalism only predicted a need for comfort. This irrational belief refers to thinking that one is unable to tolerate discomfort, which is a form of low frustration tolerance that can lead to addictions or prevent one from accomplishing long-term goals (Walen, DiGuiseppe, and Dryden). This finding appears consistent with Russell's argument that a primary reason people believe in a god is to feel safe. Though Russell's argument referred to religious belief in general, it seems applicable to the current study. Perhaps individuals who are religiously fundamentalist are also more likely to have such beliefs in order to provide a sense of comfort.

[26] Overall, the current study provided some evidence for specific elements of Ellis' (1980) original theory of religion, but considering this is the first study to explore the role of religious fundamentalism as a predictor of irrational thinking, it remains unclear whether this relation would be supported in future research. Furthermore, the effect size of this relation remained small despite the statistical significance. If future research corroborates this relation, therapists would benefit from assessing the presence of dogmatic religious beliefs at the outset of therapy. Such information would be an important signal that cognitive restructuring would be a beneficial therapeutic technique to decreasing irrational thinking and promoting more rational thinking. Additionally, dogmatic religious beliefs could attenuate the utilization and effectiveness of psychotherapy. For example, Pentecostals endorsed the belief that faith-based treatments were most effective to treat depression, whereas they endorsed that psychotherapy and medications would unlikely be effective (Trice and Bjorck). This research is disconcerting, considering the overwhelming evidence for the effectiveness for both psychotherapy and medications in treating depression. On the other hand, if future research demonstrated no support for the relation between religious fundamentalism and psychopathology, perhaps no such relation exists at all, or perhaps a different religious construct should be further explored as to how it relates to psychopathology.

[27] Certain limitations must be considered when interpreting the results of the current study. A methodological question arises as to whether defense mechanism functioning can be assessed through a self-report questionnaire, considering the putative unconscious nature of defenses. The current study was also limited in that it had a cross-sectional correlation design; therefore, the results must be taken as evidence of associations rather than evidence of causation. It remains unclear whether thinking irrationally predisposes one to hold religiously dogmatic thoughts or that having religiously dogmatic thoughts increase one's likelihood generally to think irrationally. Additionally, the data were based exclusively upon self-report measures, warranting concern whether results may have differed if any variables were also measured through other methods. Furthermore, the study results are limited in terms of generalizability because of the small sample size and geographic region which was assessed. The latter is important because the sample was quite diverse in terms of race and religious affiliation; therefore, results may not generalize to individuals of specific religions or races. For example, religious fundamentalism could relate differently to psychopathology

when comparing a sample of Jewish Orthodox followers to a sample of agnostics. This example would be especially telling because of the presumed polarization of religious fundamentalism across these groups.

[28] A methodological question that arises is "how do we recruit and study individuals from religiously fundamentalist groups?" Witzig mailed surveys to 1,016 members of an unnamed fundamentalist Protestant denomination across the United States. He randomly selected these participants from church directories and informed them that this was part of his dissertation, studying "certain kinds of beliefs underlying emotional problems" (160). He informed participants that they would receive a free CD of hymns for participating. Olds recruited participants by contacting Christian leaders of two specific churches and five bible study groups. She attended religious meetings and told potential participants that the "study investigates the relationship between psychologically and spiritually oriented variables" (119) and that they would be compensated $15 for their participation. Researchers also recruited from Pentecostal bible training camps (Trice and Bjorck). However, it remains unclear as to how we study fundamentalist individuals that make the news, such as Taliban and Al-Qaeda members.

[29] The current results suggest some evidence for a relation between religious fundamentalism and irrational thinking. Future research should be done to evaluate the validity of such a relation. If this relation is replicated and subsequently validated, mental health professionals would benefit from evaluating the extent of clients' religious beliefs at the outset of therapy and when conducting psychological evaluations. Future researchers should correct the limitations of the current study to provide stronger opportunities to evaluate the relation between religious fundamentalism and irrational thinking.

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