Spring June 3rd, 2016

Open-Minded Religiosity: Investigating the Link Between Religious Commitment and Thinking Style

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OPEN-MINDED RELIGIOSITY: INVESTIGATING THE LINK BETWEEN RELIGIOUS COMMITMENT AND COGNITIVE STYLE

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A project submitted in partial fulfillment
of the requirements of the University Scholars Program

Seattle Pacific University

2016

Approved: Dr. Jeff Keuss

Date: 6/3/2016

ABSTRACT

This study examined the relationship between religious commitment and thinking styles. Participants (n = 195) completed self-report measures of religious commitment, contextualism, Authoritarianism-Conservatism-Traditionalism (ACT - conceptualized as social attitudes/beliefs), and Open-Minded Cognition (OMC - conceptualized as a cognitive style). A marginally significant direct link was observed. Furthermore, when controlling for Contextualism, the strength of the negative link between SRF and OMC increased non-significantly. When controlling for ACT, mediation analysis revealed that the relationship between SRF and OMC was more indirect (via shared variance with ACT) than direct. Moderation analyses did not reveal significant results. Results tentatively suggest a negative relationship exists between strength of religious faith and open-minded cognition, but this relationship is better explained by a confounding effect of ACT and not religiosity itself.

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Acknowledgments

First and foremost, this project would not have been possible without Dr. Tom Carpenter. I would like to thank him for inspiring in me a love for statistics and an enthusiasm for research while guiding me along the pathway of this project in a graceful and empowering way. Additionally, I would like to thank Dr. Paul Kim for the added support, encouragement, gracious criticism, and meaningful feedback as another mentor during my time at SPU. As I will mention in my faith and learning statement, other inspirations for not only my academic endeavors, but also life philosophies, have been Drs. Kevin Neuhouser, Baine Craft, and Mícheál Roe. I would also like to thank my family and my fiancé, Paige Shepperd, for helping push me along when the project seemed to be getting the best of me.

OPEN-MINDED RELIGIOSITY: INVESTIGATING THE LINK BETWEEN RELIGIOUS BELIEFS AND COGNITIVE STYLE, WITH A CASE FOR DEPENDENT AND MODERATED RELATIONSHIPS

INTRODUCTION

There seems to be a popular perception of religious people as close-minded. Evidence of this popular perception exists in headlines like "Westboro Baptist Church: Warriors for God?" (ABC News, 2015) and "Is ISIS a Religious group? Of Course It Is" (Paul, 2015) that fill the media, emphasizing the religiosity of groups known for close-minded ideas. In fact, Sedlovskaya et al. (2013) indicated that religious people often conceal their faith in settings of higher education because they are aware of the stereotype propagated by highly educated elites. The stereotypes found in literature are that religious people are irrational, superstitious, and not valuable in higher education (Quinn & Chaudoir, 2009; Stark, 1963). They also noted that religious people can perceive a resulting stigma of such a stereotype. Therefore, it seems that a stereotype does exist, portraying religious people as less open-minded, learned, or rational than the average population.

This stereotype is very important to seriously consider because much research has found connections between religiosity and close-minded-like constructs such as prejudice, stigma, fundamentalism, in-group biases, openness to change and new experience, conformity, blind respect for authority, and conservatism (Buxant & Saroglou, 2008; Cooperman, et al., 2014; Hunsberger, 1995; Pasek & Cook, 2015, 2016; Proctor & McCord, 2009; Quinn & Chaudoir, 2009). However, no research has been conducted to show that religion is connected to close-minded cognition more generally. Furthermore, if such a relationship exists, it is not clear why it may exist. One possibility is that religion is directly related to close-minded thinking. Another possibility is that religious people also tend to have other characteristics that predict close-mindedness. In the present research, I seek to understand whether or not a connection actually

exists between religiosity and close-minded thinking. Furthermore, if the connection is found, are other variables besides just religious commitment partially responsible for that connection?

Theories of Religiosity

Religious orientation. Many ways exist to conceptualize religiosity, including one's religious orientation, which was first identified by Allport and Ross (1967) to describe the motivations behind one's religion. They conceptualized religion as either being intrinsically or extrinsically motivated, which in turn affects how religious practices are expressed and valued.

Allport and Ross (1967) defined intrinsic religious orientation as motivation to practice religion because of the goals of the religion itself. An intrinsically motivated religious person sees motivations outside of religion as being less significant than those stemming from religion. Allport and Ross (1967) noted that intrinsic religious orientation is much less self-serving than extrinsic orientation, which is the utilitarian practice of religion for the sole purpose of achieving other, outside goals. Such goals may be mundane rather than spiritual, such as feeling comforted or protected, or gaining social status. In a review, Burris (1999) suggested a convenient (though simplified) conceptualization of the two orientations by "referring to the extrinsic-intrinsic distinction as 'using' versus 'living' one's religion" (p. 145). Donahue (1985) reviewed multiple studies that found those who had a more Extrinsic religious orientation scored higher in prejudice (in various forms such as anti-black, anti-gay, anti-Jewish, and general anti-other attitudes) and dogmatism (used as an index for close-mindedness). However, since intrinsic religion theoretically is not driven by motivations outside of the religion itself, it generally does not correlate with any non-religious variables (Burris, 1999). Nonetheless, intrinsic orientation has been found to correlate highly with measures of religious commitment, independent of belief

systems, church membership, or theological orientations (Burris, 1999). Until better commitment constructs were identified, intrinsic orientation has been conceptualized by some as essentially an index of religious commitment (Digenan & Murray, 1975; Donahue, 1985).

Strength of religious faith. As a better way to conceptualize one's degree of religiosity, researchers began to move from intrinsic religiosity to assessing religious commitment directly. It can be thought of as how religious someone is no matter what their beliefs are. Plante and Boccaccini (1997) described the construct as an indicator of how important one's religion is and to what extent of intensity they follow it. The construct has been particularly useful in past research because of its validity as a measure of unidimensional religious commitment, not confounded with orientation or denomination (Lewis, Shevlin, McGuckin, & Navrátil, 2001). Thus, researchers seeking to understand links between general religiosity and close-mindedness would be advised to examine relationships with religious commitment.

Open-minded Cognition

Open-minded cognition is a style or process of thinking for which low levels indicate close-minded thinking (Price, Ottati, Wilson, & Kim, 2015). According to Price et al. (2015), open-minded cognition is a "tendency to select, interpret, and elaborate upon information in a manner that is not biased toward or against the individual's prior opinion or expectation" (p. 1500). Open-minded cognition is not to be conflated with a lack of opinion, but rather it is a way of processing and interpreting information that takes into account all clearly considered sides without letting bias dominate the thought process (Price et al., 2015). This is the opposite of close-minded cognition, which does not consider altering opinions or nuances of incoming information while processing thought (Price et al., 2015). An example of close-minded thinking

can be observed in portions of cognitive dissonance theory: to justify actions or attitudes, people often selectively avoid considering un-wanted information that increases dissonance (Cooper, 2007). This construct is characterized by directionally biased or unbiased thought, which research suggests can be a product of core psychological motivations such as need for self-esteem or security (Showers & Cantor, 1985). Thus, someone with an open-minded cognitive style still has biases. However, with an open-minded cognitive style, those biases do not dictate how the person thinks. It is important to consider then, how open-minded cognition and strength of religious faith are connected, why any connection may exist, and what it means. Would such a connection actually indicate that religious people are more close or open minded because of their religious commitment, or might it be accounted for by other confounds?

A Case for Connection Between Religiosity and Close-Mindedness

No research has examined correlations between general religious commitment and the specific construct of open-minded cognition. However the framework developed by Allen and Spilka (1967) supports the idea that religiosity may be connected with close-minded cognition. They identified a dimension called "committed and consensual" religion, as expressions of the cognitive, affective, and behavioral aspects of extrinsic and intrinsic orientations. Committed religion is more connected with candid, open, abstract, and discerning cognitive styles while consensual religion "is characterized by acquiescence to a faith that is not meaningfully internalized with an accompanying cognitive style that is detached, restrictive, concrete, vague, and simplistic" (Van Wicklen, 1990 p. 29). Furthermore, Fleck (1976) observed that consensual religion tends to be directed at acquiescing to others who can offer sanctuary, convenience, and inclusion (Van Wicklen, 1990).

Van Wicklen's (1990) framework of a cognitively detached, restrictive, concrete, vague, and simplistic religion, applies logically to Fleck's (1976) observations that partakers in consensual religion will blindly consent for the sake of convenience and feeling included. With these two theories paired, it could be reasoned that a connection between religiosity and close-mindedness may be a result of trading open-mindedness for the sake of unquestioningly acquiescing to a religion for the belongingness and comfort it can offer. Cognitively choosing to consent to a religion simply out of convenience or for the sake of feeling included is a display of close-minded cognition, as per the construct explained by Price et al. (2015). It does not process alternative/competing information when deciding to commit to the religion, because it is easier to simply choose a religion out of convenience or inclusiveness, than carefully considering all its beliefs and other contradictory beliefs. When conceptualized this way, extrinsic and consensual religions seem quite similar to agendas by people in the Westboro Baptist Church or the Islamic State (IS), as becoming a part of such small, exclusive in-groups is likely to create a high sense of belongingness, as Fleck (1976) suggested is characteristic of consensual religion. Gebauer and Maio (2012) found evidence that a sense of acceptance or belonging can significantly increase someone's belief in God, compared to feelings of punishment and rejection. It seems logical that close-mindedness could be used as a way for a religious person to maintain identification with small in-groups for the sake of acceptance.

Another study by Buxant and Saroglou (2008) lends evidence to a connection between aspects of religiosity and close-minded cognition by examining close-minded characteristics in members of New Religious Movements (NRM) (sectarian groups of religions that have stricter belief systems and that generally break from larger churches or groups because of their

exclusionary beliefs). The study found that NRM members highly value conservation of tradition, conformity, and security, while they negatively value openness to change. They also noted that members follow NRMs because they provide simple, easy, unambiguous answers to religious and existential questions, and the members more often than not consider these answers to be unquestionably absolute without considering the validity of opposing views. Though these findings were restricted to fringe groups, they highlight how religion has the potential to facilitate in followers blind respect for authority (low value of self-direction), being closed to change, and conforming unquestioningly to tradition; all values which are similar to what is expected to be found in someone with a close-minded cognitive style (Price et al., 2015).

Religiosity's correlation to prejudice also supports a possible connection between religious commitment and close-mindedness. Hunsberger (1995) cited many studies that found religiosity can lend itself to prejudice in people who practice religious fundamentalism. Likewise, Pasek and Cook (2015, 2016) found that religious fundamentalism significantly predicted outgroup prejudices of anti-gay, anti-immigrant, anti-atheist, anti-Muslim, and general religious intolerance, as mediated by stigma consciousness. The mediation suggests that fundamentally religious people are prejudiced because they are conscious of a stigma against themselves.

Finally, other religion research supports a connection between religiosity and close-minded cognition. Religion is believed to be a core psychological motivator (Allport & Ross, 1957; Gorsuch & McPherson, 1998), and since core psychological motivators have a tendency to produce directionally biased cognition (Showers & Cantor, 1985), it seems plausible that religiosity may predict a close-minded cognitive style, particularly driving cognition in ways

consistent with religious beliefs. Further evidence indicates that religious people tend to think much more positively about their own in-group religion than others (Cooperman et al., 2014) and that fundamentally religious people are less open to new experiences (Proctor & McCord, 2009). Thus, the literature supports a link between religiosity and close-minded cognition, based on its wide connection to constructs very similar to it. However, it remains an open question whether this is a function of religion or other related social factors. Further, it is unclear whether this link would be present for everyone or just some groups of individuals.

A Critical Investigation of Close-Minded Religiosity

An extensive historical, theoretical, and empirical review of religiosity and prejudice research by Hunsberger (1995) showed that most measures of religiosity actually have very mixed results when predicting prejudice, though a literature review would yield study after study citing positive correlations between religiosity and prejudice. For example, most studies prior to 1960 found a positive link between religion and prejudice, but this was before much research had been conducted on the psychological complexities of religion. Furthermore, Allport and Ross (1967), along with many other studies (Gorsuch, 1988; Hood, Hill & Spilka, 2009) showed extrinsic orientation predicted prejudice, but intrinsic did not nearly as much, if at all. One of the only reliable religious predictors of prejudice that is also internally consistent is Altemeyer and Hunsberger's (1992) religious fundamentalism. These varied findings highlight that there is definitely something about religion that can facilitate close-mindedness, though it may not actually be the religion itself, but other characteristics, including how it is practiced and what is valued by the followers.

A historical survey of religious thinkers would reveal that clearly, religious experiences vary and not all religious people are close-minded, despite the stereotype portraying them as less open, learned or rational than the average population (Quinn & Chaudoir, 2009; Sedlovskaya et al., 2013; Stark, 1963). By observing many serious Christian scholars and thinkers, one can see that genuinely open-minded and academic people can also be exceptionally committed to their religion. For example, Karl Barth, one of the most highly influential theologians of the modern era, openly embraced the ideas of evolution in spite of the church's historical rejection of it (Barth, 1981). Furthermore, two examples of extremely influential Christian scientists and empirically-minded thinkers are Francis Bacon, known as the father of the scientific method, and Francis Colins, director of the National Institutes of Health and leader of the Human Genome Project.

Given the importance of tolerance within and between religions, it is important to know whether there really is a connection between religious commitment and close-mindedness, and if so, what it represents. If it does exist, it is also important to identify what is responsible for this link and for whom it exists. Consistent with views of religion being inherently close-minded, it is possible that a unique, direct link exists between religiosity and open-minded cognition. Another possibility is that the link may be present for some people, but not others. If this is the case, it is an open question what factors may moderate this relationship.

A Case for a Suppressor, a Confound, and Moderators of Close-Minded Religiosity

The following section raises the possibilities that religiosity's correlation with close-mindedness may be suppressed by some variables or only due to confounding variables. Specifically it is proposed that the negative link between strength of religious faith and open-

minded cognition may increase when contextualism is controlled for and that it may disappear when controlling for Authoritarianism-Conservatism-Traditionalism. Additionally, a case will be made that religiosity might promote open-mindedness for some, but not for everyone.

Contextualism. Contextualism is defined as the amount of importance one gives to context when attempting to understand a person (Owe et al., 2013). This construct reflects cultural beliefs about how someone is defined. Specifically, rather than being concerned with peoples fixed natures, it is the belief that environmental and contextual factors are more important in defining a person. Someone low in contextualism would perceive sociocultural influences as unimportant for shaping a person, and thus seemingly would have a much more universal approach to understanding humanity. This linear and universal, but less perspective-taking way of thinking might be confounded with close-minded cognition. However, logic would suggest the opposite may also be true; someone who is less disposed to think that only fixed and underlying natures can define a person, may have a more open-minded way of thinking.

Because contextualism has only been recently identified as a measurable construct, there is little-to-no literature investigating the predictive nature of contextualism as a construct. Thus the rationale behind the present study's hypothesis is based on how Owe et al. (2013) described it when it was first introduced. They noted that as individuals encounter "different social practices and institutions as a result of regional, ethnic, or socioeconomic differences", the differences in their social realities may be linked to contextualism beliefs (Owe et al., 2013 p. 39). Essentially, variance in cultural environment is linked to variance in levels of contextualism, which could be one possible explanation for why certain religious people (who experience different social realities than one another) are more open-minded than others. The present study

will test this theory in two ways. The first proposes that if contextualism actually does predict open-mindedness, when it is controlled for in religious people, a negative link between strength of religious faith and open-minded cognition would increase. Additionally, it is possible that contextualism may moderate the link between religious commitment and cognitive style. Religious commitment may be positively linked to open-mindedness if someone is highly contextual because they are able to commit to their personal beliefs, while still taking into account other peoples' contexts in understanding them.

Authoritarianism-Conservatism-Traditionalism (ACT). ACT is defined as a combination of three social attitudes placing extremely high value on either social cohesion/conformity (Duckitt, 1989; Duckitt et al., 2010; Stellmacher & Petzel, 2005) or maintenance of group norms (Kreindler, 2005) ACT Conceptualizes Right Wing Authoritarianism (RWA) as a group of social attitudes, which are less stable across situations than is personality, which was originally how RWA was conceptualized (Altemeyer, 1981). These attitudes are Authoritarianism, which favors coercive and punitive social control; Conservatism, which favors deference, respect, and obedience to established authority; and Traditionalism, which favors traditional norms, values, and lifestyles (Duckitt et al., 2010).

I suggest that the connection between religiosity and open-minded cognition may be confounded by ACT. Research shows that both religiosity and constructs associated with close-minded cognition share a link with ACT. Duckitt et al. (2010) found that ACT positively correlated with general religiosity, and Duckitt & Bizumic (2013) found that ACT predicted religious conformity. Though no research has yet investigated the direct link between ACT and close-minded cognition, ACT is the social-attitudinal representation of the personality trait,

Right-Wing Authoritarianism (RWA), which predicts both religious fundamentalism and prejudice (Altemeyer, 1981; Altemeyer & Hunsberger, 1992). This finding is significant for the present research because the cognitive aspect of prejudice has been defined as negative pre-judgment of an individual or group that is not part of the in-group (Tajfel, 1969). Tajfel's classic prejudice research identified prejudice as a cognitive shortcut – a quick, negative judgment about anyone in the out-group simply because it is cognitively easier than carefully considering each individual case. This cognitive aspect of prejudice sounds strikingly like Price et al.'s (2015) measure of close-minded cognition, which is "characterized by confirmatory bias: a tendency to process information in a manner that reinforces the individual's prior opinion or expectation, *and a lack of attention paid to competing perspectives and viewpoints*" (p. 1488 emphasis added). Thus, there is reason to believe that ACT will predict both religiosity and close-minded cognition and act as a confounder of the relationship between religiosity and open-minded cognition.

Another prediction to be drawn from the above evidence is that ACT may moderate the relationship between SRF and OMC. When people (i.e., someone high in ACT) value social conformity over autonomy and they perceive threats to their group cohesion or the maintenance of their group's social norms (in the form of other groups or beliefs being more popular or enticing, media attacks, etc.), prejudice occurs to make outside groups seem less desirable (Feldman, 2003). This finding taken alongside the cognitive similarities of prejudice and close-mindedness and RWA's consistent correlations with prejudice, make it plausible that religiosity may result in open or close-minded cognition, depending on one's level of ACT. As religion has the propensity to create strong group norms and unquestioning respect for authority (Buxant & Saroglou, 2008; Cooperman et al., 2014), it makes sense as per Feldman's (2003) research that

high ACT would result in close-minded cognition for religious people. It may act as a cognitive shortcut to protect their group cohesion and social norms, in a setting where those values are aspects of religion and when people hold them in highest regard. On the other hand, those who don't see autonomy as subordinate to collective authority, yet who still commit to religions where group cohesion and social norms are imperative, open-mindedness may be higher as a result of their balancing personal social attitudes with those of the religion.

Present Research

The present research sought to clarify the relationship between strength of religious commitment (SRF) and open-minded cognitive (OMC) style. It specifically sought to determine whether this relationship may be a function of potential confounding variables of contextualism and Authoritariansm-Traditionalism-Conservatism (ACT). For predicted mediation pathways, see Figure 1. It also sought to determine whether this relationship may be stronger / weaker depending on levels of those same variables. There were 3 hypotheses**:**

1. There will be a weak, negative correlation between SRF and OMC.
2. When controlling for contextualism, the negative correlation between SRF and OMC will increase (contextualism will act as a suppressor); when controlling for ACT, the negative correlation between SRF and OMC will decrease (ACT will act as a confounder).
3. Contextualism and ACT may also moderate the relationship between SRF and OMC such that with either high levels of contextualism or low levels of ACT, SRF will be associated positively with OMC.

METHOD

Participants

Participants in this (*n* = 195) study included 18 students from Seattle Pacific University who participated in the research for class credit. Additionally, 177 other participants were individuals included via convenience sampling by the primary investigator, who participated in exchange for a chance to win a $20 gift card. Participants included were 153 females and 42 males. Race and ethnicities were majority non-Hispanic white or Caucasian (*n* = 174), Asian or Asian/American (*n* = 16), Hispanic or Latino (*n* = 8), American Indian or Alaska Native (*n* = 6), and Native Hawaiian or Pacific Islander (*n* = 2). All participants were offered either class credit or the opportunity to enter a drawing for a $20 gift card.

Design

This study was a non-experimental cross-sectional design that included both a mediation model used to test confounding and suppressing variables and a moderation model to test interactions. Mediation analysis studied the direct and indirect relationships between religiosity and cognitive style, specifically open/close-mindedness. Strength of religious commitment, authoritarianism-conservatism-traditionalism (ACT), and contextualism were predictors, and open-minded cognition was the dependent variable. ACT and contextualism were included as moderators and mediators.

Measures

Religious commitment. Strength of religious commitment was measured with the Santa Clara Strength of Religious Faith Questionnaire (SCSRFQ; Plante & Boccaccini, 1997). This 10-item measure was administered using a four-point Likert scale (1 = strongly disagree, 4 =

strongly agree). The measure assesses strength of religious faith, with a higher summed score meaning higher strength of religious faith. Measures of the construct reveal one factor, commitment, while having significant associations with most established general religiosity constructs (Lewis, Shevlin, McGuckin, & Navráatil, 2001). An example item is "I look to my faith as providing meaning and purpose to my life." Cronbach's alpha was .98.

Open-minded cognition. Open-minded cognitive style was measured with the Open-minded cognition scale (OMC; Price, et al., 2015). This six-item measure was administered using a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree) designed to have both positive and negative wording (which were reverse-scored) in order to pick up on open vs. close-minded cognitive style distinction. The measure assesses how open-minded one's cognitive style is, with high scores in positively worded statements meaning more open-minded cognition and high scores in negatively worded statements meaning more close-minded cognition. An example item for a positively worded statement is "I try to reserve judgment until I have a chance to hear arguments from both sides of an issue" and an example item for a negatively worded statement is "I have no patience for arguments I disagree with." Cronbach's alpha was .77.

Contextualism. Contextualism was measured with the Contextualism scale (Owe, et al., 2013). This is a six item measure was administered using a six-point Likert scale (1 = completely disagree, 6 = completely agree). The measure assesses one's beliefs about the importance of context in understanding people as a facet of cultural collectivism, with a higher average score indicating holding context as very important for understanding people. Some items were reverse scored; an example is "one can understand a person well without knowing about his/her family".

An example of a normally scored question is "to understand a person well, it is essential to know about the place he/she comes from." Cronbach's alpha was .81.

Authoritarianism-conservatism-traditionalism (ACT). Motivational social attitudes of authoritarianism, conservatism, and traditionalism were measured with the Authoritarianism-Conservatism-Traditionalism scale (ACT: Duckitt, et al., 2011). This 36-item measure was administered using a nine point Likert scale (-4 = very strongly disagree, 4 = very strongly agree). Higher average scores indicate valuing collective security over individual freedom or autonomy, as represented by authoritarian, conservatism, and traditionalism attitudes. Some statements were reverse scored. A reverse-scored example question for authoritarianism is "strong, tough government will harm not help our country." An example statement for conservatism is, "our leaders should be obeyed without question." An example statement for traditionalism is, "the 'old-fashioned ways' and 'old-fashioned values' still show the best way to live." Cronbach's alpha for the aggregated scale was .93.

RESULTS

Descriptive Statistics and correlations between all variables can be viewed in table 1.

Table 1. Descriptive statistics and Bias-corrected and Accelerated Bootstrapped Pearson's Correlation Coefficient Values Between Study Variables

	M	*SD*	α	1	2	3	4
1. Strength of Religious Faith	31.84	9.08	.98				
2. Contextualism	22.87	5.54	.81	.16*			
3.Authoritariansim / Conservatism / Traditionalism	146.98	44.64	.93	.50***	.07		
4. Open-Minded Cognition	31.26	5.67	.77	-.13	.05	-.19**	

Note $*p < .05$, $**p < .01$, $***p < .001$

Testing for Confounding and Suppressing Links

Mediation analyses were performed using the PROCESS macro for SPSS (v. 2.13, Model 4; Hayes, 2013). PROCESS allows researchers to measure the mediated portion of a relationship and calculates a bias-corrected and accelerated bootstrapped confidence interval for the size of the mediated effect. Significant mediation is indicated by confidence intervals that do not contain zero. To yield standardized paths, all variables were *z*-scored prior to mediation analyses. Results of the mediation model are expressed in figure 2.

SRF, contextualism, and ACT were entered into the mediation model as predictor variables of the dependent variable, OMC. Contextualism and ACT were designated as the mediators. As before, the total effect of SRF on OMC was negative and on the margin of significance (β = -.13, p = .07). Next, I assessed the degree to which this relationship was a function of contextualism and ACT.

Consistent with predictions, when controlling for contextualism and ACT, the direct link between SRF and OMC was reduced and was no longer close to significance (β = -.06, p = .46). A significant portion of the relationship between SRF and OMC was explained by ACT, with ACT acting as a mediator/confounder, *estimate* = -.08, 95% CI [-.18, -.01]. The pattern of associations was consistent with predictions; SRF significantly predicted ACT (β = .50, p < .001), and ACT significantly predicted OMC when controlling for contextualism (β = -.17, p = .04).

The indirect link between SRF and OMC as mediated by contextualism was nonsignificant (*estimate* = .01, 95% CI [-.01, .05]). SRF significantly predicted contextualism (β

= .16, p = .02), but contextualism did not significantly predict OMC when controlling for ACT and SRF (β = .08, p = .29). Contrary to predictions, contextualism was not a significant suppressor of the link between SRF and OMC.

Testing for moderated links

Table 2

Step 3 of Hierarchical Multiple Regression Predicting Effects of SRF and Contextualism Interaction on Open-Minded Cognition

	Step 3			
Variable	*β*	*SE*	*t*	*95 CI*
Strength of Religious Faith	-.10	.05	-2.13*	[-.19, -.01]
Contextualism	.08	.07	1.11	[-.06, .23]
SRF x Contextualism	-.01	.01	-.79	[-.02, .01]
R^2			.03	
F for change in R^2 when moderator is included			.63	

*p < .05

Table 3

Step 3 of Hierarchical Multiple Regression Predicting Effects of SRF and ACT Interaction on Open-Minded Cognition

	Step 3			
Variable	*β*	*SE*	*t*	*95 CI*
Strength of Religious Faith	-.05	.06	-.83	[-.16, .07]
ACT	-.02	.01	-1.88	[-.04, .001]
SRF x ACT	-.001	.001	-.64	[-.003, .001]
R^2			.20*	
F for change in R^2 when moderator is included			.41	

*p < .05

Both contextualism and ACT were examined as moderators of the relationship between SRF and OMC. Results for both moderation analyses are displayed in tables 2 and 3. In the first moderation, SRF and contextualism were entered in the first step of a hierarchical regression analysis on OMC. In the second step, the interaction term between SRF and contextualism was entered, but it did not explain a significant increase in variance in OMC, $\Delta R^2 = .003$, $F(1, 191) = .63$, $p = .43$. The standardized slope of the SRF/contextualism interaction was $\beta = -.01$, $p = .43$.

In the second moderation, SRF and ACT were entered into the first step of a hierarchical regression analysis on OMC. In the second step, the interaction term between SRF and ACT was entered, but it did not explain a significant increase in variance in OMC, $\Delta R^2 = .002$, $F(1, 191) = .41$, $p = .52$. The standardized slope of the SRF/ACT interaction was $\beta = -.001$, $p = .52$. Thus, ACT was not a significant moderator of the relationship between SRF and OMC.

DISCUSSION

Close-Minded Religion

I predicted that a small, negative link would be found between SRF and OMC. A small correlation on the threshold of significance was observed in the predicted direction for the sample. Though more research is necessary, this finding is consistent with past research showing links between religiosity and variables conceptually similar to close-minded cognition, such as detached, restrictive, concrete, vague, and simplistic cognitive characteristics (Van Wicklen, 1990), prejudice (Hunsberger, 1995; Pasek & Cook, 2015, 2016), conservation of tradition, conformity, and security (Buxant & Saroglou, 2008), and low openness to new experience (Proctor & McCord, 2009). Though more research with a more varied and larger sample is

needed, this finding indicates a tentative confirmation of the anticipated relationship in the first hypothesis.

A Suppressed and Confounded Relationship

I next tested whether the relationship between SRF and OMC would change when controlling for other factors. Part of the hypothesis predicted that contextualism would act as a suppressor variable, which when included in regression, would strengthen the link between SRF and OMC. In other words, giving high importance to context when attempting to understand a person may help someone be more open-minded, and if religiosity predicts contextualism, it may suppress the negative link between SRF and OMC. However, if that variable is controlled, it would reveal a stronger statistical link between SRF and OMC. At first glance, when contextualism was controlled for, the effect of SRF on OMC did increase, and even became a significant negative correlation. However, in analysis done to test the indirect association between SRF and OMC as mediated by contextualism, the effect was found to be non-significant. This means that contextualism was not a significant suppressor.

The other part my hypothesis was that when ACT is accounted for, any observed negative correlation to OMC would decrease. When controlling for ACT, the link decreased significantly. This finding is consistent with my hypothesis and past research indicating that ACT is correlated both with religiosity and constructs conceptually similar to close-minded cognition, such as fundamentalism (Duckitt et al, 2010) and prejudice (Duckitt & Bizumic, 2013).

An Un-Moderated Relationship

Contrary to hypotheses, I did not find evidence for an interaction between SRF and contextualism in predicting people's levels of OMC. This is consistent with my other results that showed contextualism was not a significant predictor of OMC. Also contrary to hypothesis, I did not find evidence for an interaction between SRF and OMC in predicting peoples' levels of OMC. This indicates that despite ACT directly predicting OMC, OMC does not increase for religious people low in ACT and it does not decrease for religious people high in contextualism.

Implications

Results suggest that there is no direct link between religiosity and close-minded cognition, but rather it appears to be indirect, via confounding with ACT. It appears that a main cognitive aspect of ACT is a close-minded thinking style because those high in ACT reported significantly more close-minded than close-minded cognition. The findings also suggest that for individuals who are highly religious and close-minded in cognitive style, their close-mindedness can be accounted for by social attitudes that value individual autonomy as being subordinate to the conditions of collective authority and order. These attitudes that seem to account for close-mindedness in highly religious individuals are "Authoritarianism (attitudes favoring coercive, punitive social control), Conservatism (attitudes favoring deference to, respect for, and obedience to existing authority), and Traditionalism (attitudes favoring traditional norms, values, lifestyles)" (Duckitt et al., 2010, p. 705). A possible theory for why ACT may account for close-minded thinking in religious people is that religion offers a sense of belonging, acceptance, tradition, and established collective order (Allen & Spilka, 1967; Fleck, 1976; Gebauer & Maio, 2012). So it seems logical that people whose attitudes highly value these things that religion has

to offer would be attracted to religion, thus accounting for any correlation seen between high religious commitment and close-minded cognition.

Further findings implicate that contextualism may have the propensity to act as a suppressor of the relationship between SRF and OMC because as predicted, controlling for contextualism increased the negative correlation between SRF and OMC. However, because mediation results indicated a change in slope too small to be considered significant, I cannot rule out chance as an explanation for the change.

The findings of this study have some implications for clinical practice and everyday living. Interpersonal relationships could be strengthened in therapy settings when this type of pathway is revealed in patients. If partners or people in relationship are struggling with what they see as close-mindedness in the other because of religious beliefs, this research implies that working toward a more open mind would be more successful with changes in social attitude than changes in religious commitments for people. In other words, people can be very highly committed to their religion, and be either open or close-minded, depending on their social attitudes. Furthermore, being aware of this pathway is beneficial to aid in breaking down the stigma implying religious people tend to be more close-minded, superstitious, or less valuable in higher education.

Limitations and Future Directions

Future research could seek to apply these ideas to other domains, such as examining the link between OMC and prejudice to determine if the link between ACT and OMC could lead to prejudice. Literature has suggested there is a connection between religion and prejudice (Hunsberger, 1995; Pasek & Cook, 2015, 2016). Furthermore, prejudice research by Tajfel

(1969), Feldman (2003), Altemeyer (1981), and Altemeyer and Hunsberger (1992), support a theory that prejudice occurs because of close-minded cognitive shortcuts that justify the importance and desirability of in-group prominence or cohesion over the consideration of outside perspectives. Taken alongside this theory and the findings of this study that show ACT accounts for close-mindedness in religious people, follow-up research would be beneficial to investigate if close-mindedness in religious people mediates a connection between ACT and prejudice. Because ACT is so highly correlated with religious commitment, this idea could help explain the appearance that religion predicts prejudice.

Though the scope of this study was to investigate general religiosity (Strength of Religious Faith), investigating the connection using intrinsic, extrinsic, and QUEST orientations would be beneficial in further understanding how religiosity may be connected to cognitive style. Additionally, the present study only included two possible confounding/moderating variables in the analysis of the religiosity/open-minded cognition link. To better understand this link, further confounding variables need to be investigated, including things like education levels, other multi-cultural differences (i.e. is the participant multi-cultural/multi-racial, do they have independent or interdependent self-construal, etc.) and geographical demographic differences (i.e. what part of the country participants grew up in, where do they currently live, etc.).

Future research could improve upon the present study by including a much larger, more diverse and geographically varied sample. As was noted, the connection between religiosity and close-minded cognition was on the verge of significance; however, the sample was not representative of the general United States population. The majority of participants were white students attending a known religious, Christian university in Seattle, WA. More diverse

demographics from a variety of locations would lead to a better generalizable understanding of the relationship between religiosity and thinking style. A more diverse sample would help investigate the idea that geographic area of upbringing may affect the relationship between religiosity and thinking style.

Conclusion

It appears that yes, something about being religious is associated with close-minded thinking. However, it also appears that when stereotypes about close-minded religion are propagated by academic elites or the media emphasizing religious beliefs, rather than other social attitudes or contextual factors as the main cause of close-mindedness, ironically, a closer investigation is necessary. Considering the findings from this study, answering the question from the previously mentioned headline, "Westboro Baptist Church: Warriors for God?" needs serious consideration. Is it actually being religious and following religious teachings that causes this group of people to act in such close-minded ways, or are there other social aspects that underlie the psychology of being a part of a religion that can lead to close-mindedness? The present study would suggest the latter.

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APPENDIX A: FIGURES

Figure 1. Predicted Pathways of Mediation Analysis to Test for Suppressing and Confounding Relationships

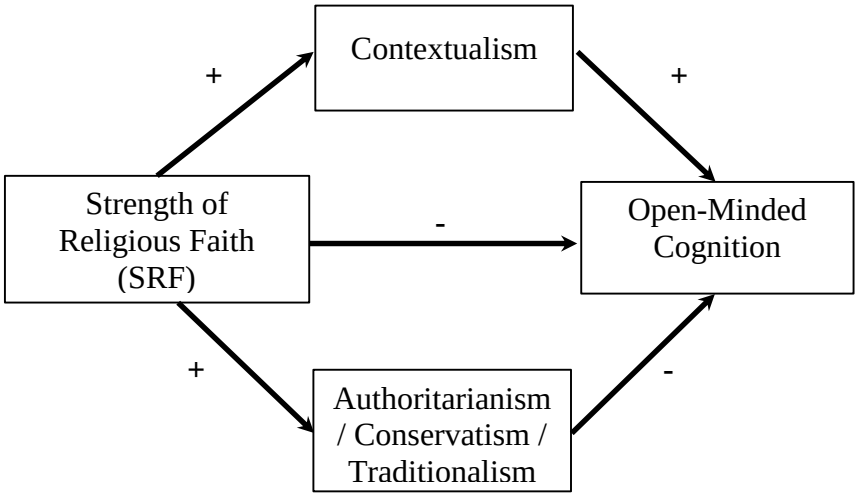
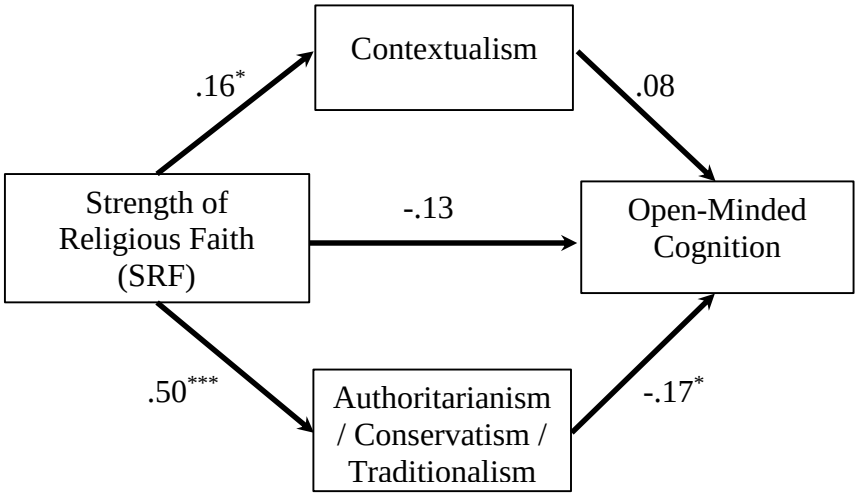


Figure 2. Mediation Analysis Results



*Note *p < .05, ***p < .001*

APPENDIX B: Integration of Faith and Learning

With the world shifting away from modernism and into a post-modernism (Iggers & Feb, 2002), truth may be seen as more subjective than previously thought. Religion has historically attempted to answer, or at least offer guidelines for approaching some of life's biggest questions. With the vast number of beliefs in the world, some think that only one can exist that is true, to the exclusion of all other beliefs. Others embrace the idea that no one truth exists, which gives at least some credibility to all beliefs (Jameson, 1991). Understanding links between religion and open/closed-mindedness is relevant in a shrinking world, where peace between cultures may center on tolerance of differing worldviews.

The process drawing me to study this topic began in USEM fall quarter of my freshman year with Dr. Neuhouser. I have personally been invested in the topic of embracing ambiguity since day one of college, because I was forced to seriously attempt it for probably the first time in my life. This is not to say I had never tried to keep an open mind about things, but in the class I was pushed to seriously wrestle with the fact that people in this world experience realities completely contradictory to the realities I experience, and that they are no less true than my own. The term I remember Dr. Neuhouser using was "living in ambiguity," when we as serious scholars and Christians must learn how to navigate a world where our worldviews are singular. This was a challenge at first, but I was exhilarated by the vast world of knowledge and possibilities that seemed to be unfolding in front of me as I opened my experience with legitimate attempts at empathic learning and living. This class set me up perfectly for the rest of the UScholars track, which continued to humble my intellectual and faithful quest for truth. This

humbling process was so influential, that ironically, the further along in my quest for truth, the only certainty I can adhere to was realized when speaking to Dr. Micháel Roe: "I am fallible."

This conclusion was highly influenced by reading Michael Polanyi and his conviction to hold "firmly to what (we) believe to be true, even though (we) know that it might conceivably be false" (Polanyi, 1962 p. 214). I have never had trouble with the first part of this philosophy, but learning to embrace the second part has profoundly deepened my intellectual experience for the better. Now I approach all parts of my intellectual endeavors this way, but it does not shake the personal commitments I make, based on the best evidence I can find through my experience pointing me toward those commitments. In essence, I have no qualms with firmly supporting what I choose to believe, because I will not believe in something without fully considering the opposing viewpoint. On the same token, my considerations keep in mind that the opposing viewpoint is the real, lived experience of another person. Thus I do not have the authority to say that my opinion is the true one, it is simply one I have chosen to commit to, out of many possible truths. Having intellectual humility has taught me much more than I think I could have ever learned had I not been open to considering ideas and realities opposite of the biases I hold.

The process of becoming humbled and learning to "live in ambiguity," as Dr. Neuhouser would say, has adequately equipped and prompted me to take on this project. Because of the subjective nature of academia and knowledge in general, I have made it my goal in the culminating study of my undergraduate career, to study from an empirical, psychological framework, the mechanisms of open-mindedness. In this study, I hope to better understand a vital part of humanity and apply it to improving well-being and tolerance of people. Important to note is the way my second major, Global Development Studies has given me a global perspective

for justice: the ultimate reason for my research in psychology. This perspective keeps me grounded and away from getting bogged down in the details of psychology, which in research can be extremely particular. The American Psychological Association (2016) defines psychology as

> the study of the mind and behavior…(which) embraces all aspects of the human experience — from the functions of the brain to the actions of nations, from child development to care for the aged. In every conceivable setting from scientific research centers to mental healthcare services, 'the understanding of behavior' is the enterprise of psychologists.

This definition is extremely important to me because it clearly portrays an academic discipline that can facilitate action upon my core ethical and religious commitments of loving God and loving my neighbor through "*all* aspects of the human experience." In seeking a better understanding of behavior and human experience, psychology constantly inspires my ecumenical convictions and equips me to better love God and my neighbor

Within the larger context of Christian scholarship, I would say my project closely reflects philosophies of George Marsden and Paul Farmer. Marsden asserts that "the best education involves being not only critical, but self-critical. For that, the Christian perspective on the human condition and the deceptiveness of the human heart provides an excellent place to stand" (1997 p. 100). I believe at least two books exist from which we can seek truth. One is the inspired word of God in the Bible and the other is the inspired creation of God in nature (I must thank Dr. Baine Craft for this metaphor). Both of these studied together can humble one another against absolutizing subjective realities. Using the APA definition of psychology, the scientific approach

to the human experience can point us toward truths about existence that ensure all relative Christian beliefs are not absolutized. Being a *Christian* scholar means applying theological convictions to an understanding gained from scientific study and ensuring that neither science, nor faith are absolutized as ultimate truth.

In relation to Paul Farmer as a Faithful Scholar, my thoughts are fairly straightforward. Scholarship for the sake of gaining knowledge seems useless when people – our neighbors whom we are supposed to love— are suffering (Kidder, 2009). Instead, scholarship in psychology is for the sake of increasing our understanding of the human condition so we can most effectively use that knowledge along with our gifts and talents to best serve those in need. Finally, I place scholarship in line with some aspects of Methodist and Mennonite traditions. Particularly influential in my scholarship, has been John Wesley's quadrilateral, which leaves room for reading multiple books in order to find what seems to be the truth. In Wesley's eyes, those are Scripture, Tradition, Reason, and Experience. If I were to boil these down in to the *two* books I mentioned earlier (inspired word of God and inspired word of nature), scripture and tradition fall under the inspired word of God, while reason and experience fall under the inspired word of nature, or in my mind, science. Even the founder of the faith I grew up in, who was more of a theologian than a scientist, understood that only one of these things without the other three cannot stand up against the innumerable alternate realities that may act as antitheses to that one perspective. Thus, in a teleological way, all four must be synthesized in a given situation to form the best subjective truth, to which I will choose to commit.

Rodney Sawatsky (1997) discussed Mennonite higher education, and the two main facets of it I tend to resonate with are internationalism and communitarianism. These two tenants are

also very important in the Methodist tradition in which I was raised. Both go hand in hand, as Christian scholarship is conducted under the pretense that borders do not define our body of Christ. Therefore, international justice and peace-making are critical areas of study. Hopefully my honors project will lend valuable insight informing how to best love my neighbors who live all over the world and deserve peace and justice. Just as borders across countries do not define our body of Christ, our individual differences are not meant to push each other apart. Rather, they are valuable insights and skills that need to be used together during scholarship and justice-seeking. Studying psychology, I witness the deep certainty of humanity being a social species. Harnessing the power of community, rather than letting differences arise in irreconcilable conflict, is what makes fine scientific discovery and serving justice possible.

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