The Influence of Religious Priming on Self-Control and Risk Taking

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ABSTARCT

In the realm of psychological-cultural studies, religion has long been demonstrated to relate to various positive benefits such as psychological and physiological health, less stress, better coping skills, better self-control, goals, less risk-taking behavior and changes in behavior, implicit responses, motivations, cognitions and attributions made (Fishbach, Friedman, Kruglanski, 2003; Hathaway, Douglas, Garbowski, 2003; Lawer-Row, 2010; McCullough, Hoyt, Larson, Koenig, Thoresen, 2000; McCullough, Willoughby, 2009; Powell, Shahabi, Thoresen, 2003; Schmeichel, Vohs, 2009; Smith, McCullough, Poll, 2003). Much of this research has been correlational in design and, in most cases, has failed to reliably demonstrate any cause and effect relationships between religion and other psychological factors mentioned above, many researchers have expressed the need for such experimental designs that, in the past, have been few and far between (McCullough, Willoughby, 2009). This study looks to demonstrate a direct relationship between religious priming and its effects on performance in a risk taking task and self-reported measures of self-control and risk-taking behavior. Data was collected on demographic information (age, gender), ethnicity, religious affiliation, and level of religious involvement. Results indicate statistically significant positive effects on self-reports of self-control (M=1.65) and negative effects on self-reports on risk taking (M=-1.70), along with an interaction effect with level of religious involvement.

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Research, in particular psychological, sociological and cultural studies, has long established a positive relationship between religious involvement and various benefits, including physical and mental health. In behavioral science, this trend is the predominant view within

religious studies, and more recent research has been even more uniform in results. Many psychological studies available in the field share certain similarities, particularly that they are correlational, focus on positive benefits, and stress the influence of the social-support religious involvement may provide (Smith, McCullough, Poll, 2003). In short, with correlational studies providing the majority of data, it is unclear whether certain types of people are more likely to attend church, or if the church has an unbiased effect. In short this trend in research cannot easily explore the phenomenon of religion, and new approaches are needed. Though the correlation approach dominates the field presently, the psychological approach to religion has existed since psychology's foundation, and has long been a critical, controversial and frictional topic within the field.

Religion, as a psychology topic, has been approached in a variety of ways and is a crucial link between psychology and other behavioral studies. From a cultural perspective, researchers examine religion as a human phenomenon, and as well examine how it relates to the individual. Using a more cognitive model, other researchers view religious thinking as internal mechanism (Bering & Johnson, 2005; Fishbach, Friedman, Kruglanski, 2003; McCullough, Willoughby, 2009; Smither, Khorsandi, 2009), and other psychological research has linked religion with certain behaviors, attitudes, personality traits, and life-choices (Lodi-Smith, Roberts, 2007; McCullough, Hoyt, Larson, Koenig, Thoresen, 2000; Schmeicheal, Vohs, 2009; Smith, McCullough, Poll, 2003). Indeed, William James, commonly considered the founder of American psychology, provided a foundation for both theoretical and empirical implications. Popularizing the subject in his work *Varieties of Religious Experience*. Here James contemplates the diversity and interconnectedness of religious views and the prominence of religion both in the individual and in society. Freud (1961), contests that religion is a societal representation of

the Oedipal Complex, in which humans cling to belief of a strong, father-like God who provides for, and demands, obedience. Though many theorists have varied greatly in their level of attraction to religion as an appropriate psychological topic, the subject has endured, yet no one theoretical framework dominates the field, any few approaches provide adequate experiments examining the causal effects invoking religion.

As mentioned above, more recent trends in empirical investigation have focused on the benefits of religion, in terms of both psychological and physical health. Though these studies cannot identify the underlying causal mechanisms of these positive relationships, they do help to emphasize the critical importance of the subject area. McCullough et al. (2000) provided a huge meta-analytic review of 42 independent studies that found people who were highly religious were 29% more likely, on average, to be alive at any given follow-up than their non-religious counterparts with a confidence interval of 95%. Powell, Shahabi, and Thoresen (2003) concluded in a study with a large sample that frequent attendance to religious service was associated with a 25% reduction in mortality. Psychological benefits are stressed as well, as Smith, McCullough, and Poll (2003) found religiousness was associated with lower rates of depressive symptoms in a massive meta-analysis of 147 independent studies.

Social psychology has provided novel approaches better examining positive psychological benefits by exploring religion as pro-social behavior; using factors such as marriage, family relationships, and coping strategies as dependent measures. A striking majority of this research has relied on self-ratings and ratings from others. For example, French, et al. (2008) found that religiousness positively correlates with self-control based on assessments made by Indonesian teachers on their students. A meta-analysis of 12 articles, emphasizes the positive influence of religion in relation to the selection of one's values, level of conformity to the norms

of society, and frequency of pro-social behavior (Saroglou, Pichon, Trompette, Verschueren, Dernelle, 2005). Ano and Vasconcelles (2005) concluded in a robust meta-analytic study that "positive" forms of religious coping (such as benevolent religious reappraisals of stressors, and active religious surrender) were positively associated with scores on measures of psychological health and negatively associated with negative outcomes such as anxiety and depression.

In recent studies, some advancement has been made by examining self-control and considering the possibility that this factor may be an underlying causal mechanism between religiousness and the various aspects of well-being, health, and much of the pro-social behavior discussed above (Fishbach, Friedman, Kruglanski, 2003; McCullough, Willoughby, 2009). In a substantial and comprehensive meta-analytic reporting on links between religiousness and health, well-being, and social behavior, McCullough and Willoughby (2009) suggested that self-control and self-regulation may the causal mechanism because religion has been demonstrated to: promote self-control; influence the selection, pursuit, and organization of goals; facilitate self monitoring; foster the development of self-regulatory strength; promote health, well-being, and pro-social behavior. Based on their review of relevant past research these researchers concluded that: (a) religion is positively related to self-control as well as traits such as Agreeableness and Conscientiousness that are considered to be the basic personality substrates of self-control; (b) specific religions prescribe specific goals for their followers; (c) some religious rituals (e.g., meditation, prayer, religious imagery, and scripture readings) directly promote self-regulation; and (d) religion's ability to promote self-control and self-monitoring can explain some of the associations with health, well-being, and social behavior.

In fact, the relationship between self-control and the exploration of a causal mechanism has opened the door to some innovative experimental designs. For example, Fishbach et al.

(2003) have demonstrated in an experimental setting that risk-taking related stimuli priming (presentation of subliminal messages such as “drugs,” “temptation,” and “pre-marital sex”) led to faster subsequent recognition of religious related words and that religious priming (presentation of religious subliminal messages such as “prayer,” “bible,” and “God”) led to slower subsequent recognition of temptation/sin words. Based on these data these researchers concluded that people automatically recruit religious concepts to help them exercise self-control and self-regulation in the presence of temptation and that the activation of religious mental content reduces the accessibility to temptation/sin related mental content.

Though priming has shown considerable effect, other researchers have relied on deception to induce religious or spiritual thought. Though these approaches are similar in aim, it is important to address their differences as they relate to the current body of research. Bering and Johnson (2005) induced religious and spiritual feelings by having a confederate inform some participants that had seen a ghost in the laboratory. Subsequently these participants were less likely to cheat on a cognitive test. Though this study demonstrates a large effect and statically significant results, in the present study priming is the preferred mechanism as it involves less conscious attention, and assesses the influence of religious stimuli at a deeper cognitive level. Since religion is often a normalized and underlying aspect of people’s lives, it is this researcher’s view that religion must exist on this level at some capacity, most likely varying person to person.

Though some experimental efforts have displayed valor in the exploration of the relationship between religion and personality, researchers continually and explicitly express the need for better controlled experiments and larger participant pools. Due to the correlational nature of this research, a direction of any causal relationship cannot be determined. For instance, Hathaway, Douglas, and Garbowski (2003) were unsure in their findings whether religion causes

higher levels of self-control or if self-control leads to a greater chance of religious affiliation amongst a large sample of children. In response to this review of related literature, it is the goal for this study to establish a reliable religious priming technique, and use this method in an experimental design to examine the relationship between religious priming and two factors that have been well-established to relate to religion: self-control and risk taking. (Bering, Johnson, 2005; Fishbach, Friedman, Kruglanski, 2003; McCullough & Willoughby, 2009; Schmeichel, Vohs, 2009; Smither, Khorsandi, 2009)

In this study, religious priming is defined as cognitively inducing the concept of religion without the conscious awareness of the participant by presenting religious words as stimuli in a word-search puzzle. To define self-control, this study follows in line with McCullough and Willoughby (2009) explaining it as the ability to regulate, control and monitor one's own emotions, behaviors and desires in adaptive efficiency. Similarly, this research follows Fishbach et al. (2003) in defining risk taking as behavior characterized by temptation, sin, and/or dangerous or adverse consequences. Using an experimental design, an experimental group will be exposed to religious priming and compared to a control group across three dependent measures: self-report of self-control, self-report of risk taking, and a score on a risk taking scenerio. It is the research hypotheses that: a) religious priming will have a positive effect on a participant's self-report of own self-control, b) religious priming will have a negative effect on a participant's self-report of own risk taking, and c) religious priming will have a negative effect on a participants score on a risk-taking scenario, indicating less risk taking behavior.

Methods

Participants

Based on a sample of convenience in a University setting, 40 University students were asked to participate in the study, some received extra credit for undergraduate psychology courses. The study used 18 males and 22 females. Other demographic information was recorded as well. In the sample, 60% of participants were Caucasian, while 37.5% were African American. Religious affiliation information was recorded as well, 72.5% were Christian, 15% were Jewish, and 12.5% reported "Other." A religiosity scale was given in the demographic section, 32% reported have strong religious affiliation, 25% reported "Middle ground," while 22.5% reported having very weak ties to their church. All participants signed a consent form and were above the age of 18.

Materials

The independent variable of religious priming was induced using a word-search puzzle stimulus presented to the participant. Two versions of this stimulus were developed, one for the control group and one for the experimental group. The experimental group had a word-search consisting of 10 target-words, of these words 7 were religious in root. Conscious awareness of this priming was masked by titling the experimental word-search "Rome." In the control group a similar word-search was presented but did not contain religiously rooted words. An attached text explained that the participant would have five minutes to find as many words as possible.

The first two measures of dependent variables relied on global self-reports of both self-control and risk taking. Both of these measures relied on a single item self-report question rated by the participant on a 7-point Likert scale. The self-control probing question asked: "On a 7-point scale, how would you rate your level of self-control?" while the self-report measure of risk

taking read: “On a 7-point scale, how would you rate your level of risk-taking (likelihood of participating in risky behavior)?”

Finally a third dependent variable relied on a risk taking scenario, a three question self-report of the participants’ likelihood of engaging in separate risky behaviors, and rated on a 5-point Likert scale. These three individual questions combined to provide a total risk-taking scenario score. The scenario consisted of a simulated camping trip where the participant has the chance to engage in various risky behaviors.

In addition participants were provided a consent form which they were required to sign, the form included a fictional experiment to ensure participants were not aware of the intent to religiously prime. As well each participant provided demographic information recorded on a form developed by the researcher, inquiring: gender, religious affiliation, ethnicity, and strength of religious affiliation.

Design Procedures

Participants were first asked to complete a religiously primed or unprimed word-search puzzle in the implementation of the independent variable. After completion of the priming task, both control and experimental groups would engage in a written risk-taking scenario, where risky choices were assessed by the participant using a 5-point Likert scale. Two additional dependent variable measures were then be taken as the participant made separate 1-item self-assessments on risk-taking behavior and on self-control ability. These three tasks completed measurements of the dependent variables. The participants also provided demographic information and completed a religiosity scale, which was collected at the beginning of the experiment. The experiment takes

about 12 minutes to complete. All participants were debriefed after the experiment, and participants that wished to be informed of the findings left adequate contact information.

Results

On the self-rating for self-control, those who were religiously primed reported significantly higher ratings (M= 1.65), an independent groups t-test revealed $t(38) = 7.482$, $p < .01$. On the self-rating for risk taking (with higher scores indicating more risk taking), those who were religiously primed reported significantly lower ratings on risk taking (M=-1.70), an independent groups t-test revealed $t(38) = -6.563$, $p < .01$. The risk-taking scenario provided a score from 3 to 15 with higher scores indicating higher risk taking, those who were religiously primed reported a slightly lower score (M=-1.15), with independent groups t-test failing to demonstrate significant results, $t(38)= -1.029$. Running the demographic information as quasi-participant data, a MANOVA revealed an interaction effect between religiosity and self-reported ratings at a significance level of .01.

Discussion

This research project aimed at creating a more empirically sound way to examine religion within an experimental setting with dependent measures limited in scope. Accordingly this study looked to follow in the line of research provided by McCullough & Willoughby (2009) in providing evidence of religions effect on self-control and risk taking within an experimental setting. As well this project looked to continue work on priming, as demonstrated by Fishbach et al. (2003) and Bering and Johnson (2005), but in applying it effectively within the topic area of religion. It was the researcher's hypotheses that religious priming, in the form of a word-search game manipulating religious words as stimuli, would have an positive effect on the participant's

self-report of self-control (indicating a higher level of this characteristic) and a negative effect on the participant's rating of their own risk taking. These two hypotheses were confirmed at a significantly significant level, suggesting both the effectiveness of the priming mechanism but as well the reactant quality of religion within the experimental setting, as will later be discussed.

Though the hypothesis that religious priming would have a negative effect on a participant's risk-taking score in a simulated task was not confirmed, this result may have important implications as to the validity of this research as a whole. Assessing the finding at surface value, this result could suggest religious priming has an effect on participant's self-reports, but not actual performance in a simulated task. This could be explained by demand characteristics within the experiment and with religion as an experimental topic in general. With further examination, the large within-group variation on the three item simulated task could suggest low validity in the self-created scenario and explain this contrast in results on this task. More research is needed to validate this project, particularly designs that can better control the setting of the manipulation (i.e. where the crossword puzzle is administered) and that can control for order and demand effects. These limitations are elaborated on later, but it is a firm conclusion of this researcher based on these results that religion seems to have a greater effect on what people report themselves as being, as opposed to how they may normally or unconsciously perform.

Much research views religion is a factor, a human trait that varies from person to person (Hathaway, Douglas, Garbowski, 2003; Lawler-Row, 2010; Lodi-Smith, Roberts. 2007; McCullough et al., 2000; McCullough & Willoughby, 2009; Smither, Khorcandi, 2009). In this way people with a religious predisposition, or whom practice religious involvement, are likely to perform differently on psychological tasks and self-reports. This research project continues these

findings by demonstrating people who reported being more religious also made self-reports of being lower in risk-taking and higher in self-control at a statistically significant level. An interaction effect between level of religious involvement and the manipulation of the independent variable demonstrates that priming is even more effective with religious people. This important finding is interrupted to suggest religion has a strong behavioral and cognitive influence, especially with those with high levels of religious involvement. As well religiosity, as a personality factor, is valuable in explaining many social and cultural phenomenon. Due to the priming method of the study, previous researchers' conclusions that religion has both cognitive and biological underpinnings (James, 1958; McCullough & Willoughby, 2009) could be interrupted to be supported. In whole the interaction effect this study presents demonstrates how religion seems to possess a reactant quality within the experimental setting. This reactant quality is expressed not only in that people with higher levels of religiosity react more extremely to religious priming and other stimuli, but as well in how even with a medium-sized randomly selected pool religion seems to illicit demand characteristics and self-reports that match norms and standards consistent with that religion.

As brushed upon, this study possesses serious limitations, and due to the extremely limited amount of experiments performed within this particular area it is difficult to draw concrete conclusions based on limited subject pool and lack of converging evidence. To begin, it must be mentioned that this study draws from a limited pool of participants based on a sample of convenience. Similarities in background, particularly religious affiliation, may explain some findings in that the sample was religious, and overall representative of a Baltimore college campus, and using primarily undergraduate psychology students. More importantly, many participants, from both the experimental and control groups, reported during a debriefing session

that they thought the experiment may be looking at religion. This may be due to a religiosity scale question that came just after the demographic questioner. Though the religiosity scale may have added to the priming effect, it may have also induced some demand characteristics. Indeed many of the participants were psychology students whom may be more prone to displaying this effect. It must also be considered that a majority of participants reported being religious. Thus the priming effect could have been even greater for this group as both social and religious norms could become intervening variables.

Though more efficient research methods need to be used to accurately assess this subject matter, this experimental demonstrates an effective strategy in empirically approaching religion and insight for future research. Religiosity is demonstrated to be suitable experimental topic manipulating priming, and word-search or other word tasks may be a extremely effective medium. Future studies should as well draw from bigger pools of participants to access the global effect religion is presumed to possess. Again word search priming materials require little time and relatively easy to design and manipulate, they may serve purpose deceivingly introduced to participants as filler activities. Another value in this current body of research is the high potentiality to possess ecological validity since it draws from religious/cultural-based words with demonstrated salience to the participant. This is demonstrated in the research by the priming having greatest effect on those high in religious involvement and by the fact that those of a Christian based religion demonstrated the effect most consistently. In summary this research provides a practical approach as to the causal mechanisms underlying religion's relation to positive psychological benefits, and provides a useful medium for religious priming in future research.

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