Self-Regulation and Religiosity

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Abstract

This study investigates whether intrinsically religious participants have a greater amount of self-regulatory resources compared to participants low in religiosity. This research also tests the hypothesis that intrinsically religious participants exert greater effort to self-regulate when they complete a task that is related to religiosity, a domain of their contingent self-worth. All participants first performed a Stroop test, followed by another self-regulatory task that involved trying to solve unsolvable anagrams. Half of the participants were told that the second (anagram) task could indirectly measure religious commitment. This study did not find evidence that intrinsically religious participants have a greater amount of self-regulatory resources, compared to nonreligious participants. However, results indicated that male, but not female, intrinsically religious participants tended to exert more self-regulation when they were told that the second task was related to religiosity than when the second task was not related to religiosity. This finding lends partial support to the idea that people (at least intrinsically religious males) may exert greater self-control in areas of contingent self-worth. This study furthers self-regulatory research by suggesting that males and females may exert differing amounts of self-control when they perform in areas that are important sources of self-esteem.

Self-Regulation and Religiosity

The self is believed to have a limited supply of a resource that resembles energy or strength, which it uses whenever it actively overrides or regulates its automatic responses to the environment (Baumeister, Bratslavsky, Muraven, & Tice, 1998). Muraven, Tice, and Baumeister (1998) found evidence of regulatory exhaustion, which they call ego depletion, when people had to perform two consecutive acts of self-regulation. Self-control in one area reduced participants' ability to self-regulate afterward in another, seemingly unrelated, area because the limited resource was lessened or depleted in the first act of self-regulation.

Studies have shown that an individual can gradually increase his or her self-control resources with practice in self-regulation as long as periods of rest are allowed for resources to become replenished (Muraven, Baumeister, & Tice, 1999; Oaten, Cheng, & Baumeister, 2001). A longitudinal study found that practicing just one form of self-control over a two week span can lessen the ego depletion effect on an unrelated regulation task in a laboratory setting (Oaten et al., 2001). Theoretically, if a person were to practice self-control on a regular basis, he or she would build up his or her personal resources and make it much more difficult for depletion to occur after performing a self-regulatory task. Previous research found that practicing self-regulation resulted in an increase in stamina, as indicated by increased self-regulation on a second task; however it was not shown that participants can significantly increase their self-regulatory ability on a first self-regulatory task, even with practice over time (Muraven, Baumeister, & Tice, 1999; Oaten et al., 2001).

Stable individual differences in self-regulation ability thus seem at least partly due to how much a person has increased his or her resource supply through the practice of self-control in their life. Baumeister and Exline (1999) point out that control of selfish impulses and the

resisting of temptations are stressed in many religious teachings, and that spiritual practices may help to exercise people's "moral muscle" to increase its strength over time.

The Role of Intrinsic Religiosity

Allport and Ross (1967) have distinguished between two types of religiosity: intrinsic and extrinsic. People who are intrinsically religious are said to live their religion and have a faith that is internalized: they carry the tenets and practices of their religion into most aspects of their daily life without external acknowledgement or reward. In contrast, an extrinsically religious person is involved in religion for reasons that are not internal, such as social desirability, external benefits, and recognition from others (Allport & Ross, 1967). Bergin, Masters, and Richards (1987) found intrinsic religiosity to be positively correlated with self-regulation, although they could not conclusively say whether being intrinsically religious was a cause or an effect of this increased self-regulatory ability**.**

Baumeister, Reis, and Delespaul (1995) conducted a study in which participants wrote accounts of past episodes in which they had experienced guilt and many of these referred to self-regulation failure, such as procrastination, overeating, wasting money, and failing to exercise, as the main source of their guilt. In several accounts, subjects reported that the anticipation of guilt prevented them from carrying out an action and thus assisted in self-control. It would seem to follow that people who view failures in self-regulation as sources of guilt, especially in important areas like religious tenets for the intrinsically faithful, would practice self-regulation more regularly and thus build up more of their self-control resource.

Baumeister and Exline (1999**)** point out that morality can help people of a society live together in harmony, but that self-control is needed for people to forego their own interests for the collective good. They believe that morality has strong ties to religion, in that virtuous behavior, or control of selfish impulses, is stressed in many religious teachings. Virtue is

typically demonstrated by conforming to the socially acceptable standards of good and moral behavior. For religious people, virtue can also be demonstrated in obeying divine commands, but even these basically refer to restraining self-interest for the good of the society. In Judaism and Christianity, for example, most of the Ten Commandments condemn selfish acts, and even the seven deadly sins in Catholicism, such as gluttony, pride, greed, and sloth, can be viewed as referring to failures in self-regulation. In addition, the four Cardinal virtues (prudence, justice, fortitude, and moderation) are reliant upon and applaud self-control. One purpose of this study is to investigate whether intrinsically religious people have a larger supply of self-regulatory resources due to an increased practice of self-control in their lives because of religion's greater amount of restrictions on selfish and immoral behavior.

Contingencies of Self-Esteem

Crocker and Park (2004) argue that because self-regulation resources are limited and easily depleted, a person will be more likely to expend them on acts in domains that are important sources of self-esteem. Typically, self-esteem was considered globally; however, Crocker and Wolfe (2001) found that a person's self-esteem is more affected by success or failure in specific areas that are important to the individual. For example, if someone does not care about doing well musically, but he or she does care a lot about performing well academically, his or her self-esteem is more likely to be lowered by doing badly on a test in school then by giving a poor musical performance. Crocker and Knight (2005) claim that people can raise their level of self-esteem by succeeding in contingent domains, or areas upon which their self-worth is based. Contingent areas of self-esteem can be either intrinsic, based on who one is, or extrinsic, based on what one does or accomplishes. Success in either an intrinsic or extrinsic domain of contingent self-worth can increase self-esteem; however, intrinsic domains of contingency, such as virtue or religiosity, have been shown to be a more effective (Schimel,

Arndt, Pyszczynski, & Greeenberg, 2001). Crocker and Knight (2005) claim that contingencies of self-worth can help regulate behavior because succeeding in contingent domains raises state self-esteem.

In addition to determining whether intrinsically religious people have more self-regulatory resources than people low in religiosity, the present research examines whether people exert more self-regulation when a task appears to be related to an area upon which self-esteem is contingent. In this study, intrinsically religious and nonreligious participants completed two self-regulatory tasks and their self-control on each was measured. Although the second task was the same for all, half of the participants received task instructions which stated that the task was related to religiosity while the other half received task instructions stating that the task was related to a neutral skill. This experiment used a 2 (participants: intrinsically religious, nonreligious) x 2 (framing of 2nd self-control task: religious, neutral) mixed factorial design.

It was hypothesized that on the first self-regulatory task, religious participants would not differ from non-religious participants in amount of self-regulation exerted. It was also expected that religious participants would expend more of their self-regulatory resources on the second task when it was framed as a religious task than when it was a neutrally framed task. Finally, it was hypothesized that religious participants would self-regulate more than nonreligious participants on the second task, whether or not it had a religious frame.

<div align="center">Method</div>

Participants

Participants were 109 male and 163 female undergraduate students at The Ohio State University taking an Introduction to Psychology course, and these students fulfilled a research experience assignment by participating. Respondents initially completed a prescreening questionnaire that assessed their self-esteem, using the Rosenberg Self-Esteem Scale, and their

religiosity. Male and female students who scored either high in intrinsic religiosity or low in religiosity, according to a prescreening measure (see Appendix A), were recruited to participate in this experiment (see Appendix B for selection criteria). Intrinsic religiosity was selected to be examined in this study because those who are intrinsically religious try to apply their religion to most areas of their life and they typically engage in religious practices for themselves, rather than others. Intrinsically religious people have more internal and less external reasons for their self-control and thus they may have developed more self-regulatory resources than extrinsically religious individuals.

After data was collected participants were further narrowed down using the "God's Love" subscale of the Contingencies of Self-Worth Scale (see Appendix C). This subscale has been used to determine how much a person's self-worth is placed in the domain of religiosity. Scores on this subscale were examined to ensure that participants identified as high in intrinsic religiosity during prescreening also scored high on the "God's Love" items during the study, which would indicate a religious contingency of self-worth. Before the data analysis, 101 participants were removed, leaving 120 participants (44 males and 76 females) identified as being both high in religious contingent self-worth and intrinsic religiosity and 51 participants (27 males and 24 females) who were identified as being low in religiosity with little to none of their self-worth dependent upon being religious (see Appendix D for selection details).

Procedure

.   Upon arriving in the lab, the participants were given a brief overview of what participating in the experiment would entail. Participants were then told that this study was investigating how personality traits affect perception. Students who chose to participate first completed a modified version of Crocker and Wolfe's (2001) Contingencies of Self-Worth Scale on the computer. This task served to remind the highly religious participants of their religiosity

because one subscale included in the CSW Scale measures the degree to which a person's self-worth is contingent upon God's love.

All of the participants then performed a Stroop test (Stroop, 1935), which has been used in previous experiments as a self-regulatory task (Oaten et al., 2001). The Stroop test entails presenting fifty color words to the subject, each of which are written in either red, blue, yellow, or green ink. Participants were instructed to hit the computer key marked with the color that a target word color is written in rather than the color key corresponding to the color the word means. This test was used as a measure of self-control because participants must overcome the dominant impulse to read and respond to the word that is presented to them, which is a color, and instead react as quickly as possible to the color that the word is written in. For example, when a person is presented with the word "blue" written in red ink, self-control would be needed to hit the red computer key instead of the blue key. Strings of "x"s appearing in either of the four colors were also presented to participants, instead of color words, and participants were asked to hit the key which matched the color of these "x"s as fast as they could. There was no incompatibility between the semantic meaning of the string of "x"s and the color word the"x"s were written in, and thus self-regulation was not needed for participants to successfully perform, unlike in the incongruent word trials. The function of these control Stroop trials is to establish each participant's baseline self-regulatory and reaction time ability because individuals may differ in this regard.

Following this task, participants performed another self-regulatory task in order to measure how much the first self-control task depleted their self-regulatory resources. Participants were given 25 anagrams, which they did not know were actually unsolvable, to unscramble into words one at a time on the computer. Each screen showed one anagram, a blank box where they could type in their answer, instructions for skipping to the next anagram, and directions for

quiting the task altogether, which they were clearly told in the initial instructons that they could do at any point in the task without penalty. The duration of participant persistence on each unsolvable anagram was recorded by the computer. The length of time that one persists on this impossible task has been used in previous research as a measure of self-regulation (Muraven et al., 1998: Baumester et al., 1998) because as subjects continue to work on the anagrams, they must exert self-control in order to overcome the impulse to quit in the face of frustration and failure.

Half of the participants were told that this second task has been found to indirectly measure a person's religious commitment with a script in the task directions that said, "This task is a measure of focus of attention and has been shown to be related to, among other things, degree of religious commitment. In fact, religious commitment has proved to be the strongest predictor of success on this task". The other half of participants were told that the task has been shown to measure a person's general personality with a script that read, "This task is a measure of focus of attention, and has been shown to be related to a number of different personality variables". This manipulation was intended to make the task seem relevant to religiosity, or a religious contingent domain, to half of the participants.

After the second self-regulatory task, participants were fully debriefed and told the true purpose of the experiment. They were asked if they had any questions about the study and were then given the contact information for the experimenters in case of future questions or concerns.

Thus, the overall design of the experiment was a 2 (religious vs nonreligious participant) x 2 (religious vs nonreligious task instructions), with persistance on the second self-control task as the primary dependent variable. I predicted both a main effect of religiosity and a two-way interaction between religiosity and task type such that intrinsically religious participants would persist longer on the task when it was framed as religion-contingent.

Results

Preliminary analyses were conducted on the difference score of compatible trials subtracted from incompatible trials on the first (Stroop) task. This difference score was an interference score that indicated how much the incompatible trials interfered with performance. The interference score means for the religious and nonreligious groups was compared using a one-way ANOVA.

The primary dependent variable was the self-regulatory exertion on the second task. This variable was analyzed by comparing the duration of persistence on the unsolvable anagram task between the four conditions (religious participants with the religiously framed 2nd task, religious participants with the neutrally framed 2nd task, nonreligious participants with the religious task, and nonreligious participants with the neutral task) using a two-way analysis of variance (ANOVA).

After initial examination of the two performance measures, possible gender differences were examined by breaking down the two-way ANOVA by gender. Finally, the two-way interaction of religion and condition was analyzed with self-esteem as a potential moderator.

First Task Data

Before the first task data was analyzed, two participants were removed because they showed too much interference and thus their scores were extreme outliers in the distribution of Stroop interference scores. Stroop trial times were capped at 2500 ms, and those below 300 ms were removed due to the unlikelihood of reacting this quickly. Performance on the first task was analyzed by calculating each participant's average interference score on the 50 presented trials. This interference score was calculated by subtracting each participant's average reaction time on the compatible Stroop trials from his or her average score on the incompatible Stroop trials. The

incompatible Stroop trials consisted of a color word, red, blue, green, or yellow, written in a non-corresponding color. Unlike the compatible trials, the incompatible trials required participants to ignore their dominant response of attending to what the word says and instead respond to the color that the word is written; incompatible trials were, thus, a measure of self-control. To control for individual differences in both self-control and reaction time, the compatible trials served as a baseline for performance. Higher interference scores reflect less self-control on the Stroop task because a high score means that the participant was much slower on average to react to the incompatible trials, which required self-regulation, than to the compatible trials, which required very little self-control.

Because the first (Stroop) task was not framed as being related to a contingent domain of self-worth, no difference in performance was expected between the religious and nonreligious groups of participants. As predicted, there was no significant difference in performance on the Stroop task between religious and nonreligious participants, $F (1, 171) = .922, p = .338$. Intrinsically religious participants and nonreligious participants did not differ in their ability to self-regulate on an initial self-control task.

Second Task Data

Performance on the second (anagram) task was assessed by summing the length of time each participant spent attempting to solve the anagrams, which participants did not know were actually unsolvable, within the 10-minute time limit. The more time a participant spent working on this second task, the greater his or her demonstration of self-regulation since he or she continued to persist despite the impulse and freedom to stop working on this impossible task. Mean persistence scores for each of the experimental conditions are reported in Table 1.

	Task Framing	
	Religious	Neutral
Religiosity Religious	7.72	7.57
Nonreligious	7.83	8.62

Table 1 Religiosity x Task Framing Interaction Means.

It was hypothesized that participants identified as being intrinsically religious would exert more self-regulation, or persist longer, on the second task when this task was framed in the instructions as being related to religious commitment than when the task was framed in a neutral manner. This increased self-regulation on a self-worth contingent task was not found; there was no significant two-way interaction of participant religiosity and task framing, F (1, 171) = 1.240, p = .267. Religious participants in the religiously framed task condition spent only slightly more time on the anagrams (M = 7.72) compared to religious participants in the neutrally framed condition of the task (M = 7.57). Across all conditions, there was no significant main effect of task framing, F (1, 171) = .552, p = .459

It was also expected that religious participants, regardless of the condition, would exert more self-regulation overall on this second task compared to the nonreligious participant group. Contrary to my predictions, there was no significant main effect of religiosity, F (1, 171) = .1.860, p = .174. In fact, nonreligious participants showed slightly more self-regulation than religious participants on both the religiously framed task (M = 7.83) and the neutrally framed task (M = 8.62).

The failure to detect significant differences across conditions may indicate that the total time spent working on the anagrams is not the ideal way to measure self-regulation. Self-

regulation could also be assessed by how long participants persist on the first anagram they are presented. During the presentation of each anagram, all participants were given the option of skipping to the next anagram (in addition to being able to quit the task altogether). It is thus possible that persisting a long time on this first unsolvable anagram demonstrates greater self-regulation than spending the same amount of time on all 25 anagrams. It is conceivable that overcoming one's impulse to give up on a very challenging anagram, and instead, continue to contemplate its possible solution with great tenacity, would require more self-control than to keep giving up on the present anagram in favor of the next one. This seems plausible even if both techniques result in participants spending the same length of time on the total task.

To examine this possibility, the mean time spent on the first anagram was tested, but there was, again, no significant two-way interaction of participant religiosity and task framing, F (1, 171) = .022, p = .883. Despite the fact that the two-way interaction was not significant, religious participants did persist longer on both the religious (M = 1.50) and neutral tasks (M = 1.86). However, this pattern also showed the opposite of the other hypothesis that religious participants would persist longer on the religiously framed second task than the neutrally framed task; all participants persisted longer on a neutral task than the religious task.

GenderAnalyses

A one-way ANOVA revealed there to be no main effect of gender on the first (Stroop) task performance, F (1, 171) = .453, p = .502. Male participants showed a slightly higher interference score on the Stroop task, and thus less self-regulation (M = 95.92) compared to females (M = 88.40). The main effect of gender on total time spent persisting on the second (anagram) task was also non-significant, F (1, 171) = .006, p = .938. In addition, there was no main effect of gender on the time spent on the first unsolvable anagram.

A 2 (religiosity) x 2 (condition) x 2 (gender) between-subjects ANOVA revealed there to be no significant three-way interaction, $F(1, 171) = .997$, $p = .320$. Nevertheless, for exploratory purposes, this effect was broken down to examine the two-way interaction of participant religiosity and task framing separately for males and females. For female participants, there was no significant two-way interaction, $F(1, 100) = .038$, $p = .847$, as shown in Figure 1.

Figure 1
2-Way ANOVA- Self-regulation on 2nd Task
Female Participants Only
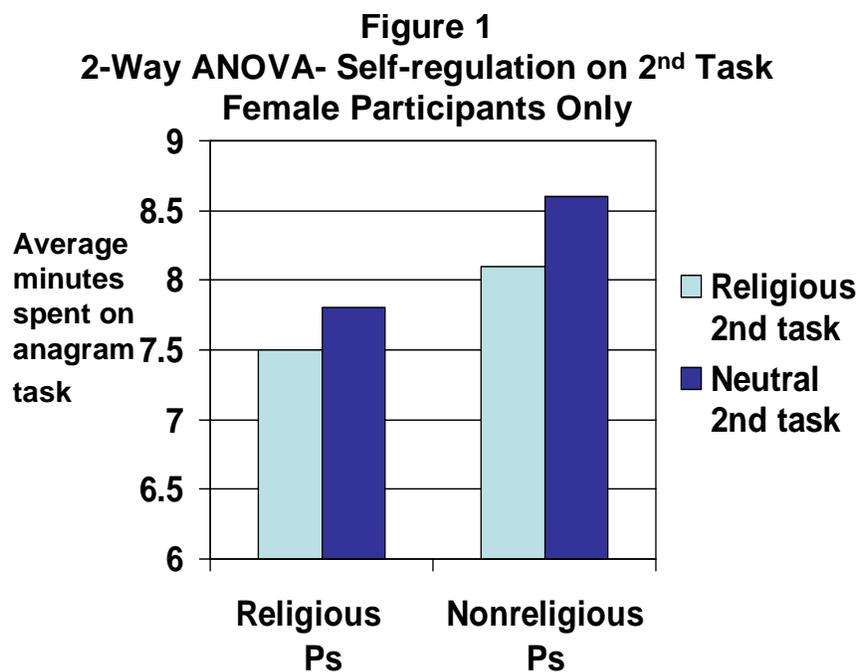
For male participants, there was a marginally significant 2-way interaction of participant religiosity and task framing, $F(1, 71) = 2.240$, $p = .130$. Male participants demonstrated the

predicted pattern of results: religious men exerted more self-regulation, by working longer on the unsolvable anagrams, on the religiously-framed second task (M = 8.21) than the neutrally-framed second task (M = 7.29). Also, nonreligious men exerted less self-regulation when the second task had a religious framing (M = 7.58) than when it was neutrally framed (M = 8.61). Male anagram performance results are presented in Figure 2.

Figure 2
2-Way ANOVA- Self-regulation on 2nd Task
Male Participants Only
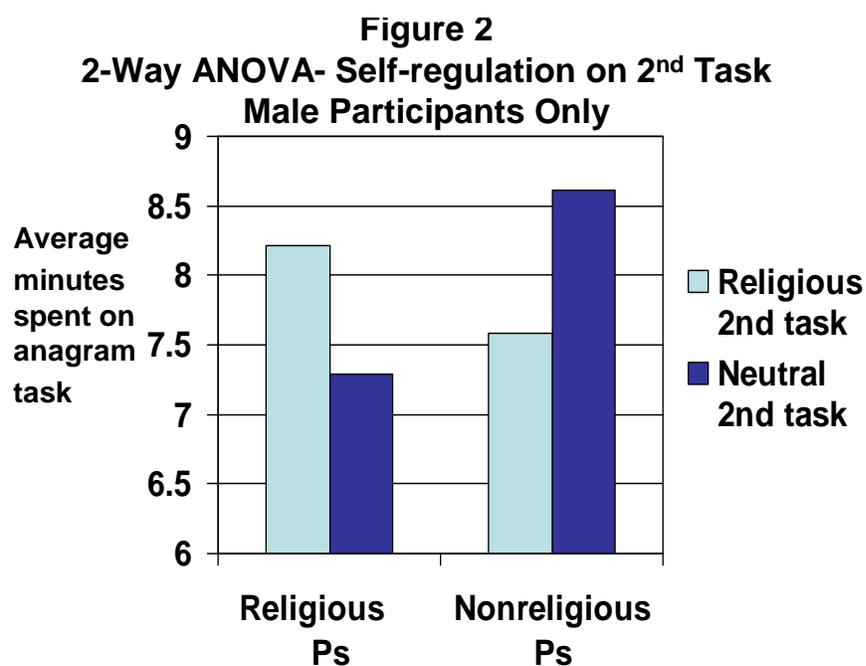
Self-esteem Data

Task performance may be influenced by the self-esteem of participants, thus it seems important to be sure that there are no significant differences in the level of self-esteem between the intrinsically religious and nonreligious participants. The Rosenberg Self-esteem Inventory was included in the prescreening questionnaire that participants completed before being invited to participate in this study (see Appendix E). It is possible for self-esteem scores on this inventory to range from 5 to 40; however, the scores for the participants in this study displayed a high range of 23 to 40 with a lofty mean of 32.65. The average self-esteem of religious participants (M = 32.95) was slightly higher, but not significantly different, from the nonreligious participants (M = 31.94), F (1, 171) = .922, p = .338.

Crocker, Brook, Niiya, and Villacorta (2006) found that people with very high self-esteem scores tend to show significantly less self-regulation, compared to people with moderate self-esteem, on difficult tasks relevant to their self-worth, especially when failure appears likely. The authors attributed this to the relative fragility of high self-esteem, which must be protected against events that threaten its reduction. People with unstable high self-esteem are therefore more likely to withdraw their self-regulatory efforts and just disengage when faced with a self-esteem relevant task that they foresee as unlikely to bring success.

Since the second task involved solving anagrams that were actually unsolvable, a task not only challenging but impossible, it seemed possible that this study by Crocker et al. (2006) might assist in explaining why religious participants did not exert significantly greater self-regulation on the religiously framed anagram task than on the neutrally framed anagram task as hypothesized. Religious participants with very high self-esteem may have purposefully disengaged on the religiously framed anagram task, instead of exerting as much self-regulation as possible, in order to prevent a loss in self-esteem if they really strove and did not succeed.

In order to superficially identify participants high in self-esteem, a median split was performed and participants with a self-esteem score of 33 or below were labeled as having a moderate level of self-esteem and participants with self-esteem scores between 34 and 40 were labeled as being high in self-esteem. Persistence time on the anagram task was analyzed with self-esteem as a moderator, and a 2 (2nd task framing: religious, neutral) x 2 (self-esteem: high, low) ANOVA was performed using only the data from the religious participants. No significant interaction between task framing and self-esteem was found, F (1, 119) = .885, p = .349, however an interesting pattern emerged from the analysis. Religious participants high in self-esteem, according to the median split, showed a slight decrease in self-regulatory exertion by spending less time on the religiously framed task (M = 7.66) than on the neutrally framed task (M = 8.05). Religious participants labeled as moderate in self-esteem showed the reverse pattern where they tended to persist slightly longer on the religiously framed task (M = 7.71) compared to the task framed as neutral (M = 7.20). This non-significant pattern is in line with the findings of Crocker et al. (2006) and is presented in Figure 3.

Figure 3
2-way ANOVA with self-esteem as a moderator
Religious participants only
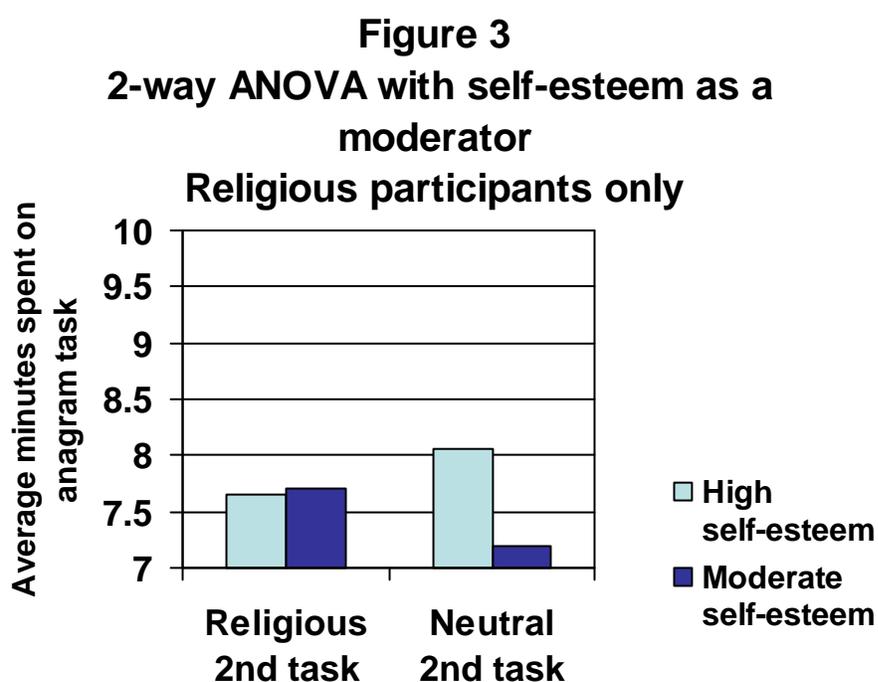
Anagram persistence time for nonreligious participants was also analyzed with self-esteem as a moderator using a 2 (condition) x 2 (self-esteem) between subjects ANOVA and no significant interaction was found, $F(1, 51) = 1.299$, $p = .260$. The non-significant pattern for nonreligious participants high in self-esteem was similar to religious participants high in self esteem. Nonreligious high self-esteem participants demonstrated greater self-regulation by spending more minutes on the neutrally framed anagram task (M = 9.43) than on the religiously framed anagram task (M = 7.69). For participants with moderate self-esteem there was very little difference in anagram persistence time on the religiously framed task (M = 7.91) and the neutrally framed task (M = 8.04), as can be seen in Figure 4.

Figure 4
2-way ANOVA with self-esteem as a moderator
Nonreligious participants only
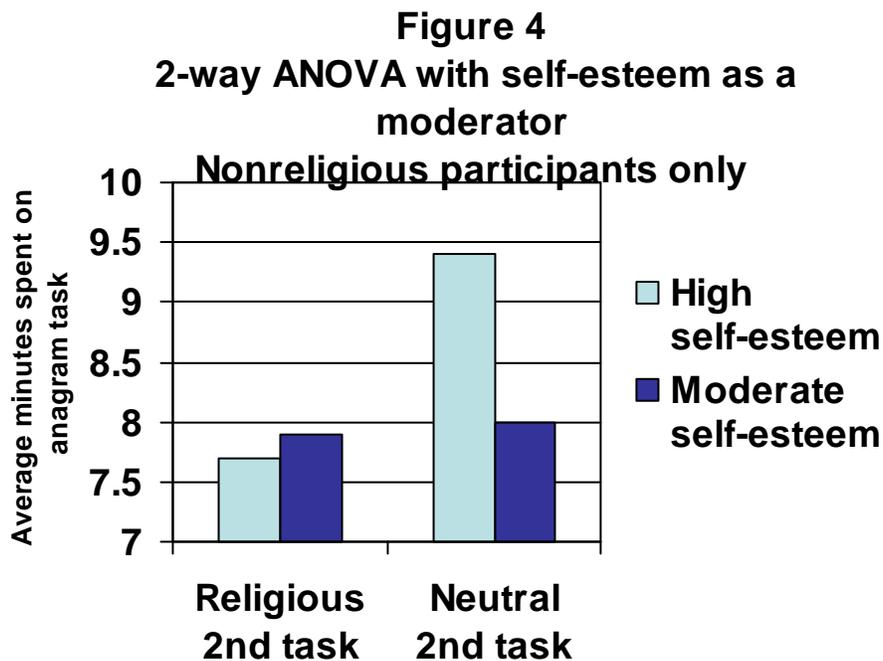
Discussion

As expected, no significant difference was found between the performance of religious and non-religious participants on the first self-control task. This finding is in line with previous studies which found that those who practiced self-regulation showed an increase in self-regulation on a second, but not a first, self-control task (Muraven, Baumeister, & Tice, 1999; Oaten, Cheng, & Baumeister, 2001). This finding, however, did not rule out the possibility that religious people have more self-regulatory resources than those who are nonreligious. This hypothesis that religious participants would exert more self-regulation than nonreligious participants on the second task, whether it was framed as religious or neutral, was not supported by this study's results. Therefore, the idea that intrinsically religious people have a greater amount of self-regulatory resources, compared to nonreligious people, did not receive support in this study.

Also contrary to predictions, the hypothesis that religious participants given a religious framing would exert significantly more self-control on the second task compared to both religious participants given a neutral framing for the second task and nonreligious participants, given either a religious or neutral framing, was found to be null. Thus, these results did not support the idea that people exert more self-regulation when a task is thought to be in a contingent domain of self-worth. It is possible that participants did not believe that the second task was related to religiosity or that the task was a domain of their contingent self-worth. One shortcoming of this study is that it lacked the inclusion of a manipulation check at the end, which could have given an indication of how convincing the second task framing was to participants.

Results did indicate that male, but not female, intrinsically religious participants tend to exert more self-regulation when they are told that the second task is related to religiosity than when male religious participants are not told this about the second task. Therefore, religious

males did exert more self-regulation when they considered the second task to be related to their self-worth contingent domain, as was predicted for all religious participants. The male participant group was less than three-fourth the size of the female participant group, and this small sample size may have been a cause for the finding of only a marginally significant difference in self-regulatory exertion between the two framed tasks for religious male participants. Men who consider religiosity to be an important source of self-worth may have been more competitive than females when performing the religiously framed task, a possible explanation for why religious males, but not religious females, showed greater self-regulation on the task related to religiosity. It is also possible that religious females feel less of a need to demonstrate their religious commitment in order to prevent a threat to self-worth, or they may value the relatedness aspect of religion more than males and therefore display less competitive behavior on the religious task.

<div align="center">Implications and Future Directions</div>

This study furthers self-regulatory research by suggesting that males and females may exert differing amounts of self-control when they perform in areas that are important sources of self-esteem to them. Overall, the present study has assisted in the understanding of how self-regulation is affected by religiosity and domains of contingent self-worth.

A future study could investigate whether different instructions for the second task, and/or the use of a different self-regulatory task, would produce a more believable religiosity-related task and the results hypothesized. A manipulation check should be included at the end of future studies to ensure that the second task's religious frame is accepted by participants.

Extrinsically religious participants may be used instead of intrinsically religious participants in a future study. It may be that extrinsically religious participants are more

motivated than those who are intrinsically religious to demonstrate their religious commitment and would therefore exert more self-regulation on a religiously framed task.

Finally, it would also be interesting for future studies to investigate the idea that people exert more self-regulatory resources when a task is related to a contingent domain by using areas of contingent self-worth other than religiosity, such as academic achievement, athletics, or physical appearance. Gender differences in these other contingent domains may shed greater light on whether men are actually more likely than woman to self-regulate in areas related to their self-worth, or if this pattern is specific to the domain of religiosity.

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Appendix A: Religiosity Measures Completed During Prescreening:

I identify most strongly with which of the following religions (Please circle one)

Judaism   Christianity   Islam   Hinduism   Buddhism   No religion   Other_____

My attitude towards religion in general is:

   -3   -2   -1   0   1   2   3
Very negative   neutral   Very positive

I practice the tenets of a religion:

   -3   -2   -1   0   1   2   3
 Never   Sometimes   Often

I would consider myself:

   -3   -2   -1   0   1   2   3
Not at all   Very religious
religious

Instructions: Please indicate whether you agree or disagree with the following statements.

1. If not prevented by unavoidable circumstances, I attend religious services:

    -3   -2   -1   0   1   2   3
 Strongly disagree   Strongly agree

2. I try hard to carry my religion over into all my other dealings in life:

    -3   -2   -1   0   1   2   3
 Strongly disagree   Strongly agree

3. I read literature about my faith:

    -3   -2   -1   0   1   2   3
 Strongly disagree   Strongly agree

4. My religious beliefs are what really lie behind my whole approach to life:

    -3   -2   -1   0   1   2   3
 Strongly disagree   Strongly agree

5. It is necessary for me to have a religious belief:

    -3   -2   -1   0   1   2   3
 Strongly disagree   Strongly agree

6. Whether I turn out to be religious or not doesn't make much difference to me:

	-3	-2	-1	0	1	2	3
Strongly disagree							Strongly agree

7. I find it impossible to conceive of myself not being religious:

	-3	-2	-1	0	1	2	3
Strongly disagree							Strongly agree

8. My faith involves all of my life

	-3	-2	-1	0	1	2	3
Strongly disagree							Strongly agree

9. My faith sometimes restricts my actions

	-3	-2	-1	0	1	2	3
Strongly disagree							Strongly agree

10. My faith impacts many of my decisions

	-3	-2	-1	0	1	2	3
Strongly disagree							Strongly agree

Appendix B: Prescreening Selection Based on Intrinsic Religiosity

- On the first prescreening item below, students who identified with Judaism or Christianity were considered further as potential religious participants since the other listed religions were only chosen a few times each and were not as applicable to the Contingencies of Self-Worth subscale "God' s love"(see below). Students who selected "No religion" were considered further as possible nonreligious participants.

- On the second item below, students who responded -2 or -3 were not contacted to participate because their possible anti-religious feelings might have resulted in complete disregard for a religiously framed task.

- Students who selected Judaism or Christianity continued to be eligible if they circled a number above zero on the last two items above. Students who did not identify with a religion but were not anti-religious were contacted to participate in the study if they circled a number below zero on the last two items above (the 10 questions below were

- checked to be sure that nonreligious students scored low on the intrinsically religious items, which they all did).

- The eligible religious students identified from the items below were then separated into intrinsically and extrinsically religious students based on the 10 items at the end of the prescreening questionnaire which were drawn from three different religious orientation scales (Allport & Ross, 1967; Batson, Schoenrade, & Ventis, 1993; Hoge, 1972).

- The self-reported Jewish and Christian students who scored at least a total of 13 on this 10 item composite scale were considered to be intrinsically religious for the purposes of this study and were invited to participate.

Appendix C: Modified Contingencies of Self-Worth Scale (Crocker & Wolfe, 2001)

Below are the items from the Modified Contingencies of Self-Worth Scale (Crocker & Wolfe, 2001) used in this study in the order shown. The 5 items that are a part of the "God's Love" subscale are presented in bold while the other subscales (academic competence, virtue, and approval from others) also each have 5 items presented in random order.

Instructions: Please **circle one number** as you indicate how much you agree or disagree with the following statements.

1. My self-worth is based on God's love.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

2. Doing something I know is wrong makes me lose my self-respect.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

3. I don't care if other people have a negative opinion about me.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

4. I feel worthwhile when I have God's love.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

5. I can't respect myself if others don't respect me.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

6. Whenever I follow my moral principles, my sense of self-respect gets a boost.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

7. My opinion about myself isn't tied to how well I do in school.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

8. I couldn't respect myself if I didn't live up to a moral code.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

9. I don't care what other people think of me.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

10. My self-esteem would suffer if I didn't have God's love.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

11. Doing well in school gives me a sense of self-respect.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

12. I feel better about myself when I know I'm doing well academically.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

13. What others think of me has no effect on what I think about myself.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

14. My self-esteem goes up when I feel that God loves me.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

15. My self-esteem is influenced by my academic performance.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

16. My self-esteem would suffer if I did something unethical.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	v Neutral	Agree	Agree Somewhat	Strongly Agree

17. When I think that I am disobeying God, I feel bad about myself.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

18. I feel bad about myself whenever my academic performance is lacking.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

19. My self-esteem depends on whether or not I follow my moral/ethical principles.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

20. My self-esteem depends on the opinions others hold of me.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree	Agree Somewhat	Strongly Agree

Appendix D: Prescreening Selection based on Religious Contingency of Self-Worth

- After all eligible participants completed the study, their scores on the Contingencies of Self-Worth subscale "God's Love" (see items below) were added. Participants completed a modified version of the Contingencies of Self-Worth scale (Crocker & Wolfe, 2001), but only the religious subscale was really of interest in this study since it was necessary that all of the participants identified during prescreening as intrinsically religious also scored high on this religious contingency subscale. In fact, it was more important that religious participants place a great amount of their self-worth in religious domains than for them to be high in intrinsic religiosity since the main hypothesis tests the idea that people will exert more self-regulation on tasks they believe to be related to an area of their self-worth.

- This modified CSW Scale included 5 items from each of the following subscales: God's love, academic competence, virtue, and approval from others (20 questions total). However the actual CSW Scale also includes the subscales family support, competition, and appearance for a total of 35 questions.

- We reduced this scale in the interest of time and chose to leave out the three subscales listed above because they didn't seem to blend in with the God's love subscale, while the subscales like virtue and approval from others seemed to make the religious priming less obvious (this first task served to remind religious participants of their religiosity in addition to allowing for later identification of religious contingency strength).

- Only data from religious participants who had a total score of 25 or above (the maximum was 30) was kept in the analysis, and data from nonreligious participants with a score of 15 or below was also included in the final analysis. The experiment data from the 101

- participants who scored between 16 and 24 on the "God's Love" subscale were eliminated from the final analysis in order to ensure that the remaining participants' self-worth had a very strong or weak contingency upon being religious.

Appendix E: Rosenberg Self-Esteem Scale Included in the Prescreening Measure

Instructions: Below is a list of statements dealing with your general feelings about yourself. For each statement, **circle one option** to indicate whether you strongly agree, agree, disagree, or strongly disagree.

1. On the whole, I am satisfied with myself.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

2. At times I think I am no good at all.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

3. I feel that I have a number of good qualities.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

4. I am able to do things as well as most other people.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

5. I feel I do not have much to be proud of.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

6. I certainly feel useless at times.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

7. I feel that I'm a person of worth, at least on an equal plane with others.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

8. I wish I could have more respect for myself.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

9. All in all, I am inclined to feel that I am a failure.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree

10. I take a positive attitude toward myself.

1	2	3	4
Strongly agree	Agree	Disagree	Strongly disagree