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# Culture and Regulation: Examining Collectivism and Individualism as Predictors of Self-Control

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CULTURE AND REGULATION: EXAMINING COLLECTIVISM AND INDIVIDUALISM  
AS PREDICTORS OF SELF-CONTROL

by

MICHAEL B PYLE

(Under the Direction of Michael Nielsen)

ABSTRACT

Self-control is the capacity to alter one's intended or instinctual behavior in order to align with societal and cultural standards. It has been suggested that the ability to exert self-control has developed evolutionarily in order to increase the odds of one and one's family's survival through participating in a society. A prediction resulting from this is that horizontal collectivism, in which individuals consider themselves as equals acting toward a shared goal, should predict self control, because a focus on one's ties to others will requires a greater development for restraining one's self. Conversely, vertical individualism, in which individuals are considered autonomous, independent agents, was predicted to show a negative relationship with self-control because of that orientation's decreased commitment to align with cultural standards. To examine these predictions, participants completed a series of questionnaires to identify their cultural dispositions. Ultimately, no relationship was found suggesting that horizontal or vertical collectivists had more self-control than horizontal or vertical individualists. Follow-up analyses using selected scale items, however, indicated a trend in the predicted direction, which suggests that future research using more robust and sensitive measures may support the predictions. Additionally, religious measures of collectivism and individualism (extrinsic and intrinsic religiosity respectively) were examined for predictive ability for self-control. Both constructs did predict self-control, but religious commitment showed to be a far more powerful predictor.

INDEX WORDS: Collectivism, Individualism, Self-control, Religiosity

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## DEDICATION

This thesis is dedicated to my grandfathers: Michael DeLuccia and Luther Arnold Pyle. From two entirely different backgrounds, each of these men worked tirelessly to ensure that not only their children be provided with an education, but that their grandchildren would have the opportunities to pursue their passions in life and learning. I aspire, everyday, to be as kind, as wise, as loving, and as generous as both Pop Pop and Granddaddy.

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## CHAPTER 1

### INTRODUCTION

One's ability to keep from engaging in an undesirable behavior has numerous positive outcomes for the future of that individual such as better health, a happier marriage, and closer relationships over time. Being able to control one's self is also beneficial to the society at large. When people behave in ways that agree with society's norms, everyone gets along better.

Past research has not sufficiently explored whether there are differences between cultures in terms of how well individuals overcome their own desires to align themselves with standards held by their own culture. This thesis focuses on collectivism, individualism, and religiosity as predictors of capacity for self-control.

#### *Self-Control*

*Self-control* has been defined as the capacity to override one's natural response tendency (Vohs & Baumeister, 2004), and is vital for everyday living within society (Geyer & Baumeister, 2005). This capacity to override one's natural response allows individuals to keep from slamming into the back of someone who cut into traffic, as well as not eating the cookie a friend offers in order to abide by a set of dietary restrictions. This is to say that self-control allows people to stop themselves from doing what they would rather do based on some external demands (e.g., society demands restraining from ramming the driver from earlier), or internal demands (e.g., not eating the cookie because it is not healthy).

Self-control has two major aspects that have been the primary targets of research. The first aspect is that there are individual differences in the capacity for self-control (Baumeister & Heatherton, 1996; Geyer & Baumeister, 2005), with some people having more self-control than

others. The second important aspect of self-control is that it functions like a muscle. It can be both depleted and even strengthened over time.

People differ with regard to the amount of self-control they are able to exert. Person “A” may be much better able to resist a cookie than Person “B”. Not only is Person “A” better off for not eating the cookie, but having this higher capacity has shown other positive outcomes over time. For instance, Mischel, Shroda, and Peake (1988) showed that four year olds who were better at a delay of gratification task were in better academic standing after ten years than those who performed poorly. This suggests that having high levels of self-control is not only beneficial to the individual, but that this trait is also fairly stable over time.

The second important aspect to note is that self-control is a limited resource. That is to say that self-control depends on a resource that when exerted, one is less capable of calling upon that resource on a subsequent task. Baumeister and Heatherton (1996) have suggested that this limited resource is similar to muscle. For example, a person who goes to the gym and participates in an extensive bicep workout will have a certain refractory period in which the muscle will be less capable of performing. Much like this muscle, when individuals exert self-control to refrain from eating the cookie without ample recovery time, they put themselves in a state of being less capable of resisting the cookie if it were presented again.

In line with the individual differences of self-control and with the muscle model of self-control, it has been shown that people who practice self-control have a resource that is less susceptible to depletion (Muraven, Baumeister, & Tice, 1999). Over time, participants who exerted small amounts of self-control many times per day (e.g., brushing teeth with non-dominant hand, sitting with an upright posture) were less susceptible to depletion when they came back after two weeks than participants who had no special instructions. This would be like

if someone regularly worked out his/her biceps. The subsequent refractory period would be shorter, and he/she would be able to resume normal functioning of that muscle more quickly. If a person rarely worked out, and participated in an extensive workout, he/she would take much longer to replenish the full capacity of that muscle.

According to Geyer and Baumeister (2005), self-control operates in three stages: acquisition of standards, monitoring, and the alteration of behavior. The *acquisition of standards* occurs daily, from childhood through adulthood. This learning process entails behaviors that are socially appropriate being positively reinforced (e.g., given a gold star for sharing), and those that are not socially appropriate being punished (e.g., put in time out, ostracized). *Monitoring* is the process of an individual identifying one's behavior and to what extent that behavior aligns to the learned standards of the society. These steps build upon each other. Without the acquisition of society's standards, identifying the disparity between behaviors and norms is impossible. The final stage is *altering behavior* to better fit in line with what society expects, regardless of whether it is desirable to the individual. This step is the most difficult in that it drains an underlying mental resource that feeds the capacity for executive functioning, which is responsible for higher order processing such as planning future actions, initiating retrieval and decision processes as necessary, integrating information coming into the system (Ashcraft, 2002), and emotion regulation, the effortful influence of the experience, expression, or duration of an emotional response (Schmeichel, Volokhov & Demaree, 2008).

Schmeichel (2007; Schmeichel, Vohs, & Baumister, 2003; Schmeichel, et al., 2008) has conducted a program of research to explore this resource and the effect depleted self-control has on executive functioning and emotion regulation. In one study, Schmeichel et al. (2003) showed that participants exerting self-control on a regulatory task performed more poorly on a

subsequent cognitive task than participants who did not exert self-control; answering fewer questions, getting less right, and obtaining a lower percentage score than participants who did not exert self-control. Interestingly though, participants in the depletion condition that were asked to perform a maintenance task, involving no executive functioning, did not do as poorly as depleted participants that were asked to perform an executive task, involving higher order processing located in the prefrontal cortex. This study shows that after being depleted of this central resource, simple maintenance recall was not hindered, only performance on tasks in which higher order tasks were involved.

Self-control is vital for cultural species such as humans (Baumeister & Heatherton, 1996), so it would be appropriate that the ability to overcome one's natural inclination to do what is best for one's self would be socially adaptive. That is, behaviors that benefit society outlast behaviors that benefit the individual. The reasoning behind self-control being so vital for societal functioning is based on Freud's (1949) suggestions that the human is, in its natural state violent and sexual. This is fitting, given that humans, as animals, have been driven by the same evolutionary motives as other animals: to survive, and then to procreate and pass on their own genes. Geyer and Baumeister (2005) suggest that by nature, the interests of the individual are often at odds with the interests of the society. As put bluntly by McCullough and Willoughby (2007, p. 9) "the best average outcome is to be gained by cooperating amidst a group of cooperators, but the best possible outcome is to be gained by being the only defector amidst a group of cooperators."

McCullough and Willoughby (2007) use two examples to express the adaptive benefits of living in a collectivist society: cooperative hunting and agriculture. Alone, one stands a far smaller chance of surviving. Finding food is a difficult task for any one person, and at best,

whatever will be able to be caught and eaten will be fairly insufficient due to its accessibility by one hunter. On the other hand, a group of 10 men with their efforts combined are able to bring an entire buffalo to the community. In the case of agriculture, an individual can grow far less crop by them self as opposed to the amount that can be produced by the effort of an entire community.

Imagine, now, the cooperator and the defector. It is obvious what the benefits of being a cooperator amidst the group entail, for example, access to a larger mating pool and cultural assisted likelihood of survival. It is safe to say that there are few downsides to attending to this role. The defector creates a host of problems. For instance, consider a group of 10 men who go out to kill a buffalo and return triumphant. The portions are then dispersed equally, one tenth for each individual that helped with the hunt. Now suppose that a single defector steals another man's tenth of the share. Of course, the defector will be punished, perhaps ostracized from the community and forced to fend for himself and for his family. This is a very aversive consequence, and may be responsible for the adaptive properties that lead to self-control.

This situation presents one fundamental problem. What if the single defector, in the middle of the night stole another man's share? No one saw him and he left no evidence. What about a far more subtle defection? If the single defector was the man cutting the meat, what might stop him from giving himself two tenths of the buffalo and distributing the eight tenths out to the other nine men without them knowing? Clearly, if people are getting away with these social infractions, there is no incentive to exert the self-control necessary to align themselves with societal norms.

As stated before, individuals differ in their capacity for self-control (Baumeister & Heatherton, 1996; Geyer & Baumeister, 2005). Also, as stated before, self-control is culturally

adaptive. All cultures, of course, have different standards. Most have underlying basic principles, such as ‘do not kill’ and ‘do not steal’, however, cultures come from different areas of the world which often present a unique set of demands, and therefore are forced to adapt in a particular way. Suggesting that these sophisticated social structures led to the creation of morals and ethics, would be to imply that there may be residual cultural differences in terms of how much of the limited resource self-control the culture’s individuals have to call upon.

From extreme uses of self-control, such as to suppress anti-social behavior, to more menial uses such avoiding Facebook in order to complete a term paper, this complex and fragile resource helps keep individuals operating cohesively with the people around them as well as operating optimally for the self. Studying self-control can lead to new discoveries regarding ways to buffer against depletion caused either by the individual or by the situation, and by exploring individual differences in self-control, can serve as a guide to the sorts of messages required to give to certain types of individuals in differing cultures in order to boost self-control capacity.

### *Individualism and Collectivism*

The impact of culture on individuals is large in that individuals grow and develop, learning from the environment around them. Hofstede (1980) identified a major factor that explains differences in behavior between cultures: individualism vs. collectivism. Individuals in collectivistic cultures are concerned with the well being of the in-group. They put the goals of the in-group ahead of their own and their behavior is regulated by social norms rather than their personal attitudes (Triandis, 2001). For example, Asian cultures are often used as samples of collectivistic cultures (see Sugimoto, 1998; Trafimow, Triandis, & Goto, 1991; Yamaguchi, Kuhlman, & Sugimori, 1995), as well as South American countries (Hofstede, 1980; Chiou,

2001), because these cultures think and behave in a manner which emphasizes the interdependence of every human in the collective, whether it be the nation, a city, or a family (Triandis, 2001). In one study, Chiou (2001) showed that a sample of students from Buenos Aires, Argentina showed the same collectivistic patterns as did a similar sample of students from Taipei, Taiwan, suggesting that there are cultures dispersed throughout the world with similar cultural emphases. Conversely, individualistic individuals often focus on personal goals over those of society and behave in a manner consistent with their attitudes over societal norms. Western cultures, such as the United States, are typically used as an example of individualistic culture (see Sugimoto, 1998; Trafimow, Triandis, & Goto, 1991; Yagamuchi, Kulhman, & Sugimori, 1995), as this culture emphasizes the individual's independence from any group (Triandis, 2001). As Cukur, De Guzman, & Carlo (2004) and Chiou (2001) show, United States samples consistently show higher scores on individualistic items and lower scores on collectivistic items.

Societies are not split so simply into these two categorizations, however. Some countries emphasize a hierarchical order (vertical culture), while some emphasize equality within the in-group (horizontal culture) regardless of their individualistic or collectivistic cultures (Singelis, Triandis, Bhawuk, & Gelfand, 1995, Triandis, 2001). To examine this distinction, Singelis et al. (1995) examined the interaction between horizontal-vertical cultures and individualistic-collectivistic cultures. These authors proposed four distinct levels: horizontal individualism, vertical individualism, horizontal collectivism, and vertical collectivism.

Horizontal collectivism is characterized by a strong identification of the self to the in-group without any distinction between status levels. Everyone is interdependent and equality is stressed. Emphasis is placed on communal sharing and equality amongst the in-group (Singelis



et al., 1995). HC is correlated with benevolence across cultures (Cukur et al., 2004) as well as approach to clan like structures orientated to a family-like atmosphere (Gardner et al., 2009). Both Chiou (2001) and Cukur et al. (2004) found that there is a consistent level of HC across cultures throughout different countries in that typically collectivistic countries (Argentina, Turkey) tend to have the same amount of horizontal collectivistic traits as typically individualistic countries (United States).

Vertical collectivism reflects a community in which every person considers the in-group ahead of the individual, while maintaining a sense of hierarchy. That is, while there is an overall motivation to put the group above the self, there are still distinctions between the status levels of individuals amidst the group. VC cultures emphasize communal sharing as well as authority ranking, maintaining both a high sense of interdependence and a low sense of independence (Singelis et al., 1995). The United States consistently scores lower on VC than typically more collectivistic cultures (Chiou, 2001; Cukur et al., 2004) purportedly due the construct's emphasis on hierarchical adhocracy supporting tradition (Gardner et al., 2009) and its limitations on relying on one's own personal abilities in order to achieve success.

Horizontal individualism occurs in cultures wherein, while every person is unique, and everyone is equal amongst the group. That is to say that instead of being innately tied homogeneously to those considered a part of the in-group, the self is autonomous and independent of others while still viewing everyone as equal. Individuals high in HI are often in search of uniqueness, creativity, autonomy and often take risks as a result of the little consequence inherent in either succeeding or failing (Komarraju & Cokley, 2008). HI correlates positively with independent self-construal (Singelis et al., 1995), universality (Cukur et al., 2004), and approach to companies with an adhocratic structure (Gardner, Reithel, Foley, Coglisier, &

Walumbwa, 2009), while correlating negatively with interdependent self-construal (Singelis et al., 1995) and modesty (Kurman & Sriram, 2008). Individuals in the United States have consistently scored higher than other countries typically considered collectivistic (Chiou, 2001; Cukur et al., 2004).

Vertical individualism maintains that everyone is unique and that some people are better than others, creating a hierarchical order in the group. These are cultures in which the autonomous self is still valued, but, unlike horizontal individualism, the culture is structured hierarchically with each person's position based upon their status. While the individuals in the United States consistently show high levels of VI, other, more collectivistic countries have shown an emergence of VI (Chiou, 2001; Cukur et al., 2004). Chiou suggests that this is the result of the emergence of market economies in these countries that inherently put more value on equity than on equality. VI individuals are attracted to organizations which sate their internal drive for competition, autonomy, achievement, and the success incurred as a result of a combination (Cukur et al., 2004; Gardner et al., 2009)

To further refine the constructs proposed by Sengelis et al. (1995), Triandis and Gelfand (1998) developed a 16-item scale with four items for each distinction. Triandis and Gelfand found that the items were perceived similarly across cultures (Korea vs. United States), and not interpreted differently as was concerned.

#### *Present research*

This program of research seeks to uncover cultural differences in the capacity to override one's dominant response tendency. Based upon Triandis and Gelfand's (1998) work, it is suggested that horizontal collectivists will have a higher capacity for self-control. This is due to the idea that no one is better, no one is worse, and everyone works towards the collective. Next,

vertical collectivists should prove to have the next highest level of self-control. This is due to the importance placed on the collective over the self. Individuals who score highly on horizontal individualism should begin to show a negative relationship with self-control. As one becomes less innately interested in putting the collective over the self, one should be less apt to regularly force themselves to adhere to social norms. Lastly, vertical individualists should have a large, negative relationship with self-control.

## CHAPTER 2

### METHOD

#### *Participants*

This study was conducted online with 140 participants recruited from a Southeastern university's introductory psychology course. Six participants were excluded from the analysis for not completing the survey, and one was excluded after expressing concern that their hypothyroidism may impact their everyday capacity for self-control, leaving 133 in the analysis. Of these participants, women ( $n = 92$ ) outnumbered men ( $n = 41$ ). The average age was 20.15 ( $SD = 4.67$ ). The sample was overwhelmingly Caucasian ( $n = 91$ ). African-Americans were the next most populous ( $n = 27$ ), followed by Asians ( $n = 7$ ). Unknown or not reported made up the remainder of the participants. Christians constituted the majority of the sample ( $n = 94$ ) splitting into Protestantism ( $n = 80$ ) and Catholicism ( $n = 14$ ). There were two Jewish respondents and one Muslim respondent. The remaining participants ( $n = 36$ ) responded "Other" which ranged from Agnosticism, to Atheism, to no belief at all. Participants received course credit for completing the survey.

#### *Materials and Procedure*

A battery of questionnaires was completed by participants using the online survey vehicle [www.SurveyMonkey.com](http://www.SurveyMonkey.com). As there were no experimental manipulations, the questionnaires were presented to participants randomly to prevent any order effects.

The Brief Self-Control Scale (BSCS) (Tangney & Baumeister, 2004; Appendix A) consists of questions that tap into the trait ability to override one's dominant response tendency and will serve as the dependent measure of self-control for this study. The appropriate items were reversed-scored and a composite mean was computed for analysis.

Triandis and Gelfand's Individualism-Collectivism scale (1998, Appendix B) measured horizontal and vertical collectivistic and individualistic traits in participants.

Other questionnaires of exploratory interest included the Intrinsic/Extrinsic Religiosity Scale-Revised (Gorsuch & McPherson, 1989, Appendix D), and the Religious Commitment Inventory (Worthington, et al., 2003, Appendix E) to explore whether individual personality traits correlate with self-control, individualism, or collectivism. Demographic information, such as religion, age, and gender was also collected (Appendix C).

Finally, in an effort to take a performance measure to compliment the self-report measure taken from the brief self-control task, participants were offered an opportunity to win a \$15 gift card for continuing to participate by answering more questions. 100 questions were presented randomly, one at a time, from various innocuous and irrelevant scales as well as quantitative problems from GRE workbooks (Appendix F). The participant was instructed that if they would like, they could continue to answer more questions, and that answering more questions would raise their odds of winning the raffle. To check for "Christmas treeing", ten probes were randomly inserted into the questions instructing the participant to select none of the available answers, but to select "Next" instead. If the participant responded to one of these probes, their participation was marked as ending at that point. Task persistence was the measurement of self-control in that participants needed to forgo the short term gain of quitting the survey for the long term gain of increased odds of winning the raffle.

#### *Data Preparation*

For the Intrinsic/Extrinsic-Revised Scale, the appropriate items were reversed scored and means for its subscales were computed for use in analysis.

Each four-item subscale (horizontal collectivism, vertical collectivism, horizontal individualism, and vertical individualism) was averaged yielding four mean scores for each participant. Unfortunately, inter-item reliability for each of the four scales proved low ( $\alpha$ s = .71, .59, .70, and .63, respectively). As such, these composites were unusable in order to test the main hypothesis. In an effort investigate trends, a correlation matrix (see Table 1) was examined for each set of four subscales. Each subscale had one item which significantly correlated with self-control. These items were HC1, “If my coworker gets a prize, I would feel proud” ( $r = .29$ ,  $p > .001$ ), VC4, “It is important to me that I respect the decisions made by my groups” ( $r = .22$ ,  $p = .012$ ), HI3, “I often ‘do my own thing’” ( $r = -.17$ ,  $p = .053$ ), and VI4, “When another person does better than I do, I get tense and aroused” ( $r = -.21$ ,  $p = .019$ ). These items were entered into subsequent regression analyses as representatives to their particular construct.

## CHAPTER 3

## RESULTS

*Primary Analysis*

To investigate the predictive power of Triandis and Gelfand's (1998) horizontal and vertical collectivism and individualism onto self-control, a simultaneous multiple linear regression was conducted regressing the brief self-control composite onto the HC, VC, HI, and VI composites. The overall model was not significant  $F(4, 120) = 1.609, p > .05$ . None of the predictor variables were significant (see Table 2,  $ps > .1$ ). Likewise, the self-control performance measure yielded no significant results when regressed onto HC, VC, HI, and VI  $F(4, 125) = 1.177, p > .05$ . None of the predictor variables were significant (see Table 3,  $ps > .1$ ).

In an effort to uncover trends that were potentially masked by the poor reliability of the composite scales, single-item representatives were analyzed using multiple regression. Items VC4, HC1, VI4, and HI3 were entered simultaneously using self-control as the criterion. The overall regression model was significant  $F(4, 122) = 5.617, p < .001$ . Analysis of individual predictors shows a trend toward the predicted hypothesis (see Table 3, Figure 1). HC1 significantly predicted self-control ( $\beta = .206, p = .038, \text{partial } r^2 = .175$ ). VC4 did not significantly predict self-control ( $\beta = .141, p = .152, \text{partial } r^2 = .120$ ), however, its beta remained positive and less than HC1. HI3 also did not significantly predict self-control ( $\beta = -.104, p = .222, \text{partial } r^2 = -.102$ ). Its beta did land in its predicted place, which was negative and in-between the VC and VI items. VI4 significantly negatively predicted self-control ( $\beta = -.221, p = .01, \text{partial } r^2 = -.217$ ).

*Secondary Analyses*

Cohen and Hill (2007) suggested that extrinsically motivated religiosity is as much a by-product of more collectivistic cultures as intrinsic religiosity is of individualistic cultures. Based on this postulation, extrinsic religiosity scores should positively predict self-control, and intrinsic religiosity should negatively predict self-control. In an effort to examine individualism and collectivism from a religious angle, two hierarchical regressions were conducted. Extrinsic religiosity was evaluated as to whether it could significantly predict self-control in the first step, and in the second whether it could uniquely predict self-control above and beyond one's religious commitment (RCI-10). Intrinsic religiosity was evaluated in the same manner.

The regression model including extrinsic religiosity on self-control proved significant,  $R^2 = .059$ ,  $F(1, 125) = 7.874$ ,  $p = .006$ . When religious commitment was added, the overall model remained significant,  $R^2 = .134$ ,  $\Delta R^2 = .075$ ,  $F(2, 124) = 9.596$ ,  $p < .001$ . The predictive power of extrinsic religiosity in the first model,  $\beta = .243$ ,  $p = .006$ , was greatly reduced ( $\beta = .052$ ,  $p > .6$ ), when religious commitment ( $\beta = .334$ ,  $p = .001$ , partial  $R^2 = .273$ ) accounted for a large amount of variance (see Table 5). This suggests that extrinsic religiosity, itself, predicts self-control, but that it does not sustain its predictive power over religious commitment.

A model including intrinsic religiosity proved significant,  $R^2 = .134$ ,  $F(1, 125) = 13.828$ ,  $p < .001$ , with intrinsic religiosity serving as a significant predictor, ( $\beta = .316$ ,  $p < .001$ ). However, adding religious commitment changed the model significantly,  $R^2 = .100$ ,  $\Delta R^2 = .034$ ,  $F(2, 124) = 9.576$ ,  $p < .001$ . Intrinsic religiosity ( $\beta = -.097$ ,  $p = .635$ , partial  $r^2 = -.040$ ) lost predictive strength when religious commitment ( $\beta = .452$ ,  $p = .029$ , partial  $r^2 = -.185$ ) was added (see Table 6). This suggests that above and beyond intrinsic religiosity, one's religious commitment is a far better predictor of self-control.



## CHAPTER 4

### DISCUSSION

The main purpose of this study was to investigate the underlying mechanism that provides individuals of varying cultural values either a higher or lower capacity to regulate them self. Using horizontal and vertical collectivism and individualism, the goal was to show that self-control is an evolutionary by-product of the drive to be within a group in order to raise one's chances of survival. If this were the case, data should show that those who are more innately collectivistic, and therefore exhibiting a greater sense of interdependence on others in the group, should show a greater capacity for self-control. Conversely, individuals who are generally independent of others should show that they have less self-control as a result of not being compelled to abide by the norms and wishes of those around them.

#### *Primary Hypothesis*

Studies in the past have showed mixed results in attempting to examine horizontal and vertical collectivism and individualism (Singelis et al., 1995, Triandis & Gelfand, 1998, Lalwani, Shavitt, & Johnson, 2006, Sivadas, Bruvold, & Nelson, 2008, Komarraju & Cokely, 2008). Singelis et al. (1995) initially created a 32-item scale to reflect HC, VC, HI, and VI as they were defined by Triandis (1995). Each subscale had eight items, and had Cronbach's alphas of .74, .68, .67, and .74, respectively. Triandis and Gelfand (1998), in an effort to reduce the size of the scale in order to save student's and researcher's time, trimmed the scale to four 4-item scales. Alphas were not reported for this 16-item scale, however the authors make the point that with an increasing sample size, low alpha levels may not accurately represent a scale's reliability. Lalwani, Shavitt, & Johnson (2006) used Triandis and Gelfand's 16-item scale citing moderate low alpha levels (.55, .67, .70, and .72, respectively) as acceptable for retention.

Sivadas, Bruvold, and Nelson (2008) were critical of both the Sengelis et al. (1995) and Triandis & Gelfand (1998) scales citing that neither were sufficient for use based on their low reliability as well as their inability to measure uniformly across cultures. While the Sivadas et al. (2008) scale was developed using samples from the United States, Denmark, India, and China, and subsequently showed reliability across cultures, the Triandis and Gelfand (1998) scale was developed in, and initially tested on individuals from the United States. As the sample for this study was from the same overall culture, it was deemed appropriate for use with subjects whom also reside in the United States.

Unfortunately, not only was reliability for all of the subscales rather weak, but the scales also offered no predictive ability for the main hypothesis that horizontal collectivism would have a strong, positive relationship with self-control, vertical collectivism having a positive, yet non-significant relationship, horizontal individualism having a negative relationship, and vertical individualism having a significantly strong, negative relationship. As this study has rendered null results, no conclusions can be made.

The individual item analysis (one item for each of HC, VC, HI, and VI) showed that there may be enough of a trend to suspect that there is a relationship (Figure 1). This uncovers two significant relationships. The first (HC1) is that the greater someone feels for a coworker, the greater self-control he/she has. This could be a result of feelings of being innately tied to the group, and therefore would bolster the amount someone would forego their own goals to see the group succeed. The second (VI4) shows that when a person is aware they are being outperformed, he/she will get “tense and aroused” has a negative relationship with self-control. This appears to be the exact opposite of the HC1 item, and therefore would predictably show an opposite reaction. Instead of putting one’s own goals aside for the sake of the collective, people

with high vertical individualism put their goals first, and therefore have no need to override their instinctual response to succeed for themselves. The other two items, VC4 and HI3 while moved in the predicted directions, were not sufficient enough to suggest relationships with self-control.

Though this analysis is not sufficient to draw any conclusions from, as there is no demonstrated validity that these single-items scales accurately measure their corresponding construct, the standardized betas suggest that they predict self-control in the hypothesized direction. The fact that each of these items derive from the four subscales suggests that further testing with more reliable scales may show the hypothesized results.

### *Secondary Hypothesis*

The inherent collectivistic properties of extrinsic religiosity proposed by Cohen and Hill (2007) led to the hypothesis that individuals that are higher in extrinsic religiosity will also have a higher capacity for self-control. An initial bivariate correlation showed that these two variables have a strong, positive relationship. Counter to the hypothesis that the individualistic properties of intrinsic religiosity would predict a negative relationship with self-control, intrinsic religiosity correlated positively with the extent participants rate their ability to override their dominant response tendency. This shows that people who attend to congregations that are generally more collectivistic do not necessarily have a higher capacity for self-control than those who attend to congregations that are generally more individualistic. It may simply be the case that as long as a person belongs to some religious group, and regularly participates, his or her self-control capacity is bolstered.

While both of these constructs predicted self-control, when religious commitment was entered as a predictor in the second step of each hierarchical regression, it accounted for enough variance to render extrinsic religiosity and intrinsic religiosity insignificant. Ultimately, it was

discovered that “the degree to which a person adheres to his or her religious values, beliefs, and practices and uses them in daily living” (Worthington et al., 2003) was a far better predictor of self-control than intrinsic or extrinsic religiosity. This may suggest that despite the lasting debate on whether an organized religious structure is necessary, or even appropriate, institutionalized religion may actually serve its purpose in keeping people in order with social norms – that is, social norms disguised as religiously appropriated behavior.

#### *Further Research*

Though the present research failed to show a strong relationship between collectivism/individualism and self-control, there remain reasons to pursue work in the area. Given the low reliability of the measurement used to determine collectivism and individualism, it would be possible to use other scales developed for a similar purpose. For instance, some variance might have been lost in the reduction of Singelis et. al’s (1995) original 32-item scale to the 16-item scale used in this study (Triandis & Gelfand, 1998). Sivadas et. al (2008) had also created an HV-IC scale that was developed using various cultures and may thus be a more appropriate measurement to use in the future.

A recent review has provided evidence to suggest that self-control, as an unconscious process, can be governed largely by one’s religiosity (Koole, McCullough, Kuhl, & Roelofsma, 2010). Atran and Norenzayan (2004) suggested that “ Religion and culture [serve] as bundles of functionally integrative, fitness-bearing traits: for example... machinelike patterns of collective norms (p 718)”. These collective norms serve as the societal standards of which one either overrides his or her instinctual motive (by means of exerting self-control) or does not (by not exerting self-control.) As religion and culture are bundled together, they should both promote

evolutionarily beneficial functions involving “social (bolstering group solidarity), and economic (sustaining public goods, surplus production) utility (p. 718).”

Very little research has been done on the direct connection between collectivism/individualism and self-control, however Lee (2000) investigated cultural differences on the tendency for people to promote themselves or to put the group first. These studies took samples from European Americans (serving as the individualist culture) and from Chinese from Hong Kong (serving as the collectivistic culture). For a measure of self-regulation, Lee measured promotion orientation behavior vs. prevention orientation behavior. Promotion orientation behavior is categorized by behavior indicating personal growth and accomplishments (Lee, 2009). This would suggest a pattern in which a person would be less prone to override their dominant response in order to conform to evolutionarily adaptive societal norms. Prevention orientation behavior is reflected in a person’s tendency to abide by his or her personal responsibilities to the group (Lee, 2009). Lee showed, as predicted, that Chinese individuals exhibited greater prevention orientation behavior while Americans exhibited greater promotion orientation behavior. These findings provide evidence of a link between collectivism/individualism and self-regulation that requires further investigation.

As Lee (2000) showed, there is evidence that there are cultural differences in the way people handle their dominant response tendency. Expanding the sample to include a greater number of ethnically and culturally diverse individuals may show cultural differences. Given that cultural differences are then found, it would then be possible to begin to identify the particular cultural mechanism that drives differences in the capacity for self-control.

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Table 1

*Horizontal and Vertical Collectivism and Individualism Single Item Correlations with Self-Control*

Item	Self-Control	<i>M</i>	<i>SD</i>
HC1	.294***	3.35	.913
HC2	.146	3.81	.719
HC3	-.034	3.70	.913
HC4	.083	3.92	.759
VC1	.063	3.20	1.043
VC2	.093	3.76	.934
VC3	.008	3.80	1.003
VC4	.222**	3.65	.838
HI1	-.117	4.23	.806
HI2	-.036	3.71	.903
HI3	-.172*	3.80	.957
HI4	.007	4.19	.880
VI1	.102	3.75	.916
VI2	-.006	2.55	1.125
VI3	.051	3.49	.966
VI4	-.207**	2.97	.929

*Note.* See Appendix B for individual items. For self-control,  $M = 3.12$ ,  $SD = .548$ . \*\*\*  $p < .01$  \*\*  $p < .05$  \*  $p = .053$ .

Table 2.

*Multiple Regression Predicting Self-Control from Horizontal and Vertical Collectivism and Individualism*

Variable	Self-Control		
	<i>B</i>	<i>SE B</i>	$\beta$
Constant	2.88	0.433	
Horizontal Collectivism	0.136	0.095	0.150
Vertical Collectivism	0.071	0.086	0.082
Horizontal Individualism	-0.125	0.097	-0.138
Vertical Individualism	-0.003	0.081	-0.004

Table 3.

*Multiple Regression Predicting Task Persistence from Horizontal and Vertical Collectivism and Individualism*

Variable	Self-Control		
	<i>B</i>	<i>SE B</i>	$\beta$
Constant	27.638	23.198	
Horizontal Collectivism	-4.926	5.242	-.098
Vertical Collectivism	.684	5.322	.148
Horizontal Individualism	7.068	4.478	.014
Vertical Individualism	2.681	4.420	.059

Table 4.

*Multiple Regression Predicting Self-Control from Horizontal and Vertical Collectivism and Individualism Single Items*

Variable	Self-Control		
	<i>B</i>	<i>SE B</i>	$\beta$
Constant	2.987	0.309	
HC1	0.124	0.059	0.206*
VC4	0.091	0.063	0.141
HI3	-0.059	0.048	-0.104
VI4	-0.130	0.050	-0.221*

Note. \*  $p < .05$

Table 5

*Hierarchical Multiple Regression Predicting Self-Control from Extrinsic Religiosity and Religious Commitment*

Variable	Self-Control			
	$\Delta R^2$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1	.059**			
Constant		2.790	.128	
Extrinsic Religiosity		.147**	.052	.243**
Step 2	.075***			
Constant		2.361	.132	
Extrinsic Religiosity		.032	.062	.052
Religious Commitment		.154**	.047	.334**

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

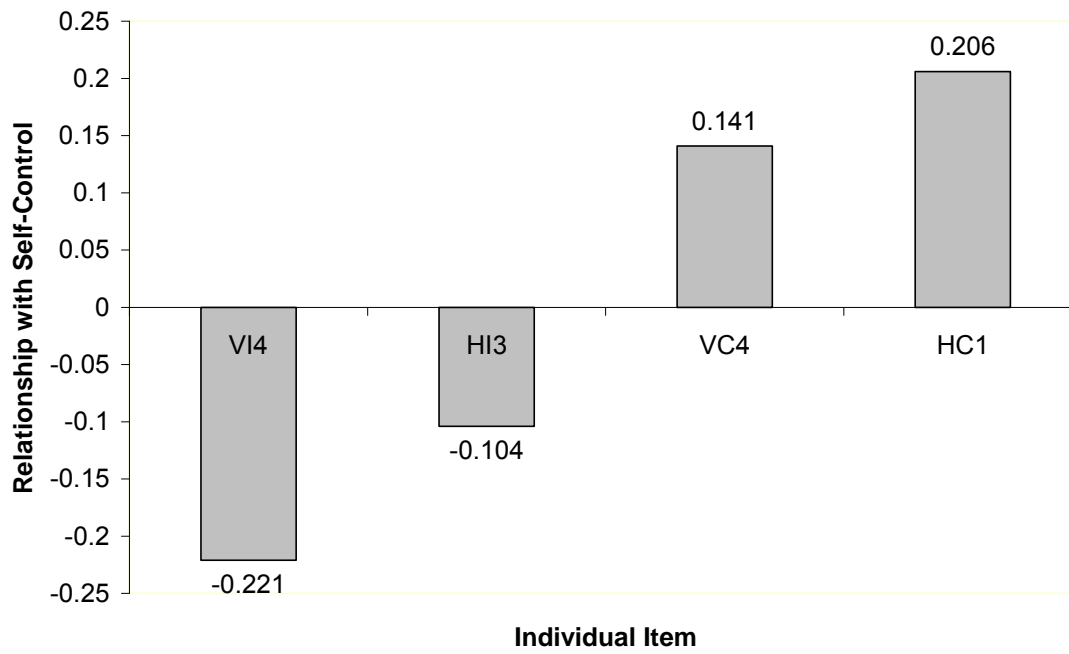
Table 6

*Hierarchical Multiple Regression Predicting Self-Control from Intrinsic Religiosity and Religious Commitment*

Variable	Self-Control			
	$\Delta R^2$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1	.100**			
Constant		2.588	.151	
Intrinsic Religiosity		.180***	.048	.316***
Step 2	.034*			
Constant		2.718	.160	
Intrinsic Religiosity		-.055	.117	-.097
Religious Comittment		.208*	.094	.452*

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





*Figure 1.* Horizontal and vertical collectivism and individualism single item beta relationship with self-control

## APPENDIX A

## Brief Self-Control Scale

Please answer the following items as they apply to you. Use the following scale to refer to how much each question is true about you.

1	2	3	4	5
Not at all like me		Sometimes like me	Very much like me	

- \_\_\_ 1. I have a hard time breaking bad habits.
- \_\_\_ 2. I am lazy.
- \_\_\_ 3. I say inappropriate things.
- \_\_\_ 4. I do certain things that are bad for me, if they are fun.
- \_\_\_ 5. I refuse things that are bad for me.
- \_\_\_ 6. I wish I had more self-discipline.
- \_\_\_ 7. I am good at resisting temptation.
- \_\_\_ 8. People would say that I have iron self-discipline.
- \_\_\_ 9. I have trouble concentrating.
- \_\_\_ 10. I am able to work effectively toward long-term goals.
- \_\_\_ 11. Sometimes I can't stop myself from doing something, even if I know it's wrong.
- \_\_\_ 12. I often act without thinking through all the alternatives.
- \_\_\_ 13. Pleasure and fun sometimes keep me from getting work done.

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality, 72*, 271-322.

## APPENDIX B

## Triandis &amp; Gelfand Individualism-Collectivism Scale

Here are a number of statements that may or may not agree with. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

1	2	3	4	5
<i>Disagree strongly</i>	<i>Disagree a little</i>		<i>Agree a little</i>	<i>Strongly Agree</i>

## Vertical Collectivism

VC1: Parents and children must stay together as much as possible.

VC2: It is my duty to take care of my family, even when I have to sacrifice what I want.

VC3: Family members should stick together, no matter what sacrifices are required.

VC4: It is important to me that I respect the decisions made by my groups.

## Horizontal Collectivism

HC1: If a coworker gets a prize, I would feel proud.

HC2: The well-being of my coworkers is important to me.

HC3: To me, pleasure is spending time with others.

HC4: I feel good when I cooperate with others.

## Vertical Individualism

VI1: It is important that I do my job better than others.

VI2: Winning is everything.

VI3: Competition is the law of nature.

VI4: When another person does better than I do, I get tense and aroused.

## Horizontal Individualism

HI1: I'd rather depend on myself than others.

HI2: I rely on myself most of the time; I rarely rely on others.

HI3: I often do "my own thing."

HI4: My personal identity, independent of others, is very important to me.

Triandis, H. C. & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology*, 74(1), 118–128.

## APPENDIX C

## Demographics

Sex:           M       F

Age:           \_\_\_\_\_

I would describe my ethnicity as: (Circle ONE)

- 1) Hispanic or Latino
- 2) Not Hispanic or Latino

I would consider myself: (Circle ONE)

- 1) Christian - Catholic
- 2) Christian - Protestant
- 3) Jewish
- 4) Muslim
- 5) Atheist
- 6) Agnostic
- 7) Other \_\_\_\_\_

I would describe my race as: (Circle ONE)

- 1) American Indian/Alaska Native
- 2) Asian
- 3) Native Hawaiian or Other Pacific Islander
- 4) Black or African American
- 5) White
- 6) More than one race
- 7) Unknown or Not reported

What denomination would you consider yourself? For example, Catholic, Methodist, Jewish Reform?

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Have you, at any time in your life, converted from one religion to another? \_\_\_\_\_

If yes, please explain.

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Is there anything about this study that you think we should know? For example, are there any special circumstances that may have influenced the results?

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## APPENDIX D

## Intrinsic/Extrinsic-Revised (I/E-R) Scale

Following are the items in the I/E-R scale. All items are scored as followed

1= I strongly agree                      4= I tend to agree  
 2= I tend to disagree                  5= I strongly agree  
 3= I'm not sure

1. (I) I enjoy reading about my religion.
2. (Es) I go to church because it helps me to make friends
3. (I)\*\* It doesn't much matter what I believe so long as I am good.
4. (I) It is important to me to spend time in private thought and prayer.
5. (I) I have often had a strong sense of God's presence.
6. (Ep) I pray mainly to gain relief and protection.
7. (I) I try hard to live all my life according to my religious beliefs.
8. (Ep)\* What religion offers me most is comfort in times of trouble and sorrow.
9. (Ep) Prayer is for peace and happiness.
10. (I)\*\* Although I am religious, I don't let it affect my daily life.
11. (Es) I go to church mostly to spend time with my friends.
12. (I)\* My whole approach to life is based on my religion.
13. (Es)\* I go to church mainly because I enjoy seeing people I know there.
14. (I)\*\* Although I believe in my religion, many other things are more important to life.

\* Single-item measures for that factor

\*\* Reverse-scored

Gorsuch, R.L., & McPherson, S.E. (1989). Intrinsic/extrinsic measurement: I/E-revised and single-item scales, *Journal for the Scientific Study of Religion*, 28, 348-354

## APPENDIX E

## Religious Commitment Inventory - 10

1. I often read books and magazines about my faith.
2. I make financial contributions to my religious organization.
3. I spend time trying to grow in understanding of my faith.
4. Religion is especially important to me because it answers many questions about the meaning of life.
5. My religious beliefs lie behind my whole approach to life.
6. I enjoy spending time with others of my religious affiliation.
7. Religious beliefs influence all my dealings in life.
8. It is important to me to spend periods of time in private religious thought and reflection.
9. I enjoy working in the activities of my religious organization.
10. I keep well informed about my local religious group and have some influence in its decisions.

Worthington, Everett L., Jr.; Wade, Nathaniel G.; Hight, Terry L.; Ripley, Jennifer S.; McCullough, Michael E.; Berry, Jack W.; Schmitt, Michelle M.; Berry, James T.; Bursley, Kevin H.; O'Connor, Lynn *The Religious Commitment Inventory--10: Development, refinement, and validation of a brief scale for research and counseling.* Journal of Counseling Psychology. Vol 50(1), Jan 2003, pp. 84-96

## APPENDIX F

## Self-Control Persistence Task

Please take a moment to think about what makes your life feel important to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Mostly True	Absolutely True
1	2	3	4	5	6	7

1. I understand my life's meaning. \_\_\_\_\_
2. I am looking for something that makes my life feel meaningful. \_\_\_\_\_
3. I am always looking to find my life's purpose. \_\_\_\_\_
4. My life has a clear sense of purpose. \_\_\_\_\_
5. I have a good sense of what makes my life meaningful. \_\_\_\_\_
6. I have discovered a satisfying life purpose. \_\_\_\_\_
7. I am always searching for something that makes my life feel significant. \_\_\_\_\_
8. I am seeking a purpose or mission for my life. \_\_\_\_\_
9. My life has no clear purpose. \_\_\_\_\_
10. I am searching for meaning in my life. \_\_\_\_\_

The Meaning in Life Questionnaire: Assessing the Presence of and Search for Meaning in Life  
 Source: Journal of counseling psychology [0022-0167] Steger yr:2006 vol:53 iss:1 pg:80 -93

11. Select the missing number:

6	8	7
36	64	49
24	48	—

- A 72 B 24 C 91 D 28

12. What is the value of  $x$  when  $2x + 3 = 3x - 4$  ?

- A.  $-7$  B.  $-\frac{1}{5}$  C.  $1$  D.  $\frac{1}{5}$  E.  $7$

13. What is the greatest common factor of 42, 126, and 210 ?

- A. 2 B. 6 C. 14 D. 21 E. 42

14. When  $x = 3$  and  $y = 5$ , by how much does the value of  $3x^2 - 2y$  exceed the value of  $2x^2 - 3y$ ?

A 4 B. 14 C. 16 D. 20 E. 50

15. If  $xy = 144$ ,  $x + y = 30$ , and  $x > y$ , what is the value of  $x - y$ ?

A 4 B. 6 C. 18 D 22 E 24

16. A boat departs Port Isabelle, Texas, traveling to an oil rig. The oil rig is located 9 miles east and 12 miles north of the boat's departure point. About how many miles is the oil rig from the departure point?

A 3 B .square root of 63 C 15 D 21 E 225

17. Which of the following is a factor of the polynomial  $2x^2 - 3x - 5$ ?

A.  $x - 1$  B  $2x - 3$  C  $2x - 5$  D  $2x + 5$  E  $3x + 5$

18. What is the slope of any line parallel to the line  $9x + 4y = 7$ ?

A  $-9$  B  $-9/4$  C  $9/7$  D 7 E 9

19. Insert the missing number:

4      9      17      35      \_\_\_      139

20. A DVD player with a list price of \$100 is marked down 30%. If John gets an employee discount of 20% off the sale price, how much does John pay for the DVD player?

A \$86.00 B \$77.60 C \$56.00 D \$50.00 E \$44.00

21. What is the degree measure of the acute angle formed by the hands of a 12-hour clock that reads exactly 1 o'clock?

A  $15^\circ$  B  $30^\circ$  C  $45^\circ$  D  $60^\circ$  E  $72^\circ$

22. A circle has a circumference of  $16\pi$  feet. What is the radius of the circle, in feet?

A .  $\sqrt{8}$  B 4 C 8 D 16 E 32

23. A rectangle with a perimeter of 30 centimeters is twice as long as it is wide. What is the area of the rectangle in square centimeters?

A 15 B 50 C 200 D  $3\sqrt{15}$  E  $6\sqrt{15}$



24. In the standard  $(x,y)$  coordinate plane, what are the coordinates of the midpoint of a line segment whose endpoints are  $(-3,0)$  and  $(7,4)$  ?

- A.(2,2) B.(2,4) C.(5,2) D.(5,4) E.(5,5)

25. Select the word that goes with the words:

Rover Fall Lord

- A Tiger B Grace C Slip D Moment E Fear F Car

26. Ms. Hernandez began her math class by saying:

I'm thinking of 5 numbers such that their mean is equal to their median. If 4 of the numbers are 14, 8, 16, and 14, what is the 5th number?

What is the 5th number Ms. Hernandez is thinking of?

- A 13 B 14 C 15 D 16 E 18

27.  $652(523) + 427(652)$  is equal to which of the following?

- A  $523(652+427)$   
B  $652(523+427)$   
C  $(652+427)(523+652)$   
D  $(652+523)(427+652)$   
E  $(652+652)(523+427)$

28. Of team A's victories this year, 60 percent were at home. If team A has won a total of 20 games this year, how many of those games were won away from home.

- A. 5  
B. 7  
C. 8  
D. 12  
E. 15

29. If  $h(x) = x^3 + x$  and  $g(x) = 2x + 3$ , then  $g(h(2)) = ?$

- A 7 B 10 C 17 D 19 E 23

30. If  $k = 6 \times 17$ , then which of the following is a multiple of  $k$ ?

- A 68  
B 78  
C 85  
D 136  
E 204

For the following questions (31-36) use the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

1	2	3	4	5	6	7
strongly disagree			neutral			strongly agree

\_\_\_ 31. I have so much in life to be thankful for.

\_\_\_ 32. If I had to list everything that I felt grateful for, it would be a very long list.

\_\_\_ 33. When I look at the world, I don't see much to be grateful for.

\_\_\_ 34. I am grateful to a wide variety of people.

\_\_\_ 35. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.

\_\_\_ 36. Long amounts of time can go by before I feel grateful to something or someone.

Emmons, R. A., McCullough, M. E., & Tsang, J. (2003). The assessment of gratitude. In S. J. Lopez and C. R. Snyder (Eds.). *Handbook of positive psychology assessment* (pp. 327-341). Washington, DC: American Psychological Association.

**Please indicate how much you agree with each of the following statements, or how true it is about you. Please write a number (1-5) to indicate your answer:**

1 = Strongly disagree (very untrue about me)

2 = Mildly disagree (somewhat untrue about me)

3 = Neither agree nor disagree

4 = Mildly agree (somewhat true about me)

5 = Strongly agree (very true about me)

\_\_\_ 37. I might be willing to try eating monkey meat, under some circumstances.

\_\_\_ 38. It would bother me to be in a science class, and to see a human hand preserved in a jar.

\_\_\_ 39. It bothers me to hear someone clear a throat full of mucous.

\_\_\_ 40. I never let any part of my body touch the toilet seat in public restrooms.

\_\_\_ 41. I would go out of my way to avoid walking through a graveyard.

\_\_\_ 42. Seeing a cockroach in someone else's house doesn't bother me.

\_\_\_ 43. It would bother me tremendously to touch a dead body.

\_\_\_ 44. If I see someone vomit, it makes me sick to my stomach.

\_\_\_ 45. I probably would not go to my favorite restaurant if I found out that the cook had a cold.

\_\_\_ 46. It would not upset me at all to watch a person with a glass eye take the eye out of the socket.

\_\_\_ 47. It would bother me to see a rat run across my path in a park.

- \_\_\_ 48. I would rather eat a piece of fruit than a piece of paper
- \_\_\_ 49. Even if I was hungry, I would not drink a bowl of my favorite soup if it had been stirred by a used but thoroughly washed flyswatter.
- \_\_\_ 50. It would bother me to sleep in a nice hotel room if I knew that a man had died of a heart attack in that room the night before.

**How disgusting would you find each of the following experiences? Please write a number (1-5) to indicate your answer:**

1 = Not disgusting at all

2 = Slightly disgusting

3 = Moderately disgusting

4 = Very disgusting

5 = Extremely disgusting

- \_\_\_ 51. You see maggots on a piece of meat in an outdoor garbage pail.
- \_\_\_ 52. You see a person eating an apple with a knife and fork
- \_\_\_ 53. While you are walking through a tunnel under a railroad track, you smell urine.
- \_\_\_ 54. You take a sip of soda, and then realize that you drank from the glass that an acquaintance of yours had been drinking from.
- \_\_\_ 55. Your friend's pet cat dies, and you have to pick up the dead body with your bare hands.
- \_\_\_ 56. You see someone put ketchup on vanilla ice cream, and eat it.
- \_\_\_ 57. You see a man with his intestines exposed after an accident.
- \_\_\_ 58. You discover that a friend of yours changes underwear only once a week.
- \_\_\_ 59. A friend offers you a piece of chocolate shaped like dog-doo.
- \_\_\_ 60. You accidentally touch the ashes of a person who has been cremated.
- \_\_\_ 61. You are about to drink a glass of milk when you smell that it is spoiled.
- \_\_\_ 62. As part of a sex education class, you are required to inflate a new unlubricated condom, using your mouth.
- \_\_\_ 63. You are walking barefoot on concrete, and you step on an earthworm.

The DS-R (Disgust Scale-Revised), Haidt, McCauley, & Rozin, 1994; Modified by Olatunji et al., in press

Using the scale shown below, please respond to each of the following statements according to how you would usually describe yourself. There are no right or wrong answers.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree		Strongly agree	

- \_\_\_ 64. I would describe myself as someone who actively seeks as much information as I can in a new situation.

- \_\_\_\_\_ 65. When I am participating in an activity, I tend to get so involved that I lose track of time.
- \_\_\_\_\_ 66. I frequently find myself looking for new opportunities to grow as a person (e.g., information, people, resources).
- \_\_\_\_\_ 67. I am *not* the type of person who probes deeply into new situations or things.
- \_\_\_\_\_ 68. When I am actively interested in something, it takes a great deal to interrupt me.
- \_\_\_\_\_ 69. My friends would describe me as someone who is “extremely intense” when in the middle of doing something.
- \_\_\_\_\_ 70. Everywhere I go, I am out looking for new things or experiences.

Instructions:

People may use the following statements to describe themselves. For each statement, decide whether the statement is uncharacteristic or characteristic of you using the following 5 point scale. Note that the 3 on the scale is Neutral – the statement is neither characteristic nor uncharacteristic of you. In the box to the right of each statement, fill in the number on the 5 point scale that best describes you.

Extremely <u>Un</u> characteristic	Moderately <u>Un</u> characteristic	Neutral	Moderately Characteristic	Extremely Characteristic
1	2	3	4	5

71. I often find myself performing tasks that I had intended to do days before.
- 72.\* I do not do assignments until just before they are to be handed in.
- 73.\* When I am finished with a library book, I return it right away regardless of the date it is due.
74. When it is time to get up in the morning, I most often get right out of bed.
75. A letter may sit for days after I write it before mailing it.
76. I generally return phone calls promptly.
77. Even with jobs that require little else except sitting down and doing them, I find they seldom get done for days.
78. I usually make decisions as soon as possible.
79. I generally delay before starting on work I have to do.
- 80.\* I usually have to rush to complete a task on time.

81. When preparing to go out, I am seldom caught having to do something at the last minute.
82. In preparing for some deadline, I often waste time by doing other things.
- 83.\* I prefer to leave early for an appointment.
- 84.\* I usually start an assignment shortly after it is assigned.
85. I often have a task finished sooner than necessary.
86. I always seem to end up shopping for birthday or Christmas gifts at the last minute.
87. I usually buy even an essential item at the last minute.
88. I usually accomplish all the things I plan to do in a day.
89. I am continually saying AI=ll do it tomorrow@.
90. I usually take care of all the tasks I have to do before I settle down and relax for the evening.

Lay, C. (1986). At last, my research article on procrastination. *Journal of Research in Personality*, 20, 474-495.

The ten remaining questions were randomly presented, as with all other questions, in the following manner to probe whether the participant is paying attention to the items they are selecting, or if they are passively selecting answer choices randomly.

91 – 100

For this question, please do not select either 'True' or 'False'. Simply select the 'Next' button and continue with the survey. If you respond either 'True' or 'False', your participation will be marked at the point as abandoned, and you will only receive credit up until this question.

True

False

Next