

The Effects of Spirituality and Self-Focused Attention on Self-Deception

by

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Abstract

The researcher asked 17 undergraduate participants to take several practice reading-tests. They were provided with a fast anchor time for the first test, and asked to estimate the time that it took them to read the passage. For the second passage, the participants presumably used the actual time it took them to read the first passage to base their second estimate on. A failure to account for the actual time would present itself as self-deception, fulfilling Gur and Sackiem's (1978) requirements for self-deception. According to Gur and Sackiem, self-deception is a type of self enhancement in which the individual must hold two, simultaneous, contradictory beliefs, not be aware of holding one of the beliefs, and having the act of choosing which belief is not subject to awareness is a *motivated* act. Further, the participants were asked to rate how hard they worked on each of the passages. These self-reported effort scores were hypothesized to demonstrate another possible act of self-deception.

This study relates self-deception to two main variables: spirituality and self-focused attention. The researcher hypothesizes that those who are in a high self-focused condition and are high in spirituality would have fewer accounts of self-deception.

The researcher did not find a significant effect of either spirituality or self-focused attention, but suggest that with more participants a larger effect may be found.

The Effects of Spirituality, and Self-focused Attention on Self-Deception

Self-deception is a prevalent force in most people's lives. We think that we know ourselves, and believe that we generally act consistently with what we really believe, but much past research shows that under certain conditions, exactly the opposite is true: We are often unaware of our own inner states, do not act in accordance with our own beliefs and attitudes, fail to predict our own behavior very well (in fact, those close to us tend to do it better), often are unaware of the events that affect our own behavior, our past memories are extremely unreliable, and those who are most mentally healthy are most likely to misrepresent themselves as being better than they are in all sort of domains (Myers, 2010).

We assume, too, that we know ourselves far better than other people know us (Hansen & Pronin, 2012). We assume that we are aware of our own thoughts and feelings, and that other people's perceptions are based on less information, and therefore, must be less accurate than our own (Jones & Nisbett, 1971). This belief is further strengthened by the knowledge that others lie, and that we can never be certain when others are telling the truth or lying (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996; DePaulo, 2004). We assume, however, that we do not "lie" to ourselves.

According to recent research, the assumption that we do not deceive ourselves is false (McKay & Dennett, 2009). Research suggests that we deceive ourselves in many different ways, and for many different reasons (Zajonc, 1980). Regardless of the reason, research evidence shows that most people deceive themselves at one time or another and that self-deception is evident in everyday life (cf. Bayne & Fernandez,

2009). These self-deceptions take many different forms, and include everything from repressing childhood memories to continual procrastination. Everyone has experienced some of the effects of self-deception (Lockard & Paulhus, 1988).

According to Gur and Sackeim (1978), for an event to be considered self-deception, it must fulfill four requirements:

1. The individual must hold two contradictory beliefs.
2. These two contradictory beliefs are held simultaneously.
3. The individual is not aware of holding one of the beliefs.
4. The act that determines which belief is not subject to awareness is a *motivated* act.

In the research literature, self-deception is divided into two categories: “soft” self-deception and “deep” self-deception (Paulhus & Buckels, 2012). Self-deception that is immediately recognized and acknowledged as deception is considered “soft self-deception” (Paulhus & Buckels, 2012). An example of soft self-deception is setting one’s watch ahead. People do so fully aware that the time on their watches is the wrong time (thus creating two contradictory beliefs) in order to “trick” themselves into arriving earlier or on time. At the moment that one believes the time displayed on his or her watch, one believes the deception that one has created—an act, by definition, of self-deception. If confronted with the discrepancy, people immediately recognize the self-deception. It is the fact that they recognize and are immediately aware that self-deception has occurred that renders it “soft” self-deception.

In contrast, "deep" self-deception encompasses all other cases of self-deception, those situations in which someone is confronted with an instance of self-deception but fails to recognize it as such (Paulhus & Buckels, 2012). For example, a drug addict may deny being an addict, and become very angry when accused of being so. He or she may claim that it is possible to "stop any time he or she wants." Nonetheless, when asked *why* he or she does not stop the addictive behavior, the addict resorts to excuses, explaining all the consequences and difficulties of quitting (Goleman, 1985). Many people have areas of their lives about which they engage in deep self-deception; self-deception is a prevalent force in our daily lives (Biebers & Ogden, 2010; Lewis, 1996; Paulhus & Buckels, 2012).

Past research suggests that self-deception occurs for a variety of reasons: We may self-deceive to resolve cognitive dissonance (the inconsistency between conflicting beliefs about ourselves that we hold; Festinger, 1957), to garner support for our beliefs, or even to present our lies as more believable (Gillath, Sesko, Shaver, & Chun, 2010; Lalwani & Shavitt, 2009; Lee & Klein, 2009). Some theorists have gone so far as to argue that if one believes the lies one tells, then they are not really "lies" at all, at least not lies for which one is responsible (Fingerette, 1969; Teahan, 1987).

Another important reason for self-deception is to support psychological defense mechanisms; it has even been hypothesized that self-deception is a necessary component for the success of any psychological defense mechanism (Fingerette, 1969). For example, when one represses a traumatic experience and "forgets" the memories, they are both unaware of and hyper aware of the scenario at the same time. They may

not recall the experience at all, but when presented with a similar scenario, they may become anxious or afraid, as though they did remember the traumatic experience.

Starek and her colleagues argue that one of the most important reasons for self-deception is that we cannot effectively satisfy our motives if we are completely aware of what we are trying to accomplish (Starek & Keating, 1991; Trivers, 1985). Self-deception is often a means we use to create our own motivation. For example, Starek and Keating demonstrated that believing something to be true can in fact cause it to *become* true. They examined self-deception in college swimmers. They chose to investigate swimmers because of the nature of the sport: Swimmers must dissociate themselves from the pain of working hard to swim so that they can continue to push themselves to perform well. Thus, because self-deception is, in a way, necessary to swimmers' success, Starek and Keating hypothesized that swimmers would score higher on measures of self-deception.

To measure self-deception, Starek and Keating (1991) used Gur and Sackiem's (1979) Self-Deception Questionnaire and a binocular rivalry test. In the binocular rivalry test, structurally similar words are simultaneously presented to each eye. In Starek and Keating's study, negative or neutral words were presented to participants at one time, simultaneously; thus, one eye saw a negative word, and the other eye saw a neutral word. The researchers operationalized self-deception as avoidance of the negative words in these verbal reports.

After the participants saw the words, the experimenters asked them to report verbally what they saw; in most cases, participants reported that they saw only one word. The researchers predicted that the participants would prefer to see the neutral

words over the negative words, and thus would be more likely to report the neutral words. They concluded that self-deception occurred, because the participants had seen both words at the same time, but they reported only seeing one of the words, and they did so while seemingly unaware that there were actually two words to report. The researchers argued that the choice to avoid reporting the negative word was a motivated act. Thus, the tendency to choose neutral over negative words constituted Starek and Keating's first measure of self-deception.

Starek and Keating (1991) also compared the swimmers who qualified for championships with those who did not, hypothesizing that those who were successful in qualifying would tend to engage more in self-deception than swimmers who were not successful, because their success is facilitated by dissociating pain from their tasks. The researchers found, as predicted, that successful athletes generally demonstrated more self-deception on both the Self-Deception Questionnaire and the binocular rivalry test. They inferred that swimmers who self-deceived were better able to reach their goals. Starek and Keating's findings are consistent with their hypothesis that self-deception can be used to serve motivation, and in turn, increase performance. They further argued that improving performance could be one of the most prevalent reasons for self-deception (Goleman, 1985; Jamner & Schwartz, 1985).

Authenticity

In a different, but related, vein of research, researchers have investigated *authenticity* (e.g., Ditto & Lopez, 1992; Gillath, Sesko, Shaver, & Chun, 2010; Goldman & Kernis, 2004). Authenticity, being truthful to oneself, is relevant to almost every aspect of our lives (Kernis & Goldman, 2006). According to theorists,

authenticity is the opposite of self-deception (Martin, 1986; Trilling, 1972). Research shows that most people agree that authenticity has benefits, and that people typically believe they should be authentic in their relationships, to present “who they really are” (Brown & Ryan, 2003; Heppner & Kernis, 2007). Generally, people express disdain for those who are self-aggrandizing, preferring authenticity (Adams, 2004).

Research also shows that authenticity plays a particularly large role in building close relationships: As we grow closer to others, we become more open, more authentic, and, as a result, experience relationships that grow closer and stronger (Adams, 2006). Martin (1986) claimed that authenticity is the backbone of a meaningful life, and that one cannot have freedom, personal responsibility, individuality, or personal fulfillment without authenticity, because none of these qualities can be realized if one refuses to be authentic by evading acknowledging one’s self.

Because of the potential for authenticity to influence many aspects of our lives (Batson, Thompson, Seufferling, Whitney, & Strongman, 1999; Knoblich & Kircher, 2004; Lynn, Pipitone, & Keenan, 2014; Twerski, 2003), the utility of understanding self-deception becomes even more apparent and important; arguably, authenticity and self-deception are two sides of the “same coin.” Unfortunately, although researchers in the 1980s showed interest in investigating these topics (e.g., Paulhus, 1984; Roth & Ingram, 1985) that interest quickly waned. It is only recently that there has been a resurgence of interest in self-deception (e.g., Schlegel, Kicks, Arndt & King, 2009; Theran, 2010), and little is known about the conditions under which self-deception occurs; few studies have been conducted in the last two decades (cf. Lockard & Paulhus, 1988). Knowledge of the situations in which one is most likely to develop

self-deceptive ideas and conditions under which people will resort to self-deception could prove to be very useful.

Operationalizing Self-Deception

Little empirical evidence has been accumulated about self-deception recently, and very few studies have attempted to uncover some of the conditions in which we self-deceive. Gur and Sackeim (1978; 1979) were the first to present a testable measure of self-deception. Their experiment was based on the assertion that people generally do not like the sound of their own voice. They measured the participants' biological response when hearing their own voices to their responses when hearing the voices of other people. Past research showed that when confronted with one's own voice, levels of arousal are significantly higher than when presented with someone else's voice (Holzman, Rousey, & Snyder, 1966; Olivos, 1967).

When participants came to the experiment, they recorded samples of their own voices. Later, they heard a series of voices, some of which were their own, and some of which were strangers' voices. They were then asked to report whether they believed that the voice they heard was their own or that of a stranger's by indicating "me" or "not me." The researchers measured participants' physiological arousal throughout the task by measuring their Galvanic skin response (GSR).

Gur and Sackeim (1979) found that many of their participants responded "not me" upon hearing a voice, even when the GSR showed the same level of arousal that would be expected if they had heard their own voice (suggesting that the voice that they heard was actually their own). The GSR results demonstrated that the participants

believed that the voice they heard was their own, but their verbal responses showed that they also believed simultaneously that the voice was *not* their own. Gur and Sackeim concluded that this self-deception was motivated by the participants' aversion to their own voice.

Gillath, Sesko, Shaver, and Chun (2010, Studies 2 & 3) attempted to explore some of the factors that contribute to self-deception, in particular, they looked at the effects of attachment security on our tendency to be authentic. They asked participants to list positive and negative qualities about themselves, as well as past acts about which they felt embarrassed or ashamed. The researchers assumed that if participants responded with authenticity, they would list *both* positive and negative qualities. The researchers also reasoned that the third list of shameful acts provided a measure of authenticity because presumably everyone has had embarrassing experiences at some point. Participants who are not engaging in self-deception should be able to list some of them, but a disinclination to do so suggests that one may be engaging in self-deception. After collecting the lists, the researchers recorded the number of items in each list to create their measure of self-deception.

Gillath et al. (2010) then manipulated attachment security (feelings of security, self-confidence and acceptance instilled in us by loved ones; Ainsworth, 1978) by comparing three different groups: Some participants were asked to recall a positive memory about a time when someone close provided support for them, eliciting memories related to secure attachment. Other participants were asked merely to recall a positive memory of a time when they accomplished a meaningful goal as part of a

group. Finally, some participants were asked merely to recall a neutral memory of a time when they went to the grocery store.

Gillath et al. (2010) found that those who were in the positive (secure attachment) condition reported more good *and* bad qualities than in the other two groups. They concluded that this finding was due to the participants' more secure feelings, which led to greater comfort in expressing authenticity, compared to the other conditions.

Quattrone and Tversky (1984) developed another operationalization of self-deception using what has come to be called “the pain paradigm.” This paradigm is based on the commonly-accepted idea that changing one's score on a diagnostic measure will in turn have an effect on a significant outcome that is merely correlated with the diagnostic measure, but does not *cause* the outcome (in effect, confusing correlation with causation). This phenomenon can be seen in a variety of everyday examples: For example, assume for a moment that intellectual people (a desired “outcome”) tend to drink tea (a “diagnostic measure” of intellectualism). In this example, drink tea is merely correlated with being intellectualism—not the cause of it. Drinking tea to support an illusion of intellectualism is clearly self-deceptive.

In their experiment, Quattrone and Tversky (1984) used the pain paradigm to demonstrate this type of self-deception: They asked participants to place their forearm into very cold water for as long as they could tolerate it. In the experimental condition, participants were told that experiencing a lot of pain in this task is correlated with a cardiovascular weakness that could lead to having an early heart attack or shorter life span than average; in another condition, participants were not given this “information.”

Participants who were told that there was a correlation between pain and a heart condition rated the experience as less painful, and even kept their hands in the cold water longer, than participants who not receive information about the correlation between pain and potential illness. The researchers concluded that participants in the experimental condition engaged in self-deception by refusing to acknowledge the pain that they were experiencing.

Paulhus and Buckels (2012) also exploited people's tendencies to confuse correlation and causation. In their experiments, they asked participants to take a practice GRE test. They told participants in one condition that high GRE scores were associated with living a successful life; other participants were not given that information . After the test period was ended, the experimenters allowed participants extra time at the end of the experiment, to provide an opportunity for participants to cheat. Paulhus and Buckels found that participants who were told that good GRE performance led to a successful life cheated more on the practice test than participants in other conditions. They considered these participants to have engaged in self-deception because of the nature of practice tests: Practice tests are taken merely for the benefit of those taking them, with the results known only by the person taking the test. Thus, cheating on a practice test could only provide a participant with a deceptive measure of his or her current status or abilities. Paulhus and Buckels further argued that the only conceivable goal for cheating on a practice test is to deceive oneself for the purpose of maintaining a positive self-evaluation.

Self-Focused Attention

Researchers have demonstrated that self-focused attention is important to promote self-regulation, the process of matching our behavior to important behavioral standards, such as norms, rules, or goals in a given situation (Carver & Scheier, 1981; Fiske & Taylor, 2008). Research shows that in order to match our behavior to some standard, three conditions must be present: self-focused attention, a salient standard or norm, and a good outcome expectancy—the belief that we can do what is necessary in order to match the standard (Mullen, 1986).

Self-focused attention research has shown that people who are in a self-focused state are more likely to behave consistently with their beliefs and attitudes (Pryor, Gibbons, Wicklund, Fazio, & Hood, 1977), and are more aware of their own internal states (Scheier, Carver, & Gibbons, 1979). Devices such as mirrors and tape recordings of one's own voice have been demonstrated to induce self-focus (Carver & Scheier, 1978; 1981). Presumably, if one is more aware of his or her own thoughts, beliefs, feelings and emotions, the tendency to be more aware of them should lead to a decrease in self-deception under certain conditions. However, few experiments have investigated this idea, and no research has investigated the effects of self-focus on deception using traditional manipulations of self-focused attention.

McFarland, Buehler, Ruti, Nguyen, and Alvaro (2007) conducted a study in which they examined a type of self-focused attention and examined its effect on tendency to self-enhancement. Their studies demonstrated that self-focused attention could lead to self-enhancement under some conditions. Specifically, they examined the relationship between someone's mood and their tendency to present themselves as

better than they are (self-enhancement). They hypothesized that the type of self-focused attention the person engages in can mediate the effect of self-focused attention on self-enhancement.

They identified two styles of self-focus: Some people who are self-focused are ruminative, dwelling on negative aspects of the self; others are more reflective, and explore the self openly. McFarland et al. (2007) hypothesized that people who employ open, reflective self-focused attention when in a negative mood would employ positive, self-enhancing thinking to compensate for their negative mood, compared to those who ruminate and typically dwell on their own negative qualities. The researchers asserted that these two types of self-focus, though habitual in some people, could also be induced.

In the first two studies, McFarland et al. (2007) looked at the effect of mood and mood orientation on self-deception. They manipulated the type of self-focused thoughts that participants engaged in (their mood orientation) and their mood. The experimenters manipulated mood by asking participants to envision either a negative or a neutral event that happened in the last year. They manipulated the participants' mood orientation by providing participants with a list of phrases that suggested either (a) an ability to attend openly to one's feelings (describing reflectivity) or (b) an inclination to dwell on mood (describing rumination).

Later, they measured participants' self-enhancing tendencies: Participants filled out a questionnaire comparing themselves to an "average other student" (Experiment 1) or to themselves in the future (Experiment 2). The researchers operationalized self-enhancement as the tendency to believe that one is significantly better (or will be

significantly better) than average. They hypothesized that those who were openly reflective were more likely to demonstrate self-enhancement than those who were ruminative.

Later in the same experiment, McFarland et al. (2007) demonstrated that mood orientation—the tendency to reflect on oneself openly or to ruminate—mediated the relationship between mood and self-enhancement: First, participants completed the same mood and mood orientation manipulations as in the first two parts of the experiment. Researchers manipulated participants' moods to create a “bad mood,” or to maintain a relatively neutral mood. Then the experimenters asked participants to answer some questions that measured how motivated they were to regain a positive mood. In the next phase of the experiment, the researchers created two conditions by asking some participants to imagine a time when they had a negative mood but were highly motivated to change their feelings while other participants imagine a time when they had a negative mood but were not motivated to change their feelings. Then, participants rated their current and future relationships on 17 qualities (measuring self-enhancement by extreme improvements in the “future” ratings). The researchers found that participants in the reflective mood orientation condition expressed a greater motivation to change their feelings compared to the other condition, and that those who had a greater motivation showed signs of more self-enhancement.

As stated earlier, few studies have examined the effects of self-focus on self-deception. McFarland et al.'s (2007) study suggests that self-focused attention should increase the tendency for *self-enhancement*, but the precise effects of self-focused attention on *self-deception* are not as clear. Research shows that deception is generally

thought to be aversive (Tomash & Reed, 2013): People do not like to be lied to, although they often lie for material gain or personal convenience (DePaulo & Kashy, 2000). Research also shows that there are specific cues to deception that people often recognize in others (DePaulo, Lindsay, Malone, & Cooper, 2003). However, little is known about how self-focus might serve to help someone detect *self-deception*. Given the mechanisms by which self-focused attention works (Carver & Scheier, 1981) it should make people more aware of their own internal states; thus, self-focused attention should serve to help them become more aware of self-deception when it occurs. Moreover, because people generally disapprove of deception, theoretically an increase in self-focused attention should decrease the instances of self-deception a participant experiences. However, no research has yet been done that demonstrates this result.

As stated earlier, a common method of inducing self-focused attention in self-focus research involves using a mirror (Carver & Scheier, 1978). Some theorists have argued that the mirror, more than some other self-focus devices, induces *private* self-focus, a particular focus on one's thoughts, feelings, beliefs and inner states (cf. Carver & Scheier, 1987). A focus on these aspects of the self should theoretically lead people to engage in less self-deception in the presence of a mirror, compared to a no mirror condition.

Spirituality

Quattrone and Tversky were the first to suggest that spirituality may be related to self-deception, in an example they discuss in their (1983) paper. In fact, in what was perhaps evidence of their particular bias, they saw religion and spirituality as key examples of self-deception. Using their previously-discussed operationalization of

deception (in which causal and diagnostic relationships are confused) they compared participants who were Calvinists to those who were Catholics. Whereas both denominations believe that spirituality (operationalized here as the desire to engage in right actions) is related to whether or not one goes to heaven or hell, the denominations (based on their theology) disagree about whether this outcome is diagnostic or causal.

Quattrone and Tversky (1983) argued that Catholics, perceive a causal relationship between spirituality and the location of their soul after death, whereas Calvinists had a diagnostic theory; that is, Catholics engage in virtuous behavior because they believe that these behaviors will provide them a way to heaven, whereas Calvinists engage in the same behaviors because they believe that virtuous acts are a sign that they are already chosen (predestined) to go to heaven. Quattrone and Tversky reasoned that the Calvinist that behaves virtuously (a diagnostic measure) in efforts to provide a sign that they were going to heaven (the outcome) is self-deceiving. The researchers in this study did not, however, examine the relationship between spirituality and self-deception; they were merely the first to suggest a relationship in the research literature.

Sedikides and Gebauer (2010) performed a meta-analysis that described the relationship between religiosity and self-enhancement (a form of self-deception). Their research began with the idea that those who are more religious tend to be more concerned with upholding a better self-image, both to themselves and to others (Burris & Navara, 2002). The researchers looked at self-reports showing participants' tendencies to give overly positive self-descriptions (this served as their operationalization of self-enhancement) and its relationship to religiosity across 57

articles and 75 samples. They found that there was a strong correlation between participants' tendencies to give overly positive self-descriptions and religiosity. These findings begin to demonstrate that self-enhancement does, in fact, underpin religiosity.

In the literature on spirituality, spirituality is considered to be a different construct than religiosity; *spirituality* refers to the “personal, subjective side of religious experience,” (Hill & Pargament, 2003; p. 64), whereas *religiosity* usually refers to engagement in religious practices. Spirituality is generally associated with the desire to engage in right actions as an end in and of itself (Leffel, 2007; Raikka, 2007).

This distinction is important in understanding how Sedikides and Gebauer's (2010) results relate to spirituality. Because religiosity and spirituality tend to be correlated with one another (Hill & Pargament, 2003), we may assume that spirituality, like religiosity, may have a relationship with self-enhancement. We cannot, however, conclude that the relationship between spirituality and self-enhancement will be the same as the relationship between religiosity and self-enhancement that Hill and Pargament describe.

Researchers generally associated spirituality with the desire to do what “is right” as an end in itself (Leffel, 2007; Raikka, 2007; Tomash & Reed, 2013). Religious people may engage in right actions as well, but they are typically more concerned with the overt acts or rewards tied to them. For example, one who is religious may be motivated to do what is right because of the rewards that they might receive while one who is spiritual may do the same act because it is “the right thing to do”.

If self-deception is not considered to be a “right action,” and comes with a variety of rewards (Alicke & Sedikides, 2009), then we can suspect that, in contrast to highly religious people, highly spiritual people should engage in lower frequencies of deception than those who measure low in spirituality. However, no research has yet been done to investigate whether this pattern would also hold true for self-deception.

Current Study

The purpose of my research is to explore some of the conditions under which self-deception occurs. In my study, I implemented a procedure similar to that used by Paulhus and Buckels (2012), who investigated cheating on a practice test. I told participants that reading speed is correlated with intelligence (Rasinski, 2002). I then asked them to estimate the time it took them to read a passage, and reported to them the actual time it took them to read. Finally, I asked them to read a second passage of the same length, and again provide their estimate of the time it took them. My major dependent variable was the extent to which participants’ estimates became more accurate. I reasoned that if I provided accurate feedback to participants about their reading speed, they should consider this new information for a passage of the same length. Consequently, after their second reading they should report a second time estimate that is closer to the actual time reported to them for the first reading, and the difference between the actual time for Passage 1 and the estimated time for Passage 2 should be smaller than the difference between the actual time for Passage 1 and their estimated time for Passage 1. I assumed that if participants did not have closer estimates after the second reading, and instead maintained an inflated estimate of their

reading speeds (even on a practice test), that would constituted evidence that they were attempting to maintain a positive self-evaluation and thus engaging in self-deception.

In particular, I wanted to investigate the effect of self-focused attention on their estimates. Self-focused attention is posited to cause people to direct their attention inwardly and to become more aware of and attuned to their own beliefs, emotions, and internal states. Because of this, theoretically, self-focused attention should raise one's awareness of whether one is behaving authentically or engaging in self-deceptive thoughts or behaviors. A raised sense of self-awareness should thus reduce the accounts of self-deception.

In the present study, I manipulated self-focused attention via the presence or absence of a mirror. I also measured dispositional self-focused attention with the *Self Consciousness Scale Revised* (Scheier & Carver, 1985).

Lastly, I examined spirituality. Given the desires of highly spiritual people and their attitudes toward immoral behavior (Leffel, 2007; Raikka, 2007; Tomash & Reed, 2013), highly spiritual people should engage in lower frequencies of self-deception than those who measure low in spirituality. In my study, I measured spirituality using the *Spiritual Assessment Inventory* (Halls & Edwards, 1996; 2002). Contrary to what Sedikides and Gebauer (2010) demonstrated for religiosity, I predicted that participants who are high in spirituality and in the high self-focus condition would be least likely to engage in self-deception.

Method

Participants

Participants included 17 undergraduate students (ages 17 to 24) at a small Christian liberal arts college (3 males, 14 females). They participated to receive course credit. All but one student spoke English as their first language. Participants were treated in accordance with the American Psychological Association ethical principles, and randomly assigned to treatment conditions.

Procedure

The experimenter directed participants to go into a room where they could read without feeling that they were being observed (to prevent incidental self-focus; Carver & Scheier, 1978). Before they began the experimental tasks, the experimenter instructed participants to leave any time-keeping devices with him, which they could retrieve when the experiment concluded.

Participants were given three reading-speed tasks. The first tasks consisted of a brief practice passage of 100 words; it was followed by two longer passages (Passages 1 and 2). The longer passages were controlled to be the same length. The experimenter timed participants as they read each passage. The main passages from which excerpts were drawn came from Jessica Dreiling's *Coming Alive* and *HWup-Haa*. These passages were counterbalanced during experimentation.

The procedure was as follows: The experimenter randomly assigned participants to a self-focus condition, and placed them in a room in which they performed the

experimental tasks either in front of a mirror (theorized to promote self-focus; Carver & Scheier, 1981) or in the absence of a mirror (control condition).

The experimenter instructed participants that they would first read a brief paragraph for practice, so that they would become accustomed to the task. They were told that the task was merely a practice test to assess their reading speed for self-assessment only (Gillath, Sesko, Shaver, and Chun, 2010), and that they should read as quickly as possible, but without sacrificing comprehension. The experimenter timed participants as they read the brief passage.

Following the reading of the brief passage, participants read a longer passage (Passage 1), also ostensibly for practice. They were once again timed. Before they began reading Passage 1, the experimenter told the participants the fact that reading speed is highly correlated with intelligence (Rasinski, 2002). The purpose of this instruction was to supply a motive to manage impressions, if the participant was inclined to do so. The experimenter also told participants that most people could read a passage of the length they were being asked to read in about 3 minutes and 40 seconds, on average. This speed was based on an upward adjustment of average reading speeds (200 to 350 words per minute) recorded in the literature (Bell, 2001; Fry, 1963), in order to create expectations among the participants that their reading times should be much shorter than they might otherwise have expected to be considered “intelligent” (Tversky & Kahneman, 1974).

After they completed reading Passage 1, participants were asked to estimate the time it took them to do so, and to estimate the number of words they read. After they made their estimates, the experimenter told them their actual time spent reading the

Passage 1. The main purpose for timing Passage 1 was to establish a baseline reading time, which would provide an anchor for participants, providing information to them about how long it should take them to read subsequent passages.

Following the reading of Passage 1, the experimenter told participants that they would once again read a second practice passage, Passage 2. The procedure was nearly identical to that of the first reading test, with one major exception: The experimenter once again emphasized that they were merely performing a practice test, to be used for self-assessment. However, he did not suggest a time within which the task could be completed as he did for Passage 1. Thus, if participants were attempting to manage their impressions upon others, when they made their time estimates for Passage 2, one would expect them to adjust their time estimates downward, opposite the direction of the standard provided by the experimenter and toward the actual time given to them after Passage 1.

Once they finished reading Passage 2, the participants once again estimated their reading time and the number of words read. After making their estimates, the experimenter reported their actual time spent reading to them. He also recorded the estimated and the actual times spent reading each passage.

Following the reading speed tasks, each participant filled out several surveys designed to assess relevant dispositional attributes. They completed the *Spiritual Assessment Inventory* (SAI), a 49-item measure of the individual's dispositional tendency for spirituality (Halls & Edwards, 1996; 2002). The inventory is broken into five factors that contribute to one's spirituality: awareness of God (19 items) disappointment in relationship with God (7 items), realistic acceptance of God (7

items), grandiosity in relationship with God (7 items), and instability in relationship with God (9 items). The scale also includes an impression management component (5 items) used to gauge the reliability of the respondent's answers.

They also completed the *Self Consciousness Scale Revised*, a 22-item inventory measuring a dispositional tendency for self-awareness (Scheier & Carver, 1985). The scale is broken into three subscales to further describe the aspects of self-consciousness: private self-consciousness (9 items), public self-consciousness (7 items), and social anxiety (6 items). Each item is rated on a scale from 0 ("not like me at all") to 3 ("a lot like me").

Finally, the experimenter administered the participant's dispositional tendency for self-deception, using the *Balanced Inventory of Desirable Responses* (BIDR; Paulhus, 1984; 1988; 1991). The BIDR measures the dispositional tendency for self-deception and for impression management. It has 40 items that fall under two subscales: self-deception and impression management (20 items each). While this study focuses on self-deception, the impression management portion of the BIDR is still informative. This subscale allows one to distinguish between attempts to self-deceive and attempts of the participants to make themselves seem better than they actually are. Each item was rated on a scale from 1, "not true." to 7, "very true."

After participants had completed these inventories, they answered a series of questions targeting their familiarity with the passages. The participants reported whether they had ever read the Passage 1 or Passage 2 before and how hard they worked on each of them.

Finally, participants were asked to complete demographic questions. When they finished, they were debriefed and thanked for their participation.

Results

Several analyses were performed using split plot factorial (mixed) ANOVAs. Analyses were performed on two major dependent variables: The difference scores that were computed for the difference in participants' estimates of their reading times versus their actual reading times, their self-rated effort scores.

Analysis of difference scores

As stated earlier, my major hypothesis involved the effect of self-focus and spirituality on the difference scores. The main dependent variable involved two difference scores: (a) the difference between the participant's actual reading time and his or her estimated reading time following Passage 1, and (b) the difference between the participant's actual reading time *on Passage 1* and his or her estimated time on Passage 2. The actual reading time on Passage 1 provided an anchor to the participant about how long it should take him or her to read the second passage. If no self-deception occurred, the estimate the participant made about his or her reading time on Passage 2 should be very similar to the actual time for Passage 1 that was reported to him or her. Thus, the difference between the estimated time and the actual time should decrease from Passage 1 to Passage 2 for those not engaging in self-deception.

In contrast, those with a high tendency to manage impressions, though they may decrease the discrepancy between their actual and estimated times after Passage 2, should not reduce the difference as much as those with low tendencies. The added

information before Passage 1, suggesting that they should be reading *faster* than they originally may have thought, should influence them try to keep their estimated time for Passage 1 as fast as possible. I thus predicted that the difference between estimated time and actual time should be bigger after Passage 2 for those with high tendencies to manage impressions than for those who have low tendencies to manage impressions.

For these analyses, I operationalized tendency to manage impressions using the impression management subscale of the SAI. Though originally I intended to use the entire spirituality score, it turned out, there was so little variation between participants on the overall scale score ($M = 3.51$, $SD = .86$) that there was no useful way to divide participants into groups based on the overall measure of spirituality. However, there was sufficient variation on the impression management subscale of the SAI, and it was highly related to the variables under investigation. I performed a median split on the scores, and divided participants into two groups, one with high tendency to manage impressions, and one with a low tendency to do so.

To test the hypothesis that self-focus and tendency to manage impressions affected the size of the difference between actual and estimated reading times from Passage 1 to Passage 2, I performed a split plot factorial ANOVA with two between subjects factors (Self-Focus and Spirituality) and one within subjects factor (Difference in time estimate between Passage 1 and Passage 2), resulting in a 2 (Self-Focus: Mirror Present vs. Mirror Absent) x 2 (Spirituality: High Tendency to Manage Impressions vs. Low Tendency to Manage Impressions) x 2 (Difference Score: Passage 1 vs. Passage 2) design. Results showed a significant main effect of the difference scores: Participants estimates for Passage 2 were significantly closer to their actual time for Passage 1 (the

anchor; $M = 40.63$, $SD = 8.04$), compared to their first estimate (between Passage 1 actual and estimated times; $M = 81.25$, $SD = 17.04$), $F(1) = 6.126$, $p = .028$.

The interaction between Spirituality and Difference in estimates approached (though did not reach) significance, $F(1) = 1.201$, $p = .293$. Generally, participants who tended to manage their impressions of spirituality responded in the expected direction: Those who were more likely to manage the impression of their spirituality ($M = 49.44$, $SD = 13.56$) had lower difference scores on their estimate for Passage 2 than those who were less likely to manage their impressions of their spirituality ($M = 72.44$, $SD = 16.03$).

The interaction between Self-Focus and Difference score also approached significance. For participants in the presence of a mirror, the difference between their estimates for Passage 1 ($M = 111.25$, $SD = 58.03$) were much higher for Passage 2 ($M = 45.00$, $SD = 33.42$) than it was for the control participants who were not in front of a mirror ($M_s = 44.33$ ($SD = 73.63$) and 36.67 ($SD = 28.61$), respectively) showing that mirror-condition participants reduced the gap between their estimated and actual times more than no-mirror-condition participants. Because I had a prediction about the effects of self-focus, I performed planned comparisons to determine if there were significant differences between the mirror and no-mirror groups: Specifically, I found when participants were in front of the mirror, the difference between their actual and estimated time for Passage 1 ($M = 111.25$, $SD = 58.03$) was significantly larger than for Passage 2 ($M = 45.00$, $SD = 33.42$), $t(7) = 3.072$, $p = .018$, two-tailed.

Analysis of self-reported effort scores

In my procedure, I asked participants to record their self-rated effort during the reading tasks. I reasoned that someone who is trying to self-enhance (and thus self-deceive) may increase his or her effort ratings from Passage 1 to Passage 2. However, this analysis was somewhat exploratory. To test the hypothesis that effort scores would be affected by self-focus and spirituality, I performed a split plot factorial ANOVA, with two between subjects factors (Self-Focus and Spirituality) and one within subjects variable (Effort on Passage 1 and Passage 2). This resulted in a 2 (Self-Focus: Mirror Present vs. Mirror Absent) x 2 (Spirituality: High Tendency to Manage Impressions vs. Low Tendency to Manage Impressions) x 2 (Effort Rating: Passage 1 vs. Passage 2) design. This analysis was very similar to the first except the dependent variable was replaced by the self-reported effort scores. I predicted that those who are in the self-focus condition, and those who were most spiritual, would be least likely to self-enhance, and thus should moderate their ratings of effort on Passage 2, whereas participants who are trying to self-enhance will be more likely to increase their effort rating on Passage 2.

The results showed a significant main effect of Effort Rating: Overall, participants rated their efforts on Passage 1 ($M = 4.2941$, $SD = 1.72$) to be lower than their effort on Passage 2 ($M = 5.00$, $SD = 2.26$), $F(1) = 5.44$, $p = .036$.

The interaction between Spirituality and Effort Rating approached significance, $F(1) = 3.436$, $p = .087$. Results showed the expected pattern: Participants who were low in Spirituality gave higher effort scores on Passage 2 ($M = 5.96$, $SD = 1.29$) than they did on passage 1 ($M = 4.50$, $SD = 1.40$). In contrast, participants who were high in

tendency to manage impressions of spirituality gave similar ratings of effort on average for both Passage 1 ($M = 4.17$, $SD = 1.99$) and Passage 2 ($M = 4.33$, $SD = 2.58$).

Discussion

In this study, I examined some of the factors that may promote the use of self-deception. In order to operationalize self-deception I used a similar paradigm as Paulhus and Buckels (2012), assuming that those who exhibit self-enhancement on a practice test are being self-deceptive. In this experiment, the participants could have deceived themselves in several measures. The major dependent variable was the difference between the actual time it took participants to read passage one and their estimate for each passage.

After running the split plot factorial ANOVA, I discovered that there was one factor that had significant results. The participants estimated significantly closer to the actual score in their estimation of the second passage. This means that, overall, participants had low incidence of self-deception. If the participants were engaging in self-deception, I would expect that their second estimate would be closer to their original estimation instead of the actual time that it took them to read the first passage.

Interestingly, when we examine the interactions with the other factors, the same pattern does not necessarily hold true. For example, those who were more likely to manage the impression of their spirituality did have lower difference scores for each passage than the participants who were less likely to manage impressions of their spirituality. Though the difference was not significant, the results are in the expected direction. With a larger sample size, I hypothesize that this difference might be significant. If it were significant, the interaction would suggest that the tendency to

manage the impression of one's spirituality could correlate with increased self-deception. Further research should be done to investigate this interaction for it could have some implications for understanding the spirituality scores.

Hall and Edwards (2002) assumed that the impression management portion of the *Spiritual Assessment Inventory* was adequate to uncover if participants were trying to change their scores to appear more desirable. If the correlation can be proven, it might suggest that the impression management scores on the SAI may be a measure of (or at least confounded by) self-deception. Further research would be needed to see if this was true.

Another variable that the participants could have used to self-deceive was the self-reported ratings of effort for each passage. Participants could have self-deceived in order to explain why they changed their estimates or why their reading speed was not as fast as they may have hoped it would be. The results show a main effect of effort; the participants tried significantly harder on passage 2 than they did on passage one. This measure could be a good measure of self-deception. If participants wanted to be intelligent, they may have manipulated this diagnostic measure in order to seem more intelligent.

The results also suggest a possible interaction between spirituality and effort. This interaction could suggest that those who have a higher tendency to manage impressions of their spirituality, also claimed to work harder on the second passage. The implications may suggest that those who consider themselves more spiritual (concluded from the fact that they desire to manage their impression of spirituality) also seem to have less of a need to claim that they worked harder. This could be for a

variety of reasons, of which we could do no better than guess at. One explanation is that those who want to seem more spiritual want to appear to rely on God to provide for them, requiring them to not have to claim to work as hard. The second, and perhaps more testable, explanation would be that people who do not manage the impression of their spirituality, also do not manage the impression of how hard they worked, and report more accurately, even if that means that it seems like they had to work harder. Both of these claims are very circumstantial, and based on little evidence; more research would need to be done in order to support either claim.

Though there were not many factors that provide significant results, most of the trends seen are in the predicted direction. I would suspect that with more participants, one would find a larger effect than those seen here.

Spirituality scores

In this experiment, I was looking at the effects of spirituality on self-deception, hypothesizing that those who are considered more spiritual would tend to demonstrate fewer accounts of self-deception. I used the Spirituality Assessment Inventory because of its prevalence in other self-enhancement and deception literature (e.g. Edwards & Hall, 2003; Sandage & Crabtree, 2011; Sandage & Jankowski, 2010; Sedikides & Gebauer, 2010). Unfortunately, when analyzing the data, I found very little variability among participants for the overall, average, spirituality scores; all of the participants had similar scores and they all tended toward the same direction.

In order to be able to use any score for spirituality, we needed a measure with larger variability, which the impression management subscale of the spirituality

assessment inventory had. The variability allowed us to note those who were highly spiritual versus those who were low in spirituality, but this measure did not get at spirituality itself, but rather the tendency for participants to manage impressions of spirituality. This distinction is very important in understanding the results of this experiment. For example, we would expect that those who are more spiritual might have lower scores of self-deception, but because the participant may have been simply trying to manage their impressions of spirituality, they may have also been trying to manage the impressions of reading speed or effort scores. If this were the case, it would seem logical to see the opposite of our original hypothesis for spirituality; those who have a high tendency to manage their spirituality may also have a high tendency for self-deception. Because these predictions were not in our original hypothesis, further research would be needed to test actual spirituality, or to see if the tendency to manage the impressions of spirituality truly does correlate with self-deception.

Measuring self-deception

Finding a reliable measure of self-deception is a difficult task (Paulhus & Buckels, 2012). This is because we cannot be certain that the participants are deceiving themselves, and not attempting to deceive the researcher. In this experiment, I attempted to minimize the possibility that they were deceiving me instead of themselves. Several steps were taken in attempts to be more certain that the measure that we examine was, in fact, self-deception.

The first step taken to attempt to discern who the participants were deceiving was placing the participants in a separate room from the experimenter, and reassuring them that their scores would remain anonymous. Theoretically, the less that the

participant felt as though they could have been associated with the scores, the less motive they would have to manage their impression (Strube, 2012).

Another key step taken by the researchers to assist in being sure that we were measuring self-deception was reminding the participants that these were just practice tests, merely for their benefit. If they believed that they were practice tests, they would not have anyone to deceive but themselves (Paulhus & Buckels, 2012).

Overall, we can conclude that while we cannot conclude with certainty that spirituality or self-focused attention affected participant's tendency to self-deceive, these factors may influence this tendency. More research is needed to uncover the factors that would make us most (or least) likely to self-deceive.

References

- Ainsworth, M. D. (1978). *Patterns of attachment*. Hillsdale, NJ, NJ: Lawrence Erlbaum Associates.
- Alicke, M. D., & Sedikides, C. (2009). Self-enhancement and self-protection: What they are and what they do. *European Review of Social Psychology*, 20(1), 1-48. doi: 10.1080/10463280802613866
- Allport, G. W. (1950). *The individual and his religion, a psychological interpretation*. New York: Macmillan.
- Baird, A., & McKay, R. (2008). Psychological factors in retrograde amnesia: Self-deception and a broken heart. *Neurocase*, 14(5), 400-413. doi: 10.1080/13554790802422120
- Bell, T. (2001). Extensive reading: Speed and comprehension. *The Reading Matrix*, 1(1).
- Bem, D. J. (1967). Self-Perception: An Alternative Interpretation Of Cognitive Dissonance Phenomena. *Psychological Review*, 74(3), 183-200. doi: 10.1037/h0024835
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822-848. doi: 10.1037/0022-3514.84.4.822
- Burris, C. T., & Navara, G. S. (2002). Morality play or playing morality?: Intrinsic religious orientation and socially desirable responding. *Self and Identity*, 1(1), 67-76. doi: 10.1080/152988602317232812

- Carver, C. S., & Scheier, M. F. (1978). Self-focusing effects of dispositional self-consciousness, mirror presence, and audience presence. *Journal of Personality and Social Psychology*, 36(3), 324-332. doi: 10.1037/0022-3514.36.3.324
- Dehler, G., & Welsh, M. (1994). Spirituality and Organizational Transformation: Implications for the New Management Paradigm. *Journal of Managerial Psychology*, 9(6), 17-26. doi: 10.1108/02683949410070179
- Depaulo, B. M., & Kashy, D. A. (1998). Everyday lies in close and casual relationships. *Journal of Personality and Social Psychology*, 74(1), 63-79. doi: 10.1037/0022-3514.74.1.63
- Depaulo, B. M., Lindsay, J. J., Malone, B. E., Muhlenbruck, L., Charlton, K., & Cooper, H. (2003). Cues to deception. *Psychological Bulletin*, 129(1), 74-112. doi: 10.1037/0033-2909.129.1.74
- DeWall, N., Baumeister, R., & Vohs, K. (2008). Satiated With Belongingness? Effects of Acceptance, Rejection, and Task Framing on Self-Regulatory Performance. *Journal of Personality and Social Psychology*, 95(6), 1367-1382.
- Ditto, P. H., & Lopez, D. F. (1992). Motivated skepticism: Use of differential decision criteria for preferred and nonpreferred conclusions. *Journal of Personality and Social Psychology*, 63(4), 568-584. doi: 10.1037/0022-3514.63.4.568
- Donahue, M. J. (1985). Intrinsic and extrinsic religiousness: Review and meta-analysis. *Journal of Personality and Social Psychology*, 48(2), 400-419. doi: 10.1037/0022-3514.48.2.400

- Douglas, W., & Gibbins, K. (1983). Inadequacy of voice recognition as a demonstration of self-deception. *Journal of Personality and Social Psychology*, 44(3), 589-592. doi: 10.1037//0022-3514.44.3.589
- Fingarette, H. (1969). Self-deception. London: Routledge & K. Paul.
- Gibbins, K., & Douglas, W. (1985). Voice recognition and self-deception: A reply to Sackeim and Gur. *Journal of Personality and Social Psychology*, 48(5), 1369-1372. doi: 10.1037/0022-3514.48.5.1369
- Gillath, O., Sesko, A. K., Shaver, P. R., & Chun, D. S. (2010). Attachment, authenticity, and honesty: Dispositional and experimentally induced security can reduce self- and other-deception. *Journal of Personality and Social Psychology*, 98(5), 841-855. doi: 10.1037/a0019206
- Goldman, B. M., & Kernis, M. H. (2004). The interrelated roles of dispositional authenticity, self progresses, and global role functioning in affecting psychological adjustment.
- Goleman, D. (1985). *Vital lies, simple truths: The psychology of self-deception*. New York: Simon and Schuster.
- Gorsuch, R. L. (1988). Psychology of Religion. *Annual Review of Psychology*, 39(1), 201-221. doi: 10.1146/annurev.ps.39.020188.001221
- Gur, R. C., & Sackeim, H. A. (1979). Self-deception: A concept in search of a phenomenon. *Journal of Personality and Social Psychology*, 37(2), 147-169. doi: 10.1037//0022-3514.37.2.147
- Hall, T. W., & Edwards, K. J. (2002). The Spiritual Assessment Inventory: A Theistic Model and Measure for Assessing Spiritual Development. *Journal for the Scientific Study of Religion*, 41(2), 341-357. doi: 10.1111/1468-5906.00121

- Hansen, K. E., & Pronin, E. (2012). Illusions of self-knowledge. In S. Vazire & T. D. Wilson (Authors), *Handbook of self-knowledge*. New York, NY: Guilford Press.
- Happé, F. (1999). Autism: Cognitive deficit or cognitive style? [Abstract]. *Trends In Cognitive Sciences*, 3(6), 216-222.
- Heppner, W., & Kernis, M. (2007). "Quiet Ego" Functioning: The Complementary Roles of Mindfulness, Authenticity, and Secure High Self-Esteem. *Psychological Inquiry*, 18(4), 248-251.
- Hill, P. C., & Pargament, K. I. (2003). Advances in the conceptualization and measurement of religion and spirituality: Implications for physical and mental health research. *American Psychologist*, 58(1), 64-74. doi: 10.1037/0003-066X.58.1.64
- Hill, P. C. (1994). Toward an attitude process model of religious experience. *Journal for the Scientific Study of Religion*, 33, 303-314.
- Hill, P. C., Pargament, K. I., Hood, R. W., McCullough, J. E., Swyers, J. P., Larson, D. B., & Zinnbauer, B. J. (2000). Conceptualizing Religion and Spirituality: Points of Commonality, Points of Departure. *Journal for the Theory of Social Behaviour*, 30(1), 51-77. doi: 10.1111/1468-5914.00119
- Holzman, P. S., Rousey, C., & Snyder, C. (1966). On listening to one's own voice: Effects on psychophysiological responses and free associations. [Abstract]. *Journal of Personality and Social Psychology*, 4(4), 432-441. doi: 10.1037/h0023790

- Impett, E. A., Sorsoli, L., Schooler, D., Henson, J. M., & Tolman, D. L. (2008). Girls' relationship authenticity and self-esteem across adolescence. *Developmental Psychology*, 44(3), 722-733. doi: 10.1037/0012-1649.44.3.722
- [Introduction]. (1963). In E. Fry (Author), *Reading faster: A drill book*. Cambridge: University Press.
- [Introduction]. (1985). In R. Trivers (Author), *Social evolution*. Menlo Park, CA: Benjamin/Cummings Pub.
- Jones, E. E., & Nisbett, R. E. (1971). *The actor and the observer: Divergent perceptions of the causes of behavior*. New York: General Learning Press.
- Kashy, D. A., & DePaulo, B. M. (1996). Who lies? *Journal of Personality and Social Psychology*, 70(5), 1037-1051. doi: 10.1037//0022-3514.70.5.1037
- Kernis, M. H., & Goldman, B. M. (2006). *Advances in Experimental Social Psychology*, 38, 283-357. doi: 10.1016/S0065-2601(06)38006-9
- Knee, C. R., Canevello, A., Bush, A. L., & Cook, A. (2008). Relationship-contingent self-esteem and the ups and downs of romantic relationships. *Journal of Personality and Social Psychology*, 95(3), 608-627. doi: 10.1037/0022-3514.95.3.608
- Lalwani, A. K., & Shavitt, S. (2009). The “me” I claim to be: Cultural self-construal elicits self-presentational goal pursuit. *Journal of Personality and Social Psychology*, 97(1), 88-102. doi: 10.1037/a0014100
- Lanyon, R. I., & Carle, A. C. (2007). Internal and External Validity of Scores on the Balanced Inventory of Desirable Responding and the Paulhus Deception

- Scales. *Educational and Psychological Measurement*, 67(5), 859-876. doi: 10.1177/0013164406299104
- Lee, S., & Klein, H. J. (2002). Relationships between conscientiousness, self-efficacy, self-deception, and learning over time. *Journal of Applied Psychology*, 87(6), 1175-1182. doi: 10.1037//0021-9010.87.6.1175
- Leffel, G. (2007). Emotion and transformation the relational spirituality paradigm part 1. Prospects and prescriptions for reconstructive dialogue. *Journal of Psychology and Theology*, 35(4), 263-280.
- Lemay, E., & Dudley, K. (2011). Caution: Fragile! Regulating the interpersonal security of chronically insecure partners. *Journal of Personality and Social Psychology*, 100(4), 681-702.
- Lewis, B. L. (1996). Self-deception: A postmodern reflection. *Journal of Theoretical and Philosophical Psychology*, 16(1), 49-66. doi: 10.1037/h0091152
- Libby, L., Valenti, G., Pfent, A., & Eibach, R. (2011). Seeing failure in your life: Imagery perspective determines whether self-esteem shapes reactions to recalled and imagined failure. *Journal of Personality and Social Psychology*, 101(6), 1157-1173.
- Lipschitz, A. (1974). The observing actor: Divergent perceptions of the cause of one's own behavior. *Social Behavior and Personality: An International Journal*, 2(2), 177-183. doi: 10.2224/sbp.1974.2.2.177
- Lockard, J. S., & Paulhus, D. L. (1988). *Self-deception: An adaptive mechanism?* Englewood Cliffs, NJ: Prentice Hall.

- Martin, L. L., & Tesser, A. (2009). Five markers of motivated behavior. In G. B. Moskowitz & H. G. Halvorson (Authors), *The psychology of goals* (pp. 257-276). New York: Guilford Press.
- McMinn, M. R., & McMinn, M. (2003). Illusory spiritual health: The role of defensiveness in understanding and assessing spiritual health. In T. W. Hall (Author), *Spiritual formation, counseling, and psychotherapy*. New York, NY: Nova Science.
- Mcfarland, C., Buehler, R., Rütli, R. V., Nguyen, L., & Alvaro, C. (2007). The impact of negative moods on self-enhancing cognitions: The role of reflective versus ruminative mood orientations. *Journal of Personality and Social Psychology*, 93(5), 728-750. doi: 10.1037/0022-3514.93.5.728
- Mckay, R. T., & Dennett, D. C. (2009). The evolution of misbelief. *Behavioral and Brain Sciences*, 32(06), 493. doi: 10.1017/S0140525X09990975
- Meehl, P. E. (1950). The individual and his religion. *Journal of Applied Psychology*, 34(6), 451-452. doi: 10.1037/h0052066
- Miller, A. G., & DePaulo, B. M. (2004). The many faces of lies. In *The social psychology of good and evil* (pp. 303-326). New York: Guilford Press.
- Murray, S. L., Holmes, J. G., & Griffin, D. W. (1996). The benefits of positive illusions: Idealization and the construction of satisfaction in close relationships. *Journal of Personality and Social Psychology*, 70(1), 79-98. doi: 10.1037//0022-3514.70.1.79
- Newman, L. S. (1999). Motivated Cognition and Self-Deception. *Psychological Inquiry*, 10(1), 59-63. doi: 10.1207/s15327965pli1001_9

- Ogden, S. K., & Biebers, A. D. (2010). *Psychology of denial*. Retrieved February 20, 2014, from <http://web.b.ebscohost.com/ehost/detail?sid=e28eb2a2-dd4e-40b3-abfcd8e86afe5757%40sessionmgr111&vid=1&hid=122&bdata=JnNpdGU9ZW hvc3QtbGl2ZQ%3d%3d#db=nlebk&AN=346104>
- Olivos, G. (1967). Response delay. psychophysiological activation and recognition of one's own voice. [Abstract]. *Psychosomatic Medicine*, 29, 433-440.
- Palenzuela, D. (1987). Sphere-specific measures of perceived control: Perceived contingency, perceived competence, or what? A critical evaluation of Paulhus and Christie's approach. *Journal of Research in Personality*, 21(3), 264-286. doi: 10.1016/0092-6566(87)90011-0
- Paulhus, D., & Buckels, E. (2012). Classic self-deception revisited. In S. Vazire & T. D. Wilson (Authors), *Handbook of self-knowledge*. New York, NY: Guilford Press.
- Paulhus, D. (1984). Balanced Inventory of Desirable Responding (BIDR). *Journal of Research in Personality*, 37-56.
- Piedmont, R. L. (1999). Does Spirituality Represent the Sixth Factor of Personality? Spiritual Transcendence and the Five-Factor Model. *Journal of Personality*, 67(6), 985-1013. doi: 10.1111/1467-6494.00080
- Pryor, J. B., Gibbons, F., Wicklund, R. A., Fazio, R. H., & Hood, R. (1977). Self-focused attention and self-report validity. *Journal of Personality*, 45(4), 513-515.
- Rasinski, T. V. (2002). Speed does matter in reading. *The Reading Teacher*, 54, 146-151.
- Reiss, S. (2004). The sixteen strivings for God [Abstract]. *Zygon*, 39(2), 303-320. doi: 10.1111/j.1467-9744.2004.00575.x

- Räikkä, J. (2007). Self-Deception And Religious Beliefs. *The Heythrop Journal*, 48(4), 513-526. doi: 10.1111/j.1468-2265.2007.00327.x
- Roback, A. A. (1951). The individual and his religion. *Psychological Bulletin*, 48(2), 173-175. doi: 10.1037/h0051192
- Roth, D. L., & Ingram, R. E. (1985). Factors in the Self-Deception Questionnaire: Associations with depression. *Journal of Personality and Social Psychology*, 48(1), 243-251. doi: 10.1037/0022-3514.48.1.243
- Sackeim, H. A., & Gur, R. C. (1978). Self-deception, other-deception and consciousness. In G. E. Schwartz & D. Shapiro (Authors), *Consciousness and self-regulation: Advances in research and theory. Vol.2*. Chichester: Wiley.
- Sackeim, H. A., & Gur, R. C. (1985). Voice recognition and the ontological status of self-deception. *Journal of Personality and Social Psychology*, 48(5), 135-1368. doi: 10.1037/0022-3514.48.5.1365
- Sandage, S. J., & Crabtree, S. (2011). Spiritual pathology and religious coping as predictors of forgiveness. *Mental Health, Religion & Culture*, 1-19. doi: 10.1080/13674676.2011.613806
- Sandage, S. J., & Jankowski, P. J. (2010). Forgiveness, spiritual instability, mental health symptoms, and well-being: Mediator effects of differentiation of self. *Psychology of Religion and Spirituality*, 2(3), 168-180. doi: 10.1037/a0019124
- Scheier, M. F., Carver, C. S., & Gibbons, F. X. (1979). Self-directed attention, awareness of bodily states, and suggestibility. *Journal of Personality and Social Psychology*, 37(9), 1576-1588. doi: 10.1037/0022-3514.37.9.1576

- Schlegel, R. J., Hicks, J. A., Arndt, J., & King, L. A. (2009). Thine own self: True self-concept accessibility and meaning in life. *Journal of Personality and Social Psychology*, 96(2), 473-490. doi: 10.1037/a0014060
- Sedikides, C., & Gebauer, J. E. (2010). Religiosity as Self-Enhancement: A Meta-Analysis of the Relation Between Socially Desirable Responding and Religiosity. *Personality and Social Psychology Review*, 14(1), 17-36. doi: 10.1177/1088868309351002
- Sheldon, K. M., Ryan, R. M., Rawsthorne, L. J., & Ilardi, B. (1997). Trait self and true self: Cross-role variation in the Big-Five personality traits and its relations with psychological authenticity and subjective well-being. *Journal of Personality and Social Psychology*, 73(6), 1380-1393. doi: 10.1037//0022-3514.73.6.1380
- Silvia, P. J., & Gendolla, G. E. (2001). On introspection and self-perception: Does self-focused attention enable accurate self-knowledge? *Review of General Psychology*, 5(3), 241-269. doi: 10.1037//1089-2680.5.3.241
- Starek, J. E., & Keating, C. F. (1991). Self-deception and Its relationship to success in competition. *Basic and Applied Social Psychology*, 12(2), 145-155. doi: 10.1207/s15324834basp1202_2
- Statman, D. (1997). Hypocrisy and self-deception. *Philosophical Psychology*, 10(1), 57-75. doi: 10.1080/09515089708573204
- Teahan, J. E. (1987). It's a sin to tell a lie if you don't believe it yourself. *American Psychologist*, 42(6), 604-605.

- Theran, S. A. (2010). Authenticity with authority figures and peers: Girls' friendships, self-esteem, and depressive symptomatology. *Journal of Social and Personal Relationships*, 27(4), 519-534. doi: 10.1177/0265407510363429
- Tomash, J., & Reed, P. (2013). The generalization of a conditioned response to deception across the public/private barrier. *Learning and Motivation*, 44(3), 196-203. doi: 10.1016/j.lmot.2012.12.001
- Twerski, A. J. (2003). *Addictive thinking: Understanding self-deception*. Center City, MN: Hazelden.
- Welles, J. (1986). Self-deception as a positive feedback mechanism. *American Psychologist*, 41(3), 325-326.
- Wood, A. M., Linley, P. A., Maltby, J., Baliousis, M., & Joseph, S. (2008). The authentic personality: A theoretical and empirical conceptualization and the development of the Authenticity Scale. *Journal of Counseling Psychology*, 55(3), 385-399. doi: 10.1037/0022-0167.55.3.385
- Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35(2), 151-175. doi: 10.1037//0003-066X.35.2.151

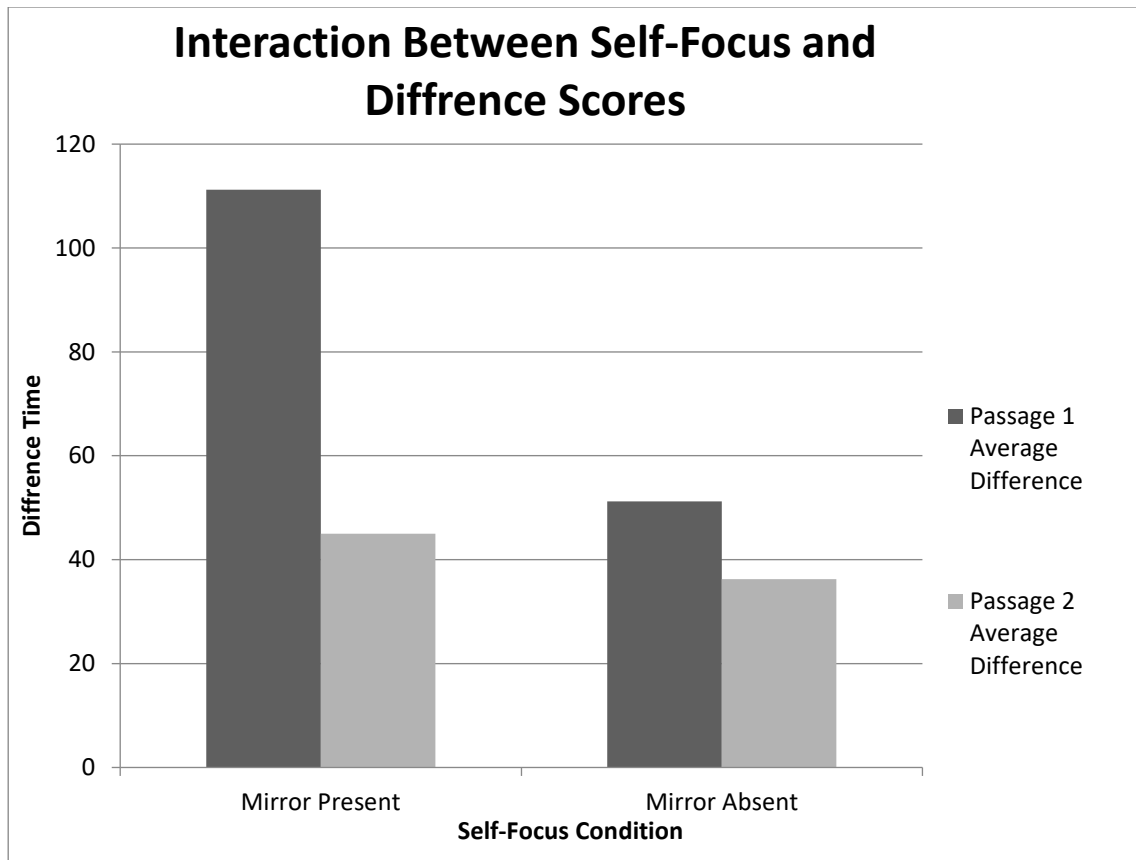


Figure 1. Bar graph demonstrating mean difference times for the interaction between the self-focus condition and the Passage being read. No significance was found in the interaction, but there was a significant difference between Passage 1 and passage 2 readings in the mirror present condition, but not the mirror absent condition.

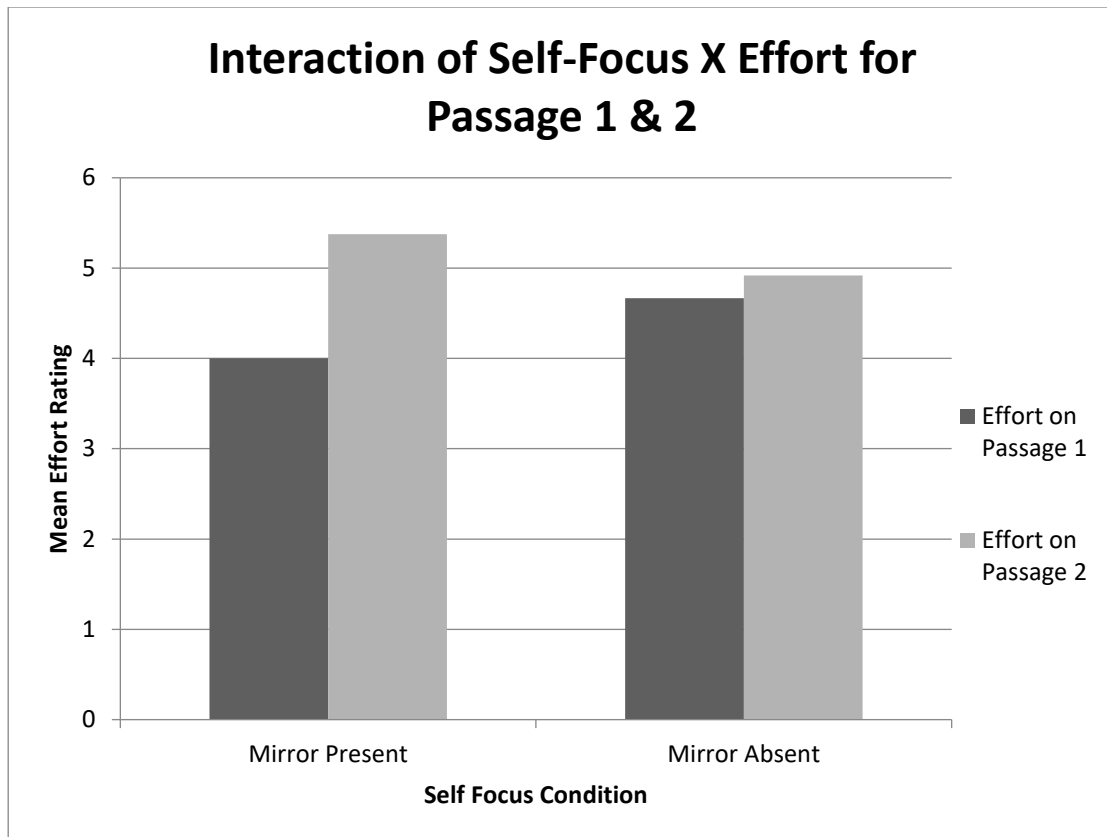


Figure 2. Bar graph demonstrating mean self-reported effort scores for the interaction between the self-focus condition and the Passage being read. No significance was found in the interaction.

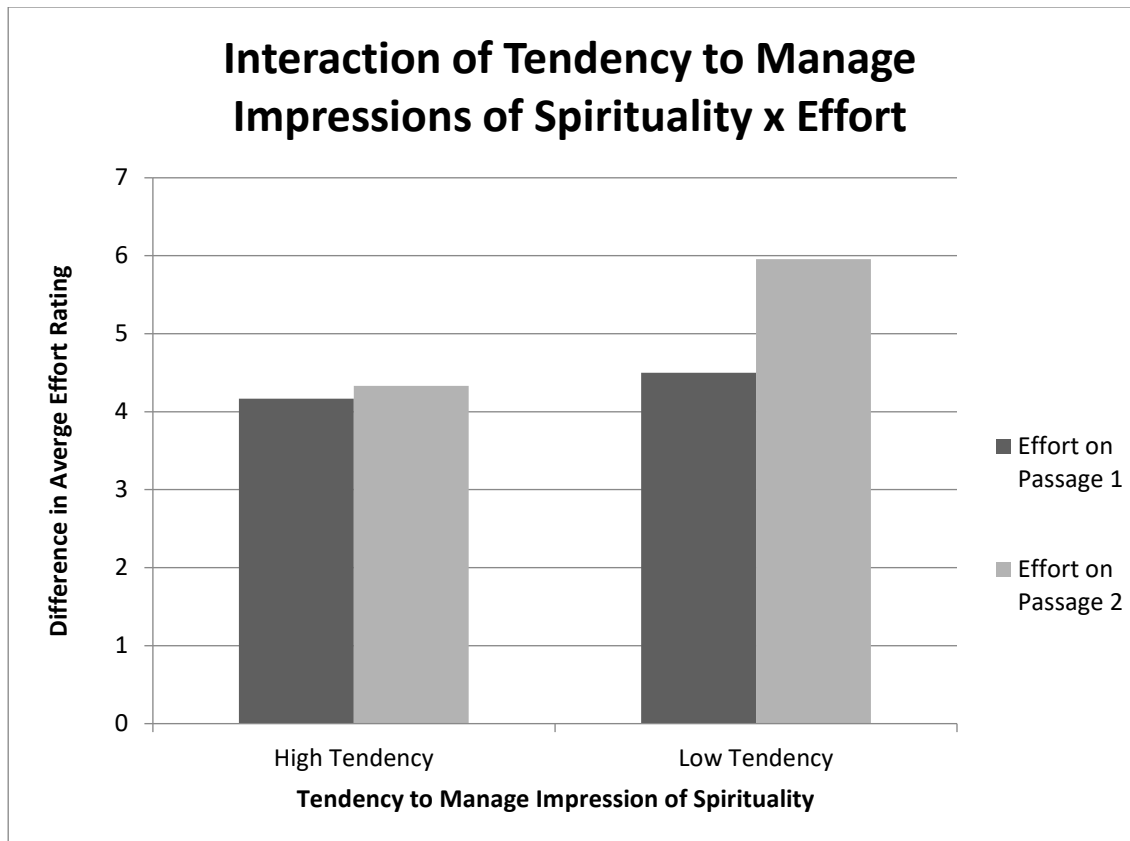
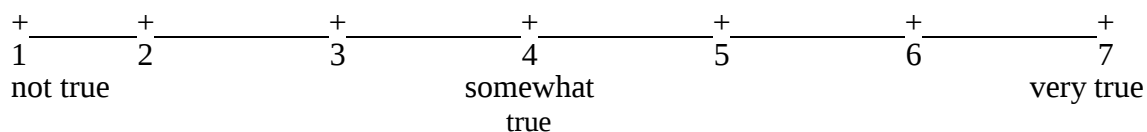


Figure 3. Bar graph demonstrating mean self-reported effort scores for the interaction between the tendency to manage impressions of spirituality and the Passage being read. No significance was found in the interaction.

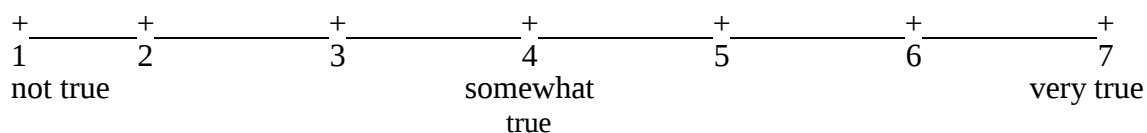
Appendix A

Balanced Inventory of Desirable Responses

Using the scale below as a guide, write a number beside each statement to indicate how true it is.



- ___ 1. My first impressions of people usually turn out to be right.
- ___ 2. It would be hard for me to break any of my bad habits.
- ___ 3. I don't care to know what other people really think of me.
- ___ 4. I have not always been honest with myself.
- ___ 5. I always know why I like things.
- ___ 6. When my emotions are aroused, it biases my thinking.
- ___ 7. Once I've made up my mind, other people can seldom change my opinion.
- ___ 8. I am not a safe driver when I exceed the speed limit.
- ___ 9. I am fully in control of my own fate.
- ___ 10. It's hard for me to shut off a disturbing thought.
- ___ 11. I never regret my decisions.
- ___ 12. I sometimes lose out on things because I can't make up my mind soon enough.
- ___ 13. The reason I vote is because my vote can make a difference.
- ___ 14. My parents were not always fair when they punished me.
- ___ 15. I am a completely rational person.
- ___ 16. I rarely appreciate criticism.
- ___ 17. I am very confident of my judgments
- ___ 18. I have sometimes doubted my ability as a lover.
- ___ 19. It's all right with me if some people happen to dislike me.



- ____ 20. I don't always know the reasons why I do the things I do.
- ____ 21. I sometimes tell lies if I have to.
- ____ 22. I never cover up my mistakes.
- ____ 23. There have been occasions when I have taken advantage of someone.
- ____ 24. I never swear.
- ____ 25. I sometimes try to get even rather than forgive and forget.
- ____ 26. I always obey laws, even if I'm unlikely to get caught.
- ____ 27. I have said something bad about a friend behind his/her back.
- ____ 28. When I hear people talking privately, I avoid listening.
- ____ 29. I have received too much change from a salesperson without telling him or her.
- ____ 30. I always declare everything at customs.
- ____ 31. When I was young I sometimes stole things.
- ____ 32. I have never dropped litter on the street.
- ____ 33. I sometimes drive faster than the speed limit.
- ____ 34. I never read sexy books or magazines.
- ____ 35. I have done things that I don't tell other people about.
- ____ 36. I never take things that don't belong to me.
- ____ 37. I have taken sick-leave from work or school even though I wasn't really sick.
- ____ 38. I have never damaged a library book or store merchandise without reporting it.
- ____ 39. I have some pretty awful habits.
- ____ 40. I don't gossip about other people's business.

Appendix B

Spirituality Assessment Inventory

Instructions:

Please respond to each statement below by writing the number that best represents your experience in the box to the right of the statement. It is best to answer according to what really reflects your experience rather than what you think your experience should be. Give the answer that comes to mind first, do not spend too much time thinking about an item. Give the best possible response to each statement even if it does not provide all the information you would like. Try your best to respond to all statements. Your answers will be completely confidential.

Some of the statements consist of two parts as shown here:

2. There are times when I feel disappointed with God.

When this happens, I still want our relationship to continue.

Your response to the second part of two tells how true statement that portion is for you when you have the experience of feeling disappointed with God described in the first part of statement 2.

1	2	3	4	5
Not At All True	Slightly True	Moderately True	Substantially True	Very True
_____	1. I have a sense of how God is working in my life			
_____	2. There are times when I feel disappointed with God			
	_____	When this happens, I still want our relationship to continue		
_____	3. God's presence feels very real to me			
_____	4. I am afraid that God will give up on me			
_____	5. I seem to have a unique ability to influence God through my prayers			
_____	6. Listening to God is an essential part of my life			
_____	7. I am always in a worshipful mood when I go to church.			
_____	8. There are times when I feel frustrated with God			
	_____	When I feel this way, I still desire to put effort into our relationship		
_____	9. I am aware of God prompting me to do things			
_____	10. My emotional connection with God is unstable			
_____	11. My experiences of God's responses to me impact me greatly			
_____	12. There are times when I feel irritated at God			

1	2	3	4	5
Not At All True	Slightly True	Moderately True	Substantially True	Very True

_____ When I feel this way, I am able to come to some sense of resolution in our relationship

_____ 13. God recognizes that I am more spiritual than most people

_____ 14. I always seek God's guidance for every decision I make

_____ 15. I am aware of God's presence in my interactions with other people

_____ 16. There are times when I feel that God is punishing me

_____ 17. I am aware of God responding to me in a variety of ways

_____ 18. There are times when I feel angry at God

_____ When this happens, I still have the sense that God will always be with me

_____ 19. I am aware of God attending to me in times of need

_____ 20. God understands that my needs are more important than most people's

_____ 21. I am aware of God telling me to do something

_____ 22. I worry that I will be left out of God's plans

_____ 23. My experiences of God's presence impacts me greatly

_____ 24. I am always as kind at home as I am at church.

_____ 25. I have a sense of the direction in which God is guiding me

_____ 26. My relationship with God is an extraordinary one that most people would not understand

_____ 27. There are times when I feel betrayed by God

_____ When I feel this way, I put effort into restoring our relationship

_____ 28. I am aware of God communicating to me in a variety of ways

_____ 29. Manipulating God seems to be the best way to get what I want

_____ 30. I am aware of God's presence in times of need

_____ 31. From day to day, I sense God being with me

_____ 32. I pray for all my friends and relatives every day

1	2	3	4	5
Not At All True	Slightly True	Moderately True	Substantially True	Very True

___ 33. There are times when I feel frustrated by God for not responding to my prayers

___ When I feel this way, I am able to talk it through with God

___ 34. I have a sense of God communicating guidance to me

___ 35. When I sin, I tend to withdraw from God

___ 36. I experience an awareness of God speaking to me personally

___ 37. I find my prayers to God are more effective than other people's

___ 38. I am always in the mood to pray.

___ 39. I feel I have to please God or he might reject me

___ 40. I have a strong impression of God's presence

___ 41. There are times when I feel that God is angry at me

___ 42. I am aware of God being very near to me

___ 43. When I sin, I am afraid of what God will do to me

___ 44. When I consult God about decisions in my life, I am aware of his direction and help

___ 45. I seem to be more gifted than most people in discerning God's will

___ 46. When I feel God is not protecting me, I tend to feel worthless

___ 47. There are times when I feel like God has let me down

___ When this happens, my trust in God is not completely broken

Appendix C

Self-Consciousness Scale Revised

Please answer the following questions about yourself by writing in an appropriate answer on the line next to the question. For each of the statements, indicate how much each statement is like you by using the following scale:

+	+	+	+
0	1	2	3
Not like me at all	somewhat like me	A little like me	a lot like me

Please be as honest as you can throughout, and try not to let your responses to one question influence your response to other questions. There are no right or wrong answers.

- ___ 1. I'm always trying to figure myself out.
- ___ 2. I'm concerned about my style of doing things.
- ___ 3. It takes me time to get over my shyness in new situations.
- ___ 4. I think about myself a lot.
- ___ 5. I care a lot about how I present myself to others.
- ___ 6. I often daydream about myself.
- ___ 7. It's hard for me to work when someone is watching me.
- ___ 8. I never take a hard look at myself.
- ___ 9. I get embarrassed very easily.
- ___ 10. I'm self-conscious about the way I look.
- ___ 11. It's easy for me to talk to strangers.
- ___ 12. I generally pay attention to my inner feelings.
- ___ 13. I usually worry about making a good impression.
- ___ 14. I'm constantly thinking about my reasons for doing things.
- ___ 15. I feel nervous when I speak in front of a group.
- ___ 16. Before I leave my house, I check how I look.
- ___ 17. I sometimes step back (in my mind) in order to examine myself from a distance.
- ___ 18. I'm concerned about what other people think of me.

- ____ 19. I'm quick to notice changes in my mood.
- ____ 20. I'm usually aware of my appearance.
- ____ 21. I know the way my mind works when I work through a problem.
- ____ 22. Large groups make me nervous.