

ABSTRACT

The Effects of Attachment to God in Relation to an In Vivo Thought Induction Task among Religious Individuals

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Extending prior research on the relation between attachment to God and obsessive-compulsive symptoms, this study used a thought induction task and examined whether attachment to God contributed to anxiety, misappraisals, and neutralizing efforts following that task. A sample of undergraduate students ($N = 106$), who endorsed belief in God, a higher power, or a cosmic force, completed self report measures and performed a well-validated thought induction task. As predicted, anxious attachment to God correlated with anxiety following the thought-induction task. Anxious attachment to God continued to correlate with post-thought induction anxiety after controlling for pre-thought induction anxiety and religiosity. Although anxious attachment to God positively correlated with a desire to pray following the thought induction task, this correlation appeared attributable to religiosity. As expected, avoidant attachment to God generally did not relate to the criterion variables. Conceptual and therapeutic implications of these results are discussed, as well as future directions and limitations.

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THE EFFECTS OF ATTACHMENT TO GOD IN RELATION TO AN IN VIVO
THOUGHT INDUCTION TASK AMONG RELIGIOUS INDIVIDUALS

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CHAPTER ONE

Introduction

Obsessive-compulsive disorder (OCD) is characterized by the presence of obsessions, compulsions, or both (American Psychiatric Association, 2013). Obsessions are recurrent and persistent thoughts, images, or impulses that cause distress to the individual. On the other hand, compulsions are the individual's purposeful attempts to reduce distress associated with thoughts by engaging in repetitive behaviors (e.g., checking, hand-washing) or mental actions (e.g., counting, prayer) (Abramowitz, Taylor, & McKay, 2009).

Cognitive-behavioral models suggest that obsessions develop from naturally occurring, intrusive thoughts (Abramowitz et al., 2009). Studies have found that intrusive thoughts are nearly-universally experienced, with intrusive thoughts being prevalent in individuals from several countries and across continents (Rachman, 2014; Radomsky et al., 2014). Further, Rachman and de Silva (1978) found that nonclinical individuals experience unwanted thoughts that are similar in content to the obsessions of individuals with OCD, such as contamination, aggression, sexuality, and doubt. According to cognitive-behavioral models, intrusive thoughts develop into obsessions when a person appraises his or her thoughts as especially significant and/or threatening (Abramowitz et al., 2009). For instance, if an intrusive thought contradicts some aspect of a person's self-concept, he or she is more likely to misappraise its significance and meaning. Negatively appraised intrusive thoughts are, in turn, more likely to be responded to with neutralization efforts as an attempt to mitigate distress. Although

neutralization efforts temporarily reduce distress, they actually increase the frequency, perceived significance, and distress surrounding intrusive thoughts (Abramowitz et al., 2009). Whereas intrusive thoughts are not limited to individuals with OCD, clinical obsessions that characterize OCD tend to have a longer duration, are harder to dismiss, and are more frequent and distressing than nonclinical intrusive thoughts (Rassin, Cogle, & Muris, 2007). Overall, researchers propose that intrusive thoughts exist on a continuum, with intrusive thoughts becoming obsessional in nature when they are negatively appraised and responded to with neutralization efforts (Clark et al., 2014).

Studies indicate that OCD is composed of several symptom dimensions (Olatunji, Williams, Haslam, Abramowitz, & Tolin, 2008; McKay et al., 2004; Mataix-Cols, Rosario-Campos, & Leckman, 2005). The symptom dimensions most consistently found in studies are (a) contamination obsessions and cleaning compulsions; (b) responsibility for harm obsessions and checking compulsions; (c) obsessions with order and compulsions to order; and (d) obsessions concerning sex, violence, and religion and compulsive rituals and neutralizing strategies (Abramowitz et al., 2009). Other research has focused on organizing symptom dimensions into distinct subtypes (McKay et al., 2004), one of which is scrupulosity.

Scrupulosity is a subtype of OCD characterized by obsessions and compulsions relating to religion and morality (Abramowitz & Jacoby, 2014). Scrupulous individuals experience obsessions that include doubt that they committed certain sins or moral transgressions by mistake or without their realization, fear that they did not perform a religious ritual correctly, intrusive sacrilegious or blasphemous images, doubts that one is not pious enough, and fear of eternal damnation. Compulsions commonly associated

with scrupulosity include excessive praying, repetition of religious rituals or bible verses, seeking unnecessary reassurance of salvation from others, and unnecessary confession (Abramowitz & Jacoby, 2014). The compulsions are meant to help alleviate distress related to intrusive thoughts. As discussed, although compulsions typically help reduce immediate distress, the compulsions typically lead to an even greater frequency of intrusive thoughts and, consequently, greater distress. According to Abramowitz and Jacoby (2014), the exacerbation of distress tends to happen among scrupulous individuals because they are often intolerant of uncertainty (i.e., fear the unknown; Carleton, 2012). Consequently, if scrupulous individuals are unsure whether their prayers or confessions will absolve them of their “sinful” obsessions, they will experience greater distress and become more preoccupied with their thoughts.

In clinical and nonclinical samples, scrupulosity is associated with higher levels of religiousness (Abramowitz, Deacon, Woods, & Tolin, 2004; Abramowitz, Huppert, Cohen, Tolin, & Cahill, 2002). One proposed reason for this association is that certain religious doctrines may exacerbate scrupulous behavior (Abramowitz & Jacoby, 2014). For example, religious doctrines may impose strict moral standards, have important authority figures, and include the possibility of severe punishment for sin. Abramowitz and Jacoby (2014) suggest that the misinterpretation of intrusive thoughts as especially meaningful and significant is a contributing factor that can lead to scrupulous behavior among religious individuals. For example, the misinterpretation of intrusive thoughts can lead religious individuals to fear God and experience doubt about religious observance, which may ultimately result in neutralizing efforts in an attempt to reduce distress.

Though scrupulosity remains understudied (Miller & Hedges, 2008), some headway has been made on understanding why religious individuals may interpret intrusive thoughts through the examination of thought-action fusion (TAF). TAF represents an individual's tendency to believe that certain thoughts inevitably result in actions (Shafran, Thordarson, & Rachman, 1996). Shafran et al. (1996) found that TAF could be separated into two distinct themes: moral and likelihood. Moral TAF is an individual's belief that thinking a "bad" thought is morally equivalent to acting out the thought. Likelihood TAF is an individual's belief that thinking a certain thought makes that thought more likely to occur. Self-report measures of TAF have been useful for examining how TAF relates to obsessive-compulsive symptoms and religiosity (Shafran et al., 1996; Williams, Lau, & Grisham, 2013). For example, Williams et al. (2013) found that TAF served as a mediator between religiosity and obsessive-compulsive symptoms. Some religions, particularly Christianity, emphasize purity of thought and intention, potentially causing some highly religious individuals to attribute more significance to naturally occurring intrusive thoughts. As previously stated, assigning significance to intrusive thoughts can contribute to the development of obsessive-compulsive symptoms (Abramowitz et al., 2009).

Researchers have sought to extend the assessment of TAF through the use of a thought induction task (Berman, Abramowitz, Wheaton, Pardue, & Fabricant, 2011). In the thought induction task, participants are asked to think of a close friend or relative and then asked to write that person's name into sentences designed to activate TAF beliefs. For instance, participants may be asked to insert the beloved person's name into the sentence "I hope _____ dies in a car accident today." After writing the name into the

sentence, participants are asked to imagine the event occurring. Immediately following imagining the respective scenario, participants are asked to rate their levels of anxiety and the perceived likelihood and moral wrongness of what they just imagined. Using this task, Berman, Abramowitz, Pardue, and Wheaton (2010) found that writing and thinking about the respective event was rated as more morally wrong and related to a greater likelihood that the negative event would actually occur among religious, relative to non-religious, individuals. Interestingly, in an extension of that study, Berman, Stark, Ramsey, Cooperman, and Abramowitz (2014) found that religiosity was associated with the use of prayer as a way to neutralize the distress from the task. Despite these promising findings, it remains unclear what factors may help contribute to TAF and neutralizing reactions among religious individuals.

The present study considers whether attachment to God may contribute to a better understanding of TAF and neutralizing reactions among religious individuals. Bowlby (1969/1982) originally suggested that infants form an attachment to their primary caregiver who they can turn to as a “safe haven” in moments of distress. Subsequent research has proposed different models of attachment for adults and children (Bartholomew & Horowitz, 1991). Related to the present research, several studies have shown that attachment theory can also be applied to supernatural figures (Granqvist & Kirkpatrick, 2013). Attachment to God is one particular attachment that has received much research attention, with studies suggesting that, for many people, God serves as a safe haven and a secure base (Kirkpatrick, 1992; Granqvist & Kirkpatrick, 2013). Research by Rowatt and Kirkpatrick (2002) suggests that attachment to God can be represented by two distinct dimensions, labeled attachment anxiety and attachment

avoidance. According to Rowatt and Kirkpatrick, individuals high in attachment anxiety view God as inconsistent in meeting their needs and high in attachment avoidance are distrusting of God as an attachment figure.

Rowatt and Kirkpatrick (2002) found that attachment anxiety, but not attachment avoidance, in relation to God positively correlated with negative affect. Extending these findings, Fergus and Rowatt (2014) found that attachment anxiety, but not attachment avoidance, in relation to God positively correlated with obsessive-compulsive symptoms (including scrupulosity) and beliefs related to the over-importance of thoughts.

Following from contemporary conceptions of attachment theory (Shaver & Mikulincer, 2002) and applications of that theory to obsessive-compulsive symptoms (Doron, Moulding, Kyrios, Nedeljkovic, & Mikulincer, 2009), Fergus and Rowatt proposed that the inability for individuals with attachment anxiety to find internal representations of security increases the likelihood for the misinterpretation of intrusive thoughts as being highly threatening and significant. This proposal is consistent with Fergus and Rowatt's findings that attachment anxiety in relation to God positively correlated with beliefs related to the over-importance of thoughts. Interestingly, when faced with threats, attachment anxiety is related to a hyperactivation of the attachment system as an attempt to restore proximity to an attachment figure (Shaver & Mikulincer, 2002). Prayer is one of the most commonly engaged in behaviors that might facilitate psychological proximity to God (Granqvist & Kirkpatrick, 2013) and, as discussed, prayer may be used as a way to reduce distress associated with intrusive thoughts (Berman et al., 2014).

Although well grounded within existing theory and research findings, Fergus and Rowatt's (2014) proposal as to how attachment to God may contribute to obsessive-

compulsive symptoms remains unexamined. The purpose of the present study was to fill that gap in the literature by examining how attachment to God relates to anxiety, TAF appraisals, and neutralizing reactions among religious individuals using the thought induction task introduced earlier. Informed by Fergus and Rowatt's findings, it was predicted that attachment anxiety, but not attachment avoidance, in relation to God would positively relate to criterion variables of the thought induction task. Religiosity was used as a covariate, as Siev, Baer, and Minichiello (2011) stated that obsessive-compulsive symptoms may simply represent a marker of religiosity in nonclinical samples.

CHAPTER TWO

Methods and Materials

Participants.

The sample consisted of 106 undergraduate students from Baylor University who endorsed believing in God, higher power, or cosmic force. The mean age of the sample was 18.8 years ($SD = 0.9$) and participants predominantly self-identified as female (83%). In terms of racial/ethnic identification 61% of the sample identified as white, 24.8% as Latino, 4.8% black, 4.8% bi- or multi-racial, 1.9% Asian, and 1.7% other. In terms with current religious self-identification, 73.6% of the sample-identified as Protestant, 19.8% as Catholic, 0.9% as Baha'i, 0.9% as Buddhist, 0.9% as Muslim, and 0.9% as "other." Approximately 2.8% of the sample reported having no religious affiliation.

Self-Report Measures.

Experiences in Close Relationships-Relationship Structure (ECR-RS). The ECR-RS (Fraley, Heffernan, Vicary, & Brumbaugh, 2011) assesses an individual's level of attachment anxiety (e.g. *I often worry that this person doesn't really care for me*) and attachment avoidance (e.g. *I prefer not to show this person how I feel deep down*), respectively. The ECR-RS was developed to assess attachment dimensions across contexts, with Fraley et al. (2011) stating that "an ideal assessment tool would use the same kinds of items and scales to assess attachment security in different relationships, making comparisons across relationships more meaningful" (p. 616). In the present study, participants were asked to answer the questions about God or a supernatural figure. The measure is nine items and participants rate each item on a scale ranging from 1

(*strongly disagree*) to 7 (*strongly agree*). Three of the items measure attachment anxiety and six of the items measure attachment avoidance. Both scales of the ECR-RS demonstrated adequate internal consistency in the present study (Cronbach's α : anxiety = .87; avoidance = .88).

General Religiousness Scale. The General Religiousness Scale (Rowatt, LaBouff, Johnson, Froese, & Tsang, 2009) is a 4-item scale that assesses religiosity. The four items are: (a) *How religious do you consider yourself to be?*; (b) *How often do you attend religious services?*; (c) *How often do you read the Bible, Koran, Torah, or other sacred book?*; and (d) *About how often do you pray or meditate outside of religious services?* . In this study, a total scale was created by standardizing responses to each item and summing these standardized scores. The GRS demonstrated adequate internal consistency in the present study ($\alpha = .85$).

Thought Induction Task.

Berman et al.'s (2011) thought-induction task consisted of asking participants to first rate their level of anxiety at that moment using a 0 (*none*) to 100 (*extreme*) visual analogue scale (VAS). Next, participants identified the name of a loved one and typed the name of the loved one into a text box. Participants were then asked to type out the sentence "I hope __ gets into a car accident this week and ends up in critical care," while typing the name of the previously identified love one into the sentence. Participants were then asked to close their eyes and imagine the situation as if it were actually occurring for five seconds (following Berman et al., 2011). Participants then rated their (a) current anxiety levels, (b) perceived likelihood of the event happening, and (c) the morality of their thinking and writing down the particular thought, (d) desire to reduce or cancel the

effects of writing of thinking about the sentence, and (e) desire to pray to reduce or cancel the effects of writing or thinking about the sentence on a 0-100 VAS.

Procedure

This study was approved by the local institutional review board. Participants were recruited using SONA, Baylor University's online registration site for students interested in participating in research. Prospective participants were offered a short description of the study before signing up. Interested participants met individually with a trained research assistant in a private lab room in a university building. Upon providing written informed consent, participants completed self-report measures and the thought induction task. The order in which the study tasks were completed was randomized. When participants completed the study, they were debriefed and thanked for their participation. Participants received partial course credit for their participation.

CHAPTER THREE

Results

Descriptive statistics among the study variables are presented in Table 1.

Table 1: Descriptive Statistics

Variable	<i>Mean</i>	<i>SD</i>
Religiosity	0.00	3.52
Pre-Thought Anxiety	33.55	24.96
Anxiety	10.25	1.85
Avoidance	20.87	3.97
Post-Thought Anxiety	62.97	25.66
Likelihood	20.33	15.45
Morality	87.60	22.26
Neutralizing Urge	79.21	25.91
Prayer	67.06	31.69

Results from a paired samples t-test found that anxiety significantly increased from pre- to post-thought induction ($t_{(105)} = 12.69, p < .001$). Zero order correlations among the study variables are presented in Table 2. As predicted, attachment anxiety in relation to God positively correlated with post-thought induction anxiety. Results from multiple linear regression analyses indicated that attachment anxiety in relation to God (partial $r = .24, p = .01$) shared a positive association with post-thought induction anxiety even after controlling for the effects of pre-thought induction anxiety (partial $r = .54, p < .001$) and

religiosity (partial $r = -.02, p = .82$). As further predicted, attachment anxiety in relation to God positively correlated with the desire to pray to reduce or cancel the effects of writing or thinking about the sentence. However, results from multiple linear regression analyses indicated that attachment anxiety in relation to God (partial $r = .17, p = .08$) no longer was associated with the desire to pray after controlling for the effects of religiosity (partial $r = .50, p < .001$). Contrary to predictions, attachment anxiety in relation to God did not correlate with the other thought induction variables (likelihood, morality, and neutralizing urge). Attachment avoidance to God unexpectedly negatively correlated with the desire to pray. However, results from multiple linear regression analyses indicated that attachment avoidance in relation to God (partial $r = -.12, p = .24$) no longer was associated with the desire to pray after controlling for the effects of religiosity (partial $r = .46, p < .001$).

Table 2: Zero-Order Correlations

Variable	<i>Anxious Attachment</i>	<i>Avoidant Attachment</i>
Religiosity	.11	-.33**
Pre-Thought Induction Anxiety	.14	-.03
Post-Thought Induction Anxiety	.27**	.07
Likelihood	.05	.02
Morality	-.01	.09
Neutralizing Urge	.10	-.01
Prayer	.21*	-.26**

Note. $N = 106$. ** $p < .01$, * $p < .05$ (two tailed)

CHAPTER FOUR

Discussion and Conclusion

The purpose of this study was to fill a gap in literature regarding whether attachment to God relates to anxiety, TAF appraisals, and neutralizing reactions among religious individuals. As predicted, anxious attachment to God was associated with post-thought induction anxiety and this association remained intact after controlling for pre-thought induction anxiety. Also as predicted, and extending the findings of Fergus and Rowatt (2014), attachment anxiety with relation to God was significantly positively correlated with the desire to prayer to cancel or reduce the effects of writing or thinking about the sentence. Surprisingly, avoidant attachment to God significantly negatively correlated with the desire to prayer. This result is relatively consistent with studies that avoidant attachment to God correlates negatively with religiosity (Fergus & Rowatt, 2014; Rowatt & Kirkpatrick, 2002; Byrd & Boe, 2001). After controlling for religiosity, the effect of avoidant and anxious attachment to God on prayer was no longer significant. Also inconsistent with predictions, attachment anxiety did not significantly relate to other thought induction variables (likelihood, morality, and neutralizing urge). Overall, these findings indicate that attachment anxiety may contribute to anxiety in response to intrusive thoughts. Although attachment anxiety relates to the use of prayer as a neutralizing effort, the relation appears attributable to overlap with religiosity.

As previously stated, anxious attachment in relation to God was found to be associated with post-thought induction anxiety. This result is consistent with Rowatt and Kirkpatrick's (2002) finding that anxious attachment to God correlated with negative

affect and anxiety. These results also support Abramowitz and Jacoby's (2014) model of scrupulosity, in which the misappraisal of intrusive thoughts contributes to preoccupation with the thought and subsequent distress. In the present study, post-thought induction anxiety correlated with anxious attachment to God after controlling for pre-thought induction anxiety. This finding implies that the misappraisal of intrusive thoughts could be a relating factor between anxious attachment to God and anxiety post-thought induction. Such a possibility shares some consistency with findings from Doron et al. (2009) that OCD related beliefs, including importance or control of thoughts, mediated the relationship between attachment anxiety (in close interpersonal relationships) and obsessive-compulsive symptoms. Based upon the present results and Abramowitz and Jacoby's (2014) cognitive-behavioral model of scrupulosity, it appears that religious individuals are more likely to misinterpret intrusive thoughts as threatening or significant and subsequently experience more anxiety when they experience anxious attachment in relation to God.

Contrary to predictions, there was no association between attachment anxiety in relation to God and moral TAF, likelihood TAF, or neutralizing urges. It is possible that variables not examined in the present study may more strongly relate to aspects of TAF and neutralizing urges relative to attachment to God. For instance, as stated by Abramowitz and Jacoby (2014), intolerance of uncertainty may contribute to misappraisals and neutralizing behaviors following intrusive thoughts among religious individuals. Abramowitz and Jacoby claim that individuals high in scrupulosity often require absolute proof that intrusive thoughts are not sinful. Because such proof is not possible, the resulting uncertainty may lead individuals high in scrupulosity to experience

more distress and anxiety in response to intrusive thoughts. In contrast, individuals with healthy religious devotion may avoid experiencing such distress in the face of uncertainty due to their faith, or belief based on trust without explicit proof. Thus it is possible, that intolerance of uncertainty may be a variable that contributes to misappraisals and neutralizing behaviors among religious individuals in response to intrusive thoughts. Additionally, intolerance of uncertainty is a factor that if included in the present study, could have contributed to an association between anxious attachment to God and other thought induction variables. As defined by Rowatt and Kirkpatrick (2002), anxious attachment to God is characterized by views of God as inconsistent in meeting needs. Consequently, individuals with an anxious attachment to God may be more likely to feel uncertain of God's forgiveness of sinful thoughts and engage in more neutralizing behaviors. According to Abramowitz and Jacoby's (2014) model, intolerance of uncertainty can also increase the likelihood that individuals will interpret intrusive thoughts as significant. As such, future researchers could assess the role of intolerance of uncertainty in intrusive thought misappraisal and anxious attachment to God.

The present results should be interpreted with the following study limitations in mind. First, the present study was conducted among a small sample of college students. It is important to note that variation in obsessive-compulsive symptoms is continuous in nature, ranging from nonclinical (normal) intrusive thoughts and rituals to clinical obsessions and compulsions (Olatunji et al., 2008). Though continuous nature of obsessive-compulsive symptoms supports the use of a nonclinical sample in the present study, the generality of study findings would be supported through replication using clinical samples. Additionally, one limitation of this study is that it did not closely

examine how differences in religion can affect thought misappraisal. According to Cohen and Rozin (2001), there are differences in the moral importance individuals assign to mental states, particularly between Protestant and Jewish individuals. An additional limitation of the present study relates to the study design, particularly that these data do not allow for causal conclusions to be drawn related to the impact of attachment to God on obsessive-compulsive symptoms. Future research should seek to examine whether experimental manipulations of attachment anxiety (e.g., Mikulincer & Shaver, 2007) in relation to God cause anxiety and prayer following a thought induction task.

Despite limitations, the present results indicate an association between anxious attachment to God and reported anxiety levels post-thought induction. Additionally, the results show an increased desire to pray post-thought induction for individuals with anxious attachment in relation to God. If future research continues to support an association between anxious attachment to God and obsessive-compulsive symptoms among religious individuals, it may be important to consider anxious attachment to God as an important component to add to Abramowitz and Jacoby's (2014) model of scrupulosity. Increased threat can lead to a hyperactivation of the attachment system (Shaver & Mikulincer, 2002). Thus, when individuals misinterpret the significance of intrusive thought and believe they are under the threat of punishment for sin, they may experience a hyperactivation of the attachment system. Following Abramowitz and Jacoby's model, attachment to God could have a role in exacerbating fear of God, subsequent anxiety, and distress in response to intrusive thoughts. Interestingly, Mikulincer and Shaver (2007) proposed that priming techniques might be used to enhance attachment security, although the long-term effects of such techniques are

largely unknown. Continuing to explore how attachment to God relates to obsessive-compulsive symptoms may thus ultimately relate to advancements in our conceptualization and treatment of scrupulosity.

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