Effects of Mood Induction, Thought-Action Fusion Beliefs, and Coping Strategies on Intrusive Thoughts

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This thesis titled
Effects of Mood Induction, Thought-Action Fusion Beliefs, and Coping Strategies on Intrusive Thoughts

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Abstract

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Effects of Mood Induction, Thought-Action Fusion Beliefs, and Coping Strategies on Intrusive Thoughts

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According to cognitive-behavioral theories of obsessive-compulsive disorder (OCD), obsessions have their origin in normal intrusive thoughts. The presence of thought-action fusion (TAF) beliefs is implicated in the escalation of intrusions into obsessions. In addition, thought suppression contributes to the development of obsessions by paradoxically increasing the frequency of intrusions and the anxiety associated with such thoughts. Mood may also affect the experience of intrusive thoughts. Although the interrelationships between TAF beliefs, thought suppression, mood and OC experiences have been studied previously, to date no study has examined all of these variables in combination. Thus, the purpose of the current study was to examine the combined effects of an induced depressive mood state, a TAF induction, and thought suppression on OC experiences in a non-clinical sample. Prior to the experiment, participants completed questionnaires, which were used to test a multiple mediator model. Participants were randomly assigned to one of two mood induction conditions (depressed or neutral mood); after which they underwent a TAF induction. Next, they used one of two coping strategy conditions (thought suppression or monitor-only control), while monitoring frequency of intrusions and providing subsequent appraisal ratings (e.g., anxiety, guilt, urge to neutralize) over two, 5-min time periods. A partial
mediation was found, with depressive symptoms and thought suppression tendencies significantly mediating the relationship between intrusive thoughts and OC symptoms. Exploratory analyses revealed a number of relationships among variables from the experimental portion of the study. Limitations to the study and directions for future research are also discussed.
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**Introduction**

Cognitive-behavioral (CB) theories of obsessive-compulsive disorder (OCD) postulate that obsessions have their origin in normal intrusive thoughts (Rachman, 1997). Intrusive ideation is an unwanted and recurrent event associated with negative affect (Clark & Rhyno, 2005). Such ideation is experienced by as much as 80-99% of the population (Freeston, Ladouceur, Thibodeau, & Gagnon, 1991; Purdon & Clark, 1993; Rachman & de Silva, 1978; Salkovskis & Harrison, 1984). Research has documented similarities between intrusive thoughts and clinical obsessions; both are associated with negative emotional states (e.g., anxiety, depressed mood, guilt; Morillo, Belloch, & García-Soriano, 2007; Rachman & de Silva, 1978) and are also perceived as meaningful to the individual (Rachman & de Silva, 1978). However, there are important distinctions between these two forms of ideation: obsessions occur more frequently, have greater intensity, and are associated with greater discomfort (Rachman & de Silva, 1978) and distress than non-clinical intrusive thoughts (Calamari & Janeck, 1998; Janeck & Calamari, 1999).

**Cognitive-behavioral theories of OCD**

CB theories of OCD assume that non-clinical intrusive thoughts and clinical obsessions are the same continuum, with the primary difference being severity (Clark & Rhyno, 2005). From a CB perspective, normally occurring intrusive thoughts can escalate into obsessions when certain factors are present, such as negative thought-related beliefs and maladaptive coping strategies (Clark & Purdon, 1993; Rachman, 1997, 1998; Salkovskis, 1985). The Obsessive Compulsive Cognitions Working Group (1997) has
identified various thought-related belief domains that impact the way which intrusive thoughts are experienced. A belief domain of particular importance to the present study is thought-action fusion beliefs.

**Thought-action fusion.** One belief that appears to play a critical role in the escalation of intrusive thoughts into obsessions is thought-action fusion (TAF), which has two components. Moral TAF refers to the belief that thinking an unacceptable thought is the equivalent of carrying out an unacceptable action. Likelihood TAF refers to the belief that thinking an unacceptable thought increases the probability of an undesired event occurring (Shafran, Thordarson, & Rachman, 1996).

TAF beliefs are commonly assessed using the Thought-Action Fusion Scale (TAF-R; Shafran et al., 1996), a self-report measure of moral and likelihood TAF beliefs. Studies have found that individuals with OCD score higher on the TAF-R than individuals without the disorder (Coles, Mennin, & Heimberg, 2001; Rassin, Merckelbach, Muris, & Schmidt, 2001). In addition, studies have found a positive correlation, ranging from .21 to .38, between scores on the TAF-R and self-report measures of OC symptoms, such as the Maudsley Obsessive-Compulsive Inventory (MOCI; Hodgson & Rachman, 1977) with a non-clinical sample (Gwilliam, Wells, & Cartwright-Hatton, 2004; Rassin, Merckelbach, Muris, & Schmidt, 2001; Rassin, Muris, Schmidt, & Merckelbach, 2000; Yorulmaz, Yilmaz, & Gençöz, 2004). Other positive correlations have been found between the TAF-R and the Padua Inventory (Sanavio, 1988) and Padua Inventory-Revised (Van Oppen, Hoekstra, & Emmelkamp, 1995) scales.
in non-clinical samples (Gwilliam et al., 2004; Rassin et al., 2001) and among individuals with OCD (Einstein & Menzies, 2004b).

Experimental studies have also examined the relationship between TAF beliefs and OCD symptoms. Rachman, Shafran, Mitchell, Trant, and Teachman (1996) developed a method to experimentally induce intrusions, thereby activating any held TAF beliefs. In this procedure, participants are asked to write out an obsessive-like thought (“I hope ____ is in a car accident”), insert the name of a loved one in the sentence, and visualize this individual in a car accident. Through use of this specific, aversive intrusion, which purportedly triggers the individual’s existing TAF beliefs, Rachman and colleagues found that this method is associated with a subsequent increase in OC-like symptoms, including anxiety, guilt, and urge to neutralize the thought. This induction has also been successfully used to temporarily produce OC-like experiences in non-clinical populations (e.g., Rassin, 2001; van den Hout, Kindt, Weiland, & Peters, 2002; van den Hout, van Pol, & Peters, 2001; Zucker, Craske, Barrios, & Holguin, 2002).

Thought suppression. CB theories also posit that maladaptive coping strategies for intrusive thoughts, namely thought suppression, play a role in the development of obsessions (Clark & Purdon, 1993). Indeed, research has found a positive relationship between thought suppression and OC symptoms (Muris, Merckelbach, & Horselenberg, 1996; Rassin & Diepstraten, 2003; Wegner & Zanakos, 1994). A common method of assessing thought suppression tendencies is the White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994), which is a self-report measure. Scores on the WBSI have been found to be positively correlated with experiencing intrusive thoughts.
(Unwanted Intrusions Questionnaire; Muris et al., 1996) and OC symptoms on the MOCI (e.g., Muris et al., 1996; Rassin & Diepstraten, 2003). Furthermore, WBSI scores are related to the frequency of obsessions, severity and resistance of OCD, and interference cause by the disorder based on a clinician-administered interview (Wegner & Zanakos, 1994).

Initial experimental research examining the effects of thought suppression on frequency of intrusive thoughts utilized neutral target thoughts. In the first of these studies, participants were instructed to either suppress or express a neutral target thought (“white bear”) during an initial 5-minute time period, after which each group received the opposite instructions for a second 5-minute time period (Wegner, Schneider, Carter, & White, 1987). Wegner and colleagues found that participants instructed to suppress were unable to fully suppress, and in fact, had more intrusive thoughts than those in the express group. This effect was termed the “immediate enhancement” effect. In addition, they found evidence for a “rebound effect,” in that initial suppression led to greater frequency of intrusive thoughts after suppression attempts ended (i.e., during the second time period). Thus, these findings suggest that thought suppression has paradoxical effects, in that suppression results in a greater frequency of intrusive thoughts both during and after suppression. Subsequent studies using a variety of neutral target thoughts have supported Wegner et al.’s (1987) findings, both for the immediate enhancement effect (e.g., Bowers & Woody, 1996; Lavy and van den Hout, 1990), and the rebound effect (e.g., Clark, Ball, & Pape, 1991; Clark, Winton, & Thynn, 1993).
Later studies utilized personal intrusive thoughts, as these are viewed as being more relevant to our understanding of clinical disorders, because these types of thoughts are more meaningful to the individual. Findings regarding frequency of intrusions when personal intrusive thoughts are suppressed have been mixed, with some research finding evidence for immediate enhancement (e.g., Marcks & Woods, 2005; Salkovskis & Campbell, 1994; Trinder & Salkovskis, 1994) and rebound effects (e.g., Koster et al., 2003; McNally & Ricciardi, 1996). Although another study has not found evidence for these effects (Purdon & Clark, 2001), it should be noted that in this case, spontaneous thought suppression occurred in the control condition, making it difficult to directly compare the two conditions. However, the frequency of intrusions is not the only meaningful way to assess the impact of thought suppression. When subjective ratings of experience (e.g., anxiety, mood state) are taken into account, suppression of personal intrusive thoughts has consistently demonstrated negative effects. More specifically, experimental research has shown that attempting to suppress personal intrusive thoughts is associated with increased anxiety (Koster et al., 2003), worsening of mood (Purdon & Clark, 2001), and greater discomfort (Trinder & Salkovskis, 1994). Likewise, research has found that suppressing personal intrusive thoughts results in a rebound of anxiety after suppression attempts have ended (Marcks & Woods, 2005). Furthermore, when an individual’s attempts at suppression have failed, this is likely associated with feelings of distress and feeling less in control of one’s thoughts (Kelly & Kahn, 1994).

**TAF beliefs and thought suppression: Correlational studies.** Thought-related beliefs, such as TAF beliefs, and thought suppression may play a combined role in the
development and maintenance of obsessions. According to CB theories (Rachman & Shafran, 1999; Rassin et al., 1999), when an individual holds negative thought-related beliefs, such as TAF beliefs, he/she becomes distressed when experiencing intrusive thoughts. This then leads to the use of strategies to eliminate the thought, namely, thought suppression. Most studies to date have examined these variables in isolation, rather than looking at both variables.

The majority of studies on thought-related beliefs, thought suppression, and OC symptoms have been correlational in nature, relying on concurrently administered self-report measures of the relevant constructs. Smári and Hólmsteinsson (2001) tested a mediation model involving presence of intrusive thoughts as the predictor variable, TAF beliefs and thought suppression tendencies as the mediators, and OC symptoms as the outcome variable, in a non-clinical sample. Results from their study showed that TAF beliefs combined with thought suppression mediated the relationship between intrusive thoughts and OC symptoms. However, no conclusions about causation can be drawn from this model due to its correlational design.

Other research testing alternative models has found that thought suppression in particular mediates the relationship between TAF beliefs and OC symptoms, rather than TAF beliefs being a mediator (Rassin, Muris, Schmidt, & Merckelbach, 2000; Marcks & Woods, 2007). Although Rassin and colleagues tested several models to determine the best-fitting one, they utilized a correlational design. Therefore, one cannot draw conclusions about causation.
These models tested to date have yielded somewhat disparate results. Although these models are in agreement that thought suppression impacts OC symptoms, it is unclear exactly whether thought suppression is serving as a mediator for other variables. That is, it is unclear if intrusive thoughts or TAF beliefs may be predicting OC symptoms with thought suppression mediating the relationship. Given the different findings, the most supported evidence seems to be that intrusive thoughts predict OC symptoms (Smári & Hólmsteinsson, 2001). According to the CB theory, TAF beliefs occur in response to an intrusion. Therefore, TAF beliefs are not the starting point for a full conceptualization of how OC symptoms develop. The model proposed by Rassin et al. (2000), however, omits intrusive thoughts. Thus, additional research is needed to explore the relationships between all variables.

A common limitation to these studies is that they rely on correlational designs. Although they provide valuable support for the CB theory of OCD, they do not have the advantage of allowing one to observe the direct effects of variables on each other. Experimental evidence is needed in conjunction to these models, in order to exert control over the variables in question. Then, the interrelationships can be more accurately measured.

**TAF beliefs and thought suppression: Experimental studies.** Two experimental studies have attempted to test the implications of these mediational models of OCD. First, Rassin (2001) had participants undergo a TAF induction (Rachman et al., 1996), then they were instructed to either actively suppress thoughts of the accident or to think of anything (i.e., do not suppress), followed by a period during which all
participants were told to think of anything. The experimental manipulation of thought suppression was associated with reduced OC symptoms. Specifically, participants reported that there was less discomfort attributed to the thought, as well as fewer feelings of responsibility and guilt. These results, however, should be interpreted cautiously due to methodological concerns. Notably, spontaneous suppression occurred in the control group, which makes it difficult to compare conditions. Furthermore, participants were allowed to neutralize the thought prior to the second time period. Thus, reduced distress may be attributable to this neutralization, rather than to the thought suppression.

A second experimental study has examined both TAF beliefs and thought suppression experimentally. Marcks and Woods (2007) used a TAF induction adapted from Rachman et al. (1996). Participants were subsequently assigned to suppress thoughts of the accident, utilize an acceptance-based approach, or to simply monitor their thoughts. During a second time period, all participants monitored their thoughts. It was found that compared to the acceptance group, the thought suppression group experienced a greater frequency of intrusions during both coping strategy time periods. In addition, thought suppression was related to more negative appraisals about the thought (e.g., ratings of guilt and moral wrongness). The monitor-only group was not used as a comparison group due to spontaneous suppression in this condition. Thus, combined with a TAF induction, thought suppression was shown to not only increase the number of intrusions, but also result in more negative appraisals about the thought.

The above literature generally supports the idea that TAF beliefs and thought suppression are both involved in the escalation of intrusive thoughts. Furthermore, these
variables seem to play a combined role in the development and maintenance of obsessions. Indeed, correlational data have provided evidence supporting the CB model of OCD. In particular, it appears that the relationship between TAF beliefs and OC symptoms is mediated by thought suppression. Although additional research is needed, there is limited evidence from experimental work (Marcks & Woods, 2007) further supporting the finding that TAF beliefs and thought suppression may play a combined role in causing normal intrusive thoughts to escalate into obsessions.

Mood and obsessions

In addition to thought-related beliefs and maladaptive coping strategies, mood has been implicated in the escalation of intrusive thoughts into obsessions (Salkovskis, 1985). In particular, Salkovskis proposed that negative cognitions are more salient during a depressed mood state; that is, intrusive thoughts are more likely to occur during depressed mood. Changes in one’s mood, including depression, have been linked to the development of OC symptoms by exacerbating intrusions as well as an individual’s interpretation of them (Salkovskis et al., 2000). Although mood has been implicated as being an important factor related to intrusive thoughts, to date, relatively little research has been conducted on this topic.

It has been suggested that beliefs about intrusive thoughts may relate to one’s mood state. Indeed, previous studies have demonstrated a relationship between TAF beliefs and depressive symptoms (Abramowitz, Whiteside, Lynam, & Kalsy, 2003; Muris, Meesters, Rassin, Merckelbach, & Campbell, 2001). In a study of adolescents, Muris et al. (2001) found likelihood TAF beliefs were associated with scores on a
measure of depression. However, in a study using an adult sample, Abramowitz et al. (2003) found that moral TAF beliefs were directly related to depression (as measured by the Beck Depression Inventory; Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961), whereas likelihood TAF beliefs were more related to trait anxiety (as measured by the State-trait Anxiety Inventory; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). Thus, in this correlational study the relationship between TAF beliefs and symptoms of OCD was mediated by depression and anxiety. These findings offer some insight on the relationship between intrusive thoughts, thought-related beliefs, mood, and OC symptoms.

Research has also been conducted on mood and thought suppression, suggesting that mood and thought suppression may together affect the development and maintenance of obsessions. More specifically, previous correlational studies have found a relationship between depressive symptoms and tendency to suppress unwanted thoughts, as measured by the WBSI (Altin & Gençöz, 2007; Muris et al., 1996; Wenzlaff, Rude, & West, 2002). Thus, individuals with higher levels of depressive symptoms are more likely to engage in thought suppression when they experience unwanted thoughts. Wenzlaff et al. (2002) examined the relationship between participants’ history of depression, certainty about dysfunctional attitudes (rigid rules and conditions for self-acceptance), and thought suppression. Not only did individuals with a history of depression have greater levels of uncertainty regarding their attitudes, but this uncertainty was associated with higher levels of thought suppression. Thought suppression was also significantly related to the severity of the depressive episode. That is, currently depressed individuals had the
highest thought suppression scores, and formerly depressed individuals also had higher scores on the WBSI than never depressed individuals (Wenzlaff et al., 2002).

Prior experimental studies have also found a relationship between attempts to suppress one’s thoughts and mood state (Wenzlaff, Wegner, & Klein, 1991; Wenzlaff, Wegner, & Roper, 1988). Wenzlaff et al. (1988) used depressed and non-depressed participants, as assessed by the Beck Depression Inventory—Short Form (Beck & Beck, 1972), and had them read a story depicting either a highly positive or highly negative event, after which they were instructed to either suppress or were given no instruction. Evidence was found for a stronger rebound effect when the suppressed thoughts were mood-congruent than mood-incongruent. Thus, individuals in a negative (depressed) mood state experienced a greater frequency of intrusions when they tried to suppress negative thoughts. Conway, Howell, and Giannopoulous (1991) found support for the Wenzlaff et al.’s (1988) mood congruence hypothesis, as well as finding that dysphoric individuals were less successful at suppressing a neutral thought than were non-dysphoric individuals.

Other research has found that thought suppression can strengthen the relationship between intrusive thoughts and the mood state associated with such thoughts. Wenzlaff et al. (1991) used music to induce either positive or negative mood states, and then instructed participants to suppress or to actively think a neutral thought (a white bear). After a time delay, all participants were instructed to think of a white bear while listening to either the positive or negative mood induction music. A greater rebound effect was found for participants in a mood-congruent state. Thus, participants in a negative mood
state experienced more intrusions during the second, negative mood state than if their second mood state was positive. The same pattern was found for the reversed mood states. In another experiment, Wenzlaff and colleagues followed a similar procedure, except that during the second time period (in which participants were instructed to think of the white bear), there was no mood induction. It was found that for participants who had previously suppressed a thought during a negative mood induction, the negative mood was reinstated upon reencountering the same thought (Wenzlaff et al., 1991). That is, the mood associated with an intrusive thought spontaneously recurred when participants experienced the intrusion again.

The above literature provides evidence to suggest that mood, particularly depressed mood, may be one of the factors involved in the development of obsessions. Intrusive thoughts are present in depression, and TAF beliefs have been demonstrated to be associated with depressed mood. Furthermore, thought suppression is associated with depressed mood. When attempts to suppress thoughts are associated with negative mood state, greater rebound effects are observed. This literature demonstrates various associations between negative mood state and other factors (TAF beliefs and thought suppression) that play a role in the development and maintenance of obsessions. The importance of mood in relation to intrusive thoughts has been suggested by the literature; however, to date there has been little empirical research on this topic.

**Current study**

The literature has identified several factors that are involved in the development and maintenance of OC symptoms. TAF beliefs and thought suppression may each play a
role in the escalation of intrusive thoughts into clinical obsessions. Furthermore, they
may together create a vicious cycle that maintains obsessions; however, more empirical
research is needed on this topic. In addition, there is limited evidence that mood may be
an important factor in the experience of intrusive thoughts. Although previous studies
have examined the interrelationships between mood state, TAF beliefs, thought
suppression, and OC experiences, to date, no studies have examined all of these variables
in combination. Thus, the purposes of the current study were to: 1) test a multiple
mediator model containing these variables; and 2) experimentally examine the combined
effects of an induced depressive mood state (compared to a neutral mood state), a TAF
induction, and thought suppression (compared to a control condition) on OC experiences
in a non-clinical sample.

**Hypothesis 1.** It was hypothesized that the relationship between intrusive
thoughts, as measured by the Revised Obsessive Intrusions Inventory (ROII total score
from part I; Purdon & Clark, 1993, 1994b), and OC symptoms (Obsessive-Compulsive
Inventory-Revised total score; Foa et al., 2002) would be mediated by TAF beliefs (TAF-
R total score; Shafran et al., 1996), thought suppression tendencies (WBSI; Wegner &
Zanakos, 1994), and depression (Depression Anxiety Stress Scale – Depression subscale
score; Lovibond & Lovibond, 1995).

**Hypothesis 2.** Immediately after the TAF induction, participants who underwent
the depressed mood induction would have higher scores on visual analog scales (VAS) of
subjective appraisal ratings (anxiety, guilt, greater urges to neutralize, moral wrongness,
Hypothesis 3. It was hypothesized that a significant mood by coping strategy interaction would be observed on frequency of intrusions, anxiety, and negative appraisals following Time Period 1. More specifically, the depression + thought suppression group was expected to have a greater frequency of intrusions, more anxiety, and more negative appraisals compared to the other groups. It was also expected that a significant mood by coping strategy interaction would be observed on change in frequency of intrusions and anxiety from Time Period 1 to 2, with the depression + thought suppression group having the greatest increase in frequency of intrusions and anxiety over the time periods compared to the other three groups.

Hypothesis 4. The focus of hypothesis 4 was on examining differences in attributions about thought suppression failure by mood condition. Among participants in the thought suppression condition who had at least one intrusive thought during the first time period, it was expected that those who underwent the depressed mood induction would have more negative internal attributions, as measured by the Thought Suppression Attribution Questionnaire (TSAQ; Tolin, Abramowitz, Hamlin, Foa, & Synodi, 2002), regarding thought suppression failure than those in the neutral mood condition.

Hypothesis 5. Hypothesis 5 explored changes in negative affect, as measured by the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988), over the course of the experiment by mood and coping strategy conditions. It was hypothesized that a significant mood by coping strategy interaction would be observed on negative
affect over the course of the experiment, with the depression + thought suppression group having the greatest increase in negative affect over the course of the experiment (i.e., from pre-mood induction to post-mood induction, post-mood induction to post-experiment), compared to the other three groups.
Method

Participants

One hundred ninety-nine participants were recruited from introductory level psychology courses using the web-based participant pool system through Ohio University’s Department of Psychology. Participants were required to be at least 18 years old; no further inclusion or exclusion criteria were used. Of the 199 participants, 19 were excluded from analyses due to incomplete data: 13 withdrew from the study and in 6 cases there was a protocol violation on the part of the research assistant. Participants who withdrew\(^1\) from the study were compared to those who completed the entire study on baseline questionnaire data. These results revealed that participants who withdrew scored significantly higher on the Obsessive-Compulsive Inventory-Revised (OCI-R), \(t(190) = -4.110, p < .001\), significantly lower on the Positive Affect subscale of the Positive and Negative Affect Schedule (PANAS), \(t(190) = 2.432, p < .05\), and had significantly higher baseline anxiety, \(t(191) = -2.248, p < .05\), compared to those who completed the study. There were no other significant differences between these two groups. Appendix A displays descriptive statistics on baseline questionnaires for participants who withdrew versus completed the study. In addition, there was no significant difference between those in the neutral mood \((n = 6)\) and the depressed mood groups \((n = 7)\) in terms of rates of drop-out, \(\chi^2(1, N = 193) = .036, p = .849\).

After providing informed consent, participants were randomly assigned to one of four groups that varied by mood induction and coping strategy condition: depressed

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\(^1\) Note that as a requirement of the Institutional Review Board, participants were reminded that they could withdraw from the study during the TAF induction (immediately prior to inserting the target individual’s name into the car accident scenario sentence). All participants who withdrew did so at this time.
mood and thought suppression ($n = 45$), depressed mood and monitor-only ($n = 47$), neutral mood and thought suppression ($n = 42$), and neutral mood and monitor-only ($n = 46$).

No significant differences were found between groups on demographic variables. Therefore, the following represents demographic data collapsed across groups; see Table 1 for descriptive statistics for demographics variables by group. Participant age ranged from 18 to 30 years ($M = 19.29, SD = 1.51$), and 65.6% of the sample was female. The majority of participants were single (98.9%), and the rest were married (1.1%). Participant race was as follows: Caucasian (84.4%), African American (6.1%), multiracial (5.0%), and Asian (4.4%). In terms of ethnicity, 2.2% of participants identified as Hispanic or Latino. All participants had received at least some college education, with a mean of one year of college ($M = 13.04, SD = 1.10$).

In terms of psychological background variables, no significant differences were found between the groups on ever having a diagnosis, $\chi^2(3, N = 180) = 4.162, p = .244$, currently having a diagnosis, $\chi^2(3, N = 180) = 4.498, p = .212$, ever taking medication for a psychological condition, $\chi^2(3, N = 180) = 4.997, p = .172$, currently taking medication for a psychological condition, $\chi^2(3, N = 179) = 4.218, p = .239$, ever receiving therapy, $\chi^2(3, N = 180) = 5.025, p = .170$, or currently receiving therapy, $\chi^2(3, N = 180) = 2.463, p = .482$. Table 2 presents these data by group and for the entire sample. The groups did not differ significantly on the following obsessive-compulsive related measures: Revised Obsessive Intrusions Inventory (ROII; Purdon & Clark, 1993, 1994b), $F(3, 171) = .682, p = .564$, Thought-Action Fusion Scale-Revised (TAF-R; Shafran, Thordarson, &
Rachman, 1996), $F(3, 173) = 2.052, p = .108$, Obsessive-Compulsive Inventory-Revised (OCI-R; Foa et al., 2002), $F(3, 175) = 1.802, p = .149$, or White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994), $F(3, 174) = 1.133, p = .337$. In addition, the conditions did not vary on baseline anxiety, $F(3, 176) = .720, p = .541$, or guilt ratings, $F(3, 176) = .081, p = .970$. Likewise, the groups did not differ significantly on the following mood-related measures: Depression Anxiety Stress Scale – Depression subscale (DASS; Lovibond & Lovibond, 1995), $F(3, 176) = .618, p = .604$, or the Negative Affect subscale of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) at baseline administration, $F(3, 175) = .299, p = .826$. A significant difference was found between groups on the Positive Affect subscale of the PANAS at baseline, $F(3, 175) = 3.60, p < .05$. Post-hoc analyses revealed that the neutral mood + monitor-only condition differed significantly from the depressed mood + thought suppression condition ($p < .01$), and the neutral mood + monitor-only condition differed significantly from the neutral mood + thought suppression condition ($p < .01$). Due to the significant group differences on this variable, baseline positive affect was initially included as a covariate in the analyses for hypotheses 2 through 5. However, it was not a significant covariate in any of the analyses; therefore, it was excluded from the final analyses. The means and standard deviations on the OC and mood-related measures, as well as baseline anxiety and guilt ratings, for each group can be found in Table 3.
Materials

**Frequency counter.** A handheld counter was used to monitor frequency of intrusions during the coping strategy time-periods. This method has been used in other thought suppression studies (e.g., Marcks & Woods, 2007).

**Demographics questionnaire.** Demographic variables were assessed via a 6-item questionnaire (Appendix B) of gender, age, education level, marital status, race, and ethnicity.

**Background information.** Psychological history was assessed via a 6-item questionnaire (Appendix C) designed for this study. Items addressed self-reported past and current psychological diagnoses, psychotropic medication, and receipt of psychotherapy.

**Revised Obsessive Intrusions Inventory.** (ROII; Purdon & Clark, 1993, 1994b.) The ROII is an inventory that assesses frequency of obsessive-like thoughts, impulses, and images. The first part of the ROII (Appendix D), which was administered in the current study, consists of 52 items rated on a 7-point scale (0 = “I have never had this thought” to 6 = “I have this thought frequently during the day”). The ROII consists of two subscales (sex/aggression and dirt/contamination) that are summed to yield a total score. Previous research has found that 97% of non-clinical individuals endorse at least one intrusive thought on the ROII (Purdon & Clark, 1994). Normative data for a non-clinical sample on the total ROII score show a mean score of 53.8 ($SD = 28.8$; Brewin & Smart, 2005). The ROII has been found to have good internal consistency, with $\alpha = .93$. In addition, scores on the ROII are significantly positively correlated with measures of
OC symptoms (scores on the Padua Inventory). However, test-retest reliability for this measure is unknown.

**Depression Anxiety Stress Scale.** (DASS; Lovibond & Lovibond, 1995.) The DASS (Appendix E) is a self-report questionnaire that consists of 21 items, which are rated on a four-point scale (0 = “did not apply to me at all” to 3 = “applied to me very much or most of the time”) in terms of how much the items apply to the individual in the past week. Items are summed to create three subscale scores (depression, anxiety, and stress) that range from 0 to 21, with higher scores being indicative of greater symptoms on the respective scales. The current study utilized the Depression subscale score. Normative data for a non-clinical sample on the Depression subscale range from a mean score of 2.12 ($SD = 3.64$; Antony Bieling, Cox, Enns, & Swinson, 1998) to 2.83 ($SD = 3.87$; Henry & Crawford, 2005). The DASS has been demonstrated to have sound psychometric properties in clinical and community samples. More specifically, the depression subscale has excellent internal consistency (Cronbach’s $\alpha = .97$; Antony et al., 1998). The depression subscale has also been shown to have good test-retest reliability over a two-week time period, with $r = .71$ (Brown, Chopita, Korotitsch, & Barlow, 1997). The depression subscale has been found to correlate highly with another measure of depression, the Beck Depression Inventory (Beck, Rush, Shaw, & Emery, 1979), and has been shown to measure features that are unique to depression, such as low positive affect (Antony et al., 1998; Brown et al., 1997).

**Thought-Action Fusion Scale-Revised.** (TAF-R; Shafran et al., 1996.) The TAF-R (Appendix F) is a 19-item measure that assesses TAF beliefs. It has three
subscales: TAF-moral, TAF-likelihood self, and TAF-likelihood other. All items are rated on a five-point scale (0 = “disagree strongly” to 4 = “agree strongly”), and are summed to create a total score and subscale scores. Normative data for a nonclinical sample have found a mean of 12.74 ($SD = 11.13$) on the moral, 1.03 ($SD = 2.14$) on the likelihood-other, and 2.09 ($SD = 2.49$) on the likelihood-self subscales (Shafran et al., 1996). In terms of psychometric properties, the TAF-R has been shown to have sound internal consistency, with $\alpha = .88$; however, the retest correlation at a three month follow-up was $r = .52$. Therefore, this construct may not be as stable as expected. Additionally, individuals with OCD score higher on the TAF-R than non-clinical individuals (Rassin et al., 2001).

**Obsessive-Compulsive Inventory-Revised.** (OCI-R; Foa et al., 2002.) OC symptoms were assessed via the OCI-R (Appendix G), which is a self-report measure of OCD severity. The OCI-R contains 18 items, which are rated on a 5-point scale (0 = “not at all” to 4 = “extremely”) of how much the experience (i.e., obsession or compulsion) has distressed or bothered the individual during the past month. Normative data for a nonclinical sample have found a mean of 18.82 ($SD = 11.10$) for the total score. The OCI-R has good internal consistency, with $\alpha = .90$ for the total score. Test-retest reliability over one week for non-anxious controls was .84 (Foa et al., 2002). The authors found significant positive correlations between the OCI-R and other OCD measures, including the Yale-Brown Obsessive-Compulsive Scale ($r = .53$; Goodman et al., 1989), the Global Obsessive-Compulsive Scale ($r = .66$; Goodman & Price, 1992), and the Maudsley Obsessive-Compulsive Inventory ($r = .85$; Hodgson & Rachman, 1977).
**White Bear Suppression Inventory.** (WBSI; Wegner & Zanakos, 1994.)

Tendency to suppress unwanted thoughts was assessed via the WBSI (Appendix H), which consists of 15 items rated on a 5-point scale (1 = “strongly disagree” to 5 = “strongly agree”). Responses are summed to create a total score that ranges from 15 to 75, with higher scores being indicative of a greater suppression tendency. Normative data for a non-clinical sample range from $M = 44.5$ ($SD = 15.3$) to $M = 47.7$ ($SD = 11.9$; Muris, Merckelback, & Horselenberg, 1996). The WBSI has good internal consistency, with $\alpha = 0.89$ (Muris et al., 1996). This measure also has good temporal stability, with test-retest correlations ranging from .69 to .80 over three months (Muris et al., 1996; Wegner & Zanakos, 1994). Muris et al. (1996) found the WBSI to be significantly correlated with the MOCI ($r = .35$; Hodgson & Rachman, 1977).

**Thought Suppression Attribution Questionnaire.** (TSAQ; Tolin et al., 2002.)

Attributions about thought suppression failure were assessed using the TSAQ (Appendix I), which consists of 13 possible attributions about the individual’s inability to control his/her thoughts. Each attribution is rated on a 7-point scale (1 = “totally disagree” to 7 = “totally agree”). Items are summed to create two subscales: internal attribution and external attribution. The internal consistencies for internal and external attributions are $\alpha = .90$ and $\alpha = .69$, respectively (Tolin et al., 2002). The authors found that participants with OCD had significantly higher internal attribution scores than did both anxious controls and non-anxious controls; however, Tolin and colleagues did not report the actual means and standard deviations for the measure. For the current study,
the TSAQ was only administered to participants in the thought suppression condition, who reported at least one intrusion during the first time period.

**Positive and Negative Affect Schedule.** (PANAS; Watson et al., 1988.) State affect was assessed via the PANAS (Appendix J). The PANAS consists of a list of 20 adjectives measuring affect, 10 of which are positive and 10 of which are negative. Participants rate each item on a 5-point scale as it applies to them (1 = “very slightly or not at all” to 5 = “extremely”). The PANAS has excellent internal consistency, with Cronbach α’s ranging from .86 to .90 for the positive affect items, and from .84 to .87 for the negative affect items (Watson et al., 1988). The PANAS was administered three times during this study: at the end of the initial questionnaire packet, immediately after the mood induction, and again at the close of the study.

**Mood induction manipulation check.** Participants used 100 mm visual analog scales (VASs) (0 mm = “not at all” to 100 mm = “extremely”) to rate five items in response to the mood induction procedure (Appendix K). These questions were developed specifically for this study, and are as follows: 1) "How much attention did you pay to the film?", 2) "How emotionally moved were you by the events in the film?", 3) "How sad/upset do you feel in response to the events in the film?", 4) "How anxious/distressed do you feel in response to the events in the film?", and 5) "How calm do you feel after watching the film?" The mood induction manipulation check was administered immediately after participants viewed the appropriate film for the assigned mood induction condition.
**TAF induction manipulation check.** The TAF induction manipulation check (Appendix L) includes 4 items rated on 100 mm VASs (0 mm = “not at all” to 100 mm = “extremely”). Examples of manipulation check items include, “How vivid were thoughts and images of the car accident?” and “How much effort did you put forth in attempting to visualize the car accident?” This manipulation check was developed for, and has been used in, a previous research study (Marcks & Woods, 2007), and was administered immediately after the TAF induction.

**Appraisal ratings.** Participants used 100 mm VASs (0 mm = “not at all” to 100 mm = “extremely”) to answer the following questions (Appendix M): 1) "How anxious/distressed do you feel right now?", 2) "How much guilt do you feel right now?", 3) "How morally wrong was it to think about the car accident?", 4) "How much control do you feel you have over the car accident occurring?", 5) "What is the likelihood of the car accident occurring in the next 24 hours?", 6) "How responsible would you feel if the car accident did occur in the next 24 hours?", 7) "How strong is your urge to do something to reduce or cancel the effects of thinking about the car accident?", 8) "How willing are you to further think about the car accident?", and 9) “How hard did you try not to think of the car accident?” Although these items have been used previously (Marcks & Woods, 2007), no data are available on their construct validity. The appraisal ratings were administered three times during the study: after the TAF induction, and after each of the two coping strategy time periods. In addition, the first two items from the appraisal ratings were administered at the end of the questionnaire packet to obtain a baseline level of anxiety and guilt.
Coping strategy manipulation check. The coping strategy manipulation check consisted of one 100 mm VAS (0 mm = “not at all” to 100 mm = “extremely”) item that differed by coping strategy condition (Appendix N). Those in the thought suppression condition answered the question, “How hard did you try to suppress your target thought?” after the time period 1. Participants in the monitor-only condition answered the question, “How hard did you try to think about anything you wanted to?” after time period 1. After the second time period, all participants answered the following question: “How hard did you try to think about anything you wanted to?” These manipulation checks have been used previously (Marcks & Woods, 2007). In addition, Item 9 on the appraisal ratings (Appendix M) was also used to assess for spontaneous thought suppression attempts across all groups during both time periods.

Post-debriefing measure. This measure consists of four items (Appendix O) designed to assess the subjective state of the participant after debriefing. The first three questions are 100 mm VAS items: "How anxious/distressed do you feel right now?", "How much guilt do you feel right now?", and “How sad/upset do you feel right now?” The fourth item, “Do you feel you require additional assistance to manage or cope with the thoughts and feelings that were brought up as result of participation in this study?” was answered with a yes or a no. This post-debriefing measure was adapted from use in previous studies in the Coping With Anxiety Research Laboratory at Ohio University.

Procedure

Figure 1 displays the procedure of the current study. First, participants were recruited to participate in a study on “mood and intrusive thoughts” using Sona, the web-
based participant pool system, through Ohio University’s Department of Psychology. Interested individuals signed up for an individual appointment to participate in the study, which was conducted in a small, featureless room.

Prior to participation, trained research assistants provided all participants with oral and written explanations of the study, after which the participants provided written informed consent. Next, participants were randomly assigned to one of four conditions, which varied by mood induction (depressed vs. neutral) and coping strategy condition (thought suppression vs. monitor-only control). Participants completed the following self-report questionnaires: demographics questionnaire (Appendix B), background information (Appendix C) ROI1 (Appendix D), DASS (Appendix E), TAF-R (Appendix F), OCI-R (Appendix G), WBSI (Appendix H), PANAS (Appendix I), and baseline anxiety and guilt ratings (Appendix M, items 1 and 2).

Following completion of the questionnaires, participants underwent the mood induction, in which they viewed a film clip designed to produce the desired emotional state. Each clip was viewed at a distance of approximately 60 cm on a 65 cm PC monitor equipped with headphones. Those in the depressed mood condition viewed a clip to evoke sadness, whereas those in the neutral (i.e., control) condition viewed a clip without emotional content. The two selected film clips have been used in conjunction to evoke the desired mood state in a previous study (Dennis & Solomon, 2010).

**Depressed mood.** A 205 s clip from *The Champ* (MGM, 1979) was used to induce sadness. This clip is comprised of scenes starting from 1 h 54 m 23 s into the film, and depicts a boxer dying on a table in a locker room, while his son cries and begs
the other men in the room to bring him back. This clip has been validated to evoke sadness by Rottenberg, Ray, and Gross (2007). Mean ratings of sadness on a 9-point scale (0 = “not at all” to 8 = “extremely”) after viewing this clip were 5.18 (SD = 1.47) for male participants and 6.33 (SD = 1.31) for female participants (Rottenberg et al., 2007). This scene has been used as a depressive mood induction (Converse, Lin, Keysar, & Epley, 2008; Dennis & Solomon, 2010; Fucito & Juliano, 2009; Wisco & Nolen-Hoeksema, 2009). Dennis and Solomon (2010) found significantly higher levels of sadness among participants who had viewed this film clip compared to a neutral mood induction film clip.

**Neutral mood.** A 202 s clip from *The Life of Mammals* (BBC Video, 2003) was used in the neutral mood condition. This clip, which depicts the feeding habits of grey squirrels, has been used as an effective neutral mood induction (Dennis & Solomon, 2010). More specifically, this clip was found to result in significantly lower state anxiety and sadness compared to a sad mood induction film clip, \( t = -3.90 \) \( (SE = 0.12) \).

After viewing the appropriate film clips, participants completed the mood induction manipulation check ratings (Appendix K) and the PANAS (Appendix J). Next, the participants underwent the TAF induction. First, participants completed the Selection of Target form (Appendix P), in which participants wrote the name of a loved one and answered two questions about the nature of their relationship with the target individual. This individual was used as the target in the TAF induction. Then, participants were read the following instructions, adapted from Rachman et al. (1996): “Keeping in mind this individual who is close to you (pause), I would like you to write out the following
sentence on this piece of paper inserting the name of the person in the blank.”

Participants were given a paper (Appendix Q) with the typed sentence, “I hope that _____ will soon be in a car accident” and were asked to copy the sentence, inserting the name of the loved one into the blank. They then were asked to read the sentence aloud, and heard via audio recording of the following instructions: “Close your eyes and take a few moments to visualize your loved one’s car accident (pause). It is important that you have a clear and vivid image of your loved one and the car accident in mind. Visualize what the accident scene looks like; for instance, the location of the accident, time of day, what your loved one looks like, the nature of your loved one’s involvement in the accident, and the severity of the accident (pause). Once you have a clear and vivid image in mind of both your loved one and the car accident, please open your eyes.” These instructions have been used in previous studies with a TAF induction (Marcks & Woods, 2007). After the TAF visualization, participants completed the TAF Induction Manipulation Check ratings (Appendix L) and appraisal ratings (Appendix M).

Participants were instructed to record the occurrence of accident-related thoughts (from the TAF induction), using a handheld frequency counter, over two, 5-minute time periods. According to their assigned condition, participants received one of two specific strategies, via audio recordings, to cope with intrusive thoughts of the accident for the first time period: thought suppression or monitor-only. During the second time period, all participants were assigned to the monitor-only condition. The instructions for all conditions were adapted from Marcks and Woods (2007), and are as follows:
Monitor-only. “During the next 5 min, you may think about anything you like. You might think of the car accident, but you do not have to. However, if at any time you have a thought or image of the car accident, please record the occurrence of the thought by pressing the button once for each occurrence. It is important that you continue in the same way for the full 5 min.”

Thought suppression. “During the next 5 min, it is very important that you try as hard as you can to suppress thoughts and images of the car accident. So try not to think about the car accident, but be sure to record thoughts or images of the car accident if they occur by pressing the button once for each occurrence. It is important that you continue in the same way for the full 5 min.”

After each time period, the research assistant recorded the frequency of intrusive thought from the frequency counter, and participants completed manipulation check ratings (Appendix N) and appraisal ratings (Appendix M). Following the second time period, all participants completed the PANAS (Appendix J) for a third time, and participants in the thought suppression condition who reported at least one intrusion during the first thought monitoring period also completed the TSAQ (Appendix I). Following the experiment, all participants, including those who withdrew during the study, were orally debriefed, and a written debriefing statement was provided to participants. Finally, all participants completed the post-debriefing measure (Appendix O) and were thanked for their participation.
Results

Preliminary analyses

A manipulation check was conducted after the mood induction using a series of independent samples t-tests on all items on Appendix K. Compared to the neutral condition, those in the depressed mood condition reported being significantly more emotionally moved by the film, \( t(178) = 8.434, p < .001 \), more sad, \( t(178) = 20.317, p < .001 \), more anxious, \( t(178) = 10.216, p < .001 \), and less calm, \( t(178) = -5.822, p < .001 \). In addition, those in the depressed mood group paid significantly more attention to the film than those in the neutral mood group, \( t(178) = 2.45, p < .05 \). Table 4 displays means and standard deviation for these items for each mood condition. Furthermore, a two-way mixed ANOVA with one between-subjects factor (mood condition) and one within-subjects factor (time period) was conducted on the Negative Affect subscale of the PANAS at its pre- to post-mood induction administrations. There was a significant time by mood interaction, \( F(1, 177) = 45.735, p < .001 \), as well as significant main effects of mood condition, \( F(1, 177) = 13.265, p < .001 \), and time, \( F(1, 177) = 4.599, p < .05 \). As expected, participants in the depressed mood condition showed an increase in negative affect from pre-mood induction (\( M = 14.45, SD = 5.42 \)) to post-mood induction (\( M = 16.17, SD = 5.23 \)); participants in the neutral mood condition showed a decrease in negative affect from pre-mood induction (\( M = 16.17, SD = 5.23 \)) to post-mood induction (\( M = 11.48, SD = 2.90 \)).

In addition, a series of one-way ANOVAs was conducted on all TAF induction manipulation check items from Appendix L. The four conditions (depressed mood +
thought suppression, depressed mood + monitor-only, neutral mood + thought suppression, and neutral mood + monitor only) did not differ significantly in their ratings of vividness of thoughts and images of the car accident scenario, \( F(3, 176) = 1.390, p = .247 \), severity of the car accident visualized, \( F(3, 175) = 1.796, p = .150 \), effort put forth into visualization, \( F(3, 176) = 1.250, p = .293 \), level of engagement with one’s thoughts, \( F(3, 176) = .404, p = .750 \), or believability of the car accident scenario, \( F(3, 176) = .434, p = .729 \). Table 5 displays means and standard deviation for these items for each group.

Manipulation checks were conducted after the first time period (Appendix N) to assess the amount of effort put forth suppressing the target thought (thought suppression condition) or thinking about anything (monitor-only condition). A two-way ANOVA with two between-subjects factors (mood, coping strategy) was conducted on this item to determine the degree to which participants complied with instructions. The mood by coping strategy interaction was not significant, \( F(1, 176) = 1.642, p = .202 \). There were no significant main effects of coping strategy condition, \( F(1, 176) = 1.391, p = .240 \), or mood condition, \( F(1, 176) = .123, p = .726 \). After the second time period, in which all groups were assigned to monitor-only, the manipulation check assessed the amount of effort put forth into thinking about anything. A two-way ANOVA with two between-subjects factors (mood, coping strategy) was conducted on this item. The mood by coping strategy interaction was not significant, \( F(1, 176) = 1.150, p = .285 \), and there were no main effects coping strategy condition, \( F(1, 176) = 2.948, p = .088 \), or mood condition, \( F(1, 176) = .473, p = .492 \). Furthermore, an item on the Appraisal Ratings (Item 9, Appendix M) assessed thought suppression by all groups. A two-way ANOVA
with two between-subjects factors (mood, coping strategy) was conducted on this item at Time Period 1. The mood by coping strategy interaction was not significant, $F(1, 176) = 3.072, p = .081$, nor was the main effect of mood condition, $F(1, 176) = .552, p = .458$. Contrary to expectations, there was no significant main effect of coping strategy condition, $F(1, 176) = 1.570, p = .212$. Thus, participants in the monitor-only condition were found to be suppressing their target thought. Due spontaneous suppression in the monitor-only group, item 9 on the Time Period 1 Appraisal Ratings was included as a covariate in the analyses testing hypotheses 3 and 5. Table 6 displays means and standard deviations for these items (Appendix N, Item 9 on Appendix M) for each group at the two time periods.

**Test of hypotheses**

**Hypothesis 1.** It was hypothesized that the relationship between intrusive thoughts (scores on Part 1 of the ROII) and obsessions (scores on OCI-R) would be mediated by TAF beliefs (scores on TAF-R), depressive symptoms (scores on depression subscale of DASS), and thought suppression tendencies (scores on WBSI). A multiple mediation analysis was conducted following the procedure outlined by Preacher and Hayes (2008), with the score from the ROII as the independent variable, scores from the TAF-R, WBSI, and DASS as the mediator variables, and the score from the OCI-R as the outcome variable. An SPSS macro (“Indirect”; Preacher & Hayes, 2008) was used, which calculates the path coefficients in a multiple mediator model and estimates confidence intervals with bootstrapping. First, the relationships between the independent variable (ROII) and each mediator (TAF-R, WBSI, and DASS), the independent variable
(ROII) and outcome (OCI-R), and the mediators and outcome (OCI-R) were examined. Figure 2 displays the results from these analyses. Next, the indirect effect of the independent variable (ROII) through each mediator on the outcome (OCI-R) was examined. Depressive symptoms and thought suppression were both found to be significant mediators \((p < .05)\), whereas TAF beliefs was not found to be a significant mediator. Finally, the direct effect of the independent variable (ROII) on the outcome variable (OCI-R), when controlling for the effects of the mediators, was evaluated. A partial mediation was found to be present, and the overall model was significant, \(F(4, 164) = 32.91, p < .0001\), accounting for 44.5% of the variance in OC symptoms.

**Hypothesis 2.** It was hypothesized that participants who underwent the depressed mood induction would have higher scores on the appraisal ratings (e.g., anxiety, guilt) after the TAF induction compared to the neutral condition. To analyze this, an independent samples t-test was conducted on anxiety (Appendix M, Item 1). There was a trend for participants in the depressed mood induction having higher ratings of anxiety than the neutral condition; however, this difference was not significant, \(t(178) = 1.795, p = .074\). In addition, a one-way multivariate analysis of variance (MANOVA) was conducted for the depressed and neutral mood groups on the following items from the Appraisal Ratings Form (Appendix M): items 2, 3, 4, 5, 6, and 7. Participants in the two mood induction conditions did not differ significantly on these ratings, \(F(6, 171) = .809, p = .564\). Thus, this hypothesis was not supported. Table 7 displays means and standard deviations on the appraisal ratings after the TAF induction.
Hypothesis 3. It was hypothesized that a significant mood by coping strategy interaction would be observed on frequency of intrusions, anxiety, and negative appraisals following Time Period 1. More specifically, the depression + thought suppression group was expected to have a greater frequency of intrusions, more anxiety, and more negative appraisals compared to the other groups. Two separate two-way ANCOVAs with two between-subjects factors (mood, coping strategy) were conducted on frequency of intrusions and anxiety, using Item 9 on Appendix M as a covariate. For frequency of intrusions, the mood by coping strategy interaction was not significant, $F(1, 175) = .322, p = .571$. There was not a main effect of coping strategy condition, $F(1, 175) = 2.374, p = .125$, or mood condition, $F(1, 175) = .024, p = .878$. The covariate was significant, $F(1, 175) = 19.851, p < .001$. In terms of anxiety, the mood by coping strategy interaction was not significant, $F(1, 175) = .017, p = .896$, and there was not a main effect of coping strategy condition, $F(1, 175) = .386, p = .535$. There was a non-significant trend for the depressed mood group reporting greater anxiety than the neutral mood group, $F(1, 175) = 3.771, p = .054$. The covariate was significant, $F(1, 175) = 51.602, p < .001$. A MANCOVA with two between-subjects factors (mood, coping strategy) was conducted on Appraisal Ratings items 2-7 (Appendix M) after Time Period 1. The mood by coping strategy interaction was not significant, $F(6, 168) = 1.458, p = .196$. There were no significant main effects of mood condition, $F(6, 168) = 1.56, p = .160$, or coping strategy condition, $F(6, 168) = .491, p = .814$. The covariate was significant, $F(6, 168) = 13.458, p < .001$. Tables 8 and 9 display mean frequency of intrusions, anxiety, and appraisal ratings for each group at the two time periods.
It was also expected that a significant mood by coping strategy interaction would be observed on change in frequency of intrusions and anxiety from Time Period 1 to 2, with the depression + thought suppression group having the greatest increase in frequency of intrusions and anxiety over the time periods compared to the other three groups. Two separate three-way mixed ANCOVAs with two between-subjects factors (mood, coping strategy) and one within-subjects factor (time period) were conducted on frequency of intrusions and anxiety, using Item 9 on Appendix M as a covariate. For change in frequency of intrusions, the three-way interaction (time, mood, coping strategy) was not significant, \( F(1, 169) = 2.072, p = .152 \). There were not significant interactions for time by mood, \( F(1, 169) = .041, p = .840 \), time by coping strategy, \( F(1, 169) = .870, p = .352 \), or mood by coping strategy, \( F(1, 169) = .330, p = .566 \). There were not significant main effects for mood condition, \( F(1, 169) = 2.290, p = .132 \), or coping strategy condition, \( F(1, 169) = .115, p = .735 \); however, there was a significant main effect of time, \( F(1, 169) = 5.187, p < .05 \), in which the frequency of intrusions decreased from Time Period 1 (\( M = 10.48, SD = 9.14 \)) to Time Period 2 (\( M = 5.83, SD = 6.93 \)), collapsed across mood and coping strategy conditions. The covariate was significant, \( F(1, 169) = 18.584, p < .001 \).

For change in anxiety, the three-way interaction (time, mood, coping strategy) was not significant, \( F(1, 172) = .473, p = .493 \). There were not significant interactions for time by mood, \( F(1, 172) = 1.490, p = .224 \), time by coping strategy, \( F(1, 172) = 1.008, p = .317 \), or mood by coping strategy, \( F(1, 172) = .512, p = .475 \). No main effects were significant for mood condition, \( F(1, 172) = 1.143, p = .287 \), or coping strategy condition, \( F(1, 172) = .017, p = .896 \). The main effect of time was
significant, \( F(1, 172) = 6.046, p < .05; \) anxiety decreased from Time Period 1 (\( M = 36.88, SD = 28.40 \)) to Time Period 2 (\( M = 23.22, SD = 23.01 \)) collapsed across mood and coping strategy conditions. The covariate was also significant, \( F(1, 172) = 54.961, p < .001. \)

**Hypothesis 4.** Regarding attributions about thought suppression failure, it was hypothesized that among participants in the thought suppression condition who reported at least one intrusive thought during the first time period (\( n = 82 \)), those in the depressed mood condition would have more negative internal attributions than those in the neutral mood condition. Only participants who were instructed to suppress their thoughts were included in this analysis; that is, it did not include participants in the monitor-only condition who were found to be spontaneously suppressing. To test this, an independent samples t-test was conducted to compare scores on the Internal Attributions subscale of the TSAQ (Appendix I). The depressed mood group (\( M = 15.14, SD = 4.86 \)) did not differ significantly from the neutral mood group (\( M = 15.55, SD = 6.16 \)) on internal attributions about thought suppression failure, \( t(80) = -.333, p = .740; \) thus, no evidence was found to support this hypothesis.

**Hypothesis 5.** Changes in negative affect, as measured by the Negative Affect subscale of the PANAS (Appendix J), over the course of the experiment by mood and coping strategy conditions were explored. It was hypothesized that a significant mood by coping strategy interaction would be observed on change in negative affect, with the depression + thought suppression group having the greatest increase in negative affect over the course of the experiment compared to the other three groups. To test this, a three-way mixed ANCOVA with two between-subjects factors (mood, coping strategy)
and one within-subjects factor (time) were conducted on the negative affect subscale of the PANAS for three time-points (pre-mood induction, post-mood induction, and post-experiment), using Item 9 on Appendix M as a covariate. The three-way interaction (time, mood, coping strategy) was not significant: $F(2, 170) = 1.261, p = .286$. In addition, the following interactions were not significant: time by mood, $F(2, 170) = 1.925, p = .149$, time by coping strategy, $F(2, 170) = .118, p = .889$, and mood by coping strategy, $F(1, 171) = 1.326, p = .251$. There were no significant main effects for mood condition, $F(1, 171) = 1.081, p = .300$, or coping strategy condition, $F(1, 171) = .198, p = .657$; however, there was a significant main effect of time, $F(2, 170) = 10.571, p < .001$. Post-hoc pairwise comparisons were conducted and revealed that negative affect was significantly higher pre-mood induction compared to post-mood induction ($p < .05$), lower post-mood induction compared to post-experiment ($p < .001$), and lower pre-mood induction compared to post-experiment ($p < .01$), regardless of mood or coping strategy condition. The covariate was also significant, $F(1, 171) = 8.992, p < .01$. Table 10 displays means and standard deviations on the Negative Affect subscale of the PANAS at each time point.

**Exploratory analyses**

Due to the unexpected findings, exploratory analyses were conducted to further investigate the relationships between variables from the experimental portion of the study. First, to further explore Hypothesis 2, the relationship between negative affect post-mood induction (scores on the Negative Affect subscale on the PANAS; Appendix J) and appraisal ratings (Appendix M) following the TAF induction was examined. For
the neutral mood condition, negative affect was only significantly correlated with anxiety, with higher levels of negative affect being related to greater anxiety. However, for the depressed mood condition, a number of significant correlations were found. More specifically, higher levels of negative affect were associated with greater anxiety and guilt, as well as higher ratings of moral wrongness, perceived control over the event occurring, likelihood of event, responsibility, and urge to neutralize. Table 11 displays the correlation coefficients for each mood condition.

Next, Hypothesis 3 was further explored by examining the relationship between thought suppression effort, frequency of intrusions, and appraisal ratings (Appendix M) following the first coping strategy time period, for participants in the thought suppression condition. For each mood condition, greater effort at suppressing was significantly related to more frequent intrusions, greater anxiety and guilt, higher ratings of moral wrongness, and greater urges to neutralize; an additional significant positive correlation was found for the depressed mood condition between thought suppression effort and responsibility appraisal ratings. The correlation coefficients for each mood condition are displayed in Table 12.

Finally, to further explore Hypothesis 4, the relationship between internal attributions about thought suppression failure (scores on the Internal Attributions subscale of the TSAQ; Appendix I), negative affect post-mood induction (scores on the Negative Affect subscale on the PANAS; Appendix J), and frequency of intrusions and appraisal ratings (Appendix M) following the first coping strategy time period were examined. This set of analyses was only conducted for participants in the thought
suppression condition who reported at least one intrusive thought during the first time period ($n = 82$), and these analyses were done separately for each mood condition. A number of significant correlations emerged. For the neutral mood condition, internal attributions about thought suppression failure were positively correlated with negative affect post-mood induction, thought suppression effort, anxiety, guilt, and willingness to further think of the scenario. For the depressed mood condition, higher scores on internal attributions about thought suppression failure were associated with greater negative affect post-mood induction, greater suppression effort, more anxiety and guilt, as well as higher ratings of moral wrongness, perceived control over the event occurring, likelihood of event, responsibility, and urge to neutralize. Table 13 displays the correlation coefficients between these variables for each mood condition.
Discussion

Findings from the study were complex and revealed moderate relationships among intrusive thoughts, OC symptoms, thought suppression tendencies, and depressive symptoms. The results from the multiple mediator model were consistent with prior research (Rassin et al., 2000; Smári & Holmesteinsson, 2001), in that depressive symptoms and thought suppression tendencies were found to be significant mediators of the relationship between intrusive thoughts and OC symptoms. However, the directionality of these relationships could not be determined from these concurrent variables, due to the correlational design of this part of the study. Contrary to expectation, the presence of TAF beliefs was not a significant mediator in the current study. Marcks and Woods (2007) found that thought suppression mediates the relationship between TAF beliefs and OC symptoms, rather than the relationship between intrusive thoughts and OC symptoms, as explored in this study. Potentially, TAF beliefs are better characterized as a predictor of OC symptoms, rather than as a mediator, as indicated by prior research. Other research has found that intrusive thoughts mediate the relationship between TAF beliefs and OC symptoms, suggesting yet another possible relationship between these variables (Abramowitz, Nelson, Rygwall, & Khandker, 2007). One study to date has examined mood, and has shown that depression and anxiety mediate the relationship between anxiety diagnosis—specifically OCD—and TAF beliefs (Abramowitz et al., 2003). Given the inconsistencies in findings, the relationship between intrusive thoughts, TAF beliefs, thought suppression, depressive symptoms, and OC symptoms is not entirely clear. However, each of these other models presents only
part of the picture of how OC symptoms develop. That is, no study has to date examined all variables implicated to play a role in the relationship between intrusive thoughts and OC symptoms. Even the two factors identified by CB theories (TAF beliefs and thought suppression) have rarely been examined together. Therefore, the unclear role of TAF beliefs in the model may be due in part to the inconsistent designs of previous research. Although the presence of TAF beliefs was not a significant mediator in the current model, a strength of this study is that many of the factors suggested by theory and research were examined together.

However, several limitations to this part of the study should be taken into consideration. Only one model was tested, rather than using multiple models to determine the best-fitting model. Other models that might have been explored include using TAF beliefs as a predictor variable (Marcks & Woods, 2007) or outcome variable (Abramowitz et al., 2003), or using OC symptoms to predict thought suppression (Markowitz & Purdon, 2008). It is suggested that future research test these alternate models. In addition, as is the case with much existing research testing such models, no causal statements can be made from this mediation analysis, due to the correlational nature of its design.

Additional correlational analyses, which were post hoc in nature, yielded interesting results from the experimental portion of the study. Although mood induction condition was not directly related to differences in appraisal ratings, induced mood affected the positive relationship between negative affect and appraisal ratings after the TAF induction. This relationship, for participants in the depressed mood condition, lends
support to prior research finding evidence for a relationship between TAF beliefs and
depressed mood (Abramowitz et al., 2003; Muris et al., 2001). In addition, suppression
effort was found to be positively correlated with frequency of intrusions, anxiety, and
appraisal ratings. This is consistent with prior research linking thought suppression
tendencies and depressed mood (Wenzlaff et al., 2002). It also substantiates prior
research showing that suppression of a personally relevant thought is associated with
more anxiety (Koster et al., 2003), and that thought suppression after a TAF induction is
associated with more intrusions and more negative appraisals (Marcks & Woods, 2007).
Furthermore, internal attributions about thought suppression failure were shown to be
related to anxiety and suppression effort. This is consistent with prior correlational
research, in which the presence of OC symptoms was associated with greater internal
attributions about thought suppression failure than the lack of OC symptoms (Tolin et al.,
2002). It should be noted, however, that a limitation to these exploratory analyses is that
Type I error rate was not controlled for.

More problematic and puzzling was the experimental portion of the present study,
which explored several hypotheses that were designed to test the causal effects of mood,
TAF beliefs, and thought suppression. These hypotheses were not supported, potentially
due in part to the spontaneous suppression by the control condition. Several design
issues should be considered for this part of the study. First, it is unclear how salient and
lasting the effects of the mood induction were, especially after the TAF induction. That
is, although the mood induction had the desired effects immediately following viewing of
the film clips, the induced mood state may not have been sustained throughout the study.
Participants’ mood state was not assessed between the mood induction and the end of the study.

Second, regarding attributions about thought suppression failure, the depressed mood induction may have served to induce more general negative cognitions that were not personally relevant. That is, although those in the depressed mood condition reported more negative affect, they may not have necessarily internalized this as assessed by the Internal Attribution subscale of the Thought Suppression Attribution Questionnaire (TSAQ). Alternatively, thought suppression failure may result in negative internal attributions, regardless of one’s mood state.

Third, issues also arose with the use of the mood induction in conjunction with the TAF induction. Although the appraisal ratings assessed thoughts and feelings related to the car accident scenario, participants might have continued to think about aspects of the mood induction, rather than the TAF induction. This could explain why those in the depressed mood condition experienced greater distress (i.e., higher ratings of anxiety). Alternatively, the effects of the TAF induction may have overwhelmed the effects of the mood induction. That is, the TAF induction may have served to negate the differences between mood conditions, and so both the depressed and neutral mood conditions may have been experiencing similar levels of negative affect. Unfortunately, this was not assessed after the TAF induction; therefore although this explanation is plausible, it is unclear as to whether this was the case.

Several issues arose concerning administration of the measures. The lack of relationship between mood induction condition and attributions about thought
suppression failure may have been due to the time elapsed between the mood induction at the start of the study and the administration of the TSAQ at the end of the study, in that the induced mood may no longer have been as salient. Changes in negative affect might have been better observed had the Positive and Negative Affect Schedule (PANAS) been administered at different time points. Namely, it would have been useful to additionally administer this measure following the TAF induction and the first coping strategy time period. Additionally, changes in negative affect may not have been accurately assessed due to the version of the PANAS used. Participants were asked to rate their feelings at the present moment, whereas other versions of the PANAS assess one’s subjective state over longer time points (e.g., the past day). Use of a different version could potentially allow better assessment of affect over the course of the experiment.

Regarding the coping strategy conditions, the monitor-only condition was found to be spontaneously suppressing their thoughts. Therefore, as participants in both coping strategy conditions were actively attempting to suppress the target thought, direct comparisons between these two conditions are difficult to make. Future research might utilize different instructions for the monitor-only condition, in order to reduce spontaneous thought suppression by this group. It has been recommended that specific “do not suppress” instructions be used for the control group (Purdon, 2004). However, findings from studies using these instructions have been mixed: Rassin (2001) reported some suppression by the control group, whereas Purdon and Clark (2001) found that participants complied with the instructions. Thus, it remains unclear how best to prevent spontaneous suppression, and highlights the importance of assessing suppression effort
across coping strategy conditions. In addition, because both coping strategy conditions were in fact suppressing the target thought, they could consequently experience similar emotional states; that is, they reported similar levels of negative affect. It has also been noted that the frequency of intrusions may not be the optimal way to assess the effects of thought suppression, but that instead, it is more important to consider the broader effects of suppression on appraisals, anxiety and discomfort, and mood state (Koster et al., 2003; Purdon & Clark, 2001; Trinder & Salkovskis, 1994). Furthermore, only assessing the number of intrusions does not account for possible differences in intensity or duration of intrusions between the groups (Purdon, 2004; Purdon, Gifford, McCabe, & Antony, 2011).

Additional limitations should be considered for the experimental portion of this study. Although the TAF induction used is a standard in the literature (e.g., Rachman et al., 1996; van den Hout et al., 2002; van den Hout et al., 2001; Zucker et al., 2002), it is not clear how individual differences in TAF beliefs impact the effectiveness of this induction. That is, envisioning a loved one in a car accident may not elicit the same OC-like experiences for someone with a low level of TAF beliefs. Additionally, although participants were instructed to select a target with whom they had a close relationship, this does not take into account conflicted feelings towards the target. In the future, studies using this induction might specify that the participant have a close as well as positive relationship with the target. Furthermore, a published, validated measure for assessing OC-relevant appraisals is lacking; the current study could have benefited from the use of such a measure. Finally, participant characteristics should be taken into
consideration, namely, that this was a homogenous sample: participants were predominately Caucasian, with similar ages and level of education.

Several additional directions exist for future research. Different coping strategy conditions might be used in comparison to thought suppression, rather than a monitor-only condition. For example, acceptance-based strategies (Marcks & Woods, 2007) utilize instructions that minimize spontaneous suppression. It is also worth noting that in addition to the literature on thought suppression, there is some discussion on the utility of a related technique, thought stopping. Although the use of thought stopping with one’s own intrusions has been distinguished from thought suppression of a neutral, imposed thought (Bakker, 2009), this does not take into account the wealth of thought suppression literature using personally relevant intrusions. However, future research might explore thought stopping (in which positive self-talk is utilized after stopping the unwanted thought) as an alternative to thought suppression.

Concerning the mood induction, it is suggested that future studies combining a mood induction with a TAF induction utilize stimuli that do not have the potential to interfere with each other. Film clips have the advantage of being dynamic and engaging stimuli; however, they also contain cognitive content that potentially interferes with the participant switching to the task of envisioning the car accident scenario. Thus, using novel combinations of inductions is recommended. For example, music might be used to induce a particular mood state, as was done in Wenzlaff et al.’s (1991) thought suppression study. Furthermore, although mood may play a role in the development of obsessions (e.g., Salkovskis et al., 2000), it should be noted that there are important
distinctions between the intrusions found in OCD and the negative automatic thoughts documented in depression (Salkovskis, 1985). Similarly, different types of depressive experiences, such as Blatt’s (1974) distinction between relationship-based and performance-based depression, could each be more or less prone to intrusions as well as the coping strategies used to adapt to them. It may be that the types of intrusions and mood are more complex than was recognized in the design of the present study. Future research should explore the relationship between these types of cognitions and mood. Finally, it would be useful to explore the effects of mood and coping strategies using a clinical sample, since the artificial creation of mood and TAF may be different for individuals with clinical levels of depression or OCD.

Despite the limitations present in this study, the results provide additional evidence for the co-occurrence of negative affect, TAF beliefs, suppression effort, and OC-related appraisals. Clearly, additional research is needed to explore the relationships between these variables and to address the methodological issues that arose in the current study.
References


are characteristic of obsessive compulsive disorder. *Behaviour Research and Therapy, 38*, 347-372.


Table 1
Descriptive statistics by group for demographic variables

<table>
<thead>
<tr>
<th>Item</th>
<th>N+MO</th>
<th>N+TS</th>
<th>D+MO</th>
<th>D+TS</th>
</tr>
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<td>19.28 (1.26)</td>
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</tr>
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<td>16</td>
</tr>
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<td>45</td>
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<td>1</td>
</tr>
<tr>
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<td>13.07 (1.16)</td>
<td>13.09 (1.12)</td>
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</tbody>
</table>

N+MO = neutral mood and monitor-only; N+TS = neutral mood and thought suppression; D+MO = depressed mood and monitor-only; D+TS = depressed mood and thought suppression
Table 2

Participants endorsing psychological background questions by group

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<tr>
<th>Item</th>
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<th>N+TS</th>
<th>D+MO</th>
<th>D+TS</th>
<th>N (%)</th>
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<td></td>
<td></td>
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N+MO = neutral mood and monitor-only; N+TS = neutral mood and thought suppression; D+MO = depressed mood and monitor-only; D+TS = depressed mood and thought suppression
Table 3
Descriptive statistics by group for baseline measures

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<td>42.64 (32.90)</td>
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<tr>
<td>DASS – Depression</td>
<td>3.07 (3.04)</td>
<td>4.02 (4.41)</td>
<td>3.85 (3.54)</td>
<td>3.64 (3.16)</td>
<td>.824</td>
</tr>
<tr>
<td>TAF-R</td>
<td>24.02 (10.96)</td>
<td>28.83 (11.72)</td>
<td>29.43 (14.86)</td>
<td>24.40 (12.59)</td>
<td>.901</td>
</tr>
<tr>
<td>OCI-R</td>
<td>12.62 (9.71)</td>
<td>13.43 (10.28)</td>
<td>17.04 (11.59)</td>
<td>12.78 (10.46)</td>
<td>.884</td>
</tr>
<tr>
<td>WBSI</td>
<td>47.71 (12.28)</td>
<td>48.40 (10.98)</td>
<td>51.21 (11.67)</td>
<td>47.07 (11.56)</td>
<td>.909</td>
</tr>
<tr>
<td>PANAS (Time 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Affect</td>
<td>28.11b (8.93)</td>
<td>23.45a (7.08)</td>
<td>26.21ab (8.39)</td>
<td>23.36a (7.79)</td>
<td>.883</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>15.22 (4.44)</td>
<td>14.36 (5.10)</td>
<td>14.57 (5.56)</td>
<td>14.31 (5.34)</td>
<td>.824</td>
</tr>
</tbody>
</table>

(continued)
Table 3 (continued)

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>N+MO M (SD)</th>
<th>N+TS M (SD)</th>
<th>D+MO M (SD)</th>
<th>D+TS M (SD)</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>29.85 (25.25)</td>
<td>25.10 (22.78)</td>
<td>30.40 (29.08)</td>
<td>24.27 (22.46)</td>
<td>--</td>
</tr>
<tr>
<td>Guilt</td>
<td>9.63 (16.14)</td>
<td>8.88 (13.69)</td>
<td>10.00 (17.89)</td>
<td>10.60 (18.15)</td>
<td>--</td>
</tr>
</tbody>
</table>

ROII = Revised Obsessive Intrusions Inventory (Purdon & Clark, 1993, 1994b); DASS = Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995); TAF-R = Thought-Action Fusion Scale-Revised (Shafran, Thordarson, & Rachman, 1996); OCI-R = Obsessive-Compulsive Inventory-Revised (Foa et al., 2002); WBSI = White Bear Suppression Inventory (Wegner & Zanakos, 1994); PANAS = Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). N+MO = neutral mood and monitor-only; N+TS = neutral mood and thought suppression; D+MO = depressed mood and monitor-only; D+TS = depressed mood and thought suppression. Different superscripts denote statistically significant ($p < .05$) differences between groups not sharing the same superscripts; identical superscripts indicate no significant differences.
Table 4
Mean manipulation check ratings by mood condition after mood induction

<table>
<thead>
<tr>
<th>Item</th>
<th>Depressed M (SD)</th>
<th>Neutral M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attention</td>
<td>89.02 (12.74)**</td>
<td>83.42 (17.63)</td>
</tr>
<tr>
<td>2. Emotionally moved</td>
<td>65.11 (23.69)**</td>
<td>33.93 (25.89)</td>
</tr>
<tr>
<td>3. Sadness</td>
<td>62.64 (25.10)**</td>
<td>5.65 (8308)</td>
</tr>
<tr>
<td>4. Anxiety/distress</td>
<td>42.07 (28.89)**</td>
<td>7.89 (12.53)</td>
</tr>
<tr>
<td>5. Calmness</td>
<td>55.11 (25.52)*</td>
<td>75.23 (20.43)</td>
</tr>
</tbody>
</table>

* Group differences statistically significant, $p < .05$; ** group differences statistically significant, $p < .001$. 

Table 5
Mean manipulation check ratings by group after TAF induction

<table>
<thead>
<tr>
<th>Item</th>
<th>N+MO M (SD)</th>
<th>N+TS M (SD)</th>
<th>D+MO M (SD)</th>
<th>D+TS M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vividness</td>
<td>64.87 (23.26)</td>
<td>64.33 (21.14)</td>
<td>72.06 (18.89)</td>
<td>69.60 (18.78)</td>
</tr>
<tr>
<td>2. Severity</td>
<td>50.51 (31.39)</td>
<td>49.33 (31.54)</td>
<td>61.13 (28.96)</td>
<td>59.69 (29.90)</td>
</tr>
<tr>
<td>3. Effort</td>
<td>66.02 (25.54)</td>
<td>63.52 (27.97)</td>
<td>61.04 (25.98)</td>
<td>70.82 (20.93)</td>
</tr>
<tr>
<td>4. Engagement</td>
<td>60.70 (25.82)</td>
<td>61.64 (24.04)</td>
<td>59.94 (23.43)</td>
<td>65.20 (25.50)</td>
</tr>
<tr>
<td>5. Believability</td>
<td>59.76 (28.57)</td>
<td>64.38 (32.77)</td>
<td>66.53 (27.27)</td>
<td>64.60 (30.06)</td>
</tr>
</tbody>
</table>

N+MO = neutral mood and monitor-only; N+TS = neutral mood and thought suppression; D+MO = depressed mood and monitor-only; D+TS = depressed mood and thought suppression
Table 6

Mean manipulation check ratings by group after coping strategy time periods

<table>
<thead>
<tr>
<th>Item</th>
<th>N+MO M (SD)</th>
<th>N+TS M (SD)</th>
<th>D+MO M (SD)</th>
<th>D+TS M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Followed instructions</td>
<td>69.93 (27.80)</td>
<td>59.31 (31.73)</td>
<td>65.91 (30.67)</td>
<td>66.36 (25.25)</td>
</tr>
<tr>
<td>Suppression effort</td>
<td>74.00 (29.07)</td>
<td>60.21 (32.90)</td>
<td>62.55 (32.55)</td>
<td>64.84 (28.26)</td>
</tr>
<tr>
<td>Time 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Followed instructions</td>
<td>58.54 (31.74)</td>
<td>45.02 (31.64)</td>
<td>56.68 (33.96)</td>
<td>53.56 (32.43)</td>
</tr>
</tbody>
</table>

N+MO = neutral mood and monitor-only; N+TS = neutral mood and thought suppression; D+MO = depressed mood and monitor-only; D+TS = depressed mood and thought suppression
Table 7

Mean appraisal rating scores by mood condition after thought-action fusion induction

<table>
<thead>
<tr>
<th>Item</th>
<th>Depressed</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
</tr>
<tr>
<td>1. Anxiety/distress</td>
<td>59.88 (29.00)</td>
<td>52.20 (28.35)</td>
</tr>
<tr>
<td>2. Guilt</td>
<td>56.88 (32.65)</td>
<td>49.61 (34.45)</td>
</tr>
<tr>
<td>3. Moral wrongness</td>
<td>66.01 (32.33)</td>
<td>60.69 (34.96)</td>
</tr>
<tr>
<td>4. Control over occurrence</td>
<td>30.47 (33.01)</td>
<td>26.41 (29.90)</td>
</tr>
<tr>
<td>5. Likelihood of occurrence</td>
<td>19.60 (25.49)</td>
<td>18.73 (22.27)</td>
</tr>
<tr>
<td>6. Responsibility</td>
<td>54.76 (37.23)</td>
<td>54.60 (39.06)</td>
</tr>
<tr>
<td>7. Urge to neutralize</td>
<td>57.44 (34.84)</td>
<td>51.05 (35.68)</td>
</tr>
</tbody>
</table>
Table 8

Mean frequency of intrusions and appraisal rating scores after coping strategy Time Period 1

<table>
<thead>
<tr>
<th>Item</th>
<th>N+MO</th>
<th>N+TS</th>
<th>D+MO</th>
<th>D+TS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Number of intrusions</td>
<td>11.78 (10.42)</td>
<td>9.21 (8.96)</td>
<td>11.64 (9.00)</td>
<td>9.11 (7.92)</td>
</tr>
<tr>
<td>1. Anxiety/distress</td>
<td>38.28 (30.70)</td>
<td>29.40 (27.33)</td>
<td>40.00 (28.84)</td>
<td>39.18 (26.07)</td>
</tr>
<tr>
<td>2. Guilt</td>
<td>34.26 (32.22)</td>
<td>22.10 (22.64)</td>
<td>38.62 (32.45)</td>
<td>34.44 (28.59)</td>
</tr>
<tr>
<td>3. Moral wrongness</td>
<td>56.41 (34.07)</td>
<td>41.41 (35.14)</td>
<td>56.17 (37.78)</td>
<td>53.31 (33.11)</td>
</tr>
<tr>
<td>4. Control over occurrence</td>
<td>20.61 (25.72)</td>
<td>20.93 (25.04)</td>
<td>27.57 (31.21)</td>
<td>17.00 (20.31)</td>
</tr>
<tr>
<td>5. Likelihood of occurrence</td>
<td>19.61 (22.78)</td>
<td>17.90 (21.28)</td>
<td>22.53 (27.14)</td>
<td>17.73 (22.32)</td>
</tr>
<tr>
<td>6. Responsibility</td>
<td>51.70 (37.47)</td>
<td>47.69 (35.75)</td>
<td>53.62 (40.45)</td>
<td>45.62 (33.57)</td>
</tr>
<tr>
<td>7. Urge to neutralize</td>
<td>50.83 (34.24)</td>
<td>45.00 (36.03)</td>
<td>56.38 (36.74)</td>
<td>47.67 (32.90)</td>
</tr>
<tr>
<td>8. Willingness to think of scenario</td>
<td>22.16 (23.90)</td>
<td>25.33 (27.00)</td>
<td>23.94 (26.83)</td>
<td>29.91 (28.83)</td>
</tr>
<tr>
<td>9. Suppression effort</td>
<td>74.00 (29.07)</td>
<td>60.21 (32.90)</td>
<td>62.55 (32.55)</td>
<td>64.84 (28.26)</td>
</tr>
</tbody>
</table>

N+MO = neutral mood and monitor-only; N+TS = neutral mood and thought suppression; D+MO = depressed mood and monitor-only; D+TS = depressed mood and thought suppression
### Table 9

Mean frequency of intrusions and appraisal rating scores after coping strategy Time Period 2

<table>
<thead>
<tr>
<th>Item</th>
<th>N+MO M (SD)</th>
<th>N+TS M (SD)</th>
<th>D+MO M (SD)</th>
<th>D+TS M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of intrusions</td>
<td>6.62 (8.16)</td>
<td>4.10 (4.40)</td>
<td>7.41 (7.97)</td>
<td>5.02 (6.07)</td>
</tr>
<tr>
<td>1. Anxiety/distress</td>
<td>25.33 (24.27)</td>
<td>15.98 (21.21)</td>
<td>28.04 (24.92)</td>
<td>22.78 (20.10)</td>
</tr>
<tr>
<td>2. Guilt</td>
<td>24.91 (26.95)</td>
<td>13.40 (18.00)</td>
<td>27.09 (27.32)</td>
<td>21.98 (25.52)</td>
</tr>
<tr>
<td>3. Moral wrongness</td>
<td>47.37 (38.00)</td>
<td>36.07 (34.23)</td>
<td>52.40 (38.73)</td>
<td>43.93 (31.98)</td>
</tr>
<tr>
<td>4. Control over occurrence</td>
<td>15.59 (20.01)</td>
<td>17.55 (25.58)</td>
<td>27.51 (32.97)</td>
<td>14.98 (20.62)</td>
</tr>
<tr>
<td>5. Likelihood of occurrence</td>
<td>15.89 (20.05)</td>
<td>17.02 (23.76)</td>
<td>21.91 (29.88)</td>
<td>12.51 (16.69)</td>
</tr>
<tr>
<td>6. Responsibility</td>
<td>41.04 (35.93)</td>
<td>40.57 (33.68)</td>
<td>48.68 (39.90)</td>
<td>39.40 (32.20)</td>
</tr>
<tr>
<td>7. Urge to neutralize</td>
<td>39.61 (34.33)</td>
<td>33.90 (34.64)</td>
<td>49.72 (33.71)</td>
<td>38.75 (34.16)</td>
</tr>
<tr>
<td>8. Willingness to think of scenario</td>
<td>20.22 (24.71)</td>
<td>22.07 (26.58)</td>
<td>21.98 (26.94)</td>
<td>20.84 (26.72)</td>
</tr>
<tr>
<td>9. Suppression effort</td>
<td>56.63 (33.48)</td>
<td>41.52 (33.19)</td>
<td>47.64 (34.31)</td>
<td>45.86 (34.35)</td>
</tr>
</tbody>
</table>

N+MO = neutral mood and monitor-only; N+TS = neutral mood and thought suppression; D+MO = depressed mood and monitor-only; D+TS = depressed mood and thought suppression
Table 10

Mean scores on Negative Affect subscale of the Positive and Negative Affect Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>N+MO M (SD)</th>
<th>N+TS M (SD)</th>
<th>D+MO M (SD)</th>
<th>D+TS M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-mood induction</td>
<td>15.22 (4.44)</td>
<td>14.36 (5.10)</td>
<td>14.57 (5.56)</td>
<td>14.31 (5.34)</td>
</tr>
<tr>
<td>Post-mood induction</td>
<td>11.47 (1.87)</td>
<td>11.48 (3.75)</td>
<td>17.09 (5.63)</td>
<td>15.22 (4.64)</td>
</tr>
<tr>
<td>Post-experiment</td>
<td>16.67 (6.79)</td>
<td>15.07 (7.01)</td>
<td>17.60 (9.56)</td>
<td>14.71 (4.69)</td>
</tr>
</tbody>
</table>

N+MO = neutral mood and monitor-only; N+TS = neutral mood and thought suppression; D+MO = depressed mood and monitor-only; D+TS = depressed mood and thought suppression
Table 11

Relationship between negative affect post-mood induction and appraisal ratings post-TAF induction by mood condition

<table>
<thead>
<tr>
<th></th>
<th>PANAS-Negative Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.222*</td>
</tr>
<tr>
<td>Guilt</td>
<td>.095</td>
</tr>
<tr>
<td>Moral wrongness</td>
<td>-.069</td>
</tr>
<tr>
<td>Control</td>
<td>.044</td>
</tr>
<tr>
<td>Likelihood</td>
<td>.148</td>
</tr>
<tr>
<td>Responsibility</td>
<td>.036</td>
</tr>
<tr>
<td>Urge to neutralize</td>
<td>.000</td>
</tr>
<tr>
<td>Depressed</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.444**</td>
</tr>
<tr>
<td>Guilt</td>
<td>.464**</td>
</tr>
<tr>
<td>Moral wrongness</td>
<td>.392**</td>
</tr>
<tr>
<td>Control</td>
<td>.640**</td>
</tr>
<tr>
<td>Likelihood</td>
<td>.263*</td>
</tr>
<tr>
<td>Responsibility</td>
<td>.403**</td>
</tr>
<tr>
<td>Urge to neutralize</td>
<td>.356**</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (two-tailed); ** correlation is significant at the .01 level (two-tailed)
Table 12

Relationship between suppression effort, frequency of intrusions, and appraisal ratings following Time 1 for thought suppression group by mood condition

<table>
<thead>
<tr>
<th>Suppression effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Number of intrusions</td>
</tr>
<tr>
<td>Anxiety</td>
</tr>
<tr>
<td>Guilt</td>
</tr>
<tr>
<td>Moral wrongness</td>
</tr>
<tr>
<td>Control</td>
</tr>
<tr>
<td>Likelihood</td>
</tr>
<tr>
<td>Responsibility</td>
</tr>
<tr>
<td>Urge to neutralize</td>
</tr>
<tr>
<td>Willingness to think</td>
</tr>
<tr>
<td>Depressed</td>
</tr>
<tr>
<td>Number of intrusions</td>
</tr>
<tr>
<td>Anxiety</td>
</tr>
<tr>
<td>Guilt</td>
</tr>
<tr>
<td>Moral wrongness</td>
</tr>
<tr>
<td>Control</td>
</tr>
<tr>
<td>Likelihood</td>
</tr>
<tr>
<td>Responsibility</td>
</tr>
<tr>
<td>Urge to neutralize</td>
</tr>
<tr>
<td>Willingness to think</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (two-tailed); ** correlation is significant at the .01 level (two-tailed)
Table 13

Relationship between attributions about thought suppression failure, negative affect post-mood induction, and frequency of intrusions and appraisal ratings following Time 1 by mood condition

<table>
<thead>
<tr>
<th></th>
<th>Neutral</th>
<th>Depressed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TSAQ-Internal</td>
<td>PA NAS-Negative Affect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of intrusions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anxiety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Guilt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moral wrongness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Likelihood</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Urge to neutralize</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Willingness to think</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suppression effort</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PANAS-Negative Affect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of intrusions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anxiety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Guilt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moral wrongness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
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<tr>
<td></td>
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<td>Likelihood</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Urge to neutralize</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Willingness to think</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suppression effort</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (two-tailed); ** correlation is significant at the .01 level (two-tailed)
Figure 1. Procedure of current study and materials administered.
Figure 2. Multiple mediator model of relationship between intrusive thoughts and obsessive-compulsive symptoms.

* * = p < .05
** ** = p < .001
Appendix A: Completion Statistics

Descriptive statistics of baseline measures for participants who completed study versus withdrew

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Completed study</th>
<th>Withdrew</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>ROII</td>
<td>37.67 (32.32)</td>
<td>47.83 (48.59)</td>
</tr>
<tr>
<td>DASS – Depression</td>
<td>3.63 (3.55)</td>
<td>4.69 (4.85)</td>
</tr>
<tr>
<td>TAF-R</td>
<td>25.51 (12.79)</td>
<td>28.38 (14.66)</td>
</tr>
<tr>
<td>OCI-R</td>
<td>14.01a (10.62)</td>
<td>27.46 (19.56)</td>
</tr>
<tr>
<td>WBSI</td>
<td>48.64 (11.66)</td>
<td>52.77 (13.43)</td>
</tr>
<tr>
<td>PANAS (Time 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Affect</td>
<td>25.32a (8.27)</td>
<td>19.62 (6.46)</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>14.62 (5.10)</td>
<td>16.85 (6.49)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>27.49a (25.06)</td>
<td>43.69 (25.61)</td>
</tr>
<tr>
<td>Guilt</td>
<td>9.79 (16.49)</td>
<td>17.23 (22.07)</td>
</tr>
</tbody>
</table>

ROII = Revised Obsessive Intrusions Inventory (Purdon & Clark, 1993, 1994b); DASS = Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995); TAF-R = Thought-Action Fusion Scale-Revised (Shafran, Thordarson, & Rachman, 1996); OCI-R = Obsessive-Compulsive Inventory-Revised (Foa et al., 2002); WBSI = White Bear Suppression Inventory (Wegner & Zanakos, 1994); PANAS = Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). Different superscripts denote statistically significant ($p < .05$) differences between groups not sharing the same superscripts; identical superscripts indicate no significant differences.
Appendix B: Demographics Questionnaire

We would like to ask you a few questions about yourself. Please answer all the questions as completely as possible by circling the appropriate response or by providing the necessary information.

1. What is your gender?  
   1=female  
   2=male

2. What is your marital status?  
   1=single (never married)  
   2=married  
   3=divorced  
   4=separated  
   5=remarried  
   6=widowed

3. What is your age? ________

4. What was the highest grade of school you completed?

   High School  
   12th grade or GED

   College  
   Freshman(13)  
   Sophomore(14)  
   Junior(15)  
   Senior (16)

5. What is your race?  
   1=African American  
   2=Asian  
   3=Caucasian  
   4=Native American  
   5=Multiracial  
   6=Other (please specify)________________

6. What is your ethnicity?  
   1= Hispanic or Latino  
   2= Not-Hispanic or Latino
Appendix C: Background Information

1. Have you ever been diagnosed with a psychological condition?
   1 = Yes (please specify) ____________________________________________
   2 = No

2. Do you currently have a diagnosis for a psychological condition?
   1 = Yes (please specify) ____________________________________________
   2 = No

3. Have you ever received medication for a psychological condition?
   1 = Yes (please specify medication) _________________________________
   2 = No

4. Are you currently taking medication for a psychological condition?
   1 = Yes (please specify medication) _________________________________
   2 = No

5. Have you ever received therapy for a psychological condition?
   1 = Yes (specify for what condition) _________________________________
   2 = No

6. Are you currently receiving therapy for a psychological condition?
   1 = Yes (specify for what condition) _________________________________
   2 = No
Appendix D: ROII

INSTRUCTIONS

This questionnaire deals with a variety of upsetting, unpleasant thoughts many people report having pop into their minds from time to time. Many of these thoughts have an aggressive or sexual theme. They tend to intrude into our minds against our will and interrupt what we are doing or what we are already thinking about. These intrusive thoughts appear "out of the blue" and are definitely uncharacteristic of our usual habits and beliefs. Thus we experience them as being unacceptable. They occur in these three forms: images, like a picture in our heads, urges to do or say something, or just thoughts about something. We are very interested in whether or not you have experienced intrusive thoughts.

Listed below are thoughts, most of which were reported by a group of undergraduate students in a previous study. Beside each item is a scale which ranges between '0' (never) and '6' (always). Rate how often you have each of the thoughts listed (regardless of whether it occurs as an image, urge or thought) by circling the number on the scale that best represents its frequency. When you have finished, continue on to Part 2 of the ROII, which will ask you some questions about your most upsetting intrusive thought.

0 = NEVER (I have never had this thought)
1 = RARELY (I have had this thought only once or twice ever)
2 = OCCASIONALLY (I have this thought a few times a year)
3 = SOMETIMES (I have this thought once or twice a month)
4 = OFTEN (I have this thought once or twice a week)
5 = VERY OFTEN (I have this thought daily)
6 = ALWAYS (I have this thought frequently during the day)

While driving, I have had unacceptable intrusive thoughts of:

1. Driving into a storefront window 0 1 2 3 4 5 6
2. Running the car off the road 0 1 2 3 4 5 6
3. Hitting pedestrians or animals 0 1 2 3 4 5 6
4. Swerving into oncoming traffic 0 1 2 3 4 5 6
5. Purposefully smashing into poles or trees 0 1 2 3 4 5 6

When I see or use a sharp object (knife, razor, scissors, etc.), I have had unacceptable intrusive thoughts of:

6. Slitting my wrist or throat 0 1 2 3 4 5 6
7. Cutting off my finger, toe or hand 0 1 2 3 4 5 6
When I am in a high place (like a cliff, bridge, window, high building, etc.), I have had unacceptable intrusive thoughts of:

8. Jumping off of a high place 0 1 2 3 4 5 6
9. Pushing a stranger off a high place 0 1 2 3 4 5 6
10. Pushing a close friend or family member off a high place 0 1 2 3 4 5 6

When I am near traffic or railway/subway tracks, I have had unacceptable intrusive thoughts of:

11. Jumping in front of a train, subway, or car 0 1 2 3 4 5 6
12. Pushing a stranger in front of a train, subway, or car 0 1 2 3 4 5 6
13. Pushing a close friend or family member in front of a train, subway, or car 0 1 2 3 4 5 6

When I am around others and I am not provoked, I have had unacceptable intrusive thoughts of:

14. Kicking, pushing or otherwise hurting complete strangers 0 1 2 3 4 5 6
15. Saying something rude to, or insulting a stranger 0 1 2 3 4 5 6
16. Bumping into people in the hallway or tripping them on the stairs 0 1 2 3 4 5 6
17. Insulting someone in authority, such as a police officer, minister or priest 0 1 2 3 4 5 6

Even though I am not angry at close friends or family members, and am otherwise unprovoked by them, I have had unacceptable intrusive thoughts of:

18. Saying something rude or insulting to one of them 0 1 2 3 4 5 6
19. Hitting or punching one of them 0 1 2 3 4 5 6
20. Choking one of them 0 1 2 3 4 5 6
21. Stabbing one of them with a knife or other sharp object 0 1 2 3 4 5 6

Even though I know it's probably not true, I have had unacceptable intrusive thoughts that:

22. I left the heat, stove or lights on in the house/apartment which may cause a fire 0 1 2 3 4 5 6
23. I left the door of the house apartment unlocked and there is an intruder inside 0 1 2 3 4 5 6
24. I left the water taps running in the house/apartment which may cause a flood 0 1 2 3 4 5 6
0 ‘NEVER’  1 ‘RARELY’  2 ‘OCCASIONALLY’  3 ‘SOMETIMES’
4 ‘OFTEN’  5 ‘VERY OFTEN’  6 ‘ALWAYS’

When I am in a public gathering (class, meeting, church) and am not provoked, I have had unacceptable intrusive thoughts of:

25. Blurt out obscenities at the person talking 0 1 2 3 4 5 6
26. Accidentally belching or "breaking wind" loudly 0 1 2 3 4 5 6
27. Throwing something at the speaker 0 1 2 3 4 5 6
28. Suddenly walking out of the meeting thereby causing a scene 0 1 2 3 4 5 6

Even though I am not angry or otherwise provoked, I have had unacceptable intrusive thoughts of:

29. Scratching the paint of cars I pass with my keys or another sharp object 0 1 2 3 4 5 6
30. Picking something up and throwing it through a window 0 1 2 3 4 5 6
31. Deliberately breaking or wrecking something (dishes, ornaments, pool table) that belongs to me, my friends or my family 0 1 2 3 4 5 6
32. Shoplifting or stealing something even though I don't really want it 0 1 2 3 4 5 6
33. Grabbing the money out of a cashier's till when purchasing an item 0 1 2 3 4 5 6
34. Holding up the bank teller while doing routine banking 0 1 2 3 4 5 6

Out of the blue and for no particular reason, I have had unacceptable intrusive thoughts of:

35. Having sex with a person who I would never want to have sex with 0 1 2 3 4 5 6
36. Having sex with a person who has authority over me (minister, boss) 0 1 2 3 4 5 6
37. That the fly of my pants is unzipped or that my blouse is unbuttoned 0 1 2 3 4 5 6
38. Throwing my arms around and kissing an authority figure 0 1 2 3 4 5 6
39. Lifting my skirt or dropping my pants, thereby indecently exposing myself 0 1 2 3 4 5 6
40. Engaging in sexual activity that goes against my sexual preference (e.g., homosexual, heterosexual) 0 1 2 3 4 5 6

Suddenly and for no particular reason I have had unacceptable intrusive thoughts of:

41. Authority figures (minister, boss) being naked 0 1 2 3 4 5 6
42. People I come in contact with being naked 0 1 2 3 4 5 6
43. Having sex in a public place 0 1 2 3 4 5 6
44. Engaging in a sexual act that I would find completely disgusting 0 1 2 3 4 5 6
0 ‘NEVER’ 1 ‘RARELY’ 2 ‘OCCASIONALLY’ 3 ‘SOMETIMES’  
4 ‘OFTEN’ 5 ‘VERY OFTEN’ 6 ‘ALWAYS’

When I am in a public place, I have had unacceptable intrusive thoughts that:

45. I am going to catch a sexually transmitted disease (STD) from touching a toilet seat or tap 0 1 2 3 4 5 6
46. I will become dirty, or contaminated, by touching public door-knobs 0 1 2 3 4 5 6
47. I will become dirty, or contaminated, by putting a public telephone 0 1 2 3 4 5 6
48. I will contract a fatal disease from touching things strangers have touched 0 1 2 3 4 5 6
49. I will transmit a fatal disease by using public facilities 0 1 2 3 4 5 6

Even though the house/apartment already looks tidy, I have had unacceptable intrusive thoughts that:

50. I must check to ensure that absolutely everything is put away 0 1 2 3 4 5 6
51. I must check to ensure that all specks of dust have been picked up off the floor 0 1 2 3 4 5 6
52. I must check to see if there is dirt in unseen places 0 1 2 3 4 5 6
Appendix E: DASS

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:
0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

<table>
<thead>
<tr>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I found it hard to wind down</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. I was aware of dryness of my mouth</td>
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<td></td>
<td></td>
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<tr>
<td>3. I couldn't seem to experience any positive feeling at all</td>
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<tr>
<td>4. I experienced breathing difficulty (e.g., excessively rapid breathing,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>breathlessness in the absence of physical exertion)</td>
<td></td>
<td></td>
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<tr>
<td>5. I found it difficult to work up the initiative to do things</td>
<td></td>
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<tr>
<td>6. I tended to over-react to situations</td>
<td></td>
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<tr>
<td>7. I experienced trembling (e.g., in the hands)</td>
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<tr>
<td>8. I felt that I was using a lot of nervous energy</td>
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<tr>
<td>9. I was worried about situations in which I might panic and make</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a fool of myself</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10. I felt that I had nothing to look forward to</td>
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<td></td>
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<tr>
<td>11. I found myself getting agitated</td>
<td></td>
<td></td>
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<tr>
<td>12. I found it difficult to relax</td>
<td></td>
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<td></td>
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<tr>
<td>13. I felt down-hearted and blue</td>
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<td></td>
<td></td>
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<tr>
<td>14. I was intolerant of anything that kept me from getting on with</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>what I was doing</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15. I felt I was close to panic</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>16. I was unable to become enthusiastic about anything</td>
<td></td>
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<tr>
<td>17. I felt I wasn't worth much as a person</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>18. I felt that I was rather touchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. I was aware of the action of my heart in the absence of physical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>exertion (e.g., sense of heart rate increase, heart missing a beat)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>20. I felt scared without any good reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. I felt that life was meaningless</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F: TAF-R

Please read each statement and respond by providing the appropriate number to the left of each item using the scale below.

0   1   2   3   4
disagree strongly  disagree  neutral  agree  agree strongly

___ 1. Thinking of making an extremely critical remark to a friend is almost as unacceptable to me as actually saying it.
___ 2. Having a blasphemous thought is almost as sinful to me as a blasphemous action.
___ 3. Thinking about swearing at someone else is almost as unacceptable to me as actually swearing.
___ 4. When I have a nasty thought about someone else, it is almost as bad as carrying out a nasty action.
___ 5. Having violent thoughts is almost as unacceptable to me as violent acts.
___ 6. When I think about making an obscene remark or gesture in church, it is almost as sinful as actually doing it.
___ 7. If I wish harm on someone, it is almost as bad as doing harm.
___ 8. If I think about making an obscene gesture to someone else, it is almost as bad as doing it.
___ 9. When I think unkindly about a friend, it is almost as disloyal as doing an unkind act.
___10. If I have a jealous thought, it is almost the same as making a jealous remark.
___11. Thinking of cheating in a personal relationship is almost as immoral to me as actually cheating.
___12. Having obscene thoughts in a church is unacceptable to me.

TAF-LO

___ 1. If I think of a relative/friend losing their job, this increases the risk that they will lose their job.
___ 2. If I think of a relative/friend being in a car accident, this increases the risk that he/she will have a car accident.
___ 3. If I think of a friend/relative being injured in a fall, this increases the risk that he/she will have a fall and be injured.
___ 4. If I think of a relative/friend falling ill this increases the risk that he/she will fall ill.

TAF-LS

___ 1. If I think of myself being injured in a fall, this increases the risk that I will have a fall and be injured.
___ 2. If I think of myself being in a car accident, this increases the risk that I will have a car accident.
___ 3. If I think of myself falling ill, this increases the risk that I will fall ill.
Appendix G: OCI-R

The following statements refer to experiences that many people have in their everyday lives. Circle the number that best describes **HOW MUCH** that experience has **DISTRESSED or BOTHERED** you during the **PAST MONTH**. The numbers refer to the following verbal labels:

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>A little</td>
<td>Moderately</td>
<td>A lot</td>
<td>Extremely</td>
</tr>
</tbody>
</table>

1. I have saved up so many things that they get in the way.  
   0 1 2 3 4
2. I check things more often than necessary.  
   0 1 2 3 4
3. I get upset if objects are not arranged properly.  
   0 1 2 3 4
4. I feel compelled to count while I am doing things.  
   0 1 2 3 4
5. I find it difficult to touch an object when I know it has been touched by strangers or certain people.  
   0 1 2 3 4
6. I find it difficult to control my own thoughts.  
   0 1 2 3 4
7. I collect things I don’t need.  
   0 1 2 3 4
8. I repeatedly check doors, windows, drawers, etc.  
   0 1 2 3 4
9. I get upset if others change the way I have arranged things.  
   0 1 2 3 4
10. I feel I have to repeat certain numbers.  
    0 1 2 3 4
11. I sometimes have to wash or clean myself simply because I feel contaminated.  
    0 1 2 3 4
12. I am upset by unpleasant thoughts that come into my mind against my will.  
    0 1 2 3 4
13. I avoid throwing things away because I am afraid I might need them later.  
    0 1 2 3 4
14. I repeatedly check gas and water taps and light switches after turning them off.  
    0 1 2 3 4
15. I need things to be arranged in a particular order.  
    0 1 2 3 4
16. I feel that there are good and bad numbers.  
    0 1 2 3 4
17. I wash my hands more often and longer than necessary.  
    0 1 2 3 4
18. I frequently get nasty thoughts and have difficulty in getting rid of them.  
    0 1 2 3 4
Appendix H: WBSI

This survey is about thoughts. There are no right or wrong answers, so please respond honestly to each of the items below. Be sure to answer every item by circling the appropriate number beside each.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

1 2 3 4 5 1. There are things I prefer not to think about.
1 2 3 4 5 2. Sometimes I wonder why I have the thoughts I do.
1 2 3 4 5 3. I have thoughts that I cannot stop.
1 2 3 4 5 4. There are images that come to mind that I cannot erase.
1 2 3 4 5 5. My thoughts frequently return to one idea.
1 2 3 4 5 6. I wish I could stop thinking of certain things.
1 2 3 4 5 7. Sometimes my mind races so fast I wish I could stop it.
1 2 3 4 5 8. I always try to put problems out of mind.
1 2 3 4 5 9. There are thoughts that keep jumping into my head.
1 2 3 4 5 10. There are things that I try not to think about.
1 2 3 4 5 11. Sometimes I really wish I could stop thinking.
1 2 3 4 5 12. I often do things to distract myself from my thoughts.
1 2 3 4 5 13. I have thoughts that I try to avoid.
1 2 3 4 5 14. There are many thoughts that I have that I don’t tell anyone.
1 2 3 4 5 15. Sometimes I stay busy just to keep thoughts from intruding on my mind.
Appendix I: TSAQ

The results of this experiment showed that you were not able to control your thoughts. When you were asked not to think about something, you indicated that you thought about it anyway. We would like to know why this occurred. Please read each statement carefully and tell us how much you agree or disagree with each statement.

1       2  3  4  5  6  7
Totally     Neither disagree   Totally
Disagree    or agree          Agree

*I was unable to control my thoughts because…*

____  1. I am mentally weak.
____  2. The experiment didn’t make sense to me, so I didn’t put much effort into it.
____  3. My thoughts are uncontrollable.
____  4. I did not try very hard.
____  5. There is something wrong with my mind.
____  6. I didn’t see the point in trying to control the thought.
____  7. It was a silly thing to do.
____  8. I have a problem with my brain.
____  9. No one could have done it very well.
____ 10. I am not very intelligent.
____ 11. I am sick.
____ 12. The thought was too strong to be controlled.
____ 13. There is no way anyone can prevent a thought from happening.
Appendix J: PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>very slightly</td>
<td>a little</td>
<td>moderately</td>
<td>quite a bit</td>
<td>extremely</td>
</tr>
<tr>
<td></td>
<td>or not at all</td>
<td>or not at all</td>
<td>or not at all</td>
<td>or not at all</td>
<td>or not at all</td>
</tr>
</tbody>
</table>

_____ interested
_____ distressed
_____ excited
_____ upset
_____ strong
_____ guilty
_____ scared
_____ hostile
_____ enthusiastic
_____ proud

_____ irritable
_____ alert
_____ ashamed
_____ inspired
_____ nervous
_____ determined
_____ attentive
_____ jittery
_____ active
_____ afraid
Appendix K: Mood Induction Manipulation Check

Please place a vertical mark on the lines to answer the questions below.

1. How much attention did you pay to the film?
   Not at all | Extremely
   0 | 50 | 100

2. How emotionally moved were you by the events in the film?
   Not at all | Extremely
   0 | 50 | 100

3. How sad/upset do you feel in response to the events in the film?
   Not at all | Extremely
   0 | 50 | 100

4. How anxious/distressed do you feel in response to the events in the film?
   Not at all | Extremely
   0 | 50 | 100

5. How calm do you feel after watching the film?
   Not at all | Extremely
   0 | 50 | 100
Appendix L: TAF Manipulation Check Ratings

Please place a vertical mark on the lines to answer the questions below.

1. How vivid were the thoughts and images of the car accident?
   Not at all | Extremely
   0          50  100

2. How severe of a car accident did you visualize?
   Not at all | Extremely
   0          50  100

3. How much effort did you put forth in attempting to visualize the car accident?
   Not at all | Extremely
   0          50  100

4. What was your level of engagement with your thoughts and images of the car accident?
   Not at all | Extremely
   0          50  100

5. How believable was the car accident scenario?
   Not at all | Extremely
   0          50  100
Appendix M: Appraisal Ratings

Please place a vertical mark on the lines to answer the questions below.

1. How anxious/distressed do you feel right now?
   Not at all | Extremely
   0 | 50 | 100

2. How much guilt do you feel right now?
   Not at all | Extremely
   0 | 50 | 100

3. How morally wrong was it to think about the car accident?
   Not at all | Extremely
   0 | 50 | 100

4. How much control do you feel you have over the car accident occurring?
   Not at all | Extremely
   0 | 50 | 100

5. What is the likelihood of the car accident occurring in the next 24 hours?
   Not at all | Extremely
   0 | 50 | 100

6. How responsible would you feel if the car accident did occur in the next 24 hours?
   Not at all | Extremely
   0 | 50 | 100

7. How strong is your urge to do something to reduce or cancel the effects of thinking about the car accident?
   Not at all | Extremely
   0 | 50 | 100
8. How willing are you to further think about the car accident?
Not at all | Extremely
0 | 50 | 100

9. How hard did you try not to think of the car accident?
Not at all | Extremely
0 | 50 | 100
Appendix N: Coping Strategy Manipulation Check

Please place a vertical mark on the lines to answer the questions below.

**Suppression Group Time Period 1**

How hard did you try to suppress your target thought?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

**Monitor-Only Group Time Period 1**

How hard did you try to think about anything you wanted to?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

**All Groups Time Period 2**

How hard did you try to think about anything you wanted to?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>
Appendix O: Post-Debriefing Measure

1. How anxious/distressed do you feel right now?
   - Not at all
   - 0
   - 50
   - 100

2. How much guilt do you feel right now?
   - Not at all
   - 0
   - 50
   - 100

3. How sad/upset do you feel right now?
   - Not at all
   - 0
   - 50
   - 100

4. Do you feel you require additional assistance to manage or cope with the thoughts and feelings that were brought up as result of participation in this study?
   - Yes
   - No
Appendix P: Selection of Target Individual Form

1. Please write down the name of a person whom you feel close to in the space provided. This person could be a friend, parent, significant other, relative, or any other loved one:

   _________________________________________

2. Please circle the response that best describes the nature of your relationship with this person (i.e., this person is my … parent, friend, etc):

   Parent
   Sibling
   Relative outside immediate family (e.g., grandparent, cousin, aunt, uncle)
   Husband/Wife
   Boyfriend/girlfriend
   Child
   Friend
   Other (please specify): ______________________

3. Please place a vertical mark on the line to answer the following question:
How close would you rate your relationship with this person?

   Not at all  |---------------------------------------------------------------| Extremely
   0        | 50                             | 100
Appendix Q: Sentence

Please read the following statement and fill in the blank with the name of a living person close to you. Then copy the completed sentence in the space provided below.

I hope ______________________ will soon be in a car accident.

______________________________________________________.