RESPONSE TO A GRAPHIC FILM AS A FUNCTION OF LEVELS OF EXPERIENTIAL AVOIDANCE: IMPLICATIONS FOR THE APPLICATION OF ACT IN THE TREATMENT OF PTSD

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DEDICATION

To my family and friends for your support over the years

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ABBSTRACT

The current study utilized a laboratory analogue to psychological trauma to examine the link between levels of experiential avoidance and the development and maintenance of negative emotional states. Specifically, participants were exposed to a graphic film displaying the aftermath of several automobile accidents that occurred as a consequence of drinking and driving in an attempt to induce intrusive thought patterns and related distress analogous to that seen in posttraumatic stress disorder (PTSD). After viewing the film, participants were asked to report the development of PTSD-like symptoms, including subjective distress, state anxiety, and intrusive thoughts and images. Distress levels were measured before exposure to the film; immediately following exposure to the film; immediately following exposure to an attention-placebo distraction task, cognitive behavioral therapy (CBT) treatment protocol, or an acceptance and commitment therapy (ACT) treatment protocol; and 4 days later in order to assess distress levels as a function of participant levels of experiential avoidance.

While participants experienced an increase in distress and anxiety following exposure to the film as well as a decrease in these variables following exposure to all implemented intervention conditions, no significant differences were noted on these measures as a function of participant levels of experiential avoidance, intervention condition, or interaction between these two variables. Additionally, no significant differences were noted on measures of intrusive thought patterns as a function of intervention condition or interaction between experiential avoidance and intervention condition. However, two regression analyses indicated a significant effect for experiential avoidance on the number of intrusive thoughts postfilm. Several limitations within the current study that may account for these unexpected findings are outlined and the implications for further related investigations are discussed.

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CHAPTER 1

Introduction

As many as 70% of individuals living in the United States have been exposed to a traumatic event at some point in their lives, and approximately 14-24% of these individuals ultimately develop posttraumatic stress disorder (PTSD; Saddock & Saddock, 2003). Due to the recent conflicts in Iraq and Afghanistan, an even greater number of troops have been exposed to traumatic events. Consequently, the incidence of PTSD is currently rising as soldiers return from war and attempt to cope with the intense emotional distress resulting from exposure to incredibly traumatic events (DeAngelis, 2008).

In the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000), PTSD symptoms are divided into three classes: (a) reexperiencing the trauma (e.g., intrusive thoughts, nightmares), (b) avoidance of trauma-related stimuli (e.g., emotional numbing, anhedonia), and (c) increased emotional arousal (e.g., irritability, hypervigilance). In order to meet diagnostic criteria for PTSD, an individual must be evidencing at least one reexperiencing symptom, three avoidance symptoms, and two increased arousal symptoms for a period of at least 1 month posttrauma.

It is not unusual for individuals who are exposed to a traumatic event to experience some of the same symptoms that comprise PTSD (e.g., numbing, depersonalization, avoidance) within days following their exposure. These symptoms are likely to be adaptive in that they reduce the risk of further exposure to trauma (Saddock & Saddock, 2003), but may constitute acute stress disorder. According to the *DSM-IV-TR* (American Psychiatric Association, 2000), in order to meet diagnostic criteria for acute stress disorder, an individual must be experiencing at least three dissociative symptoms (e.g., derealization, depersonalization, dissociative amnesia), at least

one reexperiencing symptom (e.g., nightmares), marked avoidance of stimuli (e.g., people, places) that arouse recollections of the trauma, and marked symptoms of anxiety or increased arousal (e.g., hypervigilance, difficulty sleeping) for a minimum of 2 days and a maximum of 4 weeks. Approximately 14-33% of individuals exposed to trauma will initially meet diagnostic criteria for acute stress disorder. The duration of symptoms of acute stress disorder vary among individuals exposed to trauma, and approximately half of cases experience a complete recovery within 3 months following symptom onset (American Psychiatric Association, 2000). However, not all individuals will experience a significant reduction in symptomatology over time, which may lead to clinically significant distress and functional impairment in individuals continuing to experience symptoms of acute stress disorder (Saddock & Saddock, 2003). When the symptoms of acute stress disorder extend beyond 1 month, a diagnosis of PTSD may be appropriate if full criteria for this disorder are met.

The purpose of the present study was to further investigate the potential role of experiential avoidance as a putative core pathogenic process underlying several forms of psychopathology, including PTSD. Experiential avoidance can be defined as a deliberate attempt to alter or avoid negative private events (e.g., thoughts, memories, emotions, bodily sensations) and the situations in which these negative private events tend to occur (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). The current study was designed to further investigate the role of such avoidance in the development and maintenance of negative emotional states, including the high distress levels and intrusive thought patterns often associated with PTSD. A laboratory task in which individuals were asked to watch a graphic film of drinking and driving accidents was used to examine the potential link between an individual's tendency to avoid negative private events and the subsequent development and maintenance of negative emotional states. Additionally, the

current study explored the potential effectiveness of a cognitive behavioral treatment approach, which encourages the elimination of negative private events, in comparison to an acceptance and commitment therapy protocol, which encourages participants to simply notice unwanted private events rather than attempting to alter these negative emotional states, in the maintenance of negative emotional states resulting from exposure to the film.

In the sections which follow, an initial discussion will be provided examining current empirically supported treatment approaches for PTSD and provide the rationale for an alternative treatment approach for PTSD. This discussion will examine exposure therapy (Rothbaum, Meadows, Resick, & Foy, 2000) and cognitive behavioral therapy (Foa, Dancu, Hembree, Jaycox, Meadows, & Street, 1999; Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998) as current empirically supported treatments for individuals diagnosed with PTSD. In addition, it will address some of the challenges and limitations associated with these forms of treatment. Furthermore, support will be provided for the use of a classification system for psychological difficulties that highlights processes underlying these difficulties, such as experiential avoidance, as opposed to a syndromal classification system. Relatedly, a rationale will be given for the use of acceptance and commitment therapy (ACT; Walser & Westrup, 2007) for addressing experiential avoidance in the treatment of PTSD and other, often comorbid, psychological difficulties.

Exposure Therapy

Due to an extensive literature base documenting the efficacy of its use, exposure therapy (ET) is often identified as a crucial component in the treatment of PTSD (Rothbaum et al., 2000). Most treatments, including cognitive behavioral interventions for PTSD, typically contain an exposure component. ET is a behavioral intervention in which the client is repeatedly exposed to

imaginal or in vivo cues associated with the traumatic event experienced by the client. In doing so, ET attempts to lead the client to maintain contact with emotions associated with the traumatic event until the client becomes habituated to those feelings.

In the beginning phase of ET, the client is asked to imagine the traumatic event while describing the scene out loud to the therapist in the present tense (Resick & Calhoun, 2001). For example, in the case of sexual assault, a client may be asked to imagine the events leading up to and the occurrence of the assault while verbally recounting the story. The level of detail provided in the recollection is determined by the client for the first two exposures, but the client is encouraged to include more detail (e.g., thoughts, physiological responses) during subsequent exposures. Special care is taken to ensure that exposure is not terminated until the client has experienced some decrease in anxiety, and the therapist may aid in helping the client experience reductions in anxiety if necessary (e.g., through breathing exercises, progressive muscle relaxation, or related anxiety-reducing techniques).

In ET, clients are often assigned homework. One task involves listening to tape recorded exposure sessions until the client experiences a decrease in anxiety. Another assignment involves confronting stimuli that have been feared or avoided since exposure to the trauma for at least 45 minutes each day. Therapist and clients work together to develop a hierarchy of such events, and the clients are asked to begin with the least anxiety-provoking situation and work their way up the hierarchy. For example, in the case of sexual assault in which the client has subsequently avoided discussing the assault with friends or family members, the client might be assigned to have a conversation with a friend about the assault. These tasks assist the client in maintaining contact with emotions associated with the traumatic event until the client becomes habituated to them (Resick & Calhoun, 2001).

According to results of a meta-analysis conducted by Hembree et al. (2003), ET has a therapy dropout rate similar to other common forms of PTSD treatment, with ET alone producing a 20.5% dropout rate, cognitive behavioral treatments a 22.1% dropout rate, and a combination of ET and cognitive behavioral techniques a 26.9% dropout rate. However, clinicians remain reluctant to use ET as a primary treatment for PTSD due to fears of premature termination despite the evidence just cited supporting the role of ET as an equally tolerable intervention for PTSD in comparison to other common therapeutic approaches. Results of a survey of 207 psychologists indicated only 17% used ET to treat PTSD, with 59% of respondents holding the belief that using ET was likely to increase a client's likelihood of dropping out of treatment (Becker, Zayfert, & Anderson, 2004). Furthermore, nearly 50% of cognitive-behaviorally oriented trauma specialists also held the belief that the use of ET would increase the likelihood of premature termination. Additionally, some clinicians are reluctant to incorporate ET into their treatment protocol due to fears that clients will fail to benefit from ET because the intensity of the emotions aroused though the use of ET (Tarrier et al., 1999). Therefore, clinician reluctance to engage in the use of ET provides support for the use of a different therapeutic approach for clinicians who are unlikely to use this empirically supported treatment due to fear of high client dropout rates.

Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT), consisting of ET and cognitive restructuring, is the most systematically studied intervention for PTSD (Rothbaum et al., 2000). Cognitive behavioral treatment of PTSD focuses on changing negative private experiences (e.g., thought, feelings, bodily sensations) associated with traumatic events, typically through the use of cognitive restructuring or relaxation techniques.

Cognitive restructuring involves challenging the client's distorted automatic thoughts, maladaptive assumptions, and dysfunctional schemas associated with the trauma. For instance, in the case of sexual assault, an individual may conclude that the assault was her fault because she wore revealing clothing. Several techniques may be used to challenge this assumption. The therapist might help challenge this assumption by asking "Could you have reasonably expected to be sexually assaulted because you were wearing revealing clothing?" or "Would you blame a friend for being assaulted if she wore similar clothing?" The therapist might also ask the client to examine evidence for and against the assumption that the assault was her fault because she was wearing revealing clothing. The goal of cognitive restructuring is to return the client to a more balanced view of oneself and others by challenging distorted cognitions (Resick & Calhoun, 2001).

Relaxation techniques are also used within the CBT model as a way in which the client may change the negative private experiences associated with traumatic events. For instance, the client may be encouraged to engage in breathing exercises that emphasize deep, diaphragmatic breathing as a way to reduce anxiety and induce relaxation. The client may also be encouraged to practice progressive muscle relaxation in which tension is induced and then released within major muscle groups in order to produce a state of relaxation. Visualization may additionally be used as a form of distraction and relaxation in which clients imagine themselves in a place or situation they find pleasant and relaxing (e.g., a favorite vacation spot). Cognitive restructuring and relaxation exercises are often practiced before encouraging the client to engage in imaginal exposure, as these techniques give the client skills which may be used to induce relaxation once the exposure component of treatment begins.

A combination of cognitive restructuring and ET has been shown to be equally effective in treating PTSD in comparison to an ET-only treatment protocol (Foa et al., 1999; Marks et al., 1998). Due to the ability of the clinicians to "ease" clients into the exposure component of treatment, more practitioners may be comfortable using ET within a CBT treatment protocol due to a decrease in fear of early client termination. However, an argument has been made against the use of ET within a CBT treatment protocol. For instance, Tarrier et al. (1999) suggested that the use of CBT without the inclusion of ET may be a more useful approach to treating PTSD, as it is the authors' belief that some clients fail to benefit from ET because the intensity of the emotions aroused though the use of ET appears to interfere with the habituation of these strong emotional states. Furthermore, Tarrier and colleagues state that the results of a randomized comparison suggest that CBT without the inclusion of exposure may be as effective as ET in the treatment of PTSD.

Rationale for a New Treatment Approach

Although individuals with a diagnosis of PTSD who complete ET or CBT typically experience an improvement in symptoms to the extent that they no longer meet diagnostic criteria for PTSD, these clients do not necessarily experience an improvement in quality of life following treatment. It is possible for clients to fall below diagnostic thresholds by changing only one or two symptoms while continuing to experience symptoms that continue to interfere with their quality of life (Bradley, Greene, Russ, Dutra, & Westen, 2005). Bradley et al. indicate that the average client continues to exhibit a considerable amount of residual symptoms following treatment for PTSD. For instance, a study conducted by Zayfert and DeViva (2004) indicated that among clients no longer meeting diagnostic criteria for PTSD, 48% reported levels of persisting insomnia significant enough to be coded as a residual PTSD symptom. Additionally,

studies examining the efficacy of various psychotherapeutic approaches often fail to obtain follow-up measures of symptom reduction (Bradley et al.). Therefore, it is unclear whether the improvements reported by participants are maintained over time. Furthermore, treatment outcome has traditionally been narrowly focused and has paid relatively little attention to the clinical significance of therapeutic changes and their impact on clients' quality of life.

Bradley and colleagues (2005) also point out that many clinical trials examining the efficacy of treatment of PTSD exclude clients with comorbid psychological diagnoses and difficulties. Between 62 - 80% of individuals diagnosed with PTSD also meet criteria for at least one other disorder, with men most likely to experience co-occurring alcohol use/dependence, major depression, and conduct disorder, while women are most likely to experience co-occurring major depression, simple phobia, and social phobia (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Given the high levels of comorbidity with PTSD, the use of the *DSM-IV-TR* as a syndromal classification system that identifies signs and symptoms in hopes of providing an effective treatment for reducing them may be limited in its ability to improve a client's quality of life (Hayes et al., 1996). For example, assume that a client diagnosed using the *DSM-IV-TR* (American Psychiatric Association, 2000) as suffering from PTSD and major depressive disorder receives a cognitive behavioral treatment for each diagnosed disorder. According to the Task Force on Promotion and Dissemination of Psychological Procedures (1995), clinicians employing the use of a syndromal classification system assume that one treatment approach will not necessarily be efficacious in the treatment of all psychological difficulties, and that efficacious therapeutic approaches can be organized by psychiatric diagnoses. Thus, using a syndromal classification system, a clinician would likely implement two different empirically

supported treatment protocols targeting each diagnosed disorder (i.e., treatment X for PTSD and treatment Y for major depressive disorder).

Subsequent to treatment for PTSD, the clinician may treat the client's depressive symptoms using different cognitive restructuring techniques to target and challenge beliefs specifically related to the major depressive episode. Furthermore, the client may be asked to engage in pleasurable activities as homework assignments rather than engaging in previously avoided activities. This sequential approach would likely increase the length of time necessary for the client to gain clinically significant changes. On the other hand, an alternative approach to treatment that could simultaneously impact multiple presenting problems by identifying and targeting a shared pathogenic process might eliminate the need to use two different treatment protocols either concurrently or sequentially.

Functional Classification

While it seems quite logical to use a syndromal classification system in which symptoms are identified and targeted by effective treatment, this approach to classification ignores the function(s) that the symptoms serve for the client (Hayes et al., 1996). Functional classification, on the other hand, does not rely on topographical symptomatology to point toward an adequate treatment method. Rather, a functional approach to classification examines the purpose or function that these symptoms serve for a particular client and helps determine an appropriate treatment based upon the degree to which it targets such identified mechanisms.

For example, imagine that an individual who has a history of sexual assault is suffering from nightmares, avoidance of trauma-related thoughts and activities, restricted range of affect, sleep disturbance, and anger outbursts. At the same time, this individual may be suffering from depressive symptoms, including difficulty concentrating, anhedonia, sleep disturbance, and

suicidal ideation. While these symptoms would lead to two separate diagnoses (i.e., PTSD and Major Depressive Disorder) within the syndromal classification system of the *DSM IV-TR*, this is not necessarily the case within the functional classification system. While the symptoms of the individual appear different on the surface, it is entirely possible that the symptoms may be serving the same function – to avoid the unpleasant thoughts, memories, emotions, and bodily sensations associated with the sexual assault. In this case, it may be unnecessary to deliver two distinct types of treatment for two separate disorders, as would typically occur within the syndromal classification system. Rather, the client's symptoms can be targeted using one uniform treatment approach targeting a common process or function that may account for both co-occurring disorders.

Experiential Avoidance as a Core Pathogenic Process

Experiential avoidance can be defined as an attempt to alter or avoid negative private events (e.g., thoughts, memories, emotions, bodily sensations) and the situations in which these negative private events tend to occur (Hayes et al., 1996). According to Hayes et al., although experiential avoidance is not the only process that may contribute to the development of psychological distress, it appears to play a key role in the development and maintenance of several forms of psychopathology. Although humans are naturally inclined to avoid painful emotions and other negative private events, experiential avoidance appears to be detrimental for a number of reasons. For instance, attempts to suppress thoughts may actually lead to the increased production of unwanted thoughts (Davies & Clark, 1998; Lin & Wicker, 2007; Roemer & Borkovec, 1994; Wenzlaff, Wegner, & Klein, 1991). Attempts to suppress emotions may lead to restricted social or recreational enjoyment, as in the case of avoidance of situations that may produce unwanted emotional states (Hayes et al.). Additionally, experientially avoidant coping

strategies (e.g., distracting oneself from disturbing thoughts) have been found to negatively predict outcome for a variety of difficulties (Coffey, Leitenberg, Henning, Turner, & Bennett, 1996; Gore-Felton et al., 2006; Grantz, 2006; Kidd & Carroll, 2007; Van Harreveld, Van Der Plight, Claassen, & Van Dijk, 2007).

Thought suppression. One common form of experiential avoidance is thought suppression. Unfortunately, deliberate attempts to suppress and control thoughts may actually be counterproductive, as efforts to suppress often lead to the increased production or even intensification of those thoughts that are targeted for suppression (Davies & Clark, 1998; Lin & Wicker, 2007; Roemer & Borkovec, 1994; Wenzlaff et al., 1991). For example, Lin and Wicker (2007) noted that participants who were asked to suppress unwanted, distressing thoughts actually reported a greater frequency of distressing thoughts than participants who were exposed to a distraction task or simply asked to allow themselves to think about anything without restriction. Moreover, participants who were asked to suppress unwanted thoughts tended to report higher levels of anxiety than those who were not given instructions to suppress their thoughts. In a similar study conducted by Roemer and Borkovec (1994), participants who were asked to suppress thoughts about an anxious, depressing, or neutral target situation subsequently showed an increase in spontaneous verbal statements made about the situation, while participants who were instructed to express their thoughts showed a subsequent decrease in the number of statements made about the situation. Therefore, it appears that attempts to suppress unwanted thoughts actually lead to a subsequent increase in those thoughts. Accordingly, an individual who attempts to suppress thoughts about trauma may actually experience a subsequent increase in trauma-related thoughts. Conversely, individuals who allow themselves to experience trauma-related thoughts may notice a subsequent decrease in such private events.

The thought suppression literature has also been linked to mood. Subsequent to either a positive or a negative mood induction procedure, Wenzlaff et al. (1991) asked participants not to think about a white bear. In the second phase of the study, participants were assigned to either a similar or different mood induction procedure than that to which they were originally exposed. All participants showed a "rebound effect" in which they experienced an initial decrease followed by a delayed increase in thoughts about a white bear. However, those who were exposed to the same mood induction in the second phase experienced a significantly higher rebound effect than participants who were exposed to a different mood induction procedure, indicating that the participants thought about a white bear more frequently when they were in the same mood state as the one in which they were initially instructed not to think about a white bear. Therefore, an individual who tries not to think about a traumatic event when anxious may actually experience an increase in thoughts about the traumatic event when he or she subsequently experiences anxiety.

Wenzlaff et al. (1991) also indicated that participants who subsequently expressed the previously suppressed thought experienced a reinstatement of the mood state associated with the thought suppression period. In addition, Dalgleish and Yiend (2006) asked dysphoric and nondysphoric participants to try to suppress a preselected negative memory of their choice while engaging in a stream-of-consciousness task in which they were instructed to write down everything that was going through their mind while also monitoring for any occurrence of the target memory. Comparison groups of dysphoric and nondysphoric individuals carried out the writing task without instructions to suppress the identified distressing memory. Following the stream-of consciousness task, participants were asked to retrieve autobiographical memories in response to positive and negative cue words as quickly as possible. Results of the study suggest

that dysphoric individuals who attempted to suppress a negative memory during the writing task actually experienced an increase in access to other negative memories in comparison to participants who were not given instructions to suppress the identified negative memory. In addition, dysphoric individuals who were unsuccessful in their attempts to suppress negative memories reported higher levels of depressed mood in relation to participants who were not asked to suppress memories. Therefore, previously suppressed thoughts and memories about a traumatic event may lead to further anxiety, dysphoria, and distress when the thought and/or memories spontaneously reoccur. Furthermore, attempts to suppress thoughts and disturbing memories about a traumatic event may lead to an increase in distressing psychological experiences.

In a laboratory task designed as an analogue to psychological trauma, Davies and Clark (1998) observed that the rebound effect was significantly more pronounced for individuals who were asked to suppress thoughts related to a trauma-related film in comparison to participants who were asked to suppress thoughts related to a film about polar bears, indicating that the rebound effect may be more salient for emotionally arousing thoughts. Lynch, Schneider, Rosenthal, and Cheavens (2007) further suggest that chronic thought suppression appears to mediate the relationship between negative affectivity and the frequency of intrusions of emotionally evocative images in a nonclinical sample, indicating that individuals who used thought suppression as a coping mechanism may experience more intrusive thoughts.

Emotional suppression. Although the evidence for the detrimental effects of emotional suppression is not quite as persuasive as the literature on thought suppression, Hayes et al. (1996) suggest that this may also be a pathogenic experiential avoidant process underlying several psychological disorders. For instance, in the case of anxiety, a person may be extremely

distressed about being anxious and will attempt anything to eliminate anxiety. In this case, the individual may become anxious about being anxious and even minor levels of anxiety would be viewed as threatening and, therefore, themselves become anxiety-inducing. Relatedly, the individual may also attempt to avoid or escape from all situations, memories, and thoughts that may produce anxiety. The results of such extreme avoidance would be detrimental for the anxious individual, as it would severely limit the activities and interpersonal relationships that may be pursued, severely restricting the individual's quality of life.

For example, individuals may choose not to drive a vehicle due to anxiety about the possibility of having a car accident. They may choose to not become involved in relationships due to anxiety related to the possibility of experiencing betrayal. They may choose not to attend their children's sporting events due to fear of having a panic attack in front of a large group of people. Before long, the individual is restricted to their home and avoiding all social relationships in order to prevent the experience of even minimal levels of anxiety. Furthermore, limiting the number of memories that may be accessed due to the potential of experiencing anxiety may also severely limit the individual's conscious access to pleasant memories.

Relationship to psychotherapy outcome. Psychotherapy outcome literature has also provided evidence to support experiential avoidance as a core pathogenic process. Consistent with an experiential avoidance perspective, increased depth of emotional processing in psychotherapy has been found to predict therapeutic improvement among individuals seeking treatment for depression (Pos, Greenberg, Goldman, & Korman, 2003). Furthermore, emotion-focused coping strategies that serve an experiential avoidant function (e.g., restructuring negative thoughts, distracting oneself from disturbing thoughts) have been found to negatively predict outcome for a variety of difficulties, including suicidality among homeless youth (Kidd &

Carroll, 2007); emotional and physical well-being of prisoners (Van Harreveld et al., 2007); depression among adults living with HIV/AIDS (Gore-Felton et al., 2006); distress related to childhood sexual abuse (Coffey et al., 1996); and frequency of self-harm behaviors among women with a history of such activities (Grantz, 2006). Therefore, experiential avoidance appears to be a detrimental process underlying several forms of psychopathology and, unfortunately, may even be encouraged by common therapeutic practices such as mainstream cognitive-behavioral approaches.

Analogue Studies of Experiential Avoidance

Several laboratory analogue studies have been conducted providing further evidence that experiential avoidance plays a key role in the development and maintenance of several negative emotional states. It should be noted that some of these studies have been correlational in nature in which participants with high versus low levels of experiential avoidance are presented with various challenging tasks. Other studies are experimental in their approach in which participants are instructed to actively avoid versus accept unwanted psychological experiences induced during such tasks. However, the converging evidence from both research strategies further underscores the role that experiential avoidance apparently serves in the development of unwanted emotional states.

Participants high in experiential avoidance have been found to take longer to emit a correct response that produces an aversive rather than neutral picture (Cochrane, Barnes-Holmes, Barnes-Holmes, Stewart, & Luciano, 2007). Furthermore, the high avoiders reported greater levels of anxiety following the task despite having ranked the aversive images as less unpleasant and less emotionally arousing than low-avoidant participants. Additionally, recording of event-related potentials (ERPs) showed a significantly greater negativity for electrodes over the left

hemisphere for only the high avoidant group, which suggests that they engaged in verbal strategies to regulate their emotional responses.

Experiential avoidance has also been suggested to play a role in participants' tolerance of pain in a cold pressor task in which individuals are asked to submerge their hand in cold, icy water for a period of time (Feldner, Hekmat, Zvolensky, Vowles, Secrist, & Leen-Feldner, 2006; Zettle et al., 2005). More specifically, Zettle et al. (2005) indicate that high avoidant participants were less tolerant of pain than low avoidant participants, and high avoidant individuals were more likely to engage in dysfunctional coping strategies (e.g., catastrophizing). However, high avoidant individuals did not report higher levels of pain intensity than low avoidant participants, indicating that dysfunctional coping strategies may lead to a decrease in ability to tolerate pain.

In a perceptual-motor task in which individuals were asked to sort colored straws into different colored containers as quickly and accurately as possible while wearing "drunk goggles," high avoidant participants displayed a similar coping pattern (Zettle, Petersen, Hocker, & Provines, 2007). High avoidant participants were much more likely to engage in catastrophizing and to be distressed by sensations produced during the task (e.g., dizziness, blurred vision, disorientation) than their low avoidant counterparts. Furthermore, high avoidant participants sorted significantly fewer straws than low avoidant participants, indicating an attempt to reduce contact with the negative sensations produced by the straw sorting task.

Experiential avoidance also appears to play a significant role in distress related to panic symptoms. In a study examining the role of experiential avoidance in the development of panic symptoms, high and low avoidant participants were exposed to four inhalations of 20% carbon dioxide-enriched air, which produced panic-like symptoms in participants (Feldner, Zvolensky, Eifert, & Spira, 2002). While half of the participants were instructed to inhibit the aversive

emotional state associated with carbon dioxide inhalation, the other half were instructed to simply observe their emotional response without attempting to alter their reactions. High avoidant participants reported greater distress following exposure to the inhalations in comparison to their low avoidant counterparts. High avoidant participants also reported greater levels of anxiety when suppressing negative emotional responses compared to simply observing bodily reactions in comparison to the low avoidant individuals. However, all participants experienced similar levels of physiological arousal, indicating that a tendency to suppress negative emotional reactions and bodily sensations appears to be associated with an increase in distress related to the reactions that participants are attempting to suppress.

Experiential Avoidance and PTSD

As noted earlier, experiential avoidance appears to play a key role in several psychological disorders, including PTSD. According to Ulmer at al. (2006), increases in acceptance and decreases in suppression among trauma survivors were predictive of positive outcomes, including decreases in trauma symptoms, depression, anxiety, dissociation, and automatic thoughts. These measures were also predictive of improvements in social openness and hope for the future. Plumb, Orsillo, and Luterek (2004) also found experiential avoidance to be significantly correlated with posttraumatic symptomatology over and above the effects of trauma severity. Furthermore, avoidant coping styles have been shown to be associated with posttraumatic symptomatology in female assault victims (Valentiner, Foa, Riggs, & Gershuny, 1996), motor vehicle accident victims (Nightingale & Williams, 2000), Gulf War veterans (Benotsch et al., 2000), and African American youth exposed to inner-city violence (Dempsey, 2002).

In PTSD, experiential avoidance typically focuses on the maladaptive behaviors used to avoid trauma-related thoughts, emotions, memories, and bodily sensations (Walser & Westrup, 2007). For example, substance use, dissociation, self-injurious behavior, or social isolation may be conceptualized as ways to avoid unwanted private events. Traditional approaches to treating PTSD focus primarily on coping skills that would help a client manage these unwanted private events or replace these maladaptive behaviors with more productive or acceptable ways of avoiding an unwanted private event.

Acceptance and Commitment Therapy

Within the model upon which ACT is based, acceptance and willingness is offered as an alternative to experiential avoidance (Hayes, Strosahl, & Wilson, 1999). In ACT, emphasis is not placed on getting rid of disturbing thoughts, memories, or emotions. Rather, the focus is on allowing clients to have a trauma history and make changes in their lives that are consistent with their values and goals. ACT attempts to target the avoidance of private experiences and can facilitate exposure to these experiences while bringing about meaningful and clinically significant change in a client's life (Walser & Westrup, 2007).

Although empirical support for the use of ACT in the treatment of PTSD is still limited, it has been found to be a useful approach for clients who refuse exposure therapy (Batten & Hayes, 2005). Furthermore, clients are considered good candidates for ACT if they have been through multiple treatments or have had long-term difficulties associated with trauma (Walser & Westrup, 2007).

Given the proposed importance of avoidance in the development and persistence of PTSD and the evidence indicating the efficacy of ET in treating PTSD, any new developments in the treatment of PTSD must incorporate these components into their therapeutic approach.

Consistent with this idea, ACT does contain an element of exposure, but approaches it in a way that encourages a client to identify values in their lives and commit to action consistent with those values (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004). In other words, exposure within ACT is not for the purpose of reducing anxiety and related symptoms. Rather, it is always in the service of leading a more valued and vital life by committing to valued actions.

Unlike exposure therapy and other forms of treatment for PTSD, ACT is not specifically focused on symptom reduction as an outcome, although clients typically experience a reduction in PTSD symptoms as a result of ACT treatment (Orsillo & Batten, 2005). Rather, ACT focuses on attempting to improve areas of a client's life that are most important to or valued by a particular client. In ACT, the client may be asked to describe the traumatic event that was experienced while, at the same time, not avoiding or attempting to escape the thoughts, feelings, or bodily sensations that may arise during exposure to the thoughts related to the trauma. For instance, a woman who was sexually assaulted might be asked to recount all aspects of the assault while simply observing emotional reactions, physical sensations, and thoughts that occur during the recollection of the assault. Although this approach is topographically similar to prolonged ET, ACT emphasizes that the goal of the practice is not the reduction of anxiety or other symptoms. Rather, the intention is to demonstrate to clients that they no longer need to struggle with their own experiences. These memories may be painful, but it is only the struggle with these thoughts and feelings that is destructive in their lives, not the private events themselves.

Other psychotherapeutic approaches to PTSD, such as CBT, tend to focus primarily on reducing client trauma-related fear or distress, even though clients with PTSD also struggle with a wide range of other feelings including sadness, disgust, guilt, shame, and anger (Orsillo &

Batten, 2005). Alternatively, ACT focuses on the full range of emotional experiences with which clients struggle (Orsillo & Batten). Other treatment approaches also tend to focus on reexperiencing and hyperarousal, and treatment outcome has largely been assessed in terms of PTSD symptom reduction. However, these therapies do not focus as much on the treatment of widespread problems of living among other individuals in society (e.g., relationship difficulties, social isolation, occupational problems). ACT has the potential to address these related concerns, as a client whose values include these concerns would receive treatment focused primarily on these issues. Therefore, it seems that ACT may be particularly useful in the treatment of PTSD, as clients are likely to be highly motivated to participate in an approach that is consistent with their values and aims to improve their quality of life. However, empirical support for the use of ACT in the treatment of PTSD is still limited and further research is necessary to document its efficacy and investigate the degree to which reductions in experiential avoidance serve as its mechanism of action.

Although CBT is often used as the first line of treatment with individuals with PTSD, this approach is not effective in leading to significant, persisting symptom reduction for all clients suffering from difficulties with PTSD. Foa et al. (1999) indicated that 68% of individuals who underwent either CBT or CBT combined with ET no longer met criteria for PTSD 1 year after treatment. Therefore, ACT could be viewed as an alternative to CBT in the treatment of PTSD in instances in which CBT is not effective in alleviating symptoms of PTSD. Additionally, the use of ACT in the treatment of PTSD also addresses the difficulties of avoidance that CBT is intended to address. Therefore, the core focus of CBT is also targeted using an ACT approach. The primary difference is that ACT places particular emphasis on the components of avoidance that are most detrimental to a client's quality of life. In addition, CBT focuses primarily on

assisting the client in developing coping skills that would help them manage unwanted private events or replace maladaptive experientially avoidant behaviors (e.g., self-harm) with more productive or acceptable ways (e.g., cognitive restructuring, relaxation techniques) of avoiding an unwanted private event. Conversely, ACT encourages the client to simply notice unwanted private events rather than attempting to evaluate, alter, avoid, or otherwise control these negative emotional states. Although more research is necessary in the area of ACT and PTSD, ACT can be conceptualized, at the very least, as a treatment for PTSD that can be utilized when either CBT and exposure treatments are refused by the client or they are offered, but are found to be unsuccessful.

Purpose of the Study

The current study utilized a laboratory task that was designed as an analogue to psychological trauma in order to examine the link between levels of experiential avoidance and the development and maintenance of negative emotional states. Specifically, participants were exposed to a graphic film displaying the aftermath of several automobile accidents that occurred as a consequence of drinking and driving in an attempt to induce intrusive thought patterns similar to those often associated with PTSD.

The present study examined the ways in which participants' level of experiential avoidance contributed to the development of PTSD-like symptoms resulting from exposure to the film, including subjective distress, state anxiety, and intrusive thoughts and images. Participants' level of distress was measured before exposure to the film; immediately following exposure to the film; immediately following exposure to an attention-placebo distraction task, CBT treatment protocol, or ACT treatment protocol; and 4 days later in order to assess the extent

to which the differing interventions had an impact on participants' level of distress as a function of their level of experiential avoidance.

Research Hypotheses

High avoidant participants in the present study were expected to report increased distress, anxiety, and intrusive thought patterns over time in comparison with middle and low avoidant participants, and middle avoidant participants, in turn, were expected to experience higher levels of distress and anxiety over time in comparison with low avoidant participants.

The CBT intervention condition was expected to be less efficacious in reducing distress, anxiety, and intrusive thought patterns than the ACT intervention. The CBT and ACT interventions were expected to be more efficacious in reducing negative emotional states than the distraction condition, as this condition was designed to serve as an attention-placebo control group.

Participants were expected to respond differently to CBT and ACT interventions groups based on their level of experiential avoidance. High avoidant participants were expected to respond more favorably to the ACT than the CBT intervention, while low and middle avoidant participants were expected to respond in a similar manner to both ACT and CBT interventions. Any therapeutic impact of the distraction condition was not expected to vary as a function of participants' levels of experiential avoidance.

These findings would further support the potential role of experiential avoidance as a core pathogenic process underlying the development and maintenance of negative emotional states more generally and, more specifically, help clarify the contributions of experiential avoidance to the development and maintenance of PTSD. The results of this study should also be

of some value in further evaluating the relative promise of an acceptance and commitment approach in alleviating the suffering associated with PTSD.

CHAPTER 2

Methodology

Participants

A total of 110 female participants were selected from a pool of Wichita State University students aged 18 and above who completed the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004), a self-report measure designed to assess experiential avoidance. Due to differences between males and females in terms of reported distress during piloting of the current study, only female participants were invited to participate. Participants meeting the criterion for low or high levels of experiential avoidance (i.e., one standard deviation below or above the mean, respectively) or middle levels of experiential avoidance (i.e., scores falling in the middle range of the distribution) were invited via email to participate in the current study. Invited participants were provided with a password that enabled them to sign up for a time slot via the Sona Systems website.

Exclusionary criteria included individuals currently undergoing psychotherapy for depression or anxiety as well as individuals taking prescription medication for depression or anxiety. Upon completion of the study in its entirety, participants' names were entered into a lottery drawing in which 6 participants were awarded a prize of $150.

In order to mask the purpose of the study and thereby minimize potential demand characteristics, participants were informed on the Sona Systems website and on the informed consent form (see Appendix A) that the current study ("Attitudes Towards Drinking and Driving") was designed to investigate the ways in which unpleasant emotions may lead to changes in attitudes towards maladaptive behaviors in general, and towards drinking and driving in particular. A summary of the methodology section is presented in Table 1.

Acceptance and Action Questionnaire (AAQ)

The AAQ (presented in Appendix B) is a 9-item self-report measure of experiential avoidance (Hayes et al., 2004). Participants were asked to rate statements designed to measure aspects of psychological acceptance (e.g., "I'm not afraid of my feelings") versus experiential avoidance (e.g., "Anxiety is bad") on a 7-point Likert scale. Total scores range from 9-63, with higher scores reflecting greater levels of experiential avoidance. Participants receiving AAQ scores at least one standard deviation below the mean (AAQ score at or below 26) were classified as low avoidant participants, while participants receiving scores at least one standard deviation above the mean (AAQ at or above 41) were classified as high avoidant participants. Participants receiving scores in the middle of the distribution (AAQ between 26 and 41) were classified as middle avoidant participants. These same cutting scores have been used by other researchers in classifying participants based on their levels of experiential avoidance (Feldner et al., 2003; Gird & Zettle,2009; Kerekla et al., 2004, Zettle et al., 2005).

Hayes et al. (2004) found that the AAQ displays an adequate level of internal consistency (Cronbach alpha = .70). Furthermore, significant correlations between the AAQ and other measures designed to assess experiential avoidance such as the Thought Control Questionnaire (Wells & Davies, 1994), the White Bear Suppression Inventory (Wegner & Zanakos, 1994), and the Dissociative Experiences Scale (Bernstein & Putnam, 1986) provide support for its construct and convergent validity.

Background Information Measures

Participants were asked to describe relevant background information in three questionnaires in order to determine whether participants responded differently to the film based on these variables.

Background Information Questionnaire. Participants were asked to describe relevant background information including their age, gender, ethnicity, and marital status. Participants were also asked whether they were receiving treatment, including prescription medication, for anxiety or depression, and were subsequently screened out of the present study if they responded affirmatively to these questions. Participants were also asked to report information regarding their history of automobile accidents as well as the number and severity of these accidents. Additionally, participants were asked to disclose whether a family member or friend had previously died or been seriously injured in an automobile accident. This information was not used to exclude any participants but to examine differences among groups in terms of previous experiences of participants or participants' loved ones with automobile accidents. The Background Information Questionnaire is presented in Appendix C.

Current Drinking Patterns Questionnaire. The Current Drinking Patterns Questionnaire (see Appendix D) is designed to assess the quantity and frequency of alcohol consumption. The Current Drinking Patterns Questionnaire was adapted from the Quantity/Frequency section of the Student Alcohol Questionnaire (SAQ; Engs, 1975). Respondents were asked to rate how often they drink wine, beer, and/or liquor, with a response of 0 indicating that the respondent never drinks the beverage in question and 5 corresponding daily consumption. Total scores on the frequency section of the Current Drinking Patterns Questionnaire range from 0-15, with higher scores reflecting greater frequency of alcohol consumption.

Participants were also asked to indicate the quantity of wine, beer, and/or liquor they typically drink when they choose to do so, with a response of 0 indicating that the respondent consumes less than 1 drink and a response of 5 indicating that the participant consumes more than 6 drinks at any given time. Total scores on the quantity section of the Current Drinking

Patterns Questionnaire range from 0-15, with higher scores reflecting larger quantity of alcohol consumption. This information was collected not to screen out any participants, but rather to examine differences among groups in terms of participants' typical patterns of alcohol consumption. A literature search revealed no investigations examining the validity of the SAQ. The Quantity/Frequency section used in the present study has been found to have adequate internal consistency, as this portion of the SAQ has displayed a split-half reliability coefficient of .84 and a Cronbach alpha coefficient of .84 (Engs & Hanson, 1994).

Brief MAST. The Brief Michigan Alcohol Screening Test (Brief MAST) is frequently used to determine whether a particular respondent may display patterns of behavior that are suggestive of alcoholism (Pokorny, Miller, & Kaplan, 1972). The Brief MAST asks the participant to respond to a series of 10 questions relating to the role that alcohol may play in the participant's daily life (i.e., "Have you ever been in a hospital because of your drinking?"). Total scores on the Brief MAST range from 0-31; a score of 4 points is suggestive of alcoholism, and a score of 5 or more points is indicative of alcoholism. The Brief MAST was administered to examine differences among groups in terms of ways in which alcohol consumption impacts participants' daily lives. Although data regarding the reliability and validity of the Brief MAST appears to be rather limited, a significant correlation between the Brief MAST and the Alcohol Use Disorders Identification Test provide support for its convergent validity (Connor, Grier, Feeney, & Young, 2007). Kaslow et al. (1998) found that the Brief MAST displays an adequate level of internal consistency (Cronbach alpha = .84). The Brief MAST has been found to be an adequate screening tool for alcoholism, and has been found to positively identify 99.2% of alcoholics in inpatient treatment (Chan, Pristach, & Welte, 1994). The Brief MAST is presented in Appendix E.

Attitudinal Measure

The Attitudes on Drinking and Driving Scale (ADDS; Jewell, Hupp, & Luttrell, 2004) was used to assess participants' attitudes toward drinking and driving prior to and following exposure to the film. The ADDS (see Appendix F) was administered to support the rationale given to participants that the primary purpose of the study was to examine changes in attitudes towards drinking and driving. The ADDS consists of two sections. In section 1, participants were asked to rate their acceptance of particular drinking and driving behaviors on a 5 point Likert scale, with 1 corresponding to a response of disagree and 5 corresponding to a response of agree. For instance, participants were asked to respond to the following statement: "I believe it is okay to drink and drive if everyone in the car is wearing a seatbelt." Section 1 of the ADDS yields total scores of 12-60. A literature search revealed no investigations examining the validity of the ADDS section 1. According to Jewell et al., section 1 of the ADDS appears to display an adequate level of internal consistency (Cronbach alpha = .90).

Section 2 of the ADDS consists of statements designed to assess participants' likelihood of driving a particular distance based on the amount of alcohol they have consumed. Responses are reported along a 5 point Likert scale, with 1 corresponding to a response of very unlikely and 5 corresponding to a response of very likely. For instance, participants were asked to respond to the following statement: "How likely are you to drive a short distance (a few blocks to a mile) after having one drink?" Section 2 of the ADDS yields total scores of 15-60, producing a total ADDS score of 27-120. A literature search revealed no investigations examining the validity of the ADDS section 2. According to Jewell et al. (2004), section 2 of the ADDS appears to display an adequate level of internal consistency (Cronbach alpha = .97).

Distress Measures

Participants were asked to rate their levels of subjective distress at various points throughout the study in order to provide information regarding the development and maintenance of negative emotional states following exposure to the graphic film.

Distress Thermometer. Participants were asked to rate their general level of subjective distress on a scale of 0-10 on a Distress Thermometer (see Appendix G) before and after viewing the film. The Distress Thermometer was originally developed by Roth et al. (1998) as a quick way by which to identify cancer patients who are suffering from significant psychological distress. The Distress Thermometer has an 11-point range with endpoints labeled "no distress" (0) and "extreme distress" (10). A score ≥ 4 has been found to be the optimal cutoff for identifying distressed cancer patients (Jacobsen et al., 2005).

State-Trait Anxiety Inventory, State Subscale. The State-Trait Anxiety Inventory, Form X (STAI-X; Spielberger, Gorsuch & Lushene, 1970) was administered after the Distress Thermometer to assess state anxiety levels. The STAI-X consists of 20 self-statements (e.g., "I feel upset") to which participants respond on a 1-4 scale based upon how they are feeling at the time, yielding total scores of 20-80. A meta-analysis conducted by Barnes, Harp, and Jung (2002) revealed a test-retest reliability ranging from .34 to .96 and an internal consistency ranging from .65 to .96. The STAI-X has been found to discriminate between high and low stress situations (Metzger, 1976) and has been found to significantly correlate with physiological measures of anxiety, including pulse rate, respiration rate, and blood pressure (Dreger & Brabham, 1987). The STAI-X is presented in Appendix H.

Distressing Image Form. Immediately after viewing the film, participants were asked to complete the two parts of the Distressing Image Form (see Appendix I). First, participants briefly

described the image which they found the most distressing and then rated the level of distress produced by that image. Completion of both parts of the form not only provided information about the reaction of participants to the film, but also ensured that they attended to the images presented within it.

Informational Questionnaire

Participants were asked to respond to an informational questionnaire that assessed their retention of factual information presented in the film. It seemed plausible that participants who "blocked out" or avoided the distressing nature of the film would be less likely to respond correctly to these informational items. Accordingly, it was hypothesized that high avoidant participants would be less likely to respond correctly to the informational questions due to a tendency to avoid unpleasant emotional states associated with viewing the film. However, results of a one-way analysis of variance indicated no differences among low, middle, and high avoidant participants in the number of questions to which they responded correctly, F (2, 89) = .15, $p >$ .05. The Informational Questionnaire is presented in Appendix J.

Measures of Intrusive Thoughts and Images

Participants were asked to provide information regarding the frequency and intensity of intrusive thoughts and images about the film between the two phases of the study.

Intrusions Diary. Participants were asked to complete an Intrusions Diary (see Appendix K), adapted from Laposa and Alden (2006), to provide a measurement of the frequency and intensity of any intrusive images experienced between the two phases of this study. On this form, participants were asked to record the date on which any spontaneous intrusive thoughts and/or images of the film occurred, rate the extent to which they found the intrusion to be distressing on a distress thermometer, and give a description of the intrusive thought or image.

Memory Questionnaire. The Memory Questionnaire was adapted from the Trauma Memory Questionnaire (Halligan, Michael, Clark, & Ehlers, 2003) and was originally used to discriminate between individuals who were and were not currently experiencing symptoms of PTSD. It was used in this study to assess participants' memories and associated reactions related to the film. For example, participants were asked to respond to the following statement: "I am reminded of the film for no apparent reason." Other items examined participants' tendency to "block out" or avoid unwanted memories and to experience intrusive thoughts related to the film. Participants rated their responses on a 5 point Likert scale, with 0 corresponding to a response of "not at all" and 4 corresponding to a response of "very strongly," yielding scores from 0-40.

The original Trauma Memory Questionnaire consists of two subscales. The disorganization subscale assesses the extent to which memory for the trauma is disorganized or incomplete (Cronbach alpha = .88). The intrusions subscale assesses the extent to which the trauma memories are easily triggered or accompanied by a sense of reliving the event (Cronbach alpha = .90). The first two items of the Memory Questionnaire measured disorganized memories of the film, while the remaining items measured intrusive thoughts surrounding the images presented in the film. A literature search revealed no investigations examining the validity of the Trauma Memory Questionnaire. The Memory Questionnaire is presented in Appendix L.

Impact of Event Scale. The Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979) is a widely used questionnaire measuring intrusive symptoms over the course of up to a week. The "trauma" wording of the IES was changed to refer to the film rather than a traumatic event. The IES consists of two subscales and was administered to assess participants' tendency to both experience as well as avoid intrusive thoughts and feelings related to the film. The intrusions subscale assessed the extent to which the participant experienced nightmares and

intrusive thoughts and feelings related to the film (Cronbach alpha = .78). The avoidance subscale assessed the extent to which the participant experienced numbing of responsiveness and avoidance of feelings related to the film (Cronbach alpha = .82). The total scale (.87) as well as the intrusion (.89) and avoidance (.79) subscales have also displayed adequate levels of test-retest reliability. Although a literature search revealed limited data regarding the validity of the IES, Devilly and Spence (1999) found the IES to correlate significantly with the Mississippi Scale for Civilian PTSD, providing support for its convergent validity. The IES intrusive and avoidance subscales each yields scores from 0-21, producing total scores from 0-42. The IES is presented in Appendix M.

Intervention Conditions

Participants were randomly assigned to one of three different intervention conditions of approximately 20 minutes in length.

Distraction Task. Participants in this condition were asked to read a series of reading passages and answer a series of questions following each reading passage. Participants read up to three short reading passages and responded to up to 10 questions per passage, for a total of 30 questions (see Appendix N). Participants were instructed to respond as quickly and accurately as possible to each of these reading passages and associated questions. The distraction condition was designed to serve as an attention-placebo comparison group in order to determine whether the CBT and ACT conditions were relatively more effective in alleviating negative emotional states associated with film exposure.

CBT Condition. Participants in this condition listened to an audiotape in which they were presented with cognitive-behavioral techniques that could be used to manage any distress that was experienced as a result of viewing the presented film. Participants were presented with

instructions in performing guided imagery, cognitive distraction, and scheduling "worry time" as techniques that could be used to alleviate any lingering distress. A transcript of the audiotaped CBT protocol is presented in Appendix O.

ACT Condition. Participants in this condition listened to an audiotape in which they were presented with an ACT approach to responding to negative private events. Participants were provided with instructions in performing a mindfulness exercise to notice bodily sensations, thoughts, and emotions without attempting to alter these experiences. A defusion exercise was also presented in which participants were encouraged to allow distressing images to come and go without trying to evaluate or avoid them. Finally, participants were presented with a metaphor that helped to explain how attempts to control unwelcome thoughts and images could lead to difficulties in performing other valued activities. A transcript of the audiotaped ACT protocol is presented in Appendix P.

Procedure

The current study consisted of two phases separated by 4 days. During the initial phase of the study, participants were first given an informed consent form to read and sign before participating in the study (see Appendix A). In order to mask the purpose of the study, participants were informed that the current study was designed to investigate the ways in which unpleasant emotions may lead to changes in attitudes towards maladaptive behaviors, particularly towards drinking and driving. The intent in presenting this alternative explanation of the purpose of the study was to minimize any potential demand characteristics or participant expectancy biases.

Phase 1. The first session with participants lasted approximately 60 minutes and always occurred on Monday. Following completion of a consent form, participants were asked to

respond orally to the Background Information Questionnaire, in providing information about their age, gender, ethnicity, and marital status. The questionnaire also asked about treatment for anxiety and/or depression, but no participants were excluded for this reason.

Next, participants were asked to respond to the Current Drinking Patterns Questionnaire, which assessed their frequency and quantity of typical alcohol consumption patterns. In order to further assess potential alcoholism, participants were also asked to respond to the Brief MAST, which assessed the ways in which alcohol consumption impacts participants' daily lives. The Current Drinking Patterns Questionnaire and the Brief MAST were administered in order to examine the potential differences in responding to the film as a function of these measurements.

In order to obtain a baseline of subjective distress, participants were asked to indicate their level of subjective distress prior to exposure to the film by completing the Distress Thermometer and the STAI-X. Subsequent to collection of baseline distress ratings, participants were asked to complete the Attitudes on Drinking and Driving Scale, which assessed participants' attitudes toward drinking and driving prior to exposure to the film.

After background information and baseline measurements were collected, participants viewed a graphic film entitled *America's Bloody Highways* (Drunk Busters of America, 2006) that is commonly used to dissuade viewers from engaging in drunk driving. The film displays the aftermath of several automobile accidents, including graphic images of injuries, severed limbs, and even burnt bodies, that occurred as a result of drinking and driving and is commonly used in driver education classes, health classes, and for DUI offenders. The film is appoximately13 minutes in length and is approved for use with grade 9 through adult. One participant opted out of the study at this point due to nausea induced by the film, leaving 109 participants.

Immediately following exposure to the film, participants were again asked to indicate their subjective level of distress by completing the Distress Thermometer and the STAI-X. Participants were also asked to fill out the Distressing Image Form in order to assess level of subjective distress induced by the image displayed in the film which they considered to be the most distressing. One participant was eliminated at this juncture from the study due to an unusual response on the Distressing Image Form, leaving 108 participants. Following the film and collection of related distress measures, participants were asked to complete an informational questionnaire designed to ensure that the participant paid adequate attention to the information presented in the film.

Next, participants were exposed either to the distraction, CBT, or ACT intervention for approximately 20 minutes to help manage any distress produced as a result of viewing the film. Following exposure to the assigned intervention condition, participants were asked to again indicate their subjective level of distress by completing the Distress Thermometer and the STAI-X. Subsequent to collection of distress measures, participants were provided with a copy of the Intrusions Diary, which allowed participants to track any distressing thoughts that were experienced between phase 1 and phase 2 of the current study. On this form, participants were instructed to record the date on which the distressing thought occurred as well as the level of distress produced by the thought on a scale of 0-10.

Participants in the CBT and ACT conditions also responded to a manipulation check (see Appendix Q) to ensure that adequate attention was paid to the audiotaped protocols. Participants responded to four multiple choice questions addressing activities that could be performed in response to any distressing thoughts, images, or emotions experienced as a result of the presentation of the graphic film. An inclusion criterion of 3 out of 4 correctly answered questions

was used to ensure that participants paid adequate attention to the audiotaped protocol to which they were assigned. Based on this requirement, three participants were eliminated from the ACT condition, leaving 105 participants. An inclusion criterion of 50% correctly answered items on the distraction task was also implemented in order to ensure that all participants paid adequate attention to this task. Based on this requirement, three additional participants were eliminated, leaving a total of 102 who were invited to return 4 days later for phase 2.

Phase 2. Phase 2 of the current study always occurred on Friday and 4 days after phase 1. Nine participants who completed phase 1 of the current study did not show up for phase 2, one participant cancelled her participation in phase 2, and two participants were unable to complete phase 2 due to inclement weather. This attrition rate left 90 remaining participants. First, participants were asked to complete the Memory Questionnaire and the Impact of Event Scale in order to assess the extent to which they experienced and attempted to avoid thoughts associated with the film between the initial and follow-up sessions. Participants additionally were asked to indicate their subjective level of distress by once again completing the Distress Thermometer and the STAI-X. Participants were also asked to provide the experimenter with the completed Intrusions Diary. Following collection of the Intrusions Diary, participants were asked to complete the Distressing Image Form in order to re-evaluate the level of distress produced by the image displayed within the film that they considered to be the most distressing. Participants were then asked to complete the Attitudes on Drinking and Driving questionnaire a second time in order to support the rationale that the current study was designed to assess any changes in their attitudes toward drinking and driving following exposure to the film.

Following collection of distress and attitudinal measures, participants were asked to respond to a funnel debriefing form which asked them about their understanding of the purpose

of the study and about anything involving the study that they found to be unusual (see Appendix R). Apart from several participants mentioning that they found it unusual that a high number of Hispanic individuals were displayed in the film, no other unusual aspects of the current study were reported. The funnel debriefing form was followed by a questionnaire designed to further assess participants' beliefs regarding the effectiveness of the study in accomplishing the purpose identified by the participants (see Appendix S). No unusual responses were noted on this questionnaire. Accordingly, all ($N = 90$) participants were retained following the debriefing process.

Finally, participants were given a debriefing statement to read (see Appendix T) explaining that the results of the current study would provide valuable information regarding the role of strong emotional responding in producing changes in attitudes toward maladaptive behaviors.

CHAPTER 4

Results

Summary of Hypotheses and Related Measures

Data from 90 participants evenly distributed within a 3 (Level of Experiential Avoidance) x 3 (Intervention Condition) factorial design were analyzed to address the major hypotheses of this study. To briefly reiterate, the following three hypotheses were evaluated. Hypothesis one predicted a main effect for level of experiential avoidance. Specifically, high avoidant participants were expected to report increased distress, anxiety, and intrusive thought patterns over time in comparison with middle and low avoidant participants, and middle avoidant participants were expected to experience higher levels of distress and anxiety over time in comparison with low avoidant participants.

Hypothesis two anticipated a main effect for intervention condition with the CBT intervention condition expected to be less efficacious in reducing distress, anxiety, and intrusive thought patterns than the ACT intervention. In addition, the CBT and ACT interventions were expected to be more efficacious in reducing negative emotional states than the distraction condition, as this condition was designed to serve as an attention-placebo control group.

According to the third hypothesis, a Level of Experiential Avoidance x Intervention Condition interaction was expected. In particular, high avoidant participants were expected to respond more favorably to the ACT than the CBT intervention, while low and middle avoidant participants were expected to respond in a similar manner to both ACT and CBT interventions. Any therapeutic impact of the distraction condition was not expected to vary as a function of participants' levels of experiential avoidance.

The distributions of all dependent measures were examined and determined to be adequately distributed to complete the analyses conducted in the present study. Each of the dependent variables were analyzed with 3 x 3 ANOVAs to detect any possible differences prior to the presentation of the film, or in the case of data from the Distressing Image Form, prior to the presentation of the treatment conditions. Because all of these analyses were nonsignificant, repeated measures ANOVAs; with four levels of time in the case of the distress thermometer data and STAI-X scores, and two levels for the distressing image ratings; primarily were used in evaluating the hypotheses. These primary analyses were also supplemented by regression analyses involving experiential avoidance. This made it possible to investigate the possible role of experiential avoidance as both a categorical and continuous variable in contributing to variability within the primary dependent variables. In what follows, results involving these measures addressed by the primary hypotheses will be presented followed by findings from the attitudinal measures, which were of secondary importance.

Distress Measures

Distress Thermometer. Descriptive statistics for the Distress Thermometer are presented in Table 2. Participants were expected to experience an increase in distress following exposure to the film and subsequent reductions in distress at postintervention and at phase 2. As anticipated and summarized in Table 3, results indicated an anticipated significant main effect for time, $F(3, 79) = 112.77$, $p < .001$, $\eta_p^2 = .58$. As seen in Figure 1, participants experienced minimal distress at baseline, significant increases in distress postfilm, and decreased distress at postintervention and at phase 2. Post-hoc comparisons (see Table 4) revealed that, although participants experienced a decrease in distress following intervention, postintervention distress ratings remained significantly elevated compared to baseline. Furthermore, phase 2 distress ratings

showed a significant decrease in distress to the extent that these ratings were now lower than those during baseline.

As seen in Table 3, results also indicated a significant Intervention Condition x Time interaction, $F(6, 81) = 2.27$, $p < .05$, $\eta_p^2 = .05$. As seen in Figure 2, post-hoc analyses indicated that participants in the distraction condition reported less distress at postfilm in comparison to CBT and ACT intervention conditions at a level approaching statistical significance, $F(2, 89) = 2.69$, $p > .05$. Baseline, postintervention, and phase 2 measurements of distress did not differ significantly among intervention condition groups.

As indicated in Table 3, ANOVAs failed to detect main effects for experiential avoidance, intervention condition, the interaction between experiential avoidance and intervention condition, nor the interaction of these variables with time. However, as also denoted in Table 3, limited statistical power may have contributed to a lack of anticipated findings, as statistical power among these analyses ranged in size from .10 to .69. Finally, results of a regression analysis were consistent with those of the ANOVA in also indicating no effect for experiential avoidance, $F(1, 89) = 1.37$, $p > .05$.

State-Trait Anxiety Inventory, State Subscale. Descriptive statistics for the STAI-X are presented in Table 5. Participants were expected to experience an increase in anxiety as measured by the STAI-X postfilm and subsequent reductions in distress and anxiety at postintervention and at phase 2. As anticipated and summarized in Table 6, results indicated a significant main effect for time, $F(3, 79) = 129.32$, $p < .001$, $\eta_p^2 = .61$. As seen in Figure 3, participants experienced minimal anxiety as measured by the STAI-X at baseline, increased anxiety postfilm, and decreased anxiety at postintervention and at phase 2. As seen in Table 7, post-hoc comparisons revealed that, although participants experienced a decrease in anxiety

following intervention, postintervention distress ratings remained significantly elevated compared to baseline. Phase 2 distress ratings did not significantly differ from baseline ratings, indicating a return to baseline distress levels.

As indicated in Table 6, no main effects for experiential avoidance, intervention condition, interaction between experiential avoidance and intervention condition, nor the interaction of these variables with time were obtained by the ANOVAs, perhaps at least due in part to the limited statistical power of these analyses, which ranged from .12 to .64. Again, the results of a regression analysis were consistent with these findings in also indicating no effect for level of experiential avoidance, $F(1,89) = .65$, $p > .05$.

Distressing Image Form. The Distressing Image form was designed to provide further information regarding the extent to which the participants found the film to be distressing. Descriptive statistics for the Distressing Image Form are presented in Table 8. Participants were expected to report decreases in distress related to images presented in the film at phase 2 in comparison to distress reported immediately following exposure to the film. As anticipated and summarized in Table 9, results indicated a significant main effect for time, $F(1, 81) = 169.85$, $p < .001$, $\eta_p^2 = .68$, with participants experiencing decreased distress ($M = 4.60$, $SD = 2.56$) for their chosen upsetting image during phase 2 in comparison with distress ratings immediately following exposure to the film ($M = 7.64$, $SD = 2.10$). As seen in Table 9, no other significant findings were obtained. Again, it appears that weak statistical power, ranging from .08 to .33, may have contributed to this lack of expected findings. A regression analysis also was consistent with the ANOVA finding in also detecting no effect for experiential avoidance, $F(1,89) = .78$, $p > .05$.

Measures of Intrusive Thoughts and Images

Because the Intrusions Diary, Memory Questionnaire, and the Impact of Event Scale were only administered at phase 2, data derived from these measures were analyzed with 3 x 3 ANOVAs as outlined below.

Intrusions Diary. Descriptive statistics for the Intrusions Diary, from which two measures were derived (i.e., number of intrusive thoughts and level of distress), are presented in Table 10. As seen in Table 11, a hypothesized main effect involving number of intrusive thoughts for intervention condition and its interaction with level of experiential avoidance were not detected, perhaps in part due to limited statistical power, ranging from .08 to .49. However, a marginal main effect ($p < .10$) was detected for experiential avoidance. This effect was further substantiated by a significant regression analysis for level of experiential avoidance on number of intrusive thoughts, $F(2, 89) = 4.71$, $p < .05$, $\beta = .22$, accounting for 5% of the variance in this measure.

As also seen in Table 11, hypothesized main effects involving level of distress for experiential avoidance, intervention condition, and its interaction with level of experiential avoidance were not detected, perhaps in part due to limited statistical power, ranging from .08 to .27. In addition, a regression analysis addressing experiential avoidance was also nonsignificant, $F(2, 89) = .25$, $p > .05$.

Memory Questionnaire. The Memory Questionnaire was designed to measure participants' tendency to avoid or "block out" distressing images related to the film. Descriptive statistics for the three variables derived from the Memory Questionnaire (i.e., total score, disorganization subscale, and intrusions subscale) are presented in Table 12. As seen in Table 13, no expected main effects on total score were obtained for experiential avoidance, intervention

condition, or the interaction between these two variables. These findings may in part be attributed to poor statistical power, ranging from .20 to .63. In contrast to the results of the ANOVA, a regression analysis did reveal a significant effect for experiential avoidance on total score, $F(2, 89) = 5.84$, $p < .05$, $\beta = .25$, accounting for 6% of the variance in tendency to avoid or "block out" distressing images related to the film.

As also seen in Table 13, no expected main effects on the disorganization subscale were obtained for experiential avoidance, intervention condition, or the interaction between these two variables. These findings may in part be due to inadequate statistical power, ranging from .16 to .59. The lack of an effect on the disorganization subscale for experiential avoidance was also supported by a regression analysis, $F(2, 89) = 4.47$, $p > .05$.

Finally, as seen in Table 13, no expected main effect on the intrusions subscale was obtained for experiential avoidance, intervention condition, or the interaction between these two variables. These findings may in part be attributed to limited statistical power, which ranged from .10 to .45. Contrary to the results of the ANOVA, a regression analysis did reveal a significant effect for experiential avoidance on the intrusions subscale, $F(2, 89) = 4.47$, $p < .05$, $\beta = .22$, accounting for 5% of the variance in intrusive thought patterns.

. Impact of Event Scale. The Impact of Event Scale was administered to explore the extent to which participants experienced intrusive thoughts and feelings related to the film. Descriptive statistics for the three variables derived from the Impact of Event Scale (i.e., total score, intrusions subscale, and avoidance subscale) are presented in Table 14. As seen in Table 15, the ANOVAs detected no significant main effects for experiential avoidance, intervention condition, or the interaction between these two variables. These findings may have in part resulted from inadequate statistical power, ranging from .07 to .32. Regression analyses were consistent with

the ANOVA findings. Specifically, these analyses indicated no effect for experiential avoidance on total score, $F(2, 89) = 3.33$, $p > .05$, the intrusions subscale, $F(2, 89) = 1.92$, $p > .05$, or the avoidance subscale, $F(2, 89) = 2.87$, $p > .05$.

Background Information Measures

Analyses of background and demographic variables were undertaken to ensure that any of the findings from the analyses of variance and regression could not be attributable to possible differences among participants by levels of experiential avoidance, intervention conditions, or their interaction.

Background Information Questionnaire. Tables 16 and 17 summarize demographic information and automobile accident history of the participants, respectively. There were no significant differences in age, ethnicity, or marital status among the participants as a function of their levels of experiential avoidance, intervention condition to which they were assigned, or of the interaction between these two variables.

Involvement in automobile accidents was measured dichotomously. A statistically significant difference was noted among the avoidant groups on involvement in automobile accidents, $\chi^2(2, N = 90) = 8.40$, $p < .05$, with more low avoidant participants reporting a history of automobile accidents than middle and high avoidant participants. However, there were no statistically significant differences among intervention conditions for involvement in automobile accidents, $\chi^2(2, N = 90) = 1.20$, $p > .05$, and no interaction effect was noted between level of experiential avoidance and intervention condition on involvement in automobile accidents, $\chi^2(8, N = 90) = 7.91$, $p > .05$. There were no main effects for levels of experiential avoidance, treatment condition, or their interaction for these variables in the number of accidents in which

participants had been involved, or whether participants had a friend or family member who had been seriously injured or killed in an automobile accident.

Current Drinking Patterns Questionnaire. The Current Drinking Patterns Questionnaire was administered to examine differences among groups in terms of frequency and quantity of participants' alcohol consumption. No statistically significant differences were noted among participants as a function of their level of experiential avoidance, $F(2, 89) = .12$, $p > .05$, intervention condition to which they were assigned, $F(2, 89) = .87$, $p > .05$, or the interaction between these two variables, $F(4, 89) = 1.31$, $p > .05$. Frequency and quantity sections of the Current Drinking Patterns Questionnaire were also analyzed separately, and no statistically significant differences were noted among groups as a function of their level of experiential avoidance, intervention condition to which they were assigned, or the interaction between these two variables.

Brief MAST. The Brief MAST was administered to examine the differences among groups in the way in which alcohol consumption impacted participants' daily lives. Participants were assigned to categories based on Brief MAST scores in accordance with the instructions of this instrument, including nonalcoholic (score of 0-3), possible alcoholic (score of 4), or alcoholic (score of 5 or above). There were no statistically significant differences in the distribution of participants among these three alcohol dependency subgroups as a function of their level of experiential avoidance, $\chi^2(4, N = 90) = 3.17$, $p > .05$, intervention condition to which they were assigned, $\chi^2(4, N = 90) = 3.17$, $p > .05$, or the interaction between these two variables, $\chi^2(16, N = 90) = 13.29$, $p > .05$.

Attitudinal Measure

The Attitudes on Drinking and Driving Scale (ADDS; Jewell et al., 2004) was used to assess participants' attitudes toward drinking and driving prior to and following exposure to the film. This measure was of secondary importance and was primarily utilized in order to support the rationale presented to participants that the primary purpose of the current study was to examine changes in attitudes toward drinking and driving. Descriptive statistics on the ADDS are presented in Table 18. As displayed in Table 19, results of a 3 x 3 x 2 (Time: Baseline vs. phase 2) repeated measures ANOVA indicated only a significant main effect for time, $F(1, 81) = 14.00$, $p < .001$, $\eta_p^2 = .15$, for total ADDS scores, with participants reporting less favorable attitudes toward and less reported likelihood of drinking and driving following exposure to the film ($M = 41.73$, $SD = 12.43$) compared to baseline ($M = 44.94$, $SD = 12.97$). As seen in Table 5, no main effects were noted for experiential avoidance, intervention condition, their interaction, not the interaction of these variables with time.

Section 1 and section 2 of the ADDS were also analyzed separately, with section 1 representing attitudes toward drinking and driving and section 2 representing participants' reported likelihood of engaging in drinking and driving in the future. As seen in Table 19, significant main effects for time were noted for both section 1, $F(1, 81) = 22.93$, $p < .001$, $\eta_p^2 = .22$, and section 2 of the ADDS, $F(1, 81) = 4.69$, $p < .05$, $\eta_p^2 = .05$., with participants reporting less favorable attitudes toward drinking and driving following exposure to the film than at baseline.

CHAPTER 5

Discussion

The current study was designed to further investigate the role of experiential avoidance in the development and maintenance of negative emotional states, including the high distress levels and intrusive thought patterns often associated with PTSD. A laboratory task in which individuals were asked to watch a graphic film of drinking and driving accidents was used to examine the potential link between an individual's tendency to avoid negative private events and the subsequent development and maintenance of negative emotional states.

Additionally, the present study was designed to explore the potential effectiveness of a cognitive behavioral treatment approach, which encourages the elimination of negative thoughts, feelings, and memories, in comparison to an acceptance and commitment therapy protocol, which encourages participants to simply notice unwanted private events rather than attempting to alter these psychological experiences, in the maintenance of negative emotional states resulting from exposure to the film. An attention-placebo distraction task was also developed as a comparison condition in order to assess the effectiveness of CBT and ACT approaches in alleviating negative emotional states associated with the film.

Previous research has indicated that high avoidant participants tend to be less tolerant of physical discomfort (Zettle et al., 2005; Zettle, Petersen, Hocker, & Provines, 2007) and to report higher levels of distress in response to unwanted induced psychological states and experiences (Feldner et al., 2002; Gird & Zettle, 2009) than their low avoidant counterparts. Furthermore, increases in acceptance and decreases in suppression have been found to be associated with more positive outcomes (Ulmer et al., 2006) and level of experiential avoidance has been found to be

significantly correlated with trauma symptoms (Plumb et al., 2004) among trauma survivors. Therefore, high avoidant participants in the present study were expected to report higher levels of distress, anxiety, and intrusive thought patterns over time in comparison with middle and low avoidant participants. Middle avoidant participants, in turn, were expected to experience higher levels of distress, anxiety, and intrusive thought patterns in comparison with low avoidant participants. Contrary to what was hypothesized, no significant main effects were obtained on any of these variables for participant levels of experiential avoidance when evaluated as a categorical variable. However, a slightly different pattern emerged when experiential avoidance was examined as a continuous variable with regression analyses. Specifically, these analyses did detect a significant effect for experiential avoidance limited to measures of intrusive thoughts and images, accounting for 5 to 6 % of the variance in these measures. Although a small trend in the hypothesized direction was noted on most measures, a considerably large number of additional participants would be needed to detect these differences.

An expected effect for treatment condition also was not found. Although small trends in the hypothesized direction were noted on some measures, a considerably large number of additional participants would be needed to detect these differences. This anticipated finding was largely based on previous research indicating that attempts to suppress unwanted thoughts leads to a "rebound effect" in which individuals experience an initial decrease in unwanted thoughts followed by a delayed increase in these thoughts (Wenzlaff et al., 1999). Moreover, this rebound effect has been found to be more pronounced for trauma-related images (Davies & Clark, 1998), and emotion focused coping strategies that serve an experiential avoidant function (e.g., cognitive restructuring, distracting oneself from unwanted thoughts) have been found to negatively predict psychotherapy outcomes for several populations (Coffey et al., 1996; Gore-

Felton et al., 2006; Grantz, 2006; Kidd & Carroll, 2007; Van Harreveld et al., 2007). Therefore, to the extent that the CBT intervention condition incorporated coping strategies that serve an experiential avoidant function, it was expected to be less efficacious in reducing distress, anxiety, and intrusive thought patterns than the ACT intervention. The CBT and ACT interventions, in turn, were expected to be more efficacious in reducing negative emotional states than the distraction condition, as this condition was designed to serve as an attention-placebo control group.

A final general anticipated set of findings concerned the interaction between participant levels of experiential avoidance and treatment conditions. Contrary to expectations, no significant interactive effects were detected. In particular, participants were expected to respond differently to CBT and ACT interventions groups based on their levels of experiential avoidance. Due to high avoidant participants' tendency to engage in experiential avoidant coping strategies (Cochrane et al., 2007), it was expected that these participants' typical patterns of responding to negative emotional states would be similar to the strategies provided in the CBT intervention. Therefore, it was hypothesized that the ACT intervention might provide these participants with a new and more efficacious way in which to respond to these emotional states. As such, high avoidant participants were expected to respond more favorably to the ACT than the CBT intervention, while low and middle avoidant participants were expected to respond in a similar manner to both ACT and CBT interventions. Any therapeutic impact of the distraction condition was not expected to vary as a function of participants' levels of experiential avoidance. As this expected trend was not observed among groups, increasing sample size would not likely produce the anticipated effect.

Overall results indicated that while participants experienced a significant increase in distress and anxiety following exposure to the film, as well as a significant decrease in distress and anxiety following exposure to all implemented intervention conditions, no significant differences were noted among groups on these measures as a function of experiential avoidance, intervention condition or the interaction between these two variables. Furthermore, no significant differences were noted among groups on measures of intrusive thought patterns as a function of intervention condition, or the interaction between experiential avoidance and intervention condition. However, two regression analyses indicated a significant effect for experiential avoidance on the number of intrusive thoughts postfilm. In the discussion that follows, potential factors contributing to the lack of predicted findings will each be explored in turn. Also, where appropriate and feasible, additional research will be proposed and discussed that might provide a more detailed analysis of the impact of these variables in analogue research of the type conducted in this project.

Statistical Power

One factor that potentially contributed to the lack of anticipated findings was lack of adequate statistical power. Observed power for the statistical analyses that were conducted ranged from .003 to 1.00, and inadequate statistical power was noted with the exception of analyses of change across measurement points for the Distress Thermometer, STAI-X, and the Distressing Image Form. Post-hoc examination indicated that a sample size of greater than 490 participants would be necessary to attain statistical significance with the effect sizes reported in this study, which range from .003 to .11. While the sample size of the current study ($N = 90$) is not adequate to detect a small effect size of less than a partial η^2 of .34, it is robust enough to detect those above this level. Although an increase in sample size may impact ability to detect

additional statistically significant results, such findings would be inconsequential for practical and theoretical purposes.

Levels of Experiential Avoidance

Another potential factor that must be considered as a possible contributor to the general lack of predicted effects for experiential avoidance is the possible inability of the AAQ to adequately differentiate participants by levels of experiential avoidance. This possibility, however, seems highly unlikely. Previous research indicates that the AAQ displays an adequate level of construct validity (Bernstein & Putnam, 1986; Wegner & Zanakos, 1994; Wells & Davies, 1994), which provides support for its ability to assess experiential avoidance. In addition, several studies have documented consistent and predictable differences among high and low avoidant participants in response to distressing events, including physical discomfort (Zettle et al., 2005, 2007), induced unwanted psychological states and experiences (Feldner et al., 2002; Gird & Zettle, 2009), and reactions to traumatic events (Plumb et al., 2004; Ulmer et al., 2006). Given this evidence to support the construct validity of the AAQ, it is unlikely that its poor psychometric properties contributed to the failure of the present study to generally yield expected effects for level of experiential avoidance.

Impact of Film

Another potential reason for the lack of predicted findings may be that the presented film was not personally relevant or powerful enough to evoke sufficiently long lasting differences among groups in terms of distress and anxiety. The film utilized in the present study was selected to serve two purposes. Its primary purpose was to expose participants to graphic images in an attempt to induce anxiety, distress, and intrusive thought patterns that are often associated with PTSD. Additionally, this particular film was selected to provide support for the presented

rationale of the current study as an investigation of the ways in which unpleasant emotional states may lead to changes in attitudes toward drinking and driving.

The intent in presenting this alternative explanation of the study's purpose was to minimize any potential demand characteristics or participant expectancy biases. However, it is possible that not all participants connected with this film on a personal level. That is, individuals who have previously been involved in an automobile accident or have a friend or family member who has died or been seriously injured in a car accident might conceivably respond differently to the film than individuals who have not had these experiences. However, examination of these factors indicated that participants with such a history did not report significantly higher levels of distress, anxiety, or intrusive thought patterns. Furthermore, participants who had been previously involved in an automobile accident did not report significantly higher levels of distress, anxiety, or intrusive thought patterns.

Although these variables did not appear to contribute to increased distress levels, further collection of information regarding whether participants had witnessed a fatal car accident may have been relevant to further empirically explore this question. Additionally, it is possible that participants may have been desensitized to the types of images presented in the film by viewing other such films in driver's education classes or by viewing graphic horror films. Therefore, future researchers may wish to collect additional information regarding participants' history of exposure to graphic images of bodily harm, either through watching horror films or through exposure to these types of events in real-world settings (e.g., working in a hospital, witnessing a fatal accident, etc.). Additionally, future researchers could consider using younger participants who may not have similar exposure to these types of films or experiences. Also, another type of film might be presented that would expose participants to images with which they would have

little experience (e.g., combat footage, other types of injuries/accidents, etc.) in order to limit the potential impact of previous desensitization on levels of distress. Each of these variables could potentially impact the power of the film in inducing distress, which is relevant in next considering potential ceiling and floor effects related to the impact of the film.

Ceiling and Floor Effects

As discussed in the previous section, the power, or lack thereof, of the film used in the current study may have at least in part contributed to the lack of an anticipated main effect among groups. For instance, if the film was unable to produce substantial increases in distress and anxiety, a potential floor effect could have resulted. More specifically, although significant increases in distress and anxiety measures were noted following exposure to the film, the observed increases in these measures may nevertheless not have been high enough to enable significant differences among treatment or avoidance groups to be detected. However, the levels of anxiety as measured by the STAI-X ($M = 47.99$; $SD = 11.77$) postfilm were comparable to those observed in a similar trauma analogue study ($M = 43.74$; $SD = 13.47$) in which the researchers concluded that their film produced the intended traumatic effect (Laposa & Alden, 2006). This provides support for the potential of the film to produce adequate elevations in anxiety measurements, indicating that the overall failure to find the expected results cannot be clearly attributed to a floor effect.

To also rule out a possible ceiling effect, baseline levels of distress and anxiety were examined. A ceiling effect could occur if these measures were so elevated during baseline that exposure to the film did not effectively elevate them to a sufficient level against which the differential impact of the treatment conditions could be evaluated. Examination of these measures, however, indicated relatively low levels of baseline distress and anxiety, ruling out a

potential ceiling effect. The level of baseline anxiety as measured by the STAI-X (M = 31.00; SD = 7.42) was similar to that observed by Laposa and Alden (2006) in a similar trauma analogue study (M = 30.29; SD = 9.15). Furthermore, baseline anxiety measurements in the current study were significantly lower ($p < .001$) than both the normative data for females within the same age range in a clinical population (M = 39.5; SD = 11.4) as well as within a college student population (M = 38.76; SD = 11.4) as reported by Spielberger and Gorsuch (1983). Therefore, the spread of state anxiety scores attained prefilm to postfilm in the current study appears to have been significantly large enough to detect any possible main effect for intervention condition or interaction effect with participant levels of experiential avoidance. This suggests that the overall lack of anticipated results cannot be clearly attributed to a ceiling effect.

Clean vs. Dirty Pain

Previous studies have examined both "clean pain" and "dirty pain" as dependent variables in evaluating how participants exhibiting varying levels of experiential avoidance respond to various challenges. "Clean pain" refers to a normal, adaptive response to an unpleasant event or situation, while "dirty pain" refers to the psychological distress that results from inability to control or avoid the occurrence of clean pain (Hayes et al., 1999). For instance, feeling sorrow and grieving the loss of a loved one results in clean pain, as this is a normal, adaptive response to loss. Psychological distress that arises from attempts to control the sorrow and grieving may result in the dirty pain of complicated bereavement (e.g., Nolen-Hoeksema, Parker, & Larson, 1994). Previous studies have shown that, while no differences in "clean pain" may be noted as a function of participant levels of experiential avoidance, these groups may differ in levels of "dirty pain." For example, Gird and Zettle (2009) found that, while high and low avoidant participants reported comparable increases in levels of dysphoric mood following a

mood induction task, high avoidant participants reported significantly greater levels of distress in response to this induced mood in comparison with their low avoidant counterparts. Similarly, Feldner and colleagues (2002) found that high and low avoidant participants displayed no significant differences in autonomic arousal (e.g., heart rate, respiration rate, etc.) in response to a task designed to induce panic-like symptoms but did so in their reactions to such changes. Specifically, high avoidant participants reported higher levels of anxiety and displeasure than their low avoidant counterparts in response to these induced symptoms. These studies suggest that differential levels of experiential avoidance are more closely associated with the secondary distress that participants encounter in reaction to induced emotional and physiological states than with the level or intensity of such unpleasant primary experiences.

Therefore, it is not entirely surprising that anxiety levels (i.e., "clean pain") among groups in the present study did not vary as a function of experiential avoidance. However, it was more unexpected that distress ratings did not differ among experiential avoidant groups. It is, however, possible that the wording of the Distress Thermometer was not conducive to measuring "dirty pain." Specifically, the Distress Thermometer instructions, unlike those used by Gird and Zettle (2009), for example, did not specifically ask participants to rate their levels of distress in response to any changes they may have noted in their levels of anxiety. Therefore, it is possible that the Distress Thermometer merely provided another measurement of "clean pain" rather than one of "dirty pain." Ultimately, how to most usefully capture and measure "dirty pain" in studies like the present one is perhaps as much as an empirical as it as a conceptual matter. For example, results from this study could be compared with another that replicated it but with Distress Thermometer instructions that asked participants to rate their distress in response to changes in anxiety levels.

Demand Characteristics

It is also possible that observed findings occurred as a result of demand characteristics. That is, participants in general, and regardless of their levels of experiential avoidance or intervention condition to which they were assigned, may have reported increased distress and anxiety following exposure to the film and decreased levels of these variables following intervention due the relative "transparent" hypotheses presented to participants in the informed consent. Specifically, the current study was presented as a study of the ways in which strong emotional reactions, such as those potentially created by the film, impact changes in attitudes toward drinking and driving over time. Furthermore, the three intervention conditions were presented as ways to alleviate any potential remaining distress created by exposure to the film. It is possible that participants reported an increase in distress and anxiety following the film and decreases in these measurements over time, as this was the expected pattern that was presented to them. In future studies, this could be further explored by utilizing physiological measures of anxiety (e.g., pulse rate, respiration rate, blood pressure, etc.), as used by other researchers (Dreger & Brabham, 1987; Feldner et al., 2002) that may be less susceptible to possible demand characteristics. Furthermore, collection of overt behavioral measures (e.g., fidgeting, looking away from screen) during viewing of the film could also provide further information regarding the amount of anxiety and distress produced by the film (Gordon & Teachman, 2008).

It is also possible that future studies could manipulate the type and level of demand characteristics as an independent variable. For instance, participants could go through the same protocol as presented in the current study with varying levels of demand characteristics. A "high demand" group could be presented with the expectation that each intervention is anticipated to produce significant decreases in anxiety and distress. A "low demand" group could be told that

each intervention is expected to produce only minor, if any changes at all, in anxiety and distress. A "counter demand" group could be informed that the film is expected to produce reduced levels of anxiety and distress in that participants would be expected to be relieved that they have not been involved in such accidents. Furthermore, this group could also be told that they are expected to experience an increase in anxiety and distress following intervention in anticipation of being asked to focus on their negative emotional reactions in applying the suggestions presented within the protocol.

Treatment Dosage

The length of the intervention conditions may have also contributed to the failure to obtain predicted findings of the current study. A 20-minute intervention was selected in an attempt to provide adequate exposure to each presented protocol. Other researchers have utilized protocols of a similar length with anticipated effects (Gutierrez, Luciano, Rodriguez, & Fink, 2004; Paez-Blarrina et al., 2008). However, it is also possible that participants provided with shorter CBT and ACT interventions would have reported greater decreases in distress and anxiety in comparison to the distraction task. This could be a result of the passage of time following exposure to the film leading to equal reductions in these negative emotional states. These questions could be further explored in future research by providing participants with differing lengths of all three interventions in order to examine whether their inability to impact distress levels varies as a function of their dosage levels. Also, the addition of a no treatment control group could be utilized to examine the possibility that the passage of time produced a decrease in these emotional states. In addition, such a control group could also be used to examine whether all implemented intervention conditions served a distracting function that lead to the observed decreases in distress.

Interphase Interval Length

The length of time between phase 1 and phase 2 may also have contributed to the lack of significant findings in general and those involving the treatment conditions in particular. It is possible that the current study utilized an interphase interval that was either too short or too long to detect a main effect for intervention condition or its interaction with participant levels of experiential avoidance. Although a literature review revealed no similar studies against which to compare this duration, the conceptual reasoning behind the selected 4-day length of time was to allow ample time for participants to develop potential intrusive thought patterns in relation to the film. Furthermore, by running phase 1 on Mondays and phase 2 on Fridays, the current study allowed the maximum passage of time between phases while avoiding the potential contaminating effects of the weekend. Specifically, it was assumed that alcohol consumption and subsequent driving were more likely to occur on weekends.

By reducing the amount of time between study phases, for example, from 4 days to 2 days, it is possible that participants might experience higher follow-up levels of distress against which any main effect for the intervention conditions or their interaction with participant levels of experiential avoidance could be more readily detected. However, such a reduction in the length of time between phases arguably may not serve as an analogue for PTSD. Alternatively, it is also possible that a longer amount of time, such as one calendar week, between phases may have provided participants with more time to ruminate about the film and to experience increased distress and intrusive thought patterns related to images presented during it. Previous researchers have documented this type of rebound effect when participants attempt to suppress unwanted thoughts (Lin & Wicker, 2007; Roemer & Borkovec, 1994; Wenzlaff et al., 1991), and the impact of attempted suppression of unwanted thought patterns has been found to be more

pronounced for trauma-related thoughts (Davies & Clark, 1998). Therefore, a longer interphase interval might allow for a more optimal length of time in which to produce a potential rebound effect of increased distress and anxiety following attempts to avoid these unwanted emotional states. This question could be empirically addressed in future studies by utilizing multiple follow-up measurements to examine this relationship over time.

Aggregate Effect

It is also possible that no one specific factor contributed to the lack of predicted findings. Rather, the combination of several factors may have constituted a "perfect storm" that contributed to the results of the current study. For instance, it is possible that even with enhanced statistical power, the impact of the film was simply not potent enough to elevate anxiety and distress levels and the treatment dosages were not strong enough to alleviate these levels above and beyond any potential demand characteristics.

Summary and Conclusions

The current study demonstrates the potential difficulties associated with attempts to prepare a laboratory design analogous to PTSD. As with all analogue studies, it is often difficult to induce even in an attenuated fashion the symptoms often seen within a related clinical population. Even in instances in which the anticipated results from analogue studies materialize, their external validity may be limited. As a consequence, the generalizability of findings must always be verified with related clinical populations. As such, even if the results of the current study were as anticipated, it would still be necessary to further investigate the degree to which experiential avoidance plays a role in PTSD as well as the relative efficacy and effectiveness of interventions such as ACT that seek to target such avoidance. Although the hypothesized findings would provide additional support in the potential role of ACT in the treatment of the

negative emotional states often associated with PTSD, further studies may provide support for this potential role. In the absence of an adequate analogue for PTSD, additional studies involving clinical populations comparing varying treatment approaches in the alleviation of these symptoms would provide the support for this potential approach to treatment.

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APPENDICES

APPENDIX A

WICHITA STATE UNIVERSITY

Fairmount College of Liberal Arts and Sciences

Department of Psychology

CONSENT FORM

You are invited to participate in a study investigating individual differences in how our beliefs and emotions contribute to changes in our attitudes. In particular, we are interested in better understanding individual differences in the ways in which unpleasant emotions may lead to changes in attitudes toward drinking and driving. A better understanding of the issues addressed by this project ultimately may be of some use in helping change attitudes towards this and other maladaptive behaviors, and thereby help reduce drunk driving fatalities.

You have been selected and invited to serve as a possible participant in this study because of your response to an earlier online survey related to this project. If you are not at least 18, we, unfortunately, will be unable to have you participate in the study. Also, your participation is precluded if you are currently receiving any type of treatment, including medication, for anxiety or depression.

If you decide to participate, you will be first interviewed briefly to obtain some background information and to verify that there is no reason to preclude your participation. Next, you will be asked to complete a brief series of questionnaires designed to assess additional background variables that we believe may help us better understand how you respond to a film that you will be asked to view as well as a measure of your attitudes toward drinking and driving. All and any information you provide in your responses to the questionnaires as well as any other paper-and-pencil forms you may be asked to complete will remain confidential.

After completing this brief series of questionnaires, you will be asked to view a graphic film that displays the aftermath of several automobile accidents that occurred as a result of drinking and driving, including images of vehicles, injuries, and fatalities resulting from these accidents. After viewing the film, you will be asked to complete a brief series of questionnaires designed to assess your emotional and other reactions to the film. Next, you will be asked to listen to a brief audiotape designed to help you manage any distress that may have been produced as a result of viewing the film, and you will be asked to complete a brief series of questionnaires designed to assess your remaining emotional reactions to the film.

You will be requested to participate in a follow-up session 4 days after completing the initial phase of the present experiment. In the follow-up session, you will be asked to complete a series

of questionnaires designed to assess your continued response and reactions to the film as well as a second measure of your attitudes toward drinking and driving.

Upon completion of the follow-up session, your name will be entered in a lottery drawing. Six of the approximately 70 participants completing the present study in its entirety will win a prize of $150.

The film that you will be viewing is deliberately designed to elicit a strong emotional reaction. It is possible that you may continue to experience some amount of minor distress following participation in the current research project. However, because you will not be allowed to participate in this study if you have an anxiety or depressive disorder, there is no foreseeable risk that you will experience any substantial distress following your participation in the current research project.

Your participation in this project is entirely voluntary. Your decision whether or not to participate will not affect your future relations with Wichita State University or the Department of Psychology. If you decide to participate, you may withdraw from the study at any time without affecting your status with Wichita State University or the Department of Psychology.

If you have any questions about this research, please ask me. If you have additional questions throughout the course of this project, we will be glad to answer them. Also, questions about any aspect of this research can be directed to any of the following:

Office of Research Administration, Wichita State University, Wichita KS 67260-007, Phone: 978-3285.
Stacy Barner, Clinical Psychology Graduate Student, Department of Psychology, Office: 404 JB, Phone: 978-3694, e-mail: slbarner@wichita.edu.
Dr. Robert D. Zettle, Associate Professor, Department of Psychology, Office 411 JB, Phone: 978-3081, email: robert.zettle@wichita.edu.

You will be offered a copy of this consent form to keep.

You are making a decision whether or not to participate in this study. Your signature indicates that you have read the information provided and have voluntarily decided to participate.

_____ _____

Signature of Subject Date

_____ _____

Signature of Investigator Date

APPENDIX B

Acceptance and Action Questionnaire (AAQ)

Subject Number: _____ Date: _____

Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following scale to make your choice.

1	2	3	4	5	6	7
never true	very seldom true	seldom true	sometimes true	frequently true	almost always true	always true

_____ 1. I am able to take action on a problem even if I am uncertain what is the right thing to do.

_____ 2. I often catch myself daydreaming about things I've done and what I would do differently next time.

_____ 3. When I feel depressed or anxious, I am unable to take care of my responsibilities.

_____ 4. I rarely worry about getting my anxieties, worries, and feelings under control.

_____ 5. I'm not afraid of my feelings.

_____ 6. When I evaluate something negatively, I usually recognize that this is just a reaction, not an objective fact.

_____ 7. When I compare myself to other people, it seems that most of them are handling their lives better than I do.

_____ 8. Anxiety is bad.

_____ 9. If I could magically remove all the painful experiences I've had in my life, I would do so.

APPENDIX C

Date: _____

Background Information Questionnaire

1. Age _____

2. Gender _____

3. Ethnicity _____

4. Marital Status _____

5. Are you currently receiving any type of treatment for anxiety including the use of medication?

6. Are you currently receiving any type of treatment for depression including the use of medication?

7. a) Have you ever been in an automobile accident?

   b) If so, how many accidents have you been in?

   c) How long ago did the most recent accident occur?

   d) Were you or anyone else involved in the accident injured?

   e) How serious were these injuries?

8. Have any of your family members or close friends died or been seriously injured in an automobile accident?

Subject Number: _____

APPENDIX D

Subject Number: _____ Experimenter: _____ Date: _____

Current Drinking Patterns Questionnaire

Please circle the response that best describes your current drinking patterns.

1. How often, on the average, do you have a beer?

    Every day
    At least once a week but not every day
    At least once a month but less often than once a week
    More than once a year but less than once a month
    Once a year or less
    Never (go to question 3)

2. When you drink beer, how much, one average, do you usually drink at any one time?

    More than one six pack (6 or more cans or tavern glasses)
    5 or 6 cans of beer or tavern glasses
    3 or 4 cans of beer or tavern glasses
    1 or 2 cans of beer or tavern glasses
    Less than 1 can of beer or tavern glass

3. How often do you usually have wine?

    Every day
    At least once a week but not every day
    At least once a month but less often than once a week
    More than once a year but less than once a month
    Once a year or less
    Never (go to question 5)

4. When you drink wine, how much, on the average, do you usually drink at any one time?

    Over 6 wine glasses
    5 or 6 wine glasses
    3 or 4 wine glasses
    1 or 2 wine glasses
    less than 1 glass of wine

5. How often do you usually have a drink of liquor (whiskey, gin, vodka, mixed drinks, etc.)?

Every day
At least once a week but not every day
At least once a month but less often than once a week
More than once a year but less than once a month
Once a year or less
Never (Skip question 6)

6. When you drink liquor, how many drinks, on the average, do you usually drink at any one time?

Over 6 drinks
5 or 6 drinks
3 or 4 drinks
1 or 2 drinks
Less than 1 drink

APPENDIX E

Brief MAST

1. Do you feel you are a normal drinker?

   YES NO

2. Do friends or relatives think you are a normal drinker?

   YES NO

3. Have you ever attended a meeting of Alcoholics Anonymous?

   YES NO

4. Have you ever lost friends or girlfriends/boyfriends because of your drinking?

   YES NO

5. Have you ever gotten into trouble at work because of your drinking?

   YES NO

6. Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because you were drinking?

   YES NO

7. Have you ever had delirium tremens (DTs), severe shaking, after heavy drinking?

   YES NO

8. Have you ever gone to anyone for help about your drinking?

   YES NO

9. Have you ever been in a hospital because of your drinking?

   YES NO

10. Have you ever been arrested for drunk driving or driving after drinking?

    YES NO

APPENDIX F

Attitudes on Drinking and Driving Scale (ADDS)
Driving Attitudes Scale

Circle only one response for each item and do not skip any items.

1. I believe it is okay to drink and drive if you had only one drink with a meal.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

2. I believe it is okay to drink and drive if you had a few drinks, but you are the most sober person in the car.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

3. I believe it is okay to drink and drive if your blood-alcohol content is in the legal range.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

4. I believe it is okay to drink and drive if everyone in the car is wearing a seatbelt.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

5. I believe it is okay to drink and drive if it is a short distance to your house.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

6. I believe it is okay to drink and drive if nobody else is in the car.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

7. I believe it is okay to drink and drive if it is an unplanned emergency.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

8. I believe it is okay to drink and drive if you had a few drinks, but you feel sober.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

9. I believe it is okay to drink and drive if it is daytime.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

10. I believe it is okay to drink and drive if you are not an alcoholic.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

11. I believe it is okay to drink and drive if there is no other way to get home.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

12. I believe it is okay to drink and drive if I am just the passenger.

Disagree *Somewhat Disagree* *Unsure* *Somewhat Agree* *Agree*

When answering the following questions, the word "drink" stands for one beer, one glass of wine, or one drink of liquor. Even if you don't drink much now, answer these questions as if you may drink more in the future.

13. How likely are you to drive a **short** distance *(a few blocks to a mile)* after having…

…one drink?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…two drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…3-4 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…5-6 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…over 6 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

14. How likely are you to drive a <u>medium distance (about 10 miles)</u> after having…

…one drink?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…two drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…3-4 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…5-6 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…over 6 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

15. How likely are you to drive a <u>long distance (over 20 miles)</u> after having…

…one drink?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…two drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…3-4 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

…5-6 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

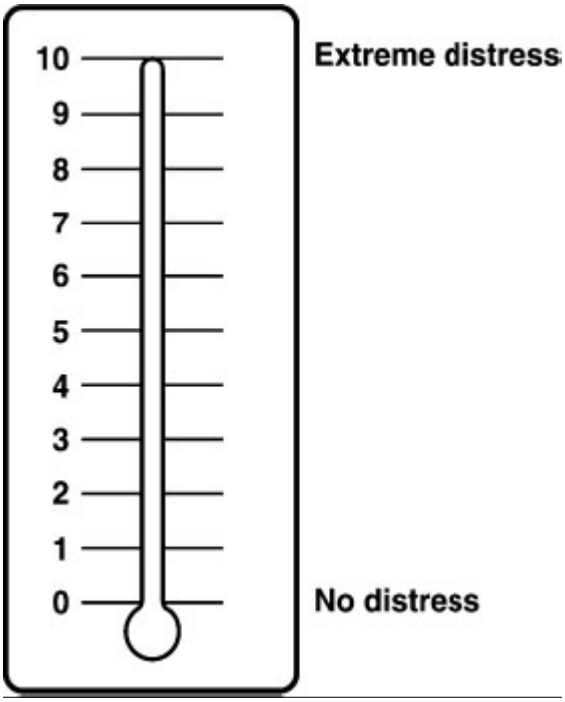
…over 6 drinks?
Very Unlikely *Unlikely* *Somewhat Likely* *Very Likely*

APPENDIX G

Subject Number _____ Experimenter_____ Date _____

Distress Thermometer

Please circle the number (0-10) that best describes how much distress you are currently experiencing.



APPENDIX H

SELF-EVALUATION QUESTIONNAIRE

Developed by C.D. Spielberger, R.L. Gorsuch and R. Lushene

STAI FORM X-1

NAME _____ DATE_____

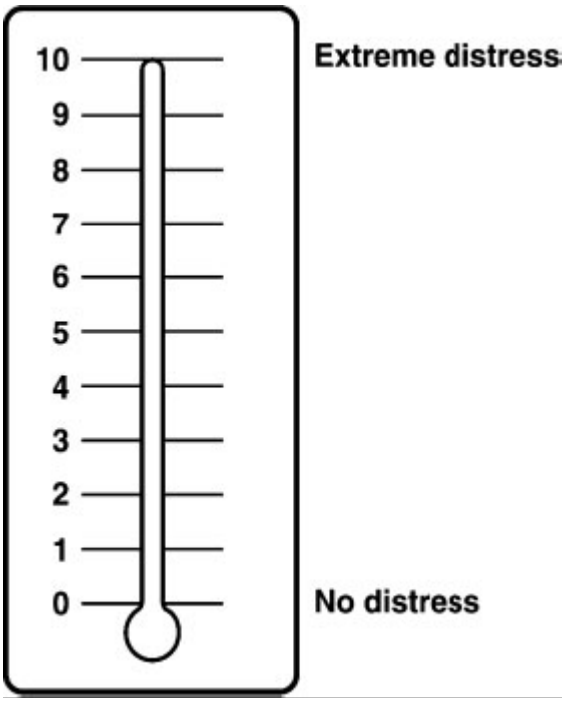
DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm…….. …….	○	○	○	○
2. I feel secure…….…….	⊙	○	○	○
3. I am tense…….……	○	○	○	○
4. I am regretful……...……..	○	○	○	○
5. I feel at ease…….…….……	○	○	○	○
6. I feel upset……..…….…….	○	○	○	○
7. I am presently worrying over possible misfortunes……..…….…..……	○	○	○	○
8. I feel rested…….…….…….……	○	○	○	○
9. I feel anxious……...…….…….	○	○	○	○
10. I feel comfortable…….……...…….	○	○	○	○
11. I feel self-confident……...……	○	○	○	○
12. I feel nervous……	○	○	○	○
13. I am jittery …….……..	○	○	○	○
14. I feel “high strung”…….……..	○	○	○	○
15. I am relaxed……..…	○	○	○	○
16. I feel content…….	○	○	○	○
17. I am worried……	○	○	○	○
18. I feel over-excited and “rattled”…….……	○	○	○	○
19. I feel joyful……..	○	○	○	○
20. I feel pleasant……..	○	○	○	○

APPENDIX I

Please describe the most distressing image that you viewed in the film and indicate why you considered this image to be distressing.

Please rate the level of distress that is produced by this image on the following scale:



APPENDIX J

Subject Number _____ Experimenter _____ Date _____

Informational Questionnaire

1. Alcohol-related traffic deaths rose between 2004 and 2005 in how many states?

   A. 12
   B. 20
   C. 25
   D. 47

2. What percentage of traffic deaths in 2005 involved alcohol?

   A. 22%
   B. 39%
   C. 52%
   D. 69%

3. How many people were killed in alcohol-related crashes in 1997?

   A. 11,491
   B. 14,112
   C. 16,711
   D. 20.411

4. How many people were killed in alcohol-related crashes in 2005?

   A. 11,643
   B. 13,568
   C. 16,885
   D. 21,558

5. Which of the following statements best describes the frequency of alcohol-related fatalities in the past 10 years?

   A. Alcohol-related fatalities have decreased drastically within the past 10 years
   B. Alcohol-related fatalities have increased drastically within the past 10 years
   C. Alcohol-related fatalities have increased slightly within the past 10 years
   D. Alcohol-related fatalities have changed little in the past 10 years

APPENDIX K

Intrusions Diary

For the next week, please record any thoughts that you may have about the film that you viewed today. For each thought that you have, you will record the date on which the thought occurred, the level of distress that you felt on a scale of 1-10 during the thought, and a description of the thought.

Date	Distress (0-10)	Description of Thought

APPENDIX L

Subject Number _____ Experimenter _____ Date_____

MEMORY QUESTIONNAIRE

The following questions relate to the ways in which people might describe memories of the film. Please rate the extent to which these statements apply to your memories of the film by circling the appropriate number. If the statement is not true for you, please circle 'not at all.' There are no right and no wrong answers to these questions.

	SINCE VIEWING THE FILM…	Not at all	A little	Moderately	Strongly	Very strongly
1.	I feel that my memory for the information presented in the film is incomplete	0	1	2	3	4
2.	My memory of the film is muddled	0	1	2	3	4
3.	Many different things trigger memories of the film	0	1	2	3	4
4.	I experience feelings similar to those I had during the film even when I am not thinking of it	0	1	2	3	4
5.	I am reminded of the film for no apparent reason	0	1	2	3	4
6.	I find myself unexpectedly remembering the film	0	1	2	3	4
7.	My memories of the film consist of vivid images	0	1	2	3	4
8.	I experience strong emotions when remembering the film	0	1	2	3	4
9.	The feelings I had during the film keep coming back to me	0	1	2	3	4
10.	When I remember the film it is like it is happening again, here and now	0	1	2	3	4

APPENDIX M

Subject Number _____ Experimenter _____ Date _____

Impact of Event Scale

Please rate the extent to which these statements apply to your memories of the film during the past week by circling the appropriate number. If the statement is not true for you, please circle 'not at all.' There are no right and no wrong answers to these questions.

		Not at all	Rarely	Sometimes	Often
*1.	I thought about it when I didn't mean to	0	1	2	3
**2.	I avoided letting myself get upset when I thought about it or was reminded of it	0	1	2	3
**3.	I tried to remove it from memory	0	1	2	3
*4.	I had trouble falling asleep or staying asleep because of pictures or thoughts about it that came into my mind	0	1	2	3
*5.	I had waves of strong feelings about it	0	1	2	3
*6.	I had dreams about it	0	1	2	3
**7.	I stayed away from reminders of it	0	1	2	3
**8.	I tried not to talk about it	0	1	2	3
*9.	Pictures about it popped into my mind	0	1	2	3
*10.	Other things kept making me think about it	0	1	2	3
**11.	I was aware that I still had a lot of feelings about it, but I didn't deal with them	0	1	2	3
**12.	I tried not to think about it	0	1	2	3
*13.	Any reminder brought back feelings about it	0	1	2	3
**14.	My feelings about it were kind of numb	0	1	2	3

* Intrusive subscale item
** Avoidance subscale item

APPENDIX N

Distraction Task

DIRECTIONS: This passage is followed by several questions. After reading the passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passage as often as necessary.

PROSE FICTION: This passage is adapted from Elizabeth Bishop's short story "The Housekeeper" (©1984 by Alice Methfessel).

Outside, the rain continued to run down the screened windows of Mrs. Sennett's little Cape Cod cottage. The long weeds and grass that composed the front yard dripped against the blurred background of the bay, where the water was almost the color of the grass. Mrs. Sennett's five charges were vigorously playing house in the dining room. (In the wintertime, Mrs. Sennett was housekeeper for a Mr. Curley, in Boston, and during the summers the Curley children boarded with her on the Cape.)

My expression must have changed. "Are those children making too much noise?" Mrs. Sennett demanded, a sort of wave going over her that might mark the beginning of her getting up out of her chair. I shook my head no, and gave her a little push on the shoulder to keep her seated. Mrs. Sennett was almost stone-deaf and had been for a long time, but she could read lips. You could talk to her without making any sound yourself, if you wanted to, and she more than kept up her side of the conversation in a loud, rusty voice that dropped weirdly every now and then into a whisper. She adored talking.

To look at Mrs. Sennett made me think of eighteenth-century England and its literary figures. Her hair must have been sadly thin, because she always wore, indoors and out, either a hat or a sort of turban, and sometimes she wore both. The rims of her eyes were dark; she looked very ill.

Mrs. Sennett and I continued talking. She said she

really didn't think she'd stay with the children another winter. Their father wanted her to, but it was too much for her. She wanted to stay right here in the cottage.

The afternoon was getting along, and I finally left because I knew that at four o'clock Mrs. Sennett's "sit down" was over and she started to get supper. At six o'clock, from my nearby cottage, I saw Theresa coming through the rain with a shawl over her head. She was bringing me a six-inch-square piece of spicecake, still hot from the oven and kept warm between two soup plates.

A few days later I learned from the twins, who brought over gifts of firewood and blackberries, that their father was coming the next morning, bringing their aunt and her husband and their cousin. Mrs. Sennett had promised to take them all on a picnic at the pond some pleasant day.

On the fourth day of their visit, Xavier arrived with a note. It was from Mrs. Sennett, written in blue ink, in a large, serene, ornamented hand, on linen-finish paper:

. . . Tomorrow is the last day Mr. Curley has and the Children all wanted the Picnic so much. The Men can walk to the Pond but it is too far for the Children. I see your Friend has a car and I hate to ask this but could you possibly drive us to the Pond tomorrow morning? . . .

Very sincerely yours,

Carmen Sennett

After the picnic, Mrs. Sennett's presents to me were numberless. It was almost time for the children to go back to school in South Boston. Mrs. Sennett insisted that she was not going; their father was coming down again to get them and she was just going to stay. He would have to get another housekeeper. She said this over and over to me, loudly, and her turbans and kerchiefs grew more and more distrait.

One evening, Mary came to call on me and we sat

on an old table in the back yard to watch the sunset.

"Papa came today," she said, "and we've got to go back day after tomorrow."

"Is Mrs. Sennett going to stay here?"

"She said at supper she was. She said this time she really was, because she'd said that last year and came back, but now she means it."

I said, "Oh dear," scarcely knowing which side I was on.

"It was awful at supper. I cried and cried."

"Did Theresa cry?"

"Oh, we all cried. Papa cried, too. We always do."

"But don't you think Mrs. Sennett needs a rest?"

"Yes, but I think she'll come, though. Papa told her he'd cry every single night at supper if she didn't, and then we all *did*."

The next day I heard that Mrs. Sennett was going back with them just to "help settle." She came over the following morning to say goodbye, supported by all five children. She was wearing her traveling hat of black satin and black straw, with sequins. High and somber, above her ravaged face, it had quite a Spanish-grandee air.

"This isn't really goodbye," she said. "I'll be back as soon as I get these bad, noisy children off my hands."

But the children hung on to her skirt and tugged at her sleeves, shaking their heads frantically, silently saying, *"No! No! No!"* to her with their puckered-up mouths.

1. According to the narrator, Mrs. Sennett wears a hat because she:

A. is often outside.
B. wants to look like a literary figure.
C. has thin hair.
D. has unique taste in clothing.

2. Considering the events of the entire passage, it is most reasonable to infer that Mrs. Sennett calls the children bad (line 92) because she:

F. is bothered by the noise they are making.
G. doesn't like them hanging on her skirt.
H. doesn't want to reveal her affection for them.
J. is angry that they never do what she tells them.

3. Considering how Mrs. Sennett is portrayed in the passage, it is most reasonable to infer that the word *ravaged*, as it is used in line 89, most nearly means that her face reveals:

A. irritation and annoyance.
B. resentfulness and anger.
C. age and fatigue.
D. enthusiasm and excitement.

4. What is the main insight suggested by the conversation in lines 69--83?

F. The Curley family cries to manipulate Mrs. Sennett into doing what they want.
G. The narrator regrets that she is not going to Boston and is a little jealous of Mrs. Sennett.
H. Mrs. Sennett is happy to leave the Curley family because they are always whining and crying.
J. Mrs. Sennett intends to return to the Cape soon because she has discovered that they have been manipulating and taking advantage of her.

5. It is reasonable to infer from the passage that Mrs. Sennett asked "Are those children making too much noise?" (lines 11--12) because Mrs. Sennett:

A. concerns herself about the well-being of others.
B. wishes to change the subject to literary figures.
C. cannot supervise the children without the narrator.
D. is bothered by the noise the children make.

6. The details and events in the passage suggest that the friendship between the narrator and Mrs. Sennett would most accurately be described as:

F. stimulating, marked by a shared love of eccentric adventures.
G. indifferent, marked by occasional insensitivity to the needs of the other.
H. considerate, notable for the friends' exchange of favors.
J. emotional, based on the friends' long commitment to share their burdens with one another.

7. As it is used in line 3, the word *composed* most nearly means:

A. contented.
B. unexcited.
C. satisfied.
D. constituted.

8. Which of the following does the passage suggest is the result of Mrs. Sennett's loss of hearing?

A. She is often frustrated and short-tempered.
B. She can lip-read.
C. She dislikes conversation.
D. She is a shy and lonely woman.

9. Given the evidence provided throughout the passage, the children probably silently mouth the word "no" (lines 94--97) because:

F. Mrs. Sennett has just called them bad, noisy children, and they are defending themselves.
G. they do not want to leave the Cape before the summer is over and are protesting.
H. they are letting the narrator know that Mrs. Sennett is thinking about returning to the Cape.
J. they are continuing their battle against Mrs. Sennett's intention to return to the Cape.

10. At what point does Mr. Curley cry at the supper table?

F. Before Mary and the narrator sit and watch the sunset
G. Before Mrs. Sennett tells the narrator she doubts she will stay another winter with the children
H. Before the children spend a rainy afternoon playing house in the dining room
J. After the narrator learns that Mrs. Sennett will return to Boston

DIRECTIONS: This passage is followed by several questions. After reading the passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passage as often as necessary.

SOCIAL SCIENCE: This passage is adapted from Leonard W. Levy's *Origins of the Fifth Amendment: The Right Against Self Incrimination.* (©1968 by Clio Enterprises Inc.).

Community courts and community justice prevailed in England at the time of the Norman Conquest [1066]. The legal system was ritualistic, dependent upon oaths at most stages of litigation, and permeated by both religious and superstitious notions. The proceedings were oral, very personal, and highly confrontative. Juries were unknown. One party publicly "appealed," or accused, the other before the community meeting at which the presence of both was obligatory. To be absent meant risking fines and outlawry. After the preliminary statements of the parties, the court rendered judgment, not on the merits of the issue nor the

question of guilt or innocence, but on the manner by which it should be resolved. Judgment in other words preceded trial because it was a decision on what form the trial should take. It might be by compurgation, by ordeal, or, after the Norman Conquest, by battle. Excepting trial by battle, only one party was tried or, more accurately, was put to his "proof." Proof being regarded as an advantage, it was usually awarded to the accused party; in effect he had the privilege of proving his own case.

Trial by compurgation consisted of a sworn statement to the truth of one's claim or denial, supported by the oaths of a certain number of fellow swearers. Presumably they, no more than the claimant, would endanger their immortal souls by the sacrilege of false swearing. Originally the oath-helpers swore from their own knowledge to the truth of the party's claim. Later they became little more than character witnesses, swearing only to their belief that his oath was trustworthy. If he rounded up the requisite number of compurgators and the cumbrous swearing in very exact form proceeded without a mistake, he won his case. A mistake "burst" the oath, proving guilt.

Ordeals were usually reserved for more serious crimes, for persons of bad reputation, for peasants, or for those caught with stolen goods. As an invocation of immediate divine judgment, ordeals were consecrated by the Church and shrouded with solemn religious mystery. The accused underwent a physical trial in which he called upon God to witness his innocence by putting a miraculous sign upon his body. Cold water, boiling water, and hot iron were the principal ordeals, all of which the clergy administered. In the ordeal of cold water, the accused was trussed up and cast into a pool to see whether he would sink or float. On the theory that water which had been sanctified by a priest would receive an innocent person but reject the guilty, innocence was proved by sinking--and hopefully a quick retrieval--guilt by floating. In the other ordeals, one had to plunge his hand into a cauldron of boiling water or carry a red hot piece of iron for a certain distance, in the hope that three days later, when the bandages were removed, the priest would find a "clean" wound, one that was healing free of infection. How deeply one

plunged his arm into the water, how heavy the iron or great the distance it was carried, depended mainly on the gravity of the charge.

The Normans brought to England still another ordeal, trial by battle, paradigm of the adversary system, which gave to the legal concept of "defense" or "defendant" a physical meaning. Trial by battle was a savage yet sacred method of proof which was also thought to involve divine intercession on behalf of the righteous. Rather than let a wrongdoer triumph, God would presumably strengthen the arms of the party who had sworn truly to the justice of his cause. Right, not might, would therefore conquer. Trial by battle was originally available for the settlement of all disputes but eventually was restricted to cases of serious crime.

Whether one proved his case by compurgation, ordeal, or battle, the method was accusatory in character. There was always a definite and known accuser, some private person who brought formal suit and openly confronted his antagonist. There was never any secrecy in the proceedings, which were the same for criminal as for civil litigation. The judges, who had no role whatever in the making of the verdict, decided only which party should be put to proof and what its form should be; thereafter the judges merely enforced an observance of the rules. The oaths that saturated the proceedings called upon God to witness to the truth of the respective claims of the parties, or the justice of their cause, or the reliability of their word. No one gave testimonial evidence nor was anyone questioned to test his veracity.

1. According to the passage, being put to the proof (lines 18-19) most nearly means the person was:

A. considered innocent until proven guilty.
B. considered guilty no matter what he did.
C. supposed to prove his own innocence.
D. given the privilege of presenting his side first.

2. In a trial by ordeal, innocence could be proven by:

F. displaying an uninfected wound.
G. floating when cast into the water.
H. wearing bandages for three days.
J. swearing an oath in a precise form.

3. The forms of trial discussed in the passage all assume that truth is best determined by:

A. carefully questioning witnesses.
B. carefully assessing physical evidence.
C. an adversary proceeding, or battle.
D. relying on the assistance of God.

4. The medieval trials discussed in the passage used judges to:

F. decide what form the trial should take.
G. determine whether to use criminal or civil procedure.
H. determine which of the witnesses were telling the truth.
J. determine the guilt or innocence of the parties.

5. Which of the following factors did all the trials discussed have in common?

I. A definite and known accuser
II. Secrecy
III. Oaths and invocations of divine assistance

A. I only
B. II only
C. I and II only
D. I and III only

6. According to the passage, an oath was declared "burst" during compurgation if the:

F. swearer made an error in the exact form of the required ritual.
G. swearer could not round up the required number of oath-helpers.
H. swearer preferred trial by ordeal, or by battle.
J. judges decided that the oath was false or unnecessary.

7. Trial by compurgation was usually selected when:

I. there were no oath-helpers available.
II. the crime was not too serious.
III. the person was a peasant or had a bad reputation.

A. I only
B. II only
C. III only
D. I and III only

8. According to the passage, a medieval trial was always begun by an accusation by:

F. a clergyman.
G. God.
H. a private person.
J. the person who had been put to his proof.

9. According to the passage, how did trial by battle *differ* from trial by compurgation and ordeal in England?

A. It had a definite, known accuser.
B. It was only used after the Norman Conquest.
C. It had no secrecy in the proceedings.
D. It required judges to question witnesses.

10. As it is used in line 33, the word *cumbrous* most nearly means:

F. comfortable.
G. untruthful.
H. mistaken.
J. burdensome.

DIRECTIONS: The passage in this test is followed by several questions. After reading the passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passage as often as necessary.

HUMANITIES: This passage is adapted from the article "Japan's Tansu: Cabinetry of the 18th and 19th Centuries" by Rosy Clarke (©1985 by W.R.C. Smith Publishing Company).

The Japanese, always pressed for room on their island empire, have long been masters at utilizing space. This is especially evident in the native handmade Japanese cabinetry known as *tansu*, produced from about 1750 to 1900. A prolific range of wooden tansu was created for a variety of needs, and a diverse group of pieces emerged, ranging from small, portable medicine chests to giant trunks on wheels.

Prior to Japan's Edo Period (1603-1867), ownership of furniture was limited to the nobility. Primarily, these were black-and-gold lacquered pieces of Chinese inspiration. But with the demise of Japan's feudal society and the rise of a moneyed merchant class by the mid-Edo Period, furniture in Japan took on its own personality, as craftsmen enjoyed the freedom to create original designs that combined function and beauty. Today, examples of these skillfully constructed chests tell us much about the lifestyle and accoutrements of people during the Edo Period and the Meiji Era (1868-1912).

The greatest demand was for clothing and merchants' chests; within these two categories, hundreds of stylistic variations occurred. Most clothing tansu were constructed with four long drawers for kimono storage and a small door compartment that opened to two or three tiny drawers for personal items. The chests were usually built in two pieces that stacked, a design that allowed for easy portability. A favorite wood used to build clothing tansu was paulownia, noted for its light weight and subtle, natural sheen. In the Edo Period, it was customary for Japanese fathers to plant a paulownia tree when a daughter was born. When she married, the tree was cut down and made into a trousseau chest.

Merchants' chests, used to store documents, writing brushes, inkstones and money, were usually constructed of thick zelkova or chestnut. Unlike clothing tansu, which were kept inside a sliding door closet in a home, a merchant's chest was in full view of customers. Thus, shop tansu was an important indicator of a shopkeeper's prosperity.

Some styles were surprisingly large, an example being the staircase tansu. Japanese homes and shops were often built with lofts, and for easy access from the ground floor, a freestanding staircase was designed by clever craftsmen who incorporated compartments and drawers throughout for maximum utility. Around six feet high, most staircase chests were made in two sections that stacked, though many one-piece chests were also produced. Because of the great amount of wood

needed to build a staircase tansu, steps, risers and case were made of softwood, and hardwood was used for doors and drawer fronts.

Many households, especially rural homes, kept large kitchen tansu to store food and crockery. The wood of these practical kitchen chests was rarely finished, and those in original condition show a lovely natural patina developed from years of exposure to the smoke and heat of the cooking area. Kitchen tansu were designed strictly for utility with sliding door compartments, inner shelves and numerous small drawers. Like staircase tansu, they display a minimum of ironwork and rarely show locking drawers or doors.

After 1900, modern techniques replaced the original handcrafted construction methods. Sand-cast iron handles, for example, are common on furniture made from about 1890 to 1920. Traditional designs--dragons, cherry blossoms and mythical personalities--that were once etched by hand onto lock plates became simplified as machine-pressed patterns appeared. Thick pieces of wood originally used became thinner around 1900, when improved wood planing techniques resulted in mass-produced tansu of diminished quality. And the amazing range of handproduced, naturally pigmented lacquer finishes that hallmarked earlier tansu all but disappeared by about 1920. With rapid industrialization at hand, many of Japan's artisans abandoned their traditional crafts.

Appreciated today for their beauty, simplicity and functionality, tansu are now showing up in homes in America and Europe. But relatively few exceptional examples of the thousands produced now remain. Those pieces available document a special part of Japanese history and culture as well as the remarkable sense of space and design of Japan's unknown craftsmen.

1. The author states that the result of mass production techniques on the tansu was:

A. diminished quality.
B. thicker pieces of wood.
C. renewed popularity.
D. greater variety.

2. The passage states that although handmade tansu were designed and used for many purposes, most were:

F. fancy black-and-gold finished pieces.
G. kitchen cabinets.
H. clothing and merchants' chests.
J. staircase chests.

3. According to the passage, the original popularity of tansu resulted primarily from the:

A. desire to display clothing and other personal items.
B. need to make good use of space.
C. need to disguise a merchant's wealth.
D. desire to be different from the Chinese.

4. According to the passage, modern production methods caused which of the following changes in the tansu?

I. Sand-cast iron handles
II. Simplification of traditional designs
III. Thinner wood

F. II only
G. III only
H. I and II only
J. I, II, and III

5. The author claims that by studying examples of handcrafted Japanese tansu that are still available today, scholars can learn about which of the following?

I. How mass production first began in Japan
II. How Japanese industrialists developed shortcuts in building furniture
III. How the Japanese lived during the Edo Period and the Meiji Era

F. II only
G. III only
H. I and II only
J. I, II, and III

6. According to the account of tansu-making in the passage, improved wood-planing techniques resulted in:

A. a need to change the types of wood used.
B. the need to apply thicker wood finishes.
C. the use of thinner wood.
D. a renewed interest in black-and-gold lacquered finishes.

7. The passage suggests that the Japanese tansu had changed by the mid-Edo Period in which of the following ways?

F. It reflected increased creative freedom of the craftsmen.
G. It became a symbol of status and wealth for the nobility.
H. It became less important to the merchant class.
J. It became much larger.

8. As it is used in the passage, the word *patina* (line 58) most nearly means the:

A. design carved in the wood of the chests.
B. original finish applied to the chest.
C. destruction of the wood by smoke and heat.
D. surface appearance of the wood.

9. According to the passage, the Chinese influence on Japanese furniture-making is reflected in which of the following characteristics of some Japanese furniture?

I. The use of space
II. The black and gold lacquer
III. The use of paulownia wood

A. II only
B. III only
C. I and II only
D. I, II, and III

10. The passage indicates about tansu that they were:

I. used for aesthetic purposes only.
II. indicative of financial status.
III. hidden from view because they held important documents.

F. I only
G. II only
H. I and II only
J. II and III only

APPENDIX O

CBT Condition

It is completely normal to feel distress after viewing the emotion-arousing images included in the film that you viewed today. Therefore, this presentation is designed to help you manage or respond to any uncomfortable emotional reactions that you may continue to experience as a result of viewing the film presented in today's study. Research suggests that several strategies may be used in order to help manage the negative emotional reactions that may result from exposure to unpleasant material or experiences. First, we will focus on guided imagery as a way to help calm and relax your body, thoughts, and emotions. Then, we will discuss both mental distraction (such as a puzzle that requires concentration) and physical distraction (such as exercise) as ways to manage distressing thoughts, images, or emotions. We will also discuss scheduling worry time every day as a strategy to manage any lingering worry that you may experience as a result of viewing the film.

Guided Imagery

Let's shift our focus now to the first technique mentioned earlier involving guided imagery. Guided imagery exercises help calm your body, thoughts, and emotions. It gives you the opportunity to take a break from any distress that you may be experiencing. Guided imagery uses all of your senses to create a relaxing place, perhaps a meadow, a walk through the woods, along the beach, or perhaps a special place from your memory.

Let's take a few moments to practice guided imagery. Take a moment to find a comfortable position in your chair. Close your eyes, as you scan your body for any tension. If you find tension, release it. Let it go and relax. Relax your head and your face…. Relax your

shoulders…. Relax your arms and hands…. Relax your chest and lungs…. Relax your back…. Relax your stomach…. Relax your hips, legs, and feet….

Experience a peaceful, pleasant, and comfortable feeling of relaxation as you prepare to make an imaginary trip to a beautiful place. Take a deep breath and breathe out slowly and easily. Take a second deep breath, and slowly breathe out. Allow your breathing to become smooth and rhythmic.

Picture yourself on a mountaintop. It has just rained and a warm wind is carrying the clouds away. The sky is clear and blue, and the sun is shining down. Below you are the beautiful green trees. You enjoy the fragrance of the forest after the rain. In the distance you can see a beautiful, white, sandy beach. Beyond that, as far as you can see, is a crystal clear, brilliant blue water. A fluffy cloud drifts in the gentle breeze until it is right over you. Slowly, this little cloud begins to sink down on you. You experience a very pleasant, delightful feeling. As the fluffy cloud moves down across your face, you feel the cool, moist touch of it on your face. As it moves down your body, all of the tension slips away, and you find yourself completely relaxed and happy.

As the soft cloud moves across your body, it gently brings a feeling of total comfort and peace. As it sinks down around you, it brings a feeling of deep relaxation. The little cloud sinks underneath you, and you are now floating on it. The cloud holds you up perfectly and safely. You feel secure. The little cloud begins to move slowly downward and from your secure position on it, you can see the beautiful forest leading down to the beach. There is a gentle rocking motion as you drift along. You feel no cares or concerns in the world, but are focused completely on the relaxed feeling you experience. The cloud can take you any place you want to go, and you choose to go to the beach. As you move to the beach, the cloud gently comes to the ground and

stops. You get off the soft cloud onto the beach, and you are at peace. You take some time to look around at the white sandy beach, and the beautiful blue water. You can hear sea gulls and the roar of the waves. As you feel the sun shining on you, you can smell the ocean air. It smells good. As you walk slowly on the beach, you enjoy the feelings of the warm, clean sand on your feet. Just ahead on the beach is a soft blanket and pillow. You lie down and enjoy the feeling of the soft material on the back of your legs and arms. As you listen to the waves and the sea gulls and feel the warmth of the sun through the cool breeze, you realize that you are comfortable, relaxed, and at peace, You feel especially happy because you realize that you can return to this special and beautiful place any time you want to go.

Feeling very relaxed, you choose to go back to the place where you started, knowing that you will take these peaceful and relaxed feelings with you. There is a stairway close by that leads you back to the room where you started. As you climb the five steps, you will become more aware of your surroundings, but you will feel relaxed and refreshed. You are at the bottom of the stairs now and begin climbing. You begin to move upward on step 1 to step 2. On step 2 to step 3, you are feeling relaxed and more aware. On step 3 to step 4, you are aware of what is around you, and your body is relaxed. On step 4 to step 5, your mind it alert and refreshed. Open your eyes and stretch gently if needed.

Distraction

Let's shift our focus now to the second technique mentioned earlier involving distraction. Some people find it helpful to distract themselves from distressing thoughts and images that occur as a result of emotional distress. Several types of distractions can be helpful. The first is mental distraction. You could focus your energy on a distracting task such as a puzzle that requires concentration and manipulation, such as a Rubik's Cube. When you are feeling

distressed, focus your energy on every detail of the game. This can interrupt the flow of distressing images into your mind. Other forms of distraction might include performing calculations in your head, balancing your checkbook, or engaging in some other mentally demanding task.

The second form of distraction is physical. When you feel distressed, strenuous exercise like swimming, jogging, aerobics, or speed walking might be helpful. Exercise can distract you and give you a sense of accomplishment and self-control when you are feeling distressed. As a result, you can begin to feel more calm and relaxed. Physical exertion is the natural outlet for the body when it is in the "fight or flight" state of arousal. Exercise returns your body to its normal equilibrium by releasing natural chemicals that build up during the stress response. In addition, exercising for 35-40 minutes daily has been found to be helpful in reducing body tension, improving sleep, creating a sense of well-being, increasing energy, and decreasing stress.

Scheduling Worry Time

Let's shift our focus now on the third technique mentioned earlier involving scheduling worry time as a strategy to manage worry. It is quite possible that, after viewing this film, you are thinking "Events are so unpredictable! What if this happens to me?" Although this statement is entirely true, a lot of people spend considerable energy each day asking "what if?" This type of worrying can easily consume you when you begin to question all of the events that might happen in your life. By learning to worry only at specific times, you can limit the impact of worry on your life.

Toward this end, set aside thirty minutes each day in which you will do nothing but worry. Be sure to actually schedule this thirty-minute "worry appointment" on your daily calendar to assure yourself the space and time to worry. Once your appointment is scheduled,

your commitment should be to worry only during your scheduled time. If you find yourself starting to worry at times other than your official worry appointment, remind yourself that you have an appointment to worry later in the day and let go of the subject. It's not always easy, but it usually helps reduce some of your anxiety. If it helps, you can make notes about what you are worried about and then refer to these notes during your allotted worry time. Be very rigid about the amount of time you've scheduled. Do not worry for more than thirty minutes a day.

As mentioned earlier, it is completely normal to experience distress after viewing the emotion-arousing images included in the film that you viewed today. This presentation was designed to help you manage any lingering distress that you may experience. If you begin to experience distress, you may use guided imagery as a strategy to help calm your body, thoughts, and emotions. It gives you the opportunity to take a break from any distress that you may be experiencing by allowing you to visualize a pleasant, relaxing environment in which you may experience a deep sense of peace and relaxation.

If you find yourself experiencing distressing thoughts and images related to emotional distress, it may be helpful to find a form of distraction from these events. Remember that you might want to use puzzles that require intense concentration to help distract yourself from these thoughts and images. You might also use exercise as a way to distract yourself as well as give you feelings of accomplishment.

If you find that you are worrying excessively about the possibility of experiencing unpleasant events, you may wish to schedule yourself a 30 minute "worry appointment" each day in which you allow yourself to push worries aside throughout the day until your worry appointment arrives each day. This may help reduce some of your anxiety and worry and allow you to focus on your daily activities without becoming consumed by worry.

This concludes the current presentation. You may remove your headphones and inform the experimenter that you have reached the conclusion of this presentation.

APPENDIX P

ACT Condition

Increasing research suggests that the more we struggle with and try to control unpleasant emotional states, the more intense they become. Although it is our natural inclination to avoid or prevent unpleasant emotional states, the attempt to do so may actually intensify these emotions. Therefore, this presentation is designed to provide you with alternative ways in which you may respond to unpleasant thoughts, images, or emotions that you may continue to experience as a result of viewing the film presented in today's study. First, we will practice a meditation exercise that will allow you to notice your bodily sensations, thoughts, and emotions without attempting to alter these experiences. Then, we will practice an exercise that will allow you to practice allowing distressing images to come and go without trying to evaluate or avoid them. Finally, we will present you with a metaphor that helps explain how attempts to control unwelcome thoughts and images can lead to difficulties.

Practicing Awareness of Your Experience

Let's first turn our attention to a meditation exercise that will allow you to practice awareness of your experience. Often the buzz of mental activity draws us in, and we become thoroughly caught up in it. Sometimes this is so thorough that we can become intensely insensitive to our moment-to-moment experience. The following meditation allows us to practice observing the buzz of mental activity without doing anything about it.

Before we start this exercise, assume a comfortable sitting position. Try to find a position where you are sitting straight and your shoulders are relaxed. Close your eyes and center yourself. Bring yourself to this room you are in, to this place and time. Visualize your physical location in the room. Become aware of your body, of the physical position of your arms and legs,

of your feet and hands. Notice the feeling of your body pressing against the chair, of the muscles around your eyes and jaw. Notice the feelings of your skin. Become aware of your breathing. Follow a breath as it comes in through your nose, travels through your lungs, moves your stomach in and out, and leaves in the opposite direction. Ride the waves of your breathing without attempting to alter it: just notice and pay attention as it happens. Now, do nothing but observe what comes up. Practice awareness.

As sensations emerge in your body, just watch them. As feelings emerge in your awareness, just notice them. As thoughts come into your awareness, just watch them. Watch them come, and watch them go. Don't grab at anything, and don't push anything away. If your mind wanders, if you find yourself getting angry or sad or imagining something you want to say to someone and slipping into fantasy, just notice that you have wandered off and bring yourself back to the sound of my voice. Notice how you get stuck in the content of your thoughts and start to fuse with them. Notice your analytical, judgmental mind. Just notice yourself getting sucked in and bring yourself back again, gently and without judgment. If you have judgments about how well or how poorly you are doing, just notice these too. Your "job" is simply to practice awareness. This means that if your mind wanders 100 times, then your job is to gently bring it back to this moment 100 times, starting with the present moment.

Allow yourself to deeply experience the present moment. Be deeply present with yourself. Even if you are having thoughts or feelings that you don't like, try not to push them away. Adopt an attitude of acceptance toward all parts of your experience: treat every experience gently, even if the experience itself is undesirable. Gently be present with yourself. When you are ready to do so, please open your eyes and reorient yourself to your surroundings.

Television Screen

Let's shift our focus now on the second technique mentioned earlier that will allow you to practice allowing distressing images to come and go without trying to evaluate or avoid them. Unpleasant or unnerving images often pop up again and again when we are faced with distressing material or experiences. When we become intimately connected with these mental images, they seem incredibly real, as if what we are imagining were actually taking place, here and now. Naturally, this can create a lot of fear, and these images can even scare us away from doing the things that we value. In the following exercise, we will recognize that images are nothing more than pictures and will practice allowing them to come and go without giving them very much attention at all. We will practice allowing them to occur without fighting them, without judging them, and without trying to avoid them.

First, bring an unpleasant image that you observed in the video to mind and notice how it's affecting you. Notice any thoughts or emotional reactions that you may be having in reaction to this image. Now imagine there's a small television screen across the room from you. Place your image on the television screen. Play around with the image: flip it upside down; turn it on its side; spin it around and around; stretch it sideways. If it's a moving video clip, play it in slow motion. Then play it backwards in slow motion. Then play it forwards at double speed. Then reverse it at double speed. Turn the color down so it's all in black and white. Turn the color and brightness up until it's ridiculously colorful (so the people have bright orange skin and the surroundings are hot pink).

Next, visualize the image in a variety of locations. Visualize your image on the t-shirt of a jogger (pause for 10 seconds). Visualize it painted on a canvas (pause for 10 seconds) or on a banner flying behind an airplane (pause for 10 seconds). Visualize it on a bumper sticker (pause for 10 seconds) or as a tattoo on someone's back (pause for 10 seconds).Visualize it on a poster

in a teenager's bedroom (pause for 10 seconds) or on a postage stamp (pause for 10 seconds). The purpose of this exercise is not to get rid of this image but to see it for what it is: a harmless picture.

Joe the Bum Metaphor

Let's shift our focus now to the third technique mentioned earlier involving a metaphor that helps explain how attempts to control unwelcome thoughts and images can lead to difficulties.

Imagine that you got a new house and you invited all the neighbors over to a housewarming party. Everyone in the whole neighborhood is invited – you even put up a sign at the supermarket. So all the neighbors show up, the party's going great, and here comes Joe the Bum, who lives behind the supermarket in the trash dumpster. He's stinky and smelly, and you think, "Oh no! Why did he show up?" But you did say on the sign, "Everyone's welcome." Can you see that it's possible for you to welcome him, and really, fully, do that without liking that he's here? You can welcome him even though you don't think well of him. You don't have to like him. You don't have to like the way he smells, or his lifestyle, or his clothing. You may be embarrassed about the way he's dipping into the punch or the finger sandwiches. Your opinion of him, your evaluation of him, is absolutely distinct from your willingness to have him as a guest in your home.

You could also decide that even though you said everyone was welcome, in reality Joe is not welcome. But as soon as you do that, the party changes. Now you have to be at the front of the house, guarding the door so he can't come back in. Or if you say, "Ok, you're welcome," but you don't really mean it, you only mean that he's welcome as long as he stays in the kitchen and doesn't mingle with the other guests, then you're going to have to be constantly making him do

that and your whole party will be guarding the bum. It's just not life enhancing. It's not much like a party. It's a lot of work. What the metaphor is about, of course, is all the feelings and memories and thoughts that show up that you don't like; they're just more bums at the door. The issue is the posture you take in regard to your own stuff. Are the bums welcome? Can you choose to welcome them in, even though you don't like the fact that they came? If not, what's the party going to be like?

As noted earlier, increasing research suggests that the more we struggle with and try to control unpleasant emotional states, the more intense they become. Therefore, attempting to avoid or prevent unpleasant emotional states may actually intensify these negative emotions. This presentation was designed to provide you with alternative ways in which you may respond to unpleasant thoughts, images, or emotions that you may experience as a result of viewing the film presented in today's study. If you begin to experience distress, you may practice a mindfulness exercise in which you become aware of your bodily sensations, thoughts, and emotions without judging them or attempting to alter them. This will allow you to become more sensitive to your moment-to-moment experiences.

If you find yourself experiencing distressing thoughts and images, you may want to practice allowing these images to come and go without attempting to alter them. In doing so, you may wish to practice the exercise that we discussed earlier in which you place these images on a television screen and distort the images. You may also take the images and imagine them in unusual places, such as a tattoo on an individual's back or as a poster in a teenager's bedroom. These exercises are not designed to get rid of this image but to simply notice them as what they are: harmless images.

If you find yourself struggling with desires to control the unpleasant thoughts an images that you are experiencing, recall the metaphor involving Joe the Bum. Can you allow these thoughts and images in without necessarily liking them? And if you refuse to allow these experiences in, are you willing to be on guard for their return while other positive experiences in life are simply passing you by?

This concludes the current presentation. You may remove your headphones and inform the experimenter that you have reached the conclusion of this presentation.

APPENDIX Q

Manipulation Check

Subject Number _____ Experimenter_____ Date _____

1. What is your understanding of what you could do in response to any distress that you experience related to the film that you viewed today?

*A. Practice relaxation exercises and/or engage in activities that would provide distraction from distressing thoughts, images, or emotions
B. Try to ignore distressing thoughts, images, or emotions associated with the film
**C. Notice any distressing thoughts, images, or emotions associated with the film without attempting to alter or avoid these responses
D. Try not to discuss any thoughts, images, or emotions associated with the film with friends or family members in order to prevent these responses from occurring

2. Which of the following activities could you perform in response to any distress that you experience related to the film that you viewed today?

**A. Practice a meditation exercise in which distressing thoughts, images, and emotions are allowed to come and go without attempting to alter or avoid these responses
*B. Practice a relaxation exercise in which you imagine yourself in a pleasant, relaxing place as a way to minimize any distress that you may be experiencing
C. Try to ignore distressing responses associated with the film
D. Prevent distress by avoiding any discussion of any distressing thoughts, images, or emotions with friends or family members

3. Which of the following activities could you perform in response to any distressing thoughts or images that you experience related to the film that you viewed today?

A. Try to ignore distressing thoughts or images associated with the film
**B. Notice these distressing thoughts or images without attempting to evaluate or avoid them
*C. Engage in distracting activities, such as focusing your energy on physical exercise or puzzles that require concentration
D. Prevent distressing thoughts and images from occurring by avoiding discussing these responses with friends or family members

4. Which of the following activities could you perform if you find yourself worrying excessively about the content of the film that you viewed today?

A. Prevent future worrying by avoiding discussing these responses with friends or family members

B. Try not to worry about the content of the film by ignoring any distressing emotions that you experience in relation to the film.

*C. Schedule a 30 minute "worry appointment" in which you will commit to worry only during your scheduled worry time

**D. Recall that you are able to allow worries to come and go without attempting to control these responses

* CBT consistent response
** ACT consistent response

APPENDIX R

Funnel Debriefing Form

Subject Number _____ Experimenter _____ Date _____

Instructions: Please answer each of the following questions as honestly as possible.

1. What is your understanding of the purpose of this study?

2. Did anything about this study seem strange to you or was there anything you were wondering about?

3. What is your understanding of why you were asked to watch the film presented in this study?

4. What is your understanding of why you were asked to participate in the activity that followed the film?

APPENDIX S

Subject Number _____ Experimenter _____ Date _____

Postfunnel Debriefing Interview Questions

1. How effective do you think the study was in (participant's response to # 1 on the funnel debriefing form)?

2. **If participant responded affirmatively to # 2 on the funnel debriefing form:** Why did (participant's response to # 2 on the funnel debriefing form) seem strange? Why were you wondering about (participant's response to # 2 on the funnel debriefing form)?

3. How effective do you think the film was in (participant's response to # 3 on the funnel debriefing form)?

4. How effective do you think the activity that followed the film was in (participant's response to # 4 on the funnel debriefing form)?

APPENDIX T

DEBRIEFING STATEMENT

Thank you for participating in this research project. It is our hope that your participation may help us better understand individual differences in the ways in which unpleasant emotions may lead to changes in attitudes toward drinking and driving and other maladaptive behaviors. We are also interested in examining whether the use of techniques designed to alleviate negative emotional states may interfere with changes in attitudes. We are encouraged that this information many provide some valuable insights into changing attitudes toward this and other maladaptive behaviors. This additional knowledge, for example, may help us prevent death and injuries resulting from drunk driving.

The film that you viewed in the present study was designed to produce a change in attitude toward drinking and driving by eliciting a strong emotional reaction. If we can understand the impact of this film and corresponding emotional reaction on changes in your attitudes, we are hopeful that this would help us better understand the emotional and cognitive components of attitude change so that we might use this information to help change attitudes towards a wide variety of maladaptive behaviors.

Out intent is to have a number of students participate in this project before it is completed. Unfortunately, for this reason, we are unable to summarize what its ultimate findings are or will be at this time. However, once the results of this project are finalized, we would be happy to share them with you. If interested, please provide us with a way of contacting you and we will do so once this project has been completed and its findings analyzed. In the interim, any questions or comments you might have about this project can be directed to its co-investigator, Stacy Barner, or its principal investigator, Dr. Robert Zettle of the Department of Psychology. Ms. Barner can be contacted in her campus office (439 Jabara Hall), and also via phone (316-978-3694) or e-mail (slbarner@wichita.edu). Dr. Zettle can be contacted in his campus office (411 Jabara Hall), and also via phone (978-3081), e-mail (robert.zettle@wichita.edu), or fax (316-978-3086).

Thanks again for your valuable participation. If you would like, you are welcome to keep this statement.

Table 1

Summary of Methodology

- Phase 1
  - Background Information Questionnaires
    - Background Information Questionnaire
    - Current Drinking Patterns Questionnaire
    - Brief MAST
  - Baseline Measures of Distress
    - Distress Thermometer
    - State-Trait Anxiety Inventory, State Subscale
  - Attitudinal Measure
    - Attitudes on Drinking and Driving Scale
  - View Film – America's Bloody Highways
  - Postfilm Distress Measures
    - Distress Thermometer
    - State-Trait Anxiety Inventory, State Subscale
    - Distressing Image Form
  - Informational Questionnaire
  - Present Distraction Task, CBT Intervention, or ACT Intervention
  - Postintervention Distress Measures
    - Distress Thermometer
    - State-Trait Anxiety Inventory, State Subscale
    - Intrusions Diary (participant takes home to complete)
- Phase 2
  - Phase 2 Distress Measures
    - Impact of Event Scale
    - Memory Questionnaire
    - Distress Thermometer
    - State-Trait Anxiety Inventory, State Subscale
    - Collect Intrusions Diary
    - Distressing Image Form
  - Attitudinal Measure
    - Attitudes on Drinking and Driving Scale
- Funnel Debriefing Form
- Postfunnel Debriefing
- Debriefing Statement

Table 2

Means and Standard Deviations for Distress Thermometer Ratings

	Low Avoidant	Middle Avoidant	High Avoidant
Distraction			
Baseline	*M* = 2.00	*M* = 2.00	*M* = 1.50
	SD = 1.63	*SD* = 1.88	*SD* = 2.50
Postfilm	*M* = 4.50	*M* = 4.40	*M* = 3.50
	SD = 2.80	*SD* = 2.50	*SD* = 1.71
Postintervention	*M* = 2.10	*M* = 2.30	*M* = 2.40
	SD = 1.79	*SD* = 2.00	*SD* = 2.06
Phase 2	*M* = 1.50	*M* = 1.80	*M* = 1.40
	SD = 1.35	*SD* = 2.20	*SD* = 1.50
CBT			
Baseline	*M* = 2.40	*M* = 1.50	*M* = 1.80
	SD = 2.06	*SD* = 1.27	*SD* = 1.87
Postfilm	*M* = 4.40	*M* = 5.80	*M* = 6.60
	SD = 2.55	*SD* = 2.25	*SD* = 3.66
Postintervention	*M* = 2.30	*M* = 2.50	*M* = 2.80
	SD = 2.21	*SD* = 2.32	*SD* = 2.15
Phase 2	*M* = 1.50	*M* = 1.50	*M* = 2.00
	SD = 1.51	*SD* = 1.18	*SD* = 2.16

ACT

Baseline	*M* = 2.00	*M* = 1.70	*M* = 2.90
	SD = 1.70	*SD* = 1.06	*SD* = 2.99
Postfilm	*M* = 5.50	*M* = 4.60	*M* = 6.00
	SD = 3.27	*SD* = 2.22	*SD* = 2.16
Postintervention	*M* = 2.80	*M* = 2.00	*M* = 2.80
	SD = 1.87	*SD* = 1.33	*SD* = 3.01
Phase 2	*M* = 1.20	*M* = 1.20	*M* = 1.60
	SD = 1.62	*SD* = 1.13	*SD* = 1.78

All Participants

Baseline	*M* = 1.98	*SD* = 1.92
Postfilm	*M* = 5.03	*SD* = 2.68
Postintervention	*M* = 2.44	*SD* = 2.05
Phase 2	*M* = 1.52	*SD* = 1.59

Table 3

Analysis of Variance for Distress Thermometer Ratings

	df	*F*	η_p^2	*p*	observed power
		Between Subjects			
Experiential Avoidance	2	.30	.01	.74	.10
Intervention Condition	2	.65	.02	.52	.16
Experiential Avoidance x Intervention Condition	4	.49	.02	.72	.16
		Within Subjects			
Time	3	112.77	.58	<.001	1.00
Experiential Avoidance x Time	6	.36	.01	.90	.15
Intervention Condition x Time	6	2.27	.05	.04	.79
Experiential Avoidance x Intervention Condition x Time	12	2.41	.06	.27	.69

Table 4

Distress Thermometer Ratings Time Comparisons

	Baseline	Postfilm	Postintervention	Phase 2
Baseline		-11.83*	-2.83*	2.70*
Postfilm			12.88*	13.32*
Postintervention				4.81*
Phase 2				

Note. Values in table represent *t* scores

* $p < .01$

Table 5

Means and Standard Deviations for STAI-X

	Low Avoidant	Middle Avoidant	High Avoidant
Distraction			
Baseline	*M* = 31.00	*M* = 33.70	*M* = 30.20
	SD = 6.46	*SD* = 7.39	*SD* = 6.18
Postfilm	*M* = 48.20	*M* = 50.00	*M* = 45.90
	SD = 10.98	*SD* = 10.78	*SD* = 1.71
Postintervention	*M* = 35.30	*M* = 35.30	*M* = 33.50
	SD = 8.99	*SD* = 8.18	*SD* = 9.11
Phase 2	*M* = 30.20	*M* = 32.50	*M* = 30.90
	SD = 10.28	*SD* = 8.69	*SD* = 9.57
CBT			
Baseline	*M* = 29.20	*M* = 27.00	*M* = 33.90
	SD = 6.03	*SD* = 4.50	*SD* = 10.49
Postfilm	*M* = 42.60	*M* = 52.00	*M* = 54.60
	SD = 11.49	*SD* = 11.69	*SD* = 13.12
Postintervention	*M* = 28.90	*M* = 30.80	*M* = 34.90
	SD = 8.02	*SD* = 11.66	*SD* = 8.76
Phase 2	*M* = 26.80	*M* = 28.00	*M* = 37.40
	SD = 5.14	*SD* = 4.78	*SD* = 7.90

ACT			
Baseline	*M* = 28.00	*M* = 30.10	*M* = 35.90
	SD = 5.54	*SD* = 5.04	*SD* = 10.50
Postfilm	*M* = 42.50	*M* = 43.00	*M* = 53.10
	SD = 11.20	*SD* = 13.27	*SD* = 8.57
Postintervention	*M* = 30.80	*M* = 31.00	*M* = 34.60
	SD = 8.17	*SD* = 6.45	*SD* = 10.91
Phase 2	*M* = 27.90	*M* = 29.20	*M* = 31.10
	SD = 9.15	*SD* = 5.39	*SD* = 7.99

All Participants		
Baseline	*M* = 31.00	*SD* = 7.42
Postfilm	*M* = 47.99	*SD* = 11.77
Postintervention	*M* = 32.79	*SD* = 8.92
Phase 2	*M* = 30.44	*SD* = 8.11

Table 6

Analysis of Variance for STAI-X

	df	*F*	η_p^2	*p*	observed power
		Between Subjects			
Experiential Avoidance	2	3.50	.08	.06	.64
Intervention Condition	2	.44	.01	.65	.12
Experiential Avoidance x Intervention Condition	4	1.76	.08	.14	.52
		Within Subjects			
Time	3	129.32	.61	<.001	1.00
Experiential Avoidance x Time	6	.56	.01	.76	.22
Intervention Condition x Time	6	1.01	.02	.42	.40
Experiential Avoidance x Intervention Condition x Time	12	1.02	.05	.43	.59

Table 7

STAI-X Time Comparisons

	Baseline	Postfilm	Postintervention	Phase 2
Baseline		-13.85**	-2.16*	.65
Postfilm			15.36**	13.75**
Postintervention				2.50*
Phase 2				

Note. Values in table represent *t* scores

* $p < .05$; ** $p < .01$

Table 8

Means and Standard Deviations for Distressing Image Form

	Low Avoidant	Middle Avoidant	High Avoidant
Distraction			
Baseline	*M* = 7.70	*M* = 7.30	*M* = 8.70
	SD = 2.11	*SD* = 1.57	*SD* = 1.34
Phase 2	*M* = 5.80	*M* = 4.50	*M* = 4.80
	SD = 2.94	*SD* = 2.72	*SD* = 2.25
CBT			
Baseline	*M* = 7.30	*M* = 7.80	*M* = 8.00
	SD = 1.89	*SD* = 2.30	*SD* = 2.31
Phase 2	*M* = 4.10	*M* = 4.70	*M* = 4.70
	SD = 2.51	*SD* = 2.26	*SD* = 2.26
ACT			
Baseline	*M* = 7.50	*M* = 6.60	*M* = 7.90
	SD = 2.84	*SD* = 2.63	*SD* = 1.73
Phase 2	*M* = 3.90	*M* = 4.50	*M* = 4.40
	SD = 3.25	*SD* = 2.37	*SD* = 2.67
All Participants			
Baseline	*M* = 7.64	*SD* = 2.10	
Phase 2	*M* = 4.60	*SD* = 2.56	

Table 9

Analysis of Variance for Distressing Image Form

	df	*F*	η_p^2	*p*	observed power
		Between Subjects			
Experiential Avoidance	2	.47	.01	.62	.12
Intervention Condition	2	.74	.02	.48	.17
Experiential Avoidance x Intervention Condition	4	.28	.01	.89	.11
		Within Subjects			
Time	1	169.85	.68	<.001	1.00
Experiential Avoidance x Time	2	1.33	.03	.27	.28
Intervention Condition x Time	2	.17	.004	.84	.08
Experiential Avoidance x Intervention Condition x Time	4	1.08	.05	.37	.33

Table 10

Means and Standard Deviations for Intrusions Diary

	Low Avoidant	Middle Avoidant	High Avoidant
Number of Intrusive Thoughts			
Distraction	*M* = 2.60	*M* = 3.90	*M* = 3.60
	SD = 1.90	*SD* = 2.73	*SD* = 2.17
CBT	*M* = 2.50	*M* = 3.30	*M* = 5.80
	SD = 1.08	*SD* = 2.11	*SD* = 4.60
ACT	*M* = 2.90	*M* = 4.50	*M* = 4.20
	SD = 2.08	*SD* = 4.22	*SD* = 5.33
Level of Distress			
Distraction	*M* = 2.89	*M* = 3.30	*M* = 2.51
	SD = 2.61	*SD* = 1.31	*SD* = 1.64
CBT	*M* = 2.84	*M* = 3.94	*M* = 3.73
	SD = 1.99	*SD* = 2.06	*SD* = 1.94
ACT	*M* = 3.20	*M* = 2.41	*M* = 3.66
	SD = 2.66	*SD* = 1.97	*SD* = 2.79

All Participants		
Number of Intrusive Thoughts	*M* = 3.70	*SD* = 3.28
Level of Distress	*M* = 3.16	*SD* = 2.12

Table 11

Analysis of Variance for Intrusions Diary

	df	*F*	η_p^2	*p*	observed power
Number of Intrusive Thoughts					
Experiential Avoidance	2	2.52	.06	.09	.49
Intervention Condition	2	.23	.01	.79	.08
Experiential Avoidance x Intervention Condition	4	.67	.03	.61	.21
Level of Distress					
Experiential Avoidance	2	.18	.01	.83	.08
Intervention Condition	2	.62	.01	.54	.15
Experiential Avoidance x Intervention Condition	4	.87	.04	.48	.27

Table 12

Means and Standard Deviations for Memory Questionnaire

	Low Avoidant	Middle Avoidant	High Avoidant
Total Score			
Distraction	*M* = 11.20	*M* = 12.70	*M* = 10.40
	SD = 5.83	*SD* = 8.16	*SD* = 5.81
CBT	*M* = 10.20	*M* = 11.30	*M* = 12.20
	SD = 4.39	*SD* = 5.50	*SD* = 6.30
ACT	*M* = 9.06	*M* = 10.20	*M* = 11.20
	SD = 5.00	*SD* = 5.57	*SD* = 6.30
Disorganization Subscale			
Distraction	*M* = 2.00	*M* = 2.40	*M* = 2.20
	SD = 1.63	*SD* = 1.90	*SD* = 2.10
CBT	*M* = 1.70	*M* = 2.00	*M* = 2.60
	SD = 1.40	*SD* = 1.15	*SD* = 1.90
ACT	*M* = 1.50	*M* = 1.50	*M* = 1.90
	SD = .85	*SD* = 1.13	*SD* = 1.80
Intrusions Subscale			
Distraction	*M* = 9.20	*M* = 10.30	*M* = 8.20
	SD = 5.37	*SD* = 7.16	*SD* = 5.18
CBT	*M* = 5.00	*M* = 9.30	*M* = 10.60
	SD = 4.22	*SD* = 5.16	*SD* = 5.54

ACT	*M* = 6.30	*M* = 9.00	*M* = 9.30
	SD = 3.53	*SD* = 5.62	*SD* = 6.63

All Participants		
Total Score	*M* = 10.35	*SD* = 6.01
Disorganization Subscale	*M* = 1.78	*SD* = 1.65
Intrusions Subscale	*M* = 8.58	*SD* = 5.51

Table 13

Analysis of Variance for Memory Questionnaire

	df	*F*	η_p^2	*p*	observed power
Total Score					
Experiential Avoidance	2	1.07	.08	.29	.63
Intervention Condition	2	.92	.02	.40	.20
Experiential Avoidance x Intervention Condition	4	1.17	.05	.33	.35
Disorganization Subscale					
Experiential Avoidance	2	1.14	.05	.34	.57
Intervention Condition	2	.83	.07	.38	.59
Experiential Avoidance x Intervention Condition	4	.50	.02	.73	.16
Intrusions Subscale					
Experiential Avoidance	2	2.28	.05	.11	.45
Intervention Condition	2	.32	.01	.72	.10
Experiential Avoidance x Intervention Condition	4	.92	.04	.45	.28

Table 14

Means and Standard Deviations for Impact of Event Scale

	Low Avoidant	Middle Avoidant	High Avoidant
Total Score			
Distraction	*M* = 14.90	*M* = 16.90	*M* = 13.80
	SD = 8.66	*SD* = 7.19	*SD* = 9.05
CBT	*M* = 10.30	*M* = 16.90	*M* = 17.90
	SD = 6.60	*SD* = 7.94	*SD* = 9.19
ACT	*M* = 11.90	*M* = 12.10	*M* = 15.40
	SD = 5.55	*SD* = 6.44	*SD* = 10.25
Intrusions Subscale			
Distraction	*M* = 6.90	*M* = 8.70	*M* = 5.60
	SD = 3.93	*SD* = 3.80	*SD* = 3.53
CBT	*M* = 4.50	*M* = 6.80	*M* = 8.10
	SD = 3.17	*SD* = 4.39	*SD* = 4.84
ACT	*M* = 5.80	*M* = 7.00	*M* = 7.30
	SD = 3.33	*SD* = 3.37	*SD* = 5.29
Avoidance Subscale			
Distraction	*M* = 8.00	*M* = 8.20	*M* = 8.20
	SD = 6.32	*SD* = 4.21	*SD* = 6.39
CBT	*M* = 6.10	*M* = 10.10	*M* = 9.80
	SD = 4.41	*SD* = 5.11	*SD* = 5.22

ACT	*M* = 6.10	*M* = 5.10	*M* = 8.10
	SD = 3.87	*SD* = 3.75	*SD* = 5.88
All Participants			
Total Score		*M* = 14.45	*SD* = 8.03
Intrusions Subscale		*M* = 6.74	*SD* = 4.03
Avoidance Subscale		*M* = 7.74	*SD* = 5.13

Table 15

Analysis of Variance for Impact of Event Scale

	df	*F*	η_p^2	*p*	observed power
Total Score					
Experiential Avoidance	2	1.55	.04	.22	.32
Intervention Condition	2	.62	.01	.54	.15
Experiential Avoidance x Intervention Condition	4	1.05	.05	.39	.32
Intrusions Subscale					
Experiential Avoidance	2	1.54	.04	.22	.32
Intervention Condition	2	.17	.004	.84	.07
Experiential Avoidance x Intervention Condition	4	1.20	.06	.32	.36
Avoidance Subscale					
Experiential Avoidance	2	1.11	.03	.33	.24
Intervention Condition	2	1.56	.04	.22	.32
Experiential Avoidance x Intervention Condition	4	.84	.04	.50	.26

Table 16

Demographic Information

	Low Avoidant	Middle Avoidant	High Avoidant
Distraction (*N* = 30)			
Age	*M* = 24.60	*M* = 25.40	*M* = 24.90
	SD = 7.73	*SD* = 8.37	*SD* = 8.75
Ethnicity	Caucasian = 8	Caucasian = 9	Caucasian = 5
	Biracial = 1	Hispanic = 1	Hispanic = 2
	Native American = 1		Asian = 2
			Native American = 1
Marital Status	Single = 6	Single = 9	Single = 8
	Married = 3	Married = 1	Married = 2
	Divorced = 1		
CBT (*N* = 30)			
Age	*M* = 24.50	*M* = 20.10	*M* = 20.80
	SD = 8.38	*SD* = 1.97	*SD* = 2.39
Ethnicity	Caucasian = 9	Caucasian = 8	Caucasian = 5
	Asian = 1	African American = 1	African American = 2
		Asian = 1	Asian = 3
Marital Status	Single = 7	Single = 10	Single = 7
	Married = 3		Married = 3

ACT($N = 30$)

Age	$M = 29.60$ $SD = 12.39$	$M = 24.00$ $SD = 8.25$	$M = 20.30$ $SD = 3.50$
Ethnicity	Caucasian = 10	Caucasian = 9 Hispanic = 1	Caucasian = 8 African American = 2
Marital Status	Single = 5 Married = 5	Single = 7 Married = 2 Divorced = 1	Single = 8 Married = 2

Table 17

Auto Accident History

	Low Avoidant	Middle Avoidant	High Avoidant
Distraction			
Have you ever been in an auto accident?	Yes = 9	Yes = 6	Yes = 6
	No = 1	No = 4	No = 4
# of auto accidents	*M* = 2.22	*M* = 2.20	*M* = 2.17
	SD = 1.85	*SD* = 1.30	*SD* = 1.60
How long ago did the most recent accident occur (in months)?	*M* = 57.60	*M* = 44.60	*M* = 26.17
	SD = 46.21	*SD* = 38.55	*SD* = 17.84
Were you or anyone else injured in the accident?	Yes = 0	Yes = 2	Yes = 2
	No = 9	No = 5	No = 4
Extent of injuries	NA	Mild = 2	Mild = 2
Have any of your friends or family members died or been seriously injured in an auto accident?	Yes = 3	Yes = 2	Yes = 4
	No = 7	No = 8	No = 6
CBT			
Have you ever been in an auto accident?	Yes = 7	Yes = 7	Yes = 4
	No = 3	No = 3	No = 6
# of auto accidents	*M* = 2.00	*M* = 1.43	*M* = 1.25
	SD = 1.00	*SD* = .79	*SD* = .50
How long ago did	*M* = 77.86	*M* = 45.28	*M* = 23.00

the most recent accident occur (in months)?	*SD* = 43.01	*SD* = 50.91	*SD* = 22.61
Were you or anyone else injured in the accident?	Yes = 1 No = 6	Yes = 1 No = 4	Yes = 1 No = 3
Extent of injuries	Moderate = 1	Mild = 1	Mild = 1
Have any of your friends or family members died or been seriously injured in an auto accident?	Yes = 6 No = 4	Yes = 3 No = 7	Yes = 4 No = 6
ACT			
Have you ever been in an auto accident?	Yes = 10 No = 0	Yes = 5 No = 5	Yes = 6 No = 4
# of auto accidents	*M* = 2.30 *SD* = 1.16	*M* = 2.17 *SD* = .75	*M* = 2.50 *SD* = 1.97
How long ago did the most recent accident occur (in months)?	*M* = 57.60 *SD* = 46.21	*M* = 114.17 *SD* = 90.23	*M* = 35.17 *SD* = 32.08
Were you or anyone else injured in the accident?	Yes = 3 No = 7	Yes = 1 No = 5	Yes = 2 No = 8
Extent of injuries	Mild = 2 Severe = 1	Mild = 1	Moderate = 1
Have any of your friends or family members died or been seriously injured in an auto accident?	Yes = 5 No = 5	Yes = 1 No = 9	Yes = 2 No = 8

Table 18

Means and Standard Deviations for Attitudes Toward Drinking and Driving Scale

	Low Avoidant	Middle Avoidant	High Avoidant
Total ADDS Score			
Distraction			
Baseline	*M* = 43.30	*M* = 47.00	*M* = 37.70
	SD = 13.28	*SD* = 14.32	*SD* = 9.42
Phase 2	*M* = 38.80	*M* = 43.00	*M* = 32.20
	SD = 15.48	*SD* = 12.08	*SD* = 5.88
CBT			
Baseline	*M* = 46.10	*M* = 41.10	*M* = 47.50
	SD = 14.99	*SD* = 9.94	*SD* = 10.02
Phase 2	*M* = 41.30	*M* = 41.80	*M* = 43.20
	SD = 10.62	*SD* = 14.85	*SD* = 8.04
ACT			
Baseline	*M* = 49.10	*M* = 41.10	*M* = 51.60
	SD = 15.96	*SD* = 9.60	*SD* = 15.68
Phase 2	*M* = 46.20	*M* = 40.30	*M* = 48.80
	SD = 11.27	*SD* = 11.85	*SD* = 15.72
Acceptability Subscale			
Distraction			
Baseline	*M* = 18.60	*M* = 21.40	*M* = 18.80
	SD = 5.62	*SD* = 6.75	*SD* = 6.96

Phase 2	*M* = 17.20	*M* = 17.90	*M* = 15.50
	SD = 6.63	*SD* = 4.95	*SD* = 4.22
CBT			
Baseline	*M* = 21.20	*M* = 19.00	*M* = 21.70
	SD = 7.37	*SD* = 6.88	*SD* = 4.97
Phase 2	*M* = 18.10	*M* = 18.70	*M* = 17.50
	SD = 4.56	*SD* = 8.29	*SD* = 3.92
ACT			
Baseline	*M* = 21.60	*M* = 18.30	*M* = 21.40
	SD = 7.09	*SD* = 4.71	*SD* = 8.49
Phase 2	*M* = 19.60	*M* = 17.20	*M* = 21.20
	SD = 5.17	*SD* = 6.00	*SD* = 7.13
Likelihood Subscale			
Distraction			
Baseline	*M* = 24.70	*M* = 25.60	*M* = 18.90
	SD = 8.79	*SD* = 8.67	*SD* = 4.28
Phase 2	*M* = 21.60	*M* = 25.10	*M* = 16.70
	SD = 9.38	*SD* = 8.46	*SD* = 3.09
CBT			
Baseline	*M* = 25.50	*M* = 22.10	*M* = 26.80
	SD = 8.21	*SD* = 3.90	*SD* = 6.71
Phase 2	*M* = 23.20	*M* = 23.10	*M* = 25.70
	SD = 6.66	*SD* = 7.99	*SD* = 5.56

ACT			
Baseline	*M* = 27.50	*M* = 22.80	*M* = 30.20
	SD = 10.06	*SD* = 5.71	*SD* = 10.21
Phase 2	*M* = 26.60	*M* = 23.10	*M* = 27.60
	SD = 8.22	*SD* = 8.14	*SD* = 9.73

All Participants		
Total ADDS Score		
Baseline	*M* = 44.94	*SD* = 12.97
Phase 2	*M* = 41.73	*SD* = 12.43
Acceptability Subscale		
Baseline	*M* = 20.22	*SD* = 6.49
Phase 2	*M* = 18.10	*SD* = 5.76
Likelihood Subscale		
Baseline	*M* = 24.90	*SD* = 8.00
Phase 2	*M* = 23.63	*SD* = 7.98

Table 19

Analysis of Variance for Attitudes Toward Drinking and Driving Scale

	df	*F*	η_p^2	*p*	observed power
Total Score					
		Between Subjects			
Experiential Avoidance	2	.17	.004	.85	.07
Intervention Condition	2	1.84	.04	.17	.37
Experiential Avoidance x Intervention Condition	4	1.83	.08	.13	.53
		Within Subjects			
Time	1	14.00	.15	< .001	.96
Experiential Avoidance x Time	2	1.16	.03	.32	.25
Intervention Condition x Time	2	.76	.02	.47	.18
Experiential Avoidance x Intervention Condition x Time	4	.27	.01	.90	.11
Acceptability Subscale					
		Between Subjects			
Experiential Avoidance	2	.11	.003	.90	.07
Intervention Condition	2	.62	.01	.54	.15
Experiential Avoidance x Intervention Condition	4	.72	.03	.58	.22
		Within Subjects			
Time	1	22.93	.22	< .001	1.00
Experiential Avoidance x Time	2	.37	.01	.69	.11

Intervention Condition x Time	2	1.35	.03	.27	.28
Experiential Avoidance x Intervention Condition x Time	4	1.57	.07	.19	.46
Likelihood Subscale					
		Between Subjects			
Experiential Avoidance	2	.21	.005	.81	.08
Intervention Condition	2	2.55	.06	.08	.50
Experiential Avoidance x Intervention Condition	4	2.56	.11	.07	.70
		Within Subjects			
Time	1	4.69	.05	.03	.57
Experiential Avoidance x Time	2	1.72	.04	.18	.35
Intervention Condition x Time	2	.34	.01	.71	.10
Experiential Avoidance x Intervention Condition x Time	4	.22	.01	.93	.09

Figure 1. Main Effect for Time on Distress Thermometer Ratings

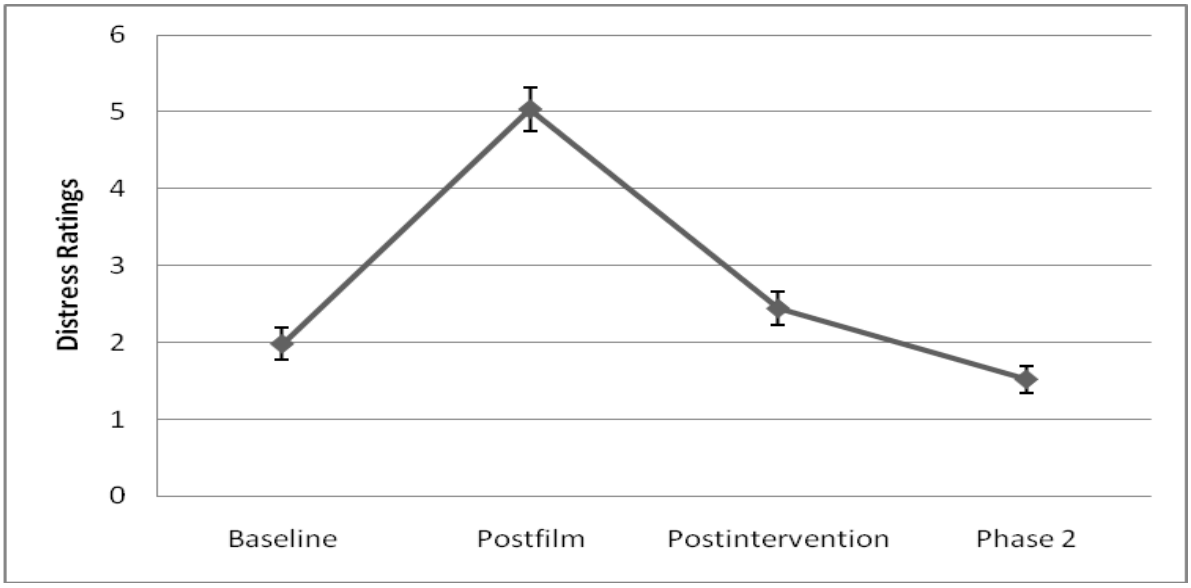


Figure 2. Interaction Between Time and Intervention Condition on Distress Thermometer Ratings

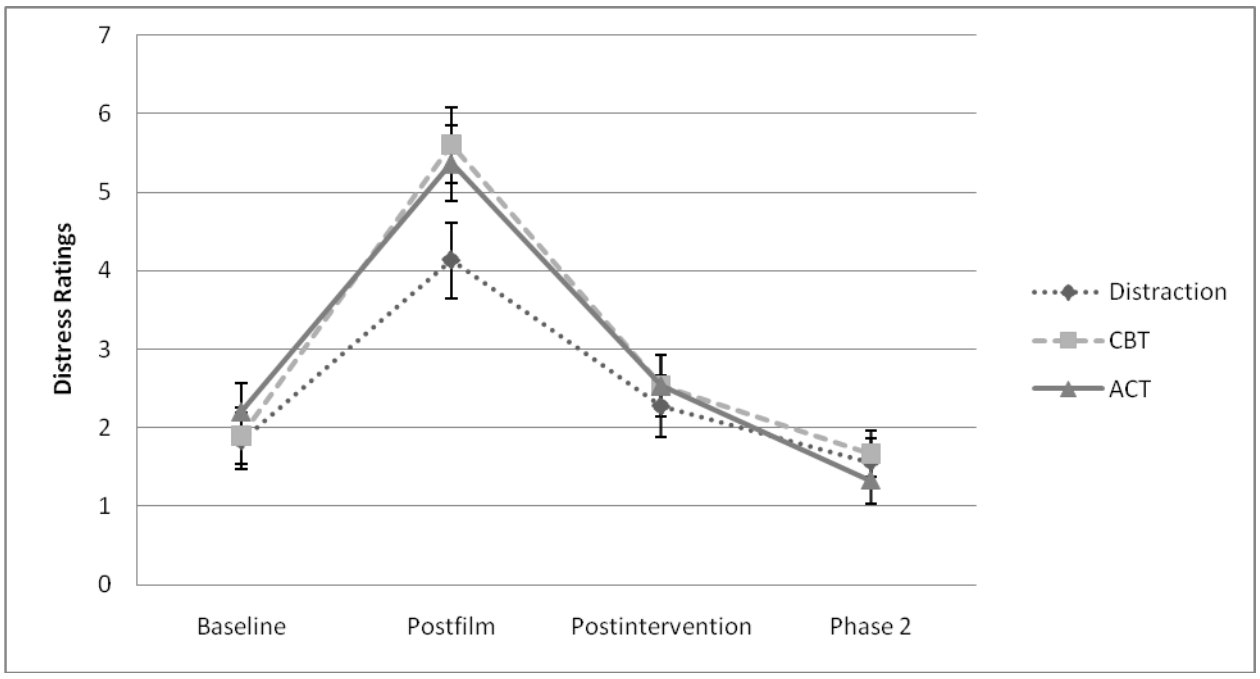


Figure 3. Main Effect for Time on Anxiety Ratings