2012

The Effects of Adding Values to an Acceptance Intervention on Willingness to Engage in a Difficult Task

Maureen Kathleen Flynn

The Effects of Adding Values to an Acceptance Intervention on Willingness to Engage in a

Difficult Task

A Dissertation
presented in partial fulfillment of requirements
for the degree of Doctor of Philosophy
in the Department of Clinical Psychology
The University of Mississippi

by

MAUREEN K. FLYNN

April 2012

ABSTRACT

There is a relatively large body of evidence supporting acceptance as a treatment component. According to Acceptance and Commitment Therapy (ACT) proponents, acceptance is done in the service of values (Hayes et al., 2011). This study aimed to examine the effects of adding a values component to an acceptance intervention on persistence in a frustrating task. Participants were randomly assigned to one of three conditions: acceptance, acceptance plus values, and suppression. Following a mood induction, participants listened to a recording of their assigned coping strategy and were then asked to use this strategy during a frustrating computer task. No group differences were found on willingness to engage in the difficult task, which does not support the ACT proponents' assertion. There are a number of methodological limitations in this study related to the mood induction placement, interventions, persistence task, and sample that may have contributed to the null findings. Continued research in this area is needed to determine the impact of values as a treatment component, which has important clinical implications.

DEDICATION

This dissertation is dedicated to my parents, whose sacrifices and encouragement helped make my dreams possible.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Historically, treatment development research has focused on answering two main questions: does the treatment work in ideal conditions (i.e., efficacy) and does the treatment work in "real-world" conditions (i.e., effectiveness). Demonstrating a causal relationship between treatment and outcome under both of these conditions is essential. There are also other important questions to ask of a treatment that have been less emphasized. Mechanism of action research examines why a treatment works, how a treatment works, and what components and combinations of components of a treatment impact outcomes. Kazdin and Nock (2003) assert "the study of mechanisms of treatment is probably the best short-term and long-term investment for improving clinical practice and patient care" (p. 1117). The following example helps illustrate reasons behind such an assertion.

The Role of Mechanism of Action in Treatment Development Research: A Case Example

Cognitive-behavioral therapy (CBT) has strong evidence supporting its efficacy for depression (Vittengl, Clark, Dunn, & Jarrett, 2006; Dobson, 1989). Cognitive Therapy (CT) and CBT treatment developers were highly influenced by the strong association between emotional disorders and negative cognition (Abramson, Metalsky, & Alloy, 1989; Beck, 1976; Seligman, Abramson, Semmel, & von Bayer, 1979; Beck, Rush, Shaw, & Emery, 1979). Drawing from this correlational evidence, CBT models theorized that negative cognition is the primary source of psychological functioning and changing cognition is the cause of its remediation. There is a potential cost to developing theories about mechanisms of action and treatment technologies based solely on correlational evidence, even if such evidence is strong and makes logical sense.

1

The theorized explanation for CBT's efficacy was not tested until the mid 90's, nearly 20 years after the first CBT treatment manual was published, even though mechanism of action is not a new idea. Beck first wrote about mechanisms of action in his 1976 book, Cognitive Therapy for Emotional Disorders. Ten years after the publication of this book, Hollon and Beck wrote, "There is not, as yet, compelling evidence that cognitive therapy works, when it works, by virtue of changing beliefs and/or information processing, although that remains a very viable possibility" (1986, p. 451). Again, 8 years later, Hollon and Beck wrote, "It is not clear whether these interventions work, when they work, by virtue of changing beliefs or thinking, as specified by theory" (1994, p. 458).

Mechanism of action evidence for CBT is now starting to accumulate and there is a growing body of evidence that contradicts the underlying theory. For example, Jarrett, Vittengl, Doyle, and Clark (2008) examined changes in cognitive content during and following cognitive therapy for recurrent depression. They found that "change in depressive symptoms is moderate to large even if there is no change in cognitive content" (p. 10). Even though there is a strong correlation between negative thoughts and emotional disorders, changing cognitive content was not necessary for symptom reduction.

The findings of CT dismantling studies have also called into question whether the cognitive interventions in CT are necessary. Jacobson et al. (1996) compared the full CT package (negative automatic thoughts, core schemas, and behavior activation) against behavior activation (BA) alone for the treatment of depression. CT and behavior activation produced equal reductions in Beck's Depression Inventory (BDI) scores at the end of the study (Jacobson, et al., 1996) and at the 2-year follow-up (Gortner, Gollan, Dobson, & Jacobson, 1998). A second dismantling study showed that for individuals with low levels of depression, CT and BA

performed equally well, but for individuals with high levels of depression, those in the BA condition had significantly lower BDI scores than those in the CT condition at post treatment (Dimidjian et al., 2006). These studies suggest that the mechanism of action in CT may be BA rather than changing beliefs or thinking as theorized.

There are costs to being wrong about mechanisms of action, even if the treatment has strong evidence supporting its efficacy. There are time, resource, and financial costs on both the side of the therapist and client to investing in inactive treatment components. For example, thousands of therapists are trained in cognitive components of the CBT model and thousands of clients are treated using technologies targeting cognitive change. This is not to say that clients treated with CBT do not benefit. CBT is efficacious. Treatment providers can foster and maximize change in their clients by focusing on the components of the model that impact outcomes. In the case of CBT, emerging evidence suggests that BA is the treatment's mechanism of change rather than cognitive change so focusing efforts on BA rather than cognitive change in therapy and therapist training is likely to reduce costs.

The CBT family has grown considerably and some of the newer variants identify mechanisms of action that were not in the traditional model. Acceptance is one of the theorized mechanisms of action. Researchers from some of these variants are simultaneously investigating acceptance as a mechanism of action, and of direct acceptance-oriented interventions, in addition to treatment efficacy and effectiveness. Finding out if the mechanisms are correct and if the interventions are necessary while the treatment is being developed is consistent with Kazdin and Nock's (2003) prescription for treatment development.

What is Acceptance?

Acceptance is not a new concept. For centuries, acceptance has been defined in philosophy, religion, and literary works (Williams & Lynn, 2010). These definitions vary but contain nonattachment, nonavoidance, nonjudgment, tolerance, and willingness as main components (Williams & Lynn, 2010). In the past couple of decades, teaching acceptance as a way to cope with negative thoughts and feelings has become increasingly researched and explicitly incorporated in psychological treatments (Herbert, Foreman, & England, 2009; Wilson et al., in press). For example, in Acceptance and Commitment Therapy (ACT), acceptance is "the voluntary adoption of an intentionally open, receptive, flexible, and nonjudgmental posture with respect to moment-to-moment experience," (Hayes, Strosahl, & Wilson, 2011, p. 272). In Dialectical Behavioral Therapy (DBT), the term "radical acceptance" is used.

> Radical acceptance is the fully open experience of what is, entering into reality just as it is, at this moment. Fully open acceptance is without constrictions, and without distortion, without judgment, without evaluation, and without attempts to keep an experience or to get rid of it (Robins, Schmidt, & Linehan, 2004, p. 39).

Both of the acceptance definitions speak to openness to experience without making attempts to change it. The term experiential avoidance is often associated with acceptance because it is the opposite of openness to experience. Avoidance is the mirror image of acceptance.

> Experiential avoidance is the phenomenon that occurs when a person is unwilling to remain in contact with particular private experiences (e.g., bodily sensations, emotions, thoughts, memories, behavioral predispositions) and takes steps to alter the form or frequency of these events and the contexts that occasion them (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996, p. 1154).

Avoidance is reinforced by the momentary elimination or reduction of negatively evaluated emotion and cognition (i.e., negative reinforcement). For example, someone who feels anxious when speaking to others may avoid situations that would require her to

speak. Avoiding such a situation may produce immediate relief from unpleasant feelings. However, the long-term consequences for avoidant repertoires may be harmful. Experiential avoidance is associated with many psychological symptoms and lower quality of life (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Ruiz, 2010).

In addition to openness to experience, acceptance involves taking a nonjudgmental posture towards experience (e.g., Wilson & DuFrene, 2009; Robins et al., 2004). Acceptance does not mean wanting or liking all aspects of experience (Hayes, Strosahl, & Wilson, 1999). Evaluations are treated like all other thoughts, with an open posture. "Having a negative judgment about a thought is not equivalent to experiential avoidance. Experiential avoidance would involve acting to reduce, eliminate, or control the thought" (Wilson & DuFrene, 2009, p. 47; cf. Hayes et al., 1996). For example, someone can accept thoughts of inadequacy and feelings of anxiety while giving a speech and still not want or like those thoughts and feelings. She does so by first noticing these thoughts and feelings, including judgments and evaluations she has about those thoughts and feelings. Then allows herself to be open to all aspects of the experience by giving the speech without attempting to change her thoughts and feelings.

The Role of Acceptance in CBT Treatment Models

Traditionally, CBT has primarily focused on the direct change of thoughts and emotions rather than using acceptance strategies. Beck does not view acceptance as a central mechanism of change in the model (Dozois & Beck, 2010). Rather, acceptance is used as a means of facilitating cognitive change, which is seen as a primary source of psychological suffering and its remediation. Within the Beckian model, "the primary objective of promoting the acceptance of

internal experiences in CT is to bring about cognitive change and symptom relief" (Dozois & Beck, 2010, p. 39).

The role acceptance plays in CBT is gradually changing. Some of the newer CBT variants have placed a higher emphasis on acceptance processes and are referred to as acceptance and mindfulness-based therapies or third wave behavior therapies (Hayes, Masuda, & De Mey, 2003). Some of these CBT variants maintain the Beckian focus on cognitive change (e.g., Wells, 1995). Other variants assert that acceptance is a mechanism of action, not merely a tool to facilitate cognitive change. Examples of these variants are ACT (Hayes et al. 1999), DBT (Linehan, 1993), Integrative Behavioral Couples Therapy (IBCT; Christensen, Jacobson, & Babcock, 1995), and Mindfulness Based Cognitive Therapy (MBCT; Teasdale, Segal, Williams, Ridgeway, Soulsby, & Lau, 2000), among others.

Empirical Support for Acceptance

Earlier treatment models such as psychoanalysis, person-centered therapy, and gestalt therapy incorporated acceptance but did not emphasize empiricism. It wasn't until the emergence of the acceptance-based behavioral therapies that we have seen a considerable growth in the body of acceptance research. Herbert and colleagues (2009) searched the terms "experiential avoidance," "experiential acceptance," and " psychological acceptance" in the PsycINFO database. They found 2 articles for the year 2000 and 35 articles for 2007 (p. 103). When conducting this same search for 2010, 58 articles were found.

Evidence for Experiential Acceptance and Avoidance as a Predictor

Many studies have examined the relationship between acceptance, and inversely avoidance, and other psychological constructs and symptoms using the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004; Hayes et al., 2006). The AAQ and its later versions

self-report instrument designed to measure the level of avoidance of thoughts, feelings, and values-based actions in the presence of negative thoughts and feelings (Hayes et al, 2004; Bond et al., in press).

Hayes and colleagues (2006) conducted a meta-analysis using 32 studies to examine the relationship between avoidance measured by the AAQ and other psychological constructs and symptoms. The effect size between avoidance and the combined psychological variables was moderate. Avoidance predicts lower quality of life and health and greater levels of psychopathology (e.g., depression, anxiety, post-traumatic stress disorder). When isolating the 20 studies from the meta-analysis that included measures of depressive symptoms, Ruiz (2010) found that that the correlations between avoidance and these symptoms ranged between $r = .37$ and $r = .77$, with a weighted correlation of .55 (p. 131).

AAQ scores also predict important behavioral outcomes. For example, higher acceptance scores on the AAQ predicted fewer computer input errors made by employees in the following year (Bond & Bunce, 2003). Additionally, higher acceptance scores predicted fewer pain-related health care visits and greater behavioral engagement in samples of people with chronic pain (McCracken, 1998; McCracken, Vowles, & Eccleston, 2004).

Studies have also shown that AAQ scores predict performance in experimental tasks. For example, participants with higher AAQ scores had lower pain tolerance in a cold-pressor task than those with lower scores (Zettle et al., 2005). Another study compared participants with high versus low AAQ scores in a perceptual-motor task that required them to wear "drunk goggles" used to induce unpleasant sensations. Participants with high AAQ scores performed worse on the task and reported greater distress due to the unpleasant sensations than those with low avoidance (Zettle, Petersen, Hocker, & Provines, 2007).

Thought suppression. Thought suppression is a form of avoidance that has been investigated for over two decades (Wegner, Schneider, Carter, & White, 1987; for a review see Abramowitz, Tolin, & Street, 2001). Thought suppression is associated with a variety of clinically relevant issues (see Rassin, Merckelbach, & Murris, 2000 for a detailed review). For example, a longitudinal study showed that high levels of thought suppression predict depression symptoms (Wenzlaff & Luxton, 2003). This prediction was particularly strong when high stress levels are also present as measured by the number of stressful events and negativity ratings of those events.

Thought suppression is associated with a higher frequency of self-harm behaviors for individuals with borderline personality disorder (Chapman, Specht, Cellucci, 2005). It is also linked to greater number of intrusive thoughts in burn victims four months after being discharged from the hospital (Lawrence, Fauerbach, & Munster, 1996) and in car accident victims one year following the accident (Bryant & Harvey, 1995). Not only does thought suppression predict negative outcomes, it often has the opposite effect intended with the occurrence of the negative thoughts actually increasing, referred to as the "rebound effect" (Abramowitz et al., 2001).

Evidence for Complex Treatment Packages Emphasizing Acceptance

Efficacy and effectiveness research is steadily growing for some of the acceptance-based psychotherapies. For example, there are over 50 randomized clinical trials (RCTs) on ACT. Three meta-analyses have shown that ACT has small to moderate effect sizes when compared with other established treatments (Hayes et al., 2006; Öst, 2008; Powers, Vörding & Emmelkamp, 2009). DBT has a large body of empirical support for improving outcomes with individuals with borderline personality disorder (Kliem, Kroger & Kosfelder, 2010; Linehan, 1993; Linehan & Dexter-Mazza, 2007). Two RCTs suggest that MCT is an efficacious treatment

(Wells, Welford, King, Papageorgio, Wisely, & Mendel, 2010; Simons, Schneider, & Herpertz-Dahlmann, 2006). Several studies show that MBCT is effective for individuals with chronic or treatment resistant depression and for preventing relapses in these individuals (Barnhofer et al., 2009; Eisendrath et al., 2008; Kenny & Williams, 2007; Ma & Teasdale, 2004; Segal et al., 2010; Teasdale et al., 2000). IBCT has been demonstrated to be as efficacious as traditional behavioral couples therapy (Jacobson, Christensen, Prince, Cordova, & Eldridge, 2000; Christensen et al., 2004).

Although the impact of acceptance cannot be demonstrated by efficacy or effectiveness research, the accumulation of positive findings suggest that some of the components in these treatments impact outcomes. However, identifying which of these treatment components work (e.g., acceptance) cannot be demonstrated using these methods. Mechanism of action research is needed to answer these questions.

Acceptance as a Mechanism of Action: Mediation

There are two main ways to study mechanism of action: meditational analyses and component analyses. A mediator causes the relationship between the treatment and outcome. Complete mediation occurs when the relationship between the treatment and the outcome no longer exists after the mediator is removed from the equation. Partial mediation occurs when the relationship between treatment and outcome is reduced rather than eliminated.

Multiple studies have demonstrated acceptance as a mediator between treatment and outcome. For example, in a study designed to reduce worksite stress, AAQ scores mediated psychological distress and innovative work-related behaviors in the ACT condition (Bond & Bunce, 2000). Another study showed that diabetes-related acceptance mediated diabetic related self-management behaviors in the ACT condition (Gregg, Callaghan, Hayes, & Glenn-Lawson,

9

2007). In a smoking cessation study, the Avoidance and Inflexibility Scale (AIS; Gifford et al., 2004) mediated long-term smoking outcomes (Gifford et al., 2004). In a sample of individuals who experienced epileptic seizures, AAQ scores mediated quality of life and frequency of seizures at the 1-year follow-up. In a study targeting weight-related self-stigma, weight-related avoidance mediated greater body mass reductions and higher reported levels of quality of life and psychological functioning in the ACT condition (Lillis, Hayes, Bunting, & Masuda, 2009). The incorporation of mediation analyses in efficacy and effectiveness research designs is continuing to grow.

Acceptance as a Mechanism of Action: Component Analyses

Component analyses investigate how each component of complex treatment packages impacts outcomes. Dismantling studies break down a complex treatment package and examine individual components separately and compare these components to the full package. Dismantling studies tend to be very large, expensive, and time consuming, especially if the treatment is more complex. Because of these problems, dismantling studies are not typically done until long after a treatment is first developed. A large scale dismantling study of one of the newer CBT variants has yet to be conducted. However, smaller scale dismantling studies that isolate a single treatment component or a combination of components have been conducted. These studies are more manageable and allow mechanism of change to be investigated as the full treatment is developed. Such simultaneous mechanism and outcome studies have been suggested as a more efficient treatment development strategy (Hayes et al, 2011).

Acceptance is routinely compared to its opposite, suppression, in these small-scale component analyses. For example, Cioffi and Holloway (1993) compared thought suppression, distraction, and acceptance (referred to as attention by the authors) in a pain induction task using

a cold-pressor. While the participant's hand was submerged, researcher instructed the participant to attend to, suppress, or distract themselves from the physical sensations. The participants in the suppression condition showed a significantly slower recovery from pain than participants in the other two conditions. Those in the acceptance condition showed the fastest pain recovery. Following the cold-pressor task, participants rated the unpleasantness of vibrations that were administered to them. The strength of the vibrations was set at a level rated neutral by a separate sample. Participants in the suppression condition rated the vibrations significantly more unpleasant than those in the other two conditions. This suggests that suppression may increase responsiveness levels to minor stimuli unrelated to the suppressed thoughts.

In addition to pain analogues, some researchers have compared coping strategies using experimental tasks related to clinically relevant issues. For example, carbon dioxide (CO_2) inhalation produces anxiety symptoms (Zvolensky & Eifert, 2001). CO_2 inhalation challenges have been used in several of these analogues (e.g., Eifert & Heffner, 2003; Feldner, Zvolensky, Eifert, & Spira, 2003; Levitt, Brown, Orsillo, & Barlow, 2004). Participants instructed to accept sensations associated with the CO_2 reported lower levels of fear and lower levels of subjective anxiety than participants instructed to suppress or control sensations (Eifert & Heffner, 2003; Levitt et al., 2004). In addition, participants in the acceptance condition also showed greater willingness to participate in another CO_2 inhalation task and shorter latency in indicating readiness to begin another CO_2 challenge (Eifert & Heffner, 2003; Levitt et al., 2004). Another study used the CO_2 inhalation task to compare the effect of acceptance versus suppression instructions in a sample of participants with high and low avoidance levels (Feldner et al., 2003). For participants with high avoidance, those in the suppression condition reported greater subjective anxiety levels during in the challenge than those in the acceptance condition. This

study suggests that an acceptance strategy may be particularly useful for people who have high levels of avoidance.

In a sample of individual with spider phobias, Hooper, Davies, Davies, and McHugh (2011) compared instructional sets in a Behavioral Approach Test (BAT). The BAT is a measurement of how close an individual move towards the feared object. Participants given mindfulness instructions (containing an acceptance component) prior to the BAT moved closer to the spider than participants given thought suppression instructions. Participants in the thought suppression condition also reported more anxiety that participants in the mindfulness condition.

Marcks and Woods (2005) examined the effects of acceptance and suppression instructions on personal intrusive thoughts. They found that participants in the acceptance condition demonstrated a decrease in discomfort but not the frequency of the intrusive thoughts following the intervention. Participants in the suppression condition reported an increase in distress and the frequency of intrusive thoughts.

Does Adding Values to Acceptance Produce Better Outcomes than Acceptance Alone?

The empirical support for acceptance as a mechanism of action is increasing rapidly. Acceptance is only one component of complex treatment packages, however. Adding other components of the treatment package to acceptance should produce better outcomes if the theory underlying the treatment is correct. Some of the newer CBT variants (e.g., ACT and DBT) are primarily interested in increasing valued living as a treatment outcome rather than merely symptom remission. ACT goes further than the other variants by identifying both acceptance and values as mechanisms of action, and, also posits an important linkage between these mechanisms.

Acceptance and Values in Acceptance and Commitment Therapy

ACT is a contextual behavioral model that uses 6 theorized processes to help individuals increase valued living (Hayes et al., 1999; Hayes et al., 2011). Two of these mechanisms of action are acceptance and values, which are directly linked to each other in the ACT model. According to Hayes and colleagues (2011)

> Feeling what one is feeling is not an end in itself—that is wallowing. Rather, clients are being asked by life itself to feel, think, sense, or remember what comes up in the process of living a valued life. (p. 275)

Acceptance of thoughts and feelings is done in the service of valued living. Hayes and colleagues (2011) further highlight this distinction in their conceptualization of term itself. In ACT, acceptance consists of both psychological acceptance and behavioral willingness (Hayes et al., 2011). Behavioral willingness is "the voluntary and values-based choice to enable or sustain contact with private experiences or the events that will likely occasion them." According to these proponents, acceptance involves behavioral willingness, which in turn involves values.

Consider this example. Most people are unlikely to be willing to let someone slam a hammer on their hand. However, adding a values context can increase willingness levels. For example, Victor Frankl describes his willingness to stay in a Nazi death camp in the service of his values of caring for his patients (Frankl, 1984). ACT treatment providers help clients link difficult behaviors with values in this same manner. Using social anxiety as an example, ACT involves linking the acceptance of negative thoughts feelings, and physical sensation with the behavior of going to a party in the service of building valued patterns of interpersonal relations.

What are values?

ACT's perspective on values adheres to its behavior analytic foundation in combination

with contemporary contextual behavioral analysis of language and cognition (Hayes, Barnes-Holmes, & Roche, 2001). Wilson, Dufrene, and Sandoz (2009) define values in ACT as, *"freely chosen, verbally constructed consequences of ongoing, dynamic, evolving patterns of activity, which establish predominant reinforcers for that activity that are intrinsic in engagement in the valued behavioral pattern itself"* (2009, p. 66).

Freely chosen. In ACT, values are freely chosen. This means that they are chosen by the individual and are not a reflection of what the individual thinks he/she should or has to value. Values are chosen in the face of thoughts or feelings surrounding them. The thoughts and feelings about values, including judgments and evaluations, are not values in this model. Thoughts and feelings wax and wane, which makes them a problematic compass to guide action. For example, actions made in service of the value of achieving a higher education are not always accompanied by positive thoughts and feelings. In fact, the road to a higher education is often plagued with negative thoughts and feelings. Choosing this value and to act in valued directions can be done even when thoughts and feelings do not align. If thoughts and feelings were the guide, actions would likely stop when things get hard, such as quitting a graduate program before finishing the degree.

Verbally constructed. According to ACT, values do not pre-exist in the world to be discovered. ACT is based on Relational Frame Theory (RFT), which is a post-Skinnerian theory of language and cognition. According to RFT, humans can derive relations and even psychological functions through verbal conditioning processes (Hayes, et al., 2001). Values are verbally constructed through these conditioning processes. This is an ongoing process and values can be adjusted when engaging in this process. For example, what it means for someone to be a father, daughter, student, or employee changes over time as he/she continuously experiences

these language processes and the consequences of valued-based action. Because constructing values is a behavior and not things that preexist in the world the word "value" is better thought of as a verb in ACT. That is, a value is something one does rather than something one discovers.

Evolving patterns of activity. Values are different than goals. Getting a degree, buying a house, and getting a job are goals. Each of these goals has an endpoint and can be achieved. Values on the other hand are qualities of ongoing patterns of activity, which can be contacted indefinitely. For example, the value of education isn't necessarily achieved when the degree is earned. The individual may continue to act in service of this value by engaging in other means of educating herself such as by reading or attending professional conferences. The pattern of activity evolves over time as context changes.

Establish intrinsic reinforcers. Humans are able to respond to reinforcers that nonhumans can't because they are able to engage in verbal processes (Hayes, et al., 2001). The reinforcing nature of values is not the direct immediate contingency of the valued-action. Sometimes that immediate contingency is aversive. Consider this example. Jill has a long history of not speaking in class because of anxiety. She decided to start answering and asking questions in class because she values her education. She experienced negative consequences when she engaged in this behavior (e.g., classmates rolling their eyes, professor dismissing her) but continued speaking in classes. The reinforcer is not the immediate socially mediated reinforcers. Instead, the reinforcer is the coordination of one's chosen, verbally constructed values and behavior. It is the process rather than the outcome that is reinforcing.

Empirical Support for Values

There is far more research on acceptance than on values. Although empirically examining the effect of making values more present and values-based action is fairly new,

15

multiple studies in experimental and clinical research demonstrate that values are associated positive outcomes. Values writing is one task often used to study the effects of contacting values. Writing about high ranking versus low ranking values has been found to have positive effects. Examples of these effects are, higher grades in African American students (Cohen, Garcia, Apfel, and Master, 2007) and more other-directed feelings, such as love and connection, (Crocker, Niiya, & Mischkowski, 2008). Additionally, lower levels of defensiveness in smokers given information regarding the harmful effects of tobacco (Crocker et al., 2008) and lower cortisol levels following a stressful task (Creswell et al., 2005) were also demonstrated.

Values-based action has also been shown to be beneficial in multiple settings. In a sample of chronic pain patients, higher ratings of one's personal success at living according to values was associated with lower levels of physical and psychosocial disability, depression, and pain-related anxiety (McCracken and Yang, 2006). In sample of epileptic patients (Lundgren, Dahl, Melin, & Kies, 2006), engagement in values mediated reductions in seizures and improvements in reports of personal well-being and quality of life (Lundgren, Dahl, & Hayes, 2008).

Component Analyses that Incorporate Acceptance and Values

The acceptance component analyses discussed in the previous section did not include a values component to the acceptance intervention. According to ACT proponents, adding values go acceptance should result in better outcomes than acceptance alone. A few studies used an ACT protocol for the acceptance condition (e.g., Hayes, Bissett et al., 1999; Takahashi, Muto, Tada, & Sugiyama; 2002; Masedo & Esteve, 2007). These protocols focused on two of the ACT processes, acceptance and defusion (i.e., holding stories about the world more lightly). Values were not included in these protocols.

Gutiérrez, Luciano, Rodriguez, & Fink (2004) attempted to address the lack of motivational contexts in these sorts of analogue studies. They set this context by telling participants in both the ACT and cognitive control conditions that engaging in the electric stimulation task would help the researchers learn how people cope with chronic pain. Participants in the ACT condition showed higher pain tolerance and reported lower believability of pain than participants in the cognitive control condition. Believability of pain is defined as reporting high levels of pain as a reason to stop the task. These positive results are similar to the acceptance component studies that did not incorporate a values context.

Paez-Blarrina, Luciano, Gutierrez-Martinez, Valdivia, Rodriguez, and Ortega (2008) used the same electric stimulation task used in Gutiérrez et al.'s (2004) study but used a different values context for both conditions. In the ACT condition, researchers used instructions and metaphors linking acceptance of discomfort and values-based action. In the cognitive control condition, researchers gave instructions and metaphors linking the presence of discomfort with stopping value-based action. Participants in the ACT condition reported significantly lower believability of pain than the cognitive control condition from pretest to posttest. Pain tolerance increased and subjective levels of pain decreased for participants in both conditions.

Another study using the same experimental task, compared 5 instructional sets: acceptance with metaphors and exercises, acceptance with written instructions only, distraction with metaphors and exercises, distractions with written instructions only, and no instructions (McMullen et al, 2007). With the exception of the no instructions conditions, researchers told participants to continue with the task as long as possible because the study will help people who suffer from chronic pain. Participants in both of the acceptance conditions reported lower levels of believability of pain than participants in the other conditions. In addition, participants in the

acceptance with metaphors and exercises condition were the only ones that showed a significant increase in task tolerance from pretest to posttest.

Again, using the same electric stimulation pain task as the previous studies, Paez-Blarinna, Luciano, Gutierrez-Martinez, Valdivia, Ortega, and Rodriguez-Valverde (2008) compared an ACT, pain control (similar to suppression), and a control condition that did not receive any training. Participants completed the experimental task twice and were exposed to a different intervention before each task. Acceptance and values were the focus of the first ACT intervention, which was given prior to the first task. Researchers told participants that the study will help those suffering from pain, described the relation between thoughts, feelings and actions using examples, and used personal examples to link private events with the current experimental task. Defusion was the focus of the second ACT intervention, which was administered right before engaging in the task the second time. Participants in the ACT condition showed significantly higher pain tolerance during the first pain task than participants in the other conditions. Breaking it down further, 70% of the participants in the ACT condition enduring the maximum number of shocks compared to 10% in the pain control, and 20% in the untrained condition (Paez-Blarinna et al., 2008, p. 92). In addition, believability of pain reports in the first pain task were significantly lower for participants in the ACT condition than participants' reports in the other two conditions.

Although these studies add a values context, they do not directly compare values and acceptance to acceptance alone. Branstetter-Rost, Cushing, and Douleh (2009) attempted to look at the additive effects of values by comparing an acceptance only intervention with an acceptance plus values interventions in an analogue pain task using a cold-pressor. In the acceptance condition, experimenters trained participants in aspects of the ACT model for 20

minutes using exercises and metaphors. The acceptance plus values condition received the same training plus a values component, which consisted of leading participants through an individualized 2-minute mindfulness exercise focused on enduring pain for their top-ranking value. Participants in the acceptance plus values condition had significantly greater pain tolerance than the acceptance condition and participants in both of the acceptance conditions demonstrated greater pain tolerance than participants in the control condition. Additionally, there were no differences between conditions on pain threshold, which is the amount of time between exposure to the painful stimulus and the reporting of pain.

Current Study

There are a few studies that use Hayes and colleagues (2011) conceptualization of acceptance by incorporating an aspect of values in the acceptance intervention. These studies were not designed to examine if adding values to acceptance interventions enhanced the outcomes of the intervention. Only one study to date has investigated the additive effects of values. Branstetter-Rost and colleagues (2009) found that acceptance plus values significantly outperformed acceptance alone on pain tolerance. The aim of this study is to both replicate and extend these findings by further testing the additive effects of values on willingness and persistence in the context of emotion distress rather than pain. It is hypothesized that individuals who receive acceptance plus values instructions will persist in a frustrating task longer and report greater willingness to complete the task again than those who receive acceptance alone instructions. It is also hypothesized that participants in both of the acceptance conditions will outperform those in the suppression (control) condition of both of these measures.

19

METHODS

Participants

Undergraduates were recruited from psychology classes at a large, public southern university and were offered class credit or extra credit for their participation. One hundred fifty-five students responded and participated in this study. One hundred twenty-one of these participants were included in analyses (see data analyses section below for explanation of case deletion). The sample was 86% Caucasian and 70.2% female. The mean age was 19.67 (SD = 4.026) and 95.9% were between the ages of 18 and 22.

Measures

Laboratory measure of persistence. The computerized mirror-tracing persistence task (MTPT-C; Strong, Lejuez, Daughters, Marniello, Kahler, & Brown, 2003) was used as a behavioral measure of persistence. Strong and colleagues (2003) developed this computerized measure based on the mirror-tracing persistence task (MTPT) protocol used by Quinn, Brandon, and Copeland (1996). The MTPT first appeared as a measure of distress tolerance in 1932 (Holsopple, 1932). The MTPT consists of participants looking at geometric figures through a mirror while tracing their outlines with a pen or pencil.

In the MTPT-C, participants are asked to trace a red dot around 3 different shapes using a computer mouse. The red dot is programmed to move in the opposite direction the participant moves the computer mouse to simulate tracing an object viewed through a mirror. If the red dot deviates from outline for more than 2 seconds a loud buzzer sounds and the red dot is moved

back to the starting point. The first two shapes participants trace are a line and an L-shape, which are used for instruction purposes. Performance on these shapes does not count towards persistence scores. The third shape is a star and tracing this figure is a considerably more difficult task. The computer program tells participants that they can quit the task at any time by pressing the space bar. The task automatically ends after 7 minutes unbeknownst to the participants. Distress tolerance is measured by latency in seconds from the beginning to the task until the task ends either by the participant pressing the space bar or after the 7 minutes elapses.

The MTPT-C has been shown to induce emotional distress as measured by anxiety, frustration, and irritation, providing support for construct validity (Bornovalova et al., 2008; Gratz, Bornovalova, Delany-Brumsey, Nick, & Lejuez, 2007). There is also some evidence for the convergent validity of the MTPT-C. Two studies show that MTPT-C is positively correlated with another behavioral measure of distress tolerance, the Paced Auditory Serial Addition Task-Computer Version (PASAT-C; Lejuez, Kahler, & Brown, 2003; Daughters et al, 2005; Schloss & Haaga, 2011). Additionally, higher unwillingness scores on the MTPT-C are associated with people who abuse substances and have a borderline personality disorder or antisocial personality disorder versus those who abuse substances but do not have a borderline personality disorder or antisocial personality disorder diagnosis (Bornovalova et al., 2008; Daughters, Sargeant, Bornovalova, Gratz, & Lejuez, 2008). Regarding predictive validity, scores on the MTPT-C predicted early treatment drop out in a substance abuse facility (Daughters et al., 2005).

Positive and negative affect. The Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988) was used to assess affect. In the PANAS, individuals rate the extent they feel certain moods. The measure contains 20 items, which are 20 different adjectives such as jittery, hostile, and upset. Ten of these items comprise the negative affect scale and the other

10 comprise the positive affect scale. This measure has good internal consistency reliability, convergent validity, and construct validity (Watson et al., 1988). The PANAS has also been shown to be sensitive enough to detect short-term fluctuations in mood (Watson et al, 1988).

Affect was also measured by Subjective Unit of Discomfort (SUDS), which was developed by Joseph Wolpe to measure anxiety levels during the treatment of phobias (Wolpe, 1969). Participants were asked, "on a scale of 1 to 100, where 1 means that you do not feel any discomfort at all and 100 means that you feel extreme discomfort, how much discomfort do you feel right now." Studies have demonstrated that SUDS levels have adequate validity (cf., Kazdin & Wilcoxin, 1976; Thayer, Papsdorf, Davis, & Vallecorsa, 1984; Milby, Mizes, & Giles, 1986).

Self-Report measure of willingness. Following the first completion of the MTPT-C, participants were asked to rate how willing they would be to complete the MTPT-C a second time on a 0 to 4 Likert scale, with 0 being "not at all willing," 1 "a little bit willing," 2 "mostly willing" and 3 " very willing," and 4 "definitely willing."

Manipulation checks. To ensure participants read and understood the coping strategy instructions provided to them, participants answered questions about their assigned coping strategy (see Appendix C). These questions were adapted from Levitt and colleagues (2003). Participants were asked to indicate to what extent they engaged in a series of acceptance and suppression related behaviors during the mood induction and the MTPT-C in order to see if the behaviors changed after the intervention and if their behaviors reflected their assigned strategy (see Appendices D and E). There were 6-items on this measure and suppression items were reverse scored. Scores range from 0 to 48 with higher scores indicating higher use of acceptance strategies.

Procedure

Experimenters went over the informed consent form with the participants. The consent form included the following statement: "you will receive full credit for participation in the study regardless of how long it takes you to finish all study elements." This sentence was included to reduce the probability of a ceiling effect on persistence scores as participants are continuing with the task in order to get full credit. Participants provided experimenters with written consent prior to starting the study. Experimenters randomly assigned participants to one of three conditions: suppression, acceptance, or acceptance plus values. Experimenters ran participants one at a time and the entire procedure lasted approximately 1 hour per participant.

Participants began by answering demographic, SUDS level, and the PANAS items on online survey software maintained by the university. Then, participants were led through a negative mood induction procedure. The mood induction began by experimenters telling participants that they will be asked to think about the thing they like least about themselves after they watch a 5-minute slide show containing other peoples' responses to that question such as, "I am not good enough," "I am not smart enough," and "I am second best." Next, participants listened to an audio recording that asked them to think about the thing they least like about themselves. Following the mood induction, participants completed the PANAS and SUDS level item again and the coping strategies measure to assess how they coped with negative private events during the mood induction.

Next, participants were provided with one of three coping strategy interventions (see Appendix B for intervention scripts). The interventions were adapted from Levitt and colleagues

(2003) and Hayes and colleagues (1999). All coping strategy interventions were matched for number of words.

After listening to the coping strategy intervention audio recording, participants completed the PANAS, a SUDS level item, and a short quiz on their assigned coping strategy. Then, participants completed the MTPT-C. Following this task, participants filled out the PANAS, the SUDS level item, and the coping strategy measure again. Participants were also asked how willing they were to complete the MTPT-C again. Participants were then asked to wait for 5 minutes before asked to complete the MTPT-C a second time.

RESULTS

Data Analysis Strategy

Prior to analyses, the data were examined through various SPSS procedures for missing values and fit between their distributions and the assumptions of multivariate analyses. The variables were examined separately for the 50 participants in the acceptance condition, 49 in the acceptance plus values condition, and 56 in the suppression condition. One case from the suppression condition had missing values on the PANAS at time 5 and one case from the acceptance condition had a missing value for the SUDS level at time 5. Both cases were deleted from the groups.

Four cases in the acceptance condition, 3 in the acceptance plus values condition, and 5 in the suppression condition were identified as univariate outliers based on having a z-score greater than 3.29 ($p < .001$, two-tailed test) on one or more variables. These cases were deleted from the analyses. No multivariate cases with a Mahalanobis distance exceeding the critical value of 48.268 ($\alpha = .001$) were identified in any of the conditions.

The assumption of normality was not met on all variables; however, parametric tests are robust to violations of this assumption with sufficient degrees of freedom and sample size (Tabachnick & Fidel, 1996). Since this sample had the necessary degrees of freedom and a large enough sample size, we decided it was appropriate to conduct analyses using parametric tests despite this assumption violation.

Before analyses, the data were also checked to ensure participants were attentive during the audio recording of their assigned coping strategy intervention. In a multiple-choice format, participants were asked how the directions on the tape told them to handle unpleasant thought and feelings. Participants who responded inconsistently with respect to their assigned strategy were removed from the analyses. There were 7 participants from the acceptance condition, 5 from the acceptance plus values condition, and 8 from the suppression condition, who were removed from further analyses for this reason. The deletion of cases because they contained missing values, were outliers, or failed the coping strategy manipulation check left 38 in the acceptance condition, 41 in the acceptance plus values condition, and 42 in the suppression condition.

Descriptive statistics were conducted on demographic variables. To examine gender and ethnic/racial differences between conditions, Pearson chi-square tests were used. A one-way ANOVA was conducted to investigate age differences between groups. To examine between group differences for baseline SUDS level, negative affect, and positive affect, a one-way MANOVA was used. A one-way MANOVA was also conducted to examine the effect of coping strategy interventions on task persistence (latency in seconds on the MTPT-C) on both administrations of the MTPT-C and self reported willingness to engage in the task again. A 3 (conditions) X 5 (time) repeated measures MANOVA was conducted to examine the coping strategies impact on SUDS levels, negative affect, and positive affect. Finally, a one-way ANOVA was used to assess between group differences in use of coping strategies during the MTPT-C.

Randomization

Preliminary comparisons were conducted to ensure that there were no group differences a priori. No group differences were found for gender using a two-tailed Pearson chi-square test, c^2(2, N = 121) = .557, p = .757 (see Table 1). When examining group differences for ethnicity using a Pearson chi-square test (two-tailed), 9 cells had an expected count less than 5, which is a violation of the assumptions for this test (see Table 1). No statistically significant group differences were found for age using a one-way ANOVA, F(2) = 1.631, p = .2, partial η^2 = .027 (see Table 2). To examine baseline affect group differences, a MANOVA was used with SUDS level, negative affect scores, or positive affect scores as the dependent measures. The results showed no statistically significant group differences on these variables at baseline, F(6, 232) = 1.129 (Wilks' Lambda), p = .346, partial η^2 = .028 (see Table 2).

Effects of the Mood Induction and Coping Strategy Interventions on Affect

To examine the mood effects of the mood induction and the coping strategy interventions a 3 (conditions) by 5 (time) repeated measures MANOVA was conducted with negative affect scores, positive affect scores, and SUDS levels as the dependent variables. Box's Test of Equality of Covariance Matrices was significant (p < .001), indicating a violation of the homogeneity assumption. However, due to a large sample size (N = 121), MANOVA analyses are robust to this assumption (Tabachnick & Fidel, 1996). Levine's test of equality of error variances was not significant for individual dependent variables.

Using the Wilks' Lambda criterion, the combined dependent variables showed a significant time effect, F(12, 107) = 15.4, p < .001, partial η^2 = .633. The time by condition interaction effect was not significant. When examining univariate within-subjects analyses, Mauchly's test of sphericity was significant for negative affect scores (χ^2(9) = 33.625, p < .001),

positive affect scores ($\chi^2(9) = 34.943$, $p < .001$), and SUDS levels ($\chi^2(9) = 81.799$, $p < .001$). A Greenhouse-Geisser correction was applied to these univariate analyses to mitigate the violation of this sphericity assumption. There was a statistically significant time effect for negative affect scores, $F(3.503) = 21.896$ (Greenhouse-Geisser), $p < .001$, partial $\eta^2 = .157$. There was also a statistically significant time effect for positive affect scores, $F(3.422) = 40.135$ (Greenhouse-Geisser), $p < .001$, partial $\eta^2 = .254$. The time effect for SUDS levels was also statistically significant, $F(3.099) = 24.331$ (Greenhouse-Geisser), $p < .001$, partial $\eta^2 = .171$.

Profile analyses were conducted to examine the time effects for negative affect scores, SUDS levels, and positive affect scores. A significant effect for flatness was found for negative affect ($F(4) = 22.061$ (Wilks' Lambda), $p < .001$), SUDS levels ($F(4) = 14.82$ (Wilks' Lambda), $p < .001$), and positive affect scores ($F(4) = 28.352$ (Wilks' Lambda), $p < .001$). This indicates that negative affect scores, SUDS levels, and positive affect scores all vary by time.

There were significant linear ($F(1) = 23.578$, $p < .001$, quadratic ($F(1) = 12.431$, $p = .001$) and Order 4 ($F(1) = 48.662$, $p < .001$) within-subjects contrasts for negative affect scores across time (see Figure 1). There were also significant quadratic ($F(1) = 46.439$, $p < .001$) and Order 4 ($F(1) = 49.524$, $p < .001$) within-subjects contrasts for SUDS levels across time (see Figure 2). For positive affect scores, there were significant linear ($F(1) = 84.224$, $p < .001$, quadratic ($F(1) = 5.266$, $p = .024$), cubic ($F(1) = 5.879$, $p = .017$, and order 4 ($F(1) = 10.491$, $p = .002$) within-subjects contrasts (see Figure 3).

Effects of Coping Strategy Instructions on Willingness to Engage in Task

To examine the effects of coping strategy instructions on willingness to engage in the frustrating task, a MANOVA was conducted using the following dependent variables: persistence in MTPT-C the first time engaging in the task, persistence in MTPT-C the second

time engaging in the task, and self-reported level of willingness to do the MTPT-C a second time. Box's M test of equality of covariance matrices was not significant indicating that the assumption of homogeneity was met. The results did not show a statistically significant effect of the three coping strategy instructions on persistence as measured by these dependent variables, $F(6, 232) = .471$ (Wilks' Lambda), $p = .830$, partial $\eta^2 = .012$. See Figures 4, 5, and 6.

To examine the effects of the coping strategy instructions on willingness for participants who were at least slightly affected by the mood induction, an additional MANOVA was conducted for participants who had a SUDS level increase of at least 5 points post-mood induction. Box's M test of equality of covariance matrices was not significant indicating that the assumption of homogeneity was met. These results also did not show a statistically significant effect of the three coping strategy instructions on persistence as measured by these dependent variables, $F(6, 88) = 1.039$ (Wilks' Lambda), $p = .227$, partial $\eta^2 = .087$ (see Figure 7, 8, and 9).

Coping Strategy Manipulation Check

To examine group differences in reported use of coping strategies before and after the intervention, a MANOVA was conducted. The results showed a significant group difference in reported coping strategies, $F(4, 234) = 10.11$ (Wilks' Lambda), $p < .001$, partial $\eta^2 = .147$. Post-hoc analyses (Tukey) showed that there were no group differences in reported coping strategy use pre-intervention. However, there were group differences post-intervention. Participants in the acceptance condition reported using acceptance strategies more than the suppression condition (mean difference: 6.16, SE = 1.42, $p < .001$). Participants in the acceptance plus values condition also reported using acceptance strategies significantly more than those in the suppression condition (mean difference: 8.28, SE = 1.39, $p < .001$; see Table 3).

DISCUSSION

The current study attempted to examine the effects of adding a values component to an acceptance intervention on persistence in engagement in a frustrating task (MTPT-C). It was hypothesized that the acceptance and acceptance plus values interventions would outperform the thought suppression intervention and the acceptance plus values intervention would also do better than the acceptance only intervention. However, the results did not show significant differences between groups on persistence in the MTPT-C in this experimental preparation. There are a number of possible explanations for this null finding.

Potential Explanations

Placement of the mood induction. One possible reason for not finding group differences on persistence in the MTPT-C could be issues related to the placement of the mood induction. Szasz, Szentagotai, and Hofmann (2011) found significant differences between reappraisal and suppression conditions on persistence in the MTPT-C for individuals who had at least a moderate level of anger following a mood induction. Szasz and colleagues did not find this difference when comparing the acceptance and suppression conditions. The coping strategy instructions that were used immediately following the mood induction in the Szasz and colleagues' study were extremely brief (only one paragraph). McMullen and colleagues (2008) found that participants who were given an acceptance intervention that included metaphors and experiential exercises had significantly higher pain tolerance following the intervention than at baseline. This same effect was not seen with participants who were given brief acceptance instructions that did not

contain metaphors and experiential exercises. For this reason, the interventions used in the current study included metaphors and experiential exercises, which increases their length.

Lengthening the interventions may have produced an unanticipated effect, however. The interventions lasted almost 7 minutes, which may have reduced the impact of the mood induction on the MTPT-C. Although there were significant contrasts for mood in both Szasz and colleagues' (2009) study and the current study, the contrasts were different. In Szasz and colleague's study, there was a significant linear contrast for anger scores and the current study showed significant quadratic and order 4 contrasts for SUDS levels and negative affect scores. This demonstrates that there was less relative discomfort immediately prior to beginning the willingness task in the current study than in Szasz and colleagues' study. Incorporating a second mood induction or moving the mood induction so that it follows the coping strategy induction might mitigate this problem in future studies.

Problems with the persistence task. The null findings could also be related to problems with the MTPT-C task itself. Several component analyses have found that participants in the acceptance-based condition showed greater willingness than those in the suppression condition (Hayes, Bissett et al., 1999; Takahashi et al., 2002; Masedo & Esteve, 2007; Gutiérrez et al., 2004; McMullen et al., 2004, Branstetter-Rost et al., 2009; Eifert & Heffner, 2003' Levitt et al., 2004). All of interventions in these component analyses targeted physical sensations and the experimental tasks consisted of wither a cold-pressor, electric shocks, or CO_2 inhalation. One of the aims of the current study was to extend these findings to emotions, which is a more typical target is psychological interventions.

There have only been a couple of component analyses that examined the use of coping strategy interventions on willingness in areas other than physical sensations – anger and anxiety

31

(Szasz et al., 2004; Hofmann, Heering, Sawyer, & Asnaani, 2009). Neither of these studies found significant differences between the acceptance and suppression conditions on willingness as measured by persistence in the MTPT-C or length of an impromptu speech. The problems related to these 2 persistence tasks might be the reason for the null findings.

The MTPT-C task may not provide enough of an opportunity for participants to practice using coping strategies. The physical sensation-related tasks may have provided more opportunity to practice using the strategies because the only job participants had in the tasks was to experience the presence of uncomfortable sensations, thoughts and emotions before voluntarily ending it. The MTPT-C task, however, involves the presence of uncomfortable feelings and an additional task that requires a high level of concentration and focus – tracing a figure. It could be that concentrating on this additional task reduced participants' ability to use the strategies as frequently during the exercise. Thinking about the coping strategy might take them away from the tracing task.

Giving a speech may be a better task than the MTPT-C because it is something that most people encounter and commonly brings up unpleasant thoughts and feelings. Using a task that is more personally relevant might make the acceptance and values components more meaningful and powerful. However, speech length may not be the best measurement of willingness. For example, speech content, length and number pauses, and interaction with the audience may be a more accurate measure of willingness in this task. Developing and piloting a behavioral approach task for public speaking and using the number of steps the participants completes as a measure of willingness may be more successful.

Problems with the comparison groups. Another possible reason for not finding group differences could be related to the choice of comparison group. Suppression might work as well

as acceptance on persistence in short tasks that require concentration, such as the MTPT-C. The paradoxical effects that make suppression a bad long-term strategy may not surface under these conditions. It is also possible that all three coping strategies (acceptance, acceptance plus values, and suppression) might have been effective but the effect could not be seen because a no treatment control group was not included in the study.

Problems with the sample. The null findings in this study could also be related to the sample used. No inclusion or exclusion criteria were used for the undergraduate participants. Perhaps using only distressed participants or those with low frustration tolerance might have produced different results. Sample related problems could also be why Hofmann and colleagues' (2009) did not find significant group differences between acceptance and suppression conditions on persistence in an impromptu speech. They did not select for individuals who had public speaking anxiety. Coping interventions may not have any impact if the person has no need to use them during the experimental task.

The coping strategies are ineffective. Another possible reason for the null findings in this study could be that the coping strategies are ineffective. Acceptance has relatively strong empirical support demonstrating its effectiveness (c.f., Ruiz, 2010). Because of the number of studies supporting the use of acceptance, the methodological limitations may be a more likely explanation for not finding group differences between acceptance and suppression in the current study.

The empirical support for values is smaller than for acceptance. It could be that values do not add anything to acceptance interventions. However, this conclusion seems to be too soon to make, considering the methodological concerns with the current study and that the limited values research shows positive outcomes. For example, values writing research has shown that writing

about a high versus low ranking value resulted in higher grades in African American students (Cohen et al., 2007), more other-directed feelings, such as love and connection (Crocker et al., 2008), and lower cortisol levels following a stressful task (Creswell et al., 2005). Adding a values-based mindfulness exercise to an ACT intervention also increased pain tolerance (Branstetter-Rost et al., 2009). Replications of the writing studies and conducting meditational studies and more values component analyses with varied preparations are needed to make any conclusions about the impact of values on outcomes.

Interventions were not effective. It could also be that the coping strategies are effective but the interventions used in the study to target the coping strategies are not. The interventions could have been ineffective due to their format or narrowness.

Format. Several of the component analyses that found group differences on measures of willingness contained in-person interventions (e.g., Hayes, Bissett et al., 1999; Masedo & Esteve, 2007; Gutiérrez et al., 2004; Branstetter-Rost et al., 2009; Eifert & Heffner, 2003). In-person interventions may be more powerful because participants may be more likely to listen attentively because it is more engaging or for social-related factors. Additionally, the social interactions that occur between participants and examiners during the interventions may also enhance the effects of the strategies, especially if participants are permitted to ask questions (e.g., Hayes, Bissett et al., 1999).

In-person interventions were not the only interventions that produced significant group differences on measures of willingness, however (e.g., Levitt et al., 2004; McMullen et al., 2004). The current study modified interventions used in one of these successful studies (Levitt et al., 2004). The audio recording format was chosen for the current study because of limited available resources and prior success with the interventions. Research is needed to determine if

34

there are differences in the impact of coping strategy interventions based on their form (e.g., in person, audio recording, or video recording).

Narrowness of the intervention. Most of the interventions in the component analyses that found group differences between acceptance and suppression on willingness consisted of full ACT or acceptance and defusion (e.g. Hayes, Bissett et al., 1999; Takahashi et al., 2002; Masedo & Esteve, 2007; Gutiérrez et al., 2004; McMullen et al., 2004, Branstetter-Rost et al., 2009; Eifert & Heffner, 2003). The goal of the current study, however, was to isolate the acceptance and values components to assess their individual impact on persistence. Adding additional ACT components to the interventions would impact the purity of the component analyses, which is why additional components were left out of the study. If the interventions in the current study contained more ACT components, however, group differences might have been found.

Limitations

This study contains methodological issues that limit the conclusions that can be drawn from it. The sample consisted of undergraduate students, most of whom were between 18 and 22-years old, female, and Caucasian. The interventions may produce different results if the demographic make-up of the sample was altered in some way. Having inclusion criteria (e.g., low distress tolerance scores, low overall well-being scores) may have also resulted in different findings.

Procedural issues may also affect the conclusions about the impact of acceptance and values on persistence. For example, the length of time between the mood induction and the persistence task may have also affected the results because the mood effects did not carry over to the beginning of the persistence task as intended. Additionally, the coping instructions may have been more powerful if they contained more metaphors and experiential exercises, were

conducted in person, and contained more treatment components. Lastly, the persistence task used may not allow sufficient time to practice the assigned coping strategy.

Future Directions

Complex treatment packages contain multiple components. Only testing treatment effectiveness does not provide information about mechanism of action, which is important for improving clinical interventions (e.g., Kazdin & Nock, 2003). One-way to examine the potency of theorized mechanisms of action in treatment packages are with component analyses. The current study aimed to examine two treatment components (acceptance and values) using this research design. The results of this study did not provide evidence demonstrating that either treatment component produces better outcomes than suppression.

It may be the experimental preparation and not the strategies that are responsible for the null finding. Future research can investigate different modifications of the preparation. For example, studies could move the mood induction to be closer in proximity to the persistence task. Researchers could also design studies that alter the content, metaphors, exercises, length, and format (in-person, audio, video) of the interventions to see if these factors influence their effect.

The component analyses that showed that acceptance interventions outperformed suppression interventions on measures of willingness all focused on physical sensations. None of these studies compared acceptance and acceptance plus values interventions. Because these studies did show significant group differences, using these physical sensation-related experimental tasks to test the effects of adding a values component to an acceptance intervention may be a good first step. Branching out of the physical realm into emotions is also desirable

because it is often the focus of psychotherapy. Developing and piloting new persistence tasks that relate to emotional difficulties may also be needed.

Conclusions

There is a relatively large body of evidence supporting acceptance as a treatment component. According to ACT proponents, acceptance is done in the service of values (Hayes et al., 2011). This component analyses examined the effects of adding a values component to an acceptance intervention on a persistence task in a mood-related context. No group differences were found, which does not support the ACT proponents' assertion. There are a number of methodological limitations in this study related to the mood induction placement, interventions, persistence task, and sample that may have contributed to the null findings. Continued research in this area is needed to determine the impact of values as a treatment component, which has important clinical implications.

Table 1

Comparison of Gender and Ethnicity by Condition

Characteristic	Overall N (percent)	Acceptance N (percent)	Acceptance Plus Values N (percent)	Suppression N (percent)
Gender				
Male	36 (29.8%)	13 (34.2%)	11 (26.8%)	12 (28.6%)
Female	85 (70.2%)	25 (65.8%)	30 (73.2%)	30 (71.4%)
Ethnicity				
Caucasian	104 (86.0%)	34 (89.5%)	34 (82.9%)	36 (85.7%)
African American	14 (11.6%)	3 (7.9%)	6 (14.6%)	5 (11.9%)
Asian	1 (0.8%)	1 (2.6%)	0 (0.0%)	0 (0.0%)
Hispanic	2 (1.7%)	0 (0.0%)	1 (0.8%)	1 (0.8%)

Table 2

Comparison of Age and Baseline SUDS Levels, Positive Affect Scores, and Negative Affect

Scores by Condition

Characteristics	Overall Mean (SD)	Acceptance Mean (SD)	Acceptance Plus Values Mean (SD)	Suppression Mean (SD)
Age	19.67 (4.026)	20.61 (6.82)	19.02 (1.19)	19.45 (1.67)
SUDS	10.36 (12.55)	11.03 (12.66)	11.39 (13.24)	8.74 (10.85)
Positive Affect	30.84 (8.69)	31.10 (8.80)	30.41 (8.76)	31.02 (8.72)
Negative Affect	14.33 (4.39)	15.42 (5.12)	14.63 (4.77)	13.05 (4.40)

Table 3

Comparison of Mean Acceptance Scores Pre- and Post-Intervention by Condition

	Pre-Intervention Acceptance Score Mean (SD)	Post-Intervention Acceptance Score Mean (SD)
Acceptance	27.08 (7.53)	28.45 (5.42)
Acceptance Plus Values	29.49 (7.95)	30.56 (7.34)
Suppression	27.69 (8.50)	22.29 (6.02)

Figure 1

Within-subjects Mean Negative Affect Scores Across Time
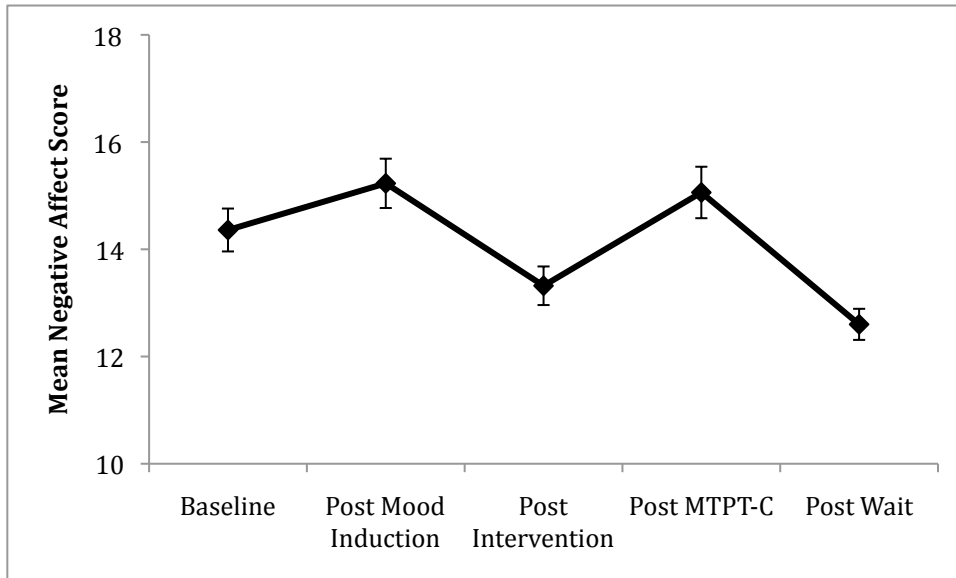
Figure 2

Within-subjects Mean SUDS Levels Across Time
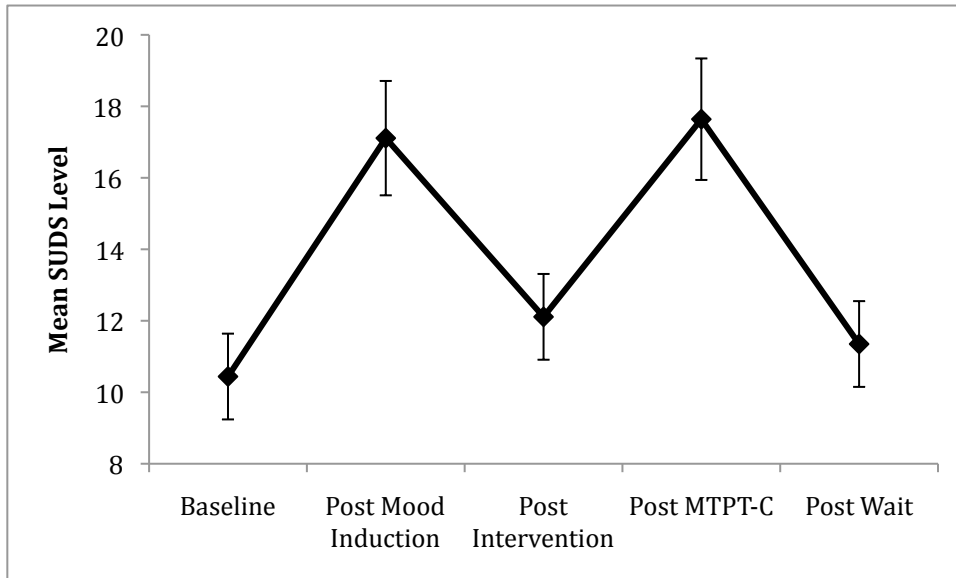
Figure 3

Within-subjects Mean Positive Affect Scores Across Time
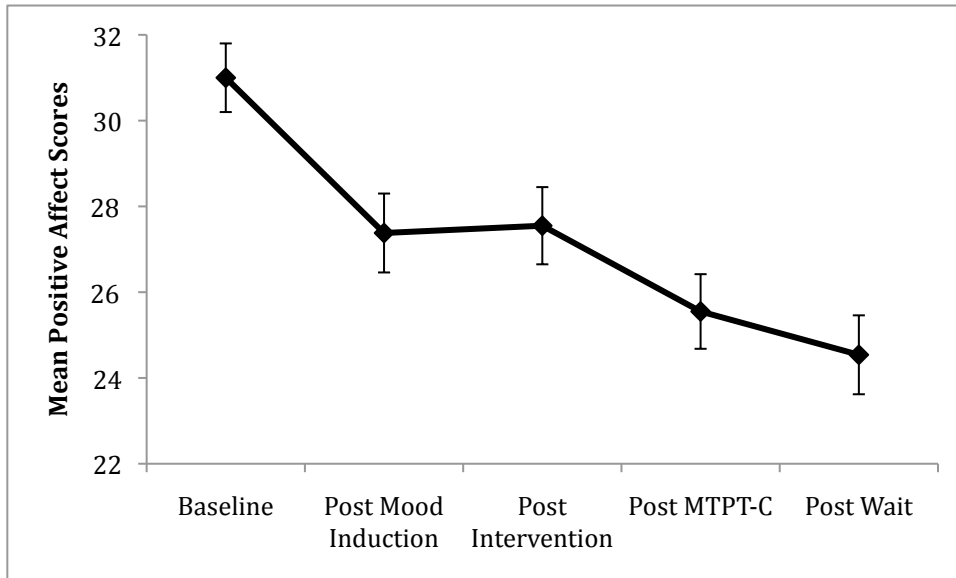
Figure 4

Comparison of Mean Seconds Spent the First Time Engaging in MTPT-C by Condition
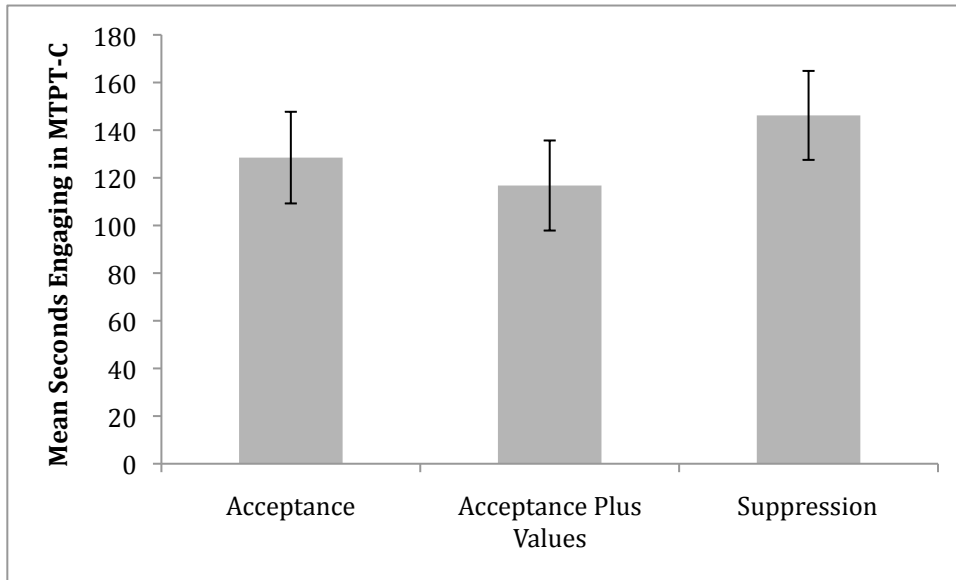
Figure 5

Comparison of Mean Seconds Spent the Second Time Engaging in MTPT-C by Condition
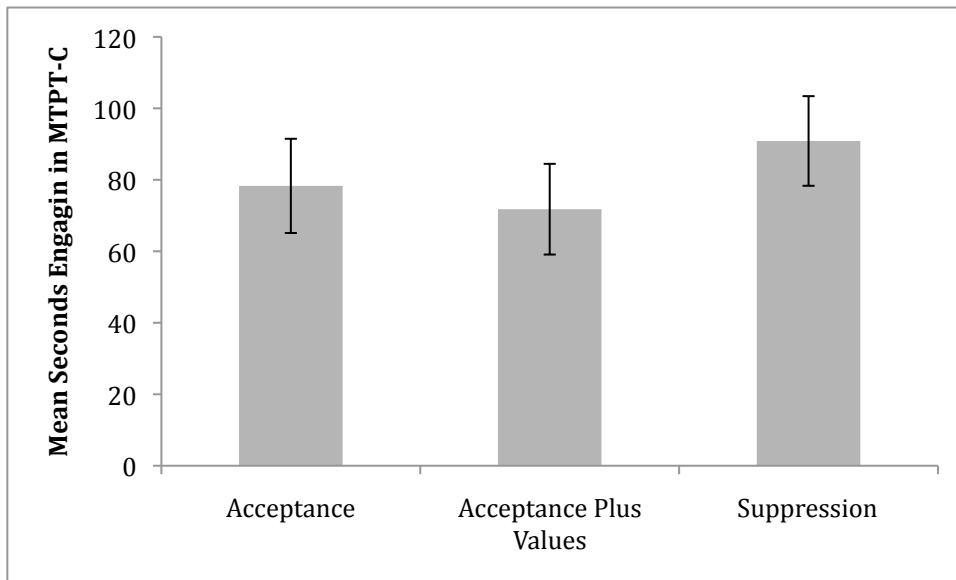
Figure 6

Comparison of Mean Self-Reported Willingness to Engage in the MTPT-C a Second Time by

Condition

Figure 7

Comparison of Mean Seconds Spent the First Time Engaging in MTPT-C by Condition for

Participants with an Increase of 5 Points or More Post Mood Induction

Figure 8

Comparison of Mean Seconds Spent the Second Time Engaging in MTPT-C by Condition for

Participants with an Increase of 5 Points or More Post Mood Induction
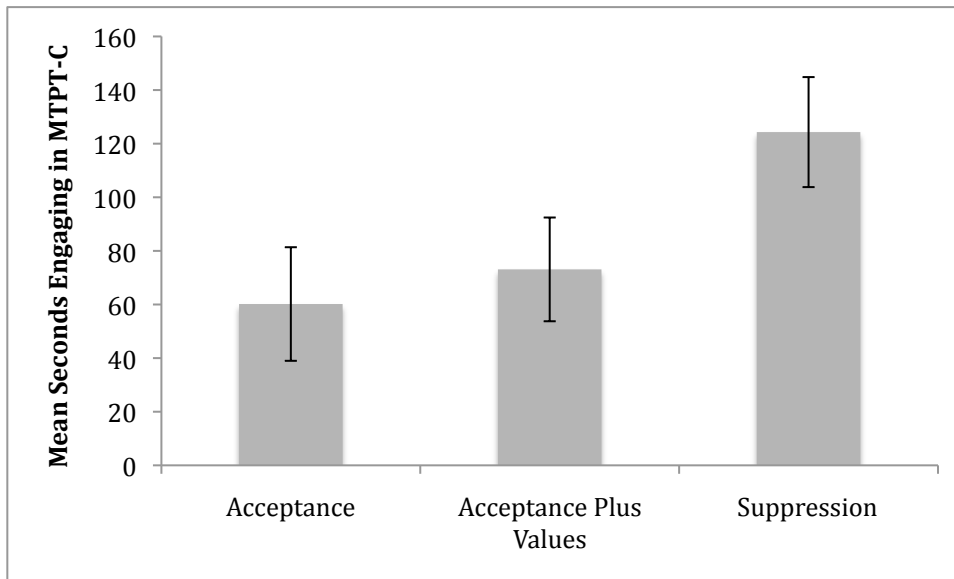
Figure 9

Comparison of Mean Self-Reported Willingness to Engage in the MTPT-C a Second Time by

Condition for Participants with an Increase of 5 Points or More Post Mood Induction
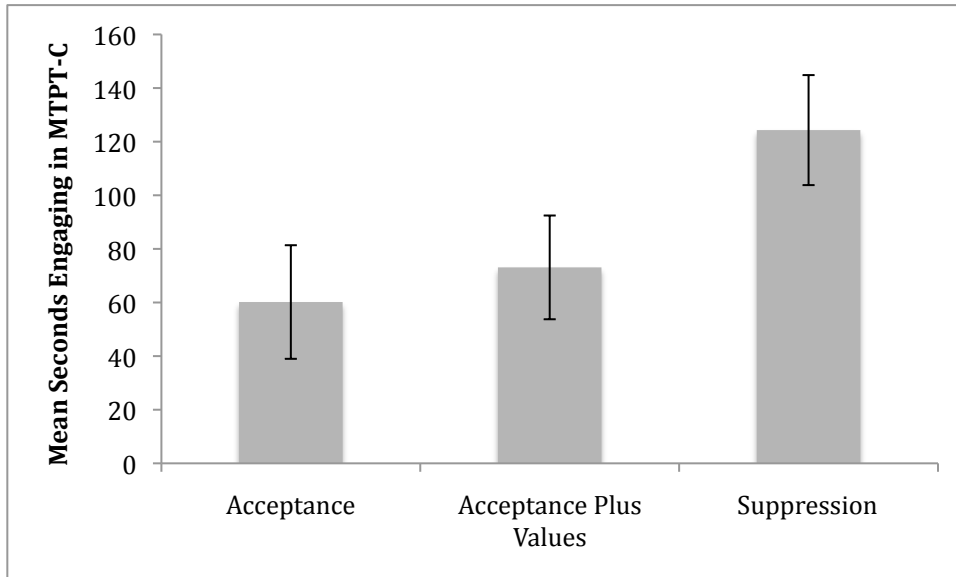
LIST OF REFERENCES

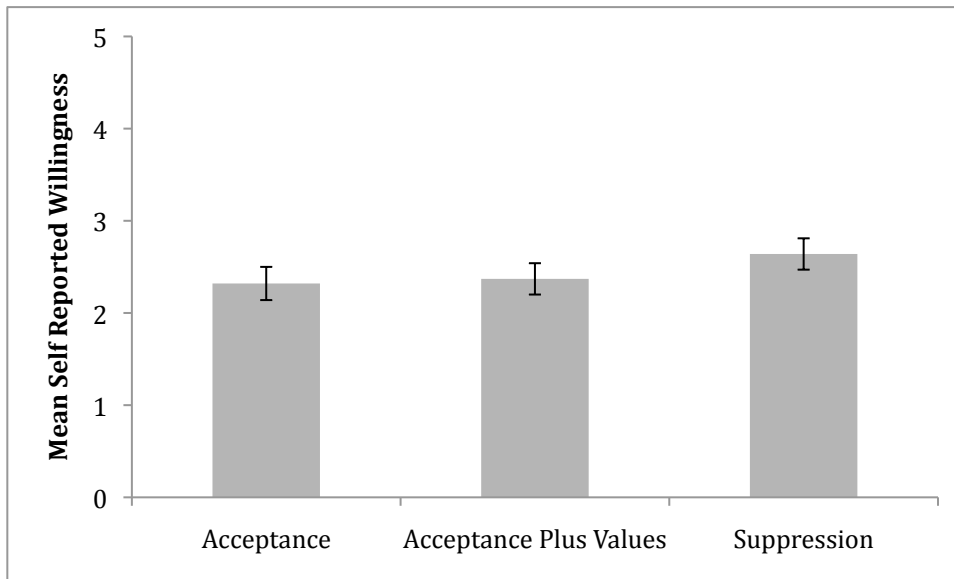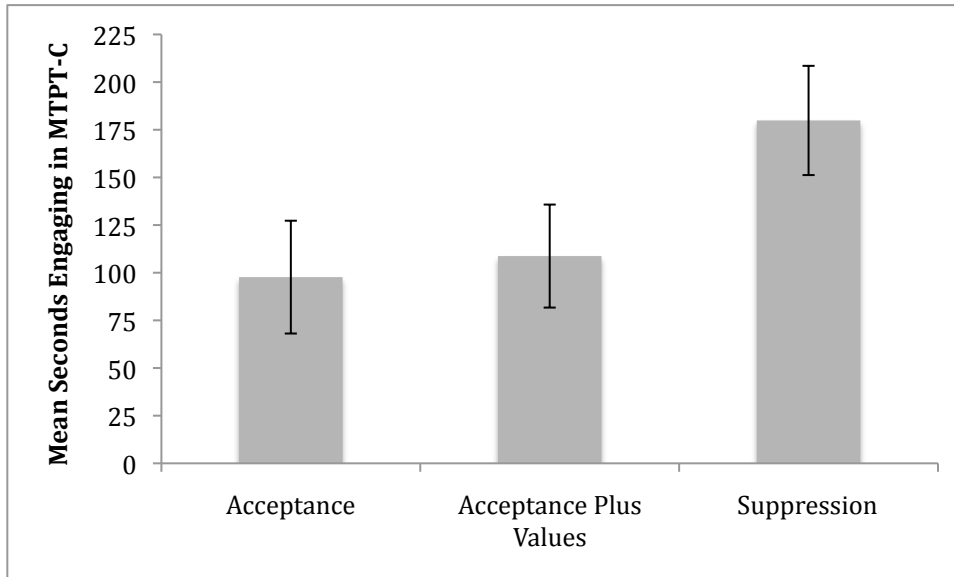Abramowitz, J.S., Tolin, D.F., & Street, G.P. (2001). Paradoxical effects of thought suppression: A meta-analysis of controlled studies. *Clinical Psychology Review, 21*(5), 683-703.

Abramson, L.Y., Metalsky, G.I., & Alloy, L.B. (1989). Hopelessness depression: A theory based subtype of depression. *Psychological Review, 96*, 358–372.

Barnhofer, T., Crane, C., Hargus, E., Amarasinghe, M., Winder, R., & Williams, J. M. (2009). Mindfulness-based cognitive therapy as a treatment for chronic depression: a preliminary study. *Behaviour Research and Therapy*, *47*, 366-373.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: International Universities Press.

Beck, A.T., Rush, A.J., Shaw, B.F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.

Bond, F. W., & Bunce, D. (2000). Mediators of change in emotion-focused and problem-focused worksite stress management interventions. *Journal of Occupational Health Psychology, 5*, 156-163.

Bond, F. W., & Bunce, D. (2003). The role of acceptance and job control in mental health, job satisfaction, and work performance. *Journal of Applied Psychology, 88*, 1057-1067.

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., Waltz, T., & Zettle, R. D. (in press). Preliminary psychometric properties of the Acceptance and Action Questionnaire – II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*.

Bornovalova, M.B., Gratz, K.L., Daughters, S.B., Nick, B., Delaney-Brumsey, A., Lynch, T.R., Kosson, D., & Lezjuez, C.W. (2008). A multimodal assessment of the relationship between emotion dysregulation and borderline personality disorder among inner-city

substance users in residential treatment. *Journal of Psychiatric Research, 42*, 717-726.

Branstetter-Rost, A., Cushing, C., & Douleh, T. (2009). Personal values and pain tolerance: Does a values intervention add to acceptance. *The Journal of Pain, 10*(8), 887-892.

Bryant, R.A. & Harvey, A.G. (1995). Processing threatening information in posttraumatic stress disorder. *Journal of Abnormal Psychology, 104*(3), 537-541.

Chapman, A.L., Specht, M.W., & Cellucci, T. (2005). Borderline personality disorder and deliberate self-harm: Does experiential avoidance play a role? *Suicide and Life-Threatening Behavior, 35*(4), 388-399.

Christensen, A., Atkins, D. C., Berns, S., Wheeler, J., Baucom, D. H., & Simpson, L. E. (2004). Traditional versus integrative behavioral couple therapy for significantly and chronically distressed married couples. *Journal of Consulting and Clinical Psychology, 72,* 176–191.

Christensen, A., Jacobson, N. S., & Babcock, J. C. (1995). Integrative behavioral couple therapy. In N. S. Jacobson, & A. S. Gurman (Eds.), *Clinical handbook of couples therapy* (pp. 31-64). New York: Guilford Press.

Cioffi, D., & Holloway, J. (1993). Delayed costs of suppressed pain. *Journal of Personality and Social Psychology, 64,* 274-282.

Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science, 313*, 1307-1310.

Creswell, J. D., Welch, W. T., Taylor, S. E., Sherman, D. K., Gruenewald, T. L., & Mann, T. (2005). Affirmation of personal values buffers neuroendocrine and psychological stress responses. *Psychological Science, 16*(11), 846-851

Crocker, J., Niiya, Y., & Mischkowski, D. (2008). Why does writing about important values reduce defensiveness? Self-affirmation and the role of positive other-directed feelings. *Psychological Science, 19*, 740-747.

Daughters, S.B., Lejuez, C.W., Bornovalova, M.A., Kahler, C.W., Strong, D.R., Brown, R.A. (2005). Distress tolerance as a predictor of early treatment dropout in a residential substance abuse treatment facility. *Journal of Abnormal Psychology, 114*, 729-734.

Daughters, S.B., Sargeant, M.N., Bornovalova, M.A., Gratz, K.L., & Lejuez, C.W. (2008). The relationship between distress tolerance and antisocial personality disorder among male innter-city treatment seeking substance abusers. *Journal of Personality Disorders, 22*(5), 509-524.

Dimidjian, S., Hollon, S. D., Dobson, K. S., Schmaling, K. B., Kohlenberg, R. J., Addis, M. E., et al. (2006). Randomized trial of behavioral activation, cognitive therapy, and antidepressant medication in the acute treatment of adults with major depression. *Journal of Consulting and Clinical Psychology, 74*, 658– 670.

Dobson, K.S. (1989). A meta-analysis of the efficacy of cognitive therapy for depression. *Journal of Consulting and Clinical Psychology, 57*(3), 414-419.

Dozois, D.J.A. & Beck, A.T. (2010). Cognitive Therapy. In J.D. Herbert & E.M. Forman (Eds.), *Acceptance and Mindfulness in Cognitive Behavior Therapy: Understanding and Applying the New Therapies* (pp. 30-64). New Jersey: John Wiley & Sons.

Eifert, G. H., & Heffner, M. (2003). The effects of acceptance versus control contexts on avoidance of panic-related symptoms. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 293–312.

Eisendrath, S. D., Delucchi, K., Bitner, R., Fenimore, P., Smit, M., & McLane, M. (2008).

    Mindfulness-based cognitive therapy for treatment resistant depression: a pilot study.

    Psychotherapy and Psychosomatics, *77*, 319-320.

Feldner, M. T., Zvolensky, M. J., Eifert, G. H., & Spira, A. P. (2003). Emotional avoidance: An

    experimental test of individual differences and response suppression using biological

    challenge. *Behaviour Research and Therapy, 41*, 403-411.

Frankl, V. E. (1946/1984). *Man's Search for Meaning*. New York: Washington Square Press.

Gifford, E. V., Kohlenberg, B. S., Hayes, S. C., Antonuccio, D. O., Piasecki, M. M., Rasmussen-

    Hall, M. L., et al. (2004). Acceptance-based treatment for smoking cessation. *Behavior*

    Therapy, *35*, 689-705.

Gortner, E. T., Gollan, J. K., Dobson, K. S., & Jacobson, N. S. (1998). Cognitive– behavioral

    treatment for depression: Relapse prevention. *Journal of Consulting and Clinical*

    Psychology, 66, 377–384.

Gratz, L.G., Bornovalova, M.A., Delany-Brumsey, A., Nick, B., & Lejuez, C.W. (2007). A

    laboratory-based study of the relationship between childhood abuse and experiential

    avoidance among inner-city substance users: The role of emotional nonacceptance.

    Behavior Therapy, 38, 256-268.

Gregg, J. A., Callaghan, G. M., Hayes, S. C., & Glenn-Lawson, J. L. (2007). Improving diabetes

    self-management through acceptance, mindfulness, and values: A randomized controlled

    trial. *Journal of Consulting and Clinical Psychology*, *75*, 336–343.

Gutiérrez-Martínez, O., Luciano-Soriano, C., Rodríguez-Valverde, M., & Fink, B. C. (2004).

    Comparison Between an Acceptance-Based and a Cognitive-Control-Based Protocol for

    Coping With Pain. *Behavior Therapy, 35*, 767-783.

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (Eds.). (2001). *Relational Frame Theory: A Post-Skinnerian account of human language and cognition*. New York: Plenum Press.

Hayes, S. C., Bissett, R., Korn, Z., Zettle, R. D., Rosenfarb, I., Cooper, L., & Grundt, A. (1999). The impact of acceptance versus control rationales on pain tolerance. *The Psychological Record, 49*(1), 33-47.

Hayes, S.C, Luoma, J.B., Bond, F.W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes, and outcomes. *Behaviour Research and Therapy, 44*, 1-25.

Hayes, S. C., Masuda, A., & De Mey, H. (2003). Acceptance and Commitment Therapy and the third wave of behavior therapy. *Gedragstherapie (Dutch Journal of Behavior Therapy), 2*, 69-96.

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change.* New York: Guilford.

Hayes, S. C., Strosahl, K., & Wilson, K. G. (2011). *Acceptance and commitment therapy, Second Edition: The process and practice of mindful change.* New York: Guilford.

Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., Polusny, M. A., Dykstra, T. A., Batten, S. V., Bergan, J., Stewart, S. H., Zvolenksy, M. J., Eifert, G. H., Bond, F. W., Forsyth, J. P., Karekla, M., & McCurry, S. M. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record, 54*, 553-578.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M, & Strosahl, K. D. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*, 1152-1168.

Herbert, J.D., Forman, E.M., & England, E.L. (2009). Psychological acceptance. In W.

    O'Donohue & J.E. Fisher (Eds.), *General principles and empirically supported*

    techniques of cognitive behavior therapy (pp. 102-112). New Jersey: John Wiley & Sons.

Hofman, G.G., Heering, S., Sawyer, A.T., & Asnaani, A. (2009). How to handle anxiety: The

    effects of reappraisal, acceptance, and suppression strategies on anxious arousal.

    Behavior Research and Therapy, 47, 389-394.

Hollon, S. D. & Beck, A. T. (1986). *Cognitive and cognitive-behavioral therapies.* In S. L.

    Garfield & A. E. Bergin (Eds.), *Handbook of psychotherapy and behavior change* (3rd

    ed.) (pp. 443-482). New York: John Wiley.

Hollon, S.D., & Beck, A.T. (1994). Cognitive and cognitive-behavioral therapies. In A.E. Bergin

    & S.L. Garfield (Eds.), *Handbook of Psychotherapy and Behavior Change* (pp. 428-466).

    Oxford, England: John Wiley & Sons.

Holsopple, J.Q. (1932). The social automatic adjustment of delinquents who are unable to inhibit

    old automatic perceptual responses. *Journal of Social Psychology, 3*, 91-96.

Hooper, N., Davies, N., Davies, L., & McHugh, L. (2011). Comparing thought suppression and

    mindfulness as coping techniques for spider fear. *Consciousness and Cognition, 20*(4),

    1824-1830.

Jacobson, N. S., Christensen, A., Prince, S. E., Cordova, J., & Eldridge, K. (2000). Integrative

    behavioral couple therapy: An acceptance-based, promising new treatment for couple

    discord. *Journal of Consulting and Clinical Psychology, 68,* 351–355.

Jacobson, N. S., Dobson, K. S., Truax, P. A., Addis, M. E., Koerner, K., Gollan, J. K., et al.

    (1996). A component analysis of cognitive– behavioral treatment for depression. *Journal*

    of Consulting and Clinical Psychology, 64, 295–304.

Jarrett, R.B., Vittengl, J.R., Doyle, K., & Clark, L.A. (2007). Changes in cognitive content during and following cognitive therapy for recurrent depression: Substantial and enduring, but not predictive of change in depressive symptoms. *Journal of Consulting and Clinical Psychology, 75*(3), 432-446.

Kazdin, A.E., & Nock, M.K. (2003). Delineating mechanisms of change in child and adolescent therapy: Methodological issues and research recommendations. *Journal of Child Psychology and Psychiatry, 44*(8), 1116-1129.

Kazdin, A. E., & Wilcoxin, L. A. (1976). Systematic desensitization and nonspecific treatment effects: A methodological evaluation. *Psychological Bulletin*, 83, 729-758.

Kenny, M. A. & Williams J.M.G. (2007). Treatment resistant depressed patients show a good response to Mindfulness-based Cognitive Therapy. *Behaviour Research and Therapy*, *45*, 617-625.

Kliem, S., Kroger, C. & Kosfelder, J. (2010). Dialectrical behavior therapy for borderline personality disorder: A meta-analysis using mixed-effects modeling. *Journal of Consulting and Clinical Psychology*, *78*(*6*), 936-951.

Lawrence, J.W., Fauerbach, J., & Munster, A. (1996). Early avoidance of traumatic stimuli predicts chronicity of intrusive thoughts following burn injury. *Behaviour Research and Therapy, 34*(8), 643-646.

Lejuez, C.W., Kahler, C.W., & Brown, R.A. (2003). A modified computer version of the paced auditory serial addition task (PASAT) as a laboratory-based stressor. *The Behavior Therapist, 26*(4) 290-293.

Levitt, J. T., Brown, T. A., Orsillo, S. M., & Barlow, D. H. (2004). The effects of acceptance versus suppression of emotion on subjective and psychophysiological response to carbon dioxide challenge in patients with panic disorder. *Behavior Therapy, 35*, 747–766.

Lillis, J., Hayes, S. C., Bunting, K., & Masuda, A. (2009). Teaching acceptance and mindfulness to improve the lives of the obese: A preliminary test of a theoretical model. *Annals of Behavior Medicine*, *37*, 58-69.

Linehan, M.M. (1993). *Cognitive-Behavioral Treatment of Borderline Personality Disorder*. New York: Guilford

Linehan, M. M. & Dexter-Mazza, E. T. (2007). Dialectical behavior therapy for borderline personality disorder. In D. H. Barlow (Ed.), *Clinical handbook of psychological disorders: A step-by-step treatment manual* (4th ed.; pp. 365-420). New York: The Guilford Press.

Lundgren, T., Dahl, J., & Hayes, S. C. (2008). Evaluation of mediators of change in the treatment of epilepsy with Acceptance and Commitment Therapy. *Journal of Behavior Medicine, 31*(3), 225-235.

Lundgren, T., Dahl, J., Melin, L., & Kies, B. (2006). Evaluation of acceptance and commitment therapy for drug refractory epilepsy: a randomized controlled trial in South Africa—a pilot study. *Epilepsia, 47*(12), 2173–2179.

Ma, S. H. & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology*, *72*, 31-40.

58

Marcks, B. A., & Woods, D. W. (2007). Role of though-related beliefs and coping strategies in

    the escalation of intrusive thoughts: An analog to obsessive-compulsive disorder.

    Behaviour Research and Therapy, *45*, 2640-2651.

Masedo, A. I., & Esteve, M. R. (2007). Effects of suppression, acceptance and spontaneous

    coping on pain tolerance, pain intensity and distress. *Behaviour Research and Therapy,*

    45, 199-209.

McCracken, L. M. (1998). Learning to live with the pain: Acceptance of pain predicts adjustment

    in persons with chronic pain. *Pain, 74*, 27.

McCracken, L. M., Vowles, K. E., & Eccleston, C. (2004). Acceptance of chronic pain:

    Component analysis and a revised assessment method. *Pain, 107*, 159-166.

McCracken, L. M., & Yang, S. (2006). The role of values in a contextual cognitive-behavioral

    approach to chronic pain. *Pain, 123*, 137-145.

McMullen, J., Barnes-Holmes, D., Barnes-Holmes, Y., Stewart, I., Luciano, M. C., & Cochrane,

    A. (2008). Acceptance versus distraction: Brief instructions, metaphors and exercises in

    increasing tolerance for self-delivered electric shocks. *Behaviour Research & Therapy,*

    46(1), 122-9.

Milby, J. B., Mizes, J. S., & Giles, T. R. (1986). Assessing the process of desensitization therapy:

    Five practical measures. *Journal of Psychotherapy and Behavioral Assessment*, *8*, 241-

    252.

Öst, L. (2008). Efficacy of the third wave of behavioral therapies: A systematic review and meta-

    analysis. *Behaviour Research and Therapy, 46,* 296-321.

Páez, M., Luciano M. C., Gutiérrez, O., Valdivia, S., Rodríguez, M., & Ortega, J. (2008). Coping with Pain in the Motivational Context of Values: Comparison between an Acceptance-based and a Cognitive-control-based Protocol. *Behaviour Modification, 32*(3), 403-422.

Páez-Blarrina, M., Luciano, M. C., Gutiérrez-Martínez, O., Valdivia, S., Ortega, J., & Rodríguez-Valverde, M. (2008). The role of values with personal examples in altering the functions of pain: Comparison between acceptance-based and cognitive-control-based protocols. *Behaviour Research and Therapy, 46*, 84-97.

Powers, M. B., Vörding, M. B., & Emmelkamp, P. M. (2009). Acceptance and commitment therapy: A meta-analytic review. *Psychotherapy and Psychosomatics*, *78*, 73-80.

Quinn, E.P. Brandon, T.H., & Copeland, A.L. (1996). Is task persistence related to smoking and substance abuse? The application of learned industiousness theory to addictive behaviors. *Experimental and Clinical Psychopharmacology, 4*, 186-190.

Rassin, E., Merckelbach, H., & Muris, P. (2000). Paradoxical and less paradoxical effects of thought suppression: A critical review. *Clinical Psychology Review, 20*(8), 973-955.

Robins, C.J., Schmidt, H., & Linehan, M. M. (2004). Dialectical behavior therapy: Synthesizing radical acceptance with skillful means. In S. C. Hayes, V. M. Follette, & M.M. Linehan (Eds.), *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition* (pp. 30-44). New York, NY: Guilford Press.

Ruiz, F. J. (2010). A review of Acceptance and Commitment Therapy (ACT) empirical evidence: Correlational, experimental psychopathology, component and outcome studies. *International Journal of Psychology and Psychological Therapy, 10*, 125-162.

Schloss, H.M., & Haaga, D.A. (2011). Interrelating behavioral measures of distress tolerance

    with self-reported experiential avoidance. *Journal of Rational-Emotive & Cognitive*

    Therapy, 29(1), 53-63.

Segal, Z.V., Bieling, P., Young, T., MacQueen, G., Cooke, R., Marting, L., Bloch, R., & Levitan,

    R.D. (2010). Antidepressant monotherapy vs sequential pharmacotherapy and

    mindfulness-based cognitive therapy, or placebo, for relapse prophylaxis in recurrent

    depression. *Archives of General Psychiatry, 67*(12), 1256-1264.

Seligman, M.E.P., Abramson, L.Y., & Semmel, A. (1979). Depressive attributional style.

    Journal of Abnormal Psychology, 88(3), 242-247.

Simons, M., Schneider, S., & Herpertz-Dahlmann, B. (2006). Metacognitive therapy versus

    exposure and response prevention for pediatric obsessive-compulsive disorder.

    Psychotherapy and Psychosomatics, 75(4), 257-264.

Strong, D.R., Lejuez, C.W., Daughters, S., Marinello, M., Kahler, C.W., & Brown, R.A. (2003).

    The computerized mirror tracing task, version I. Unpublished manual.

Szasz, P.L., Szentagotai, A. & Hoffman, S.G. (2001). The effect of emotion regulation strategies

    on anger. *Behaviour Research and Therapy, 49*(2), 114-119.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics*. (3rd ed.). New York:

    Harper Collins.

Takahashi, M., Muto, T., Tada, M., & Sugiyama, M. (2002). Acceptance rationale and increasing

    pain tolerance: Acceptance-based and FEAR-based practice. *Japanese Journal of*

    Behavior Therapy, 28, 35-46.

Teasdale, J. D., Segal, Z. V., Williams J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology*, *68*, 615-623.

Thayer, B. A., Papsdorf, J. D., Davis, R., & Vallecorsa, S. (1984). Automatic correlates of the subjective anxiety scale. *Journal of Behavior Therapy and Experimental Psychiatry*, *15*, 3-7.

Vittengl, J.R., Clark, L.A., Dunn, T.W., & Jarrett, R.B. (2007). Reducing relapse and recurrence in unipolar depression: A comparative meta-analysis of cognitive-behavioral therapy's effects. *Journal of Consulting and Clinical Psychology, 75*(3), 475-488.

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 45*(6), 1063-1070.

Wegner, D. M., Schneider, D. J., Carter, S. R. & White, T. L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology, 53,* 5-13.

Wells*, A.* (*1995*). Metacognition and worry: A *cognitive model* of generalized anxiety disorder. *Behavioral and Cognitive Psychotherapy*, *23*, 301-320.

Wells, A., Welford, M., King, P., Papageorgiou, C., Wisely, J., & Mendel, A. (2010). A pilot randomized trial of metacognitive therapy versus applied relaxation in the treatment of adults with generalized anxiety disorder. *Behavior Research Therapy, 48*, 429-434.

Wenzlaff, R.M. & Luxton, D.D. (2003). The role of thought suppression in depressive rumination. *Cognitive Therapy and Research, 27*(3), 293-308.

Williams, J. C., & Lynn, S. J. (2010). Acceptance: An historical and conceptual review. *Imagination, Cognition, & Personality, 30*, 5-56.

Wilson, K. G., & DuFrene, T. (2009). *Mindfulness for two: An acceptance and commitment therapy approach to mindfulness in psychotherapy*. Oakland, CA: New Harbinger.

Wilson, K. G., Flynn, M. K., Bordieri, M., Nassar, S., Lucas, N., & Whiteman, K. (in press). Acceptance in Cognitive Behavior Therapy. In W. O'Donohue & J. Fisher (Eds.) *Cognitive Behavior Therapy: Core Principles for Practice*. Hoboken, NJ: Wiley.

Wolpe, J. (1969) *The practice of behavior therapy* (1st ed.). New York: Pergamon.

Zettle, R. D., Hocker, T. R., Mick, K. A., Scofield, B. E., Petersen, C. L., Hyunsung S., & Sudarijanto, R. P. (2005). Differential strategies in coping with pain as a function of level of experiential avoidance. *The Psychological Record, 55*(4), 511-524.

Zettle, R. D., Petersen, C. L., Hocker, T. R., & Provines, J. L. (2007). Responding to a challenging perceptual-motor task as a function of level of experiential avoidance. *The Psychology Record, 57*, 49-62.

Zvolensky, M.J. & Eifert, G.H. (2001). A review of psychological factors/processes affecting anxious responding during voluntary hyperventilation and inhalations of carbon dioxide-enriched air. *Clinical Psychology Review, 21*(3), 375-400.

LIST OF APPENDICES

APPENDIX A

Directions
This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate to what extent you feel this way now

Use the following scale to record your answers.

(1) = Very slightly or not at all	(2) = A little	(3) = Moderately	(4) = Quite a bit	(5) = Extremely

	Very slightly or not at all A little	Moderately	Quite a bit	Extremely
1. Interested	1	2	3	4	5
2. Distressed	1	2	3	4	5
3. Excited	1	2	3	4	5
4. Upset	1	2	3	4	5
5. Strong	1	2	3	4	5
6. Guilty	1	2	3	4	5
7. Scared	1	2	3	4	5
8. Hostile	1	2	3	4	5
9. Enthusiastic	1	2	3	4	5
10. Proud	1	2	3	4	5
11. Irritable	1	2	3	4	5
12. Alert	1	2	3	4	5
13. Ashamed	1	2	3	4	5
14. Inspired	1	2	3	4	5
15. Nervous	1	2	3	4	5
16. Determined	1	2	3	4	5
17. Attentive	1	2	3	4	5
18. Jittery	1	2	3	4	5
19. Active	1	2	3	4	5
20. Afraid	1	2	3	4	5

APPENDIX B

Instructions for the Acceptance Condition

I am going to spend some time now discussing a way that you can approach an upcoming task, and negative thoughts and feelings in general. Human beings tend to do what they can to avoid experiencing negative thoughts and feelings. And when we do experience them, we often try to get rid of them in some way. No one likes to feel bad. Take a moment to see if this is true in your experience. What you do when negative thoughts and feelings come up? (pause) What do you try to get rid of them or lessen them? (pause)

Although we engage in these kinds of behaviors in an attempt to make ourselves feel better, it often makes us feel worse, especially in the long run. Research has shown that the more you try to stop yourself from thinking about things, the more likely these thoughts are to come up and really affect you. You may know this from your own experience.

Have you ever tried really hard to fall asleep, only to discover that you just can't? The more pressure you put on yourself to sleep, the harder it gets, until sleeping becomes almost impossible. Well, it works the same way with negative thoughts and feelings. The harder you try to control them, the stronger they feel. Here's another example. Suppose I had you hooked up to the best polygraph machine that has ever been built. This is a perfect machine, the most sensitive ever made. When you are all wired up to it, there is no way you can be aroused or anxious without the machine knowing it. So I tell you that you have a very simple task here: all you have to do is stay relaxed. If you get the least bit anxious, however, I will know it. I know you want to try hard but I want to give you extra incentive so I have a .44 Magnum, which I will hold to your head. If you just stay relaxed, I won't blow your brains out, but if you get nervous (and I'll know because you are wired up to this

perfect machine), I'm going to have to kill you. So, just relax! What do you think would happen? Guess what you'd get?...The tiniest bit of anxiety would be terrifying. You'd naturally be saying "Oh, my gosh! I am getting anxious! Here it comes!" BAMM! How could it be otherwise? No matter how hard you tried to control your negative thoughts and feelings even to stay alive, you can't.

There is a saying, "if you're not willing to have it, you've got it." That is, if you are not willing to experience anxiety, you're stuck with it.

The thing is, it is part of human experience that we will feel anxious or sad, or uncomfortable at times. Where this process goes awry, is when we get in our own way, by forcefully trying to make the thoughts and emotions go away. Even worse, sometimes our sense of happiness becomes dependent on our ability to control these things, and then when we find that we can't, we end up feeling worse and worse. You see, when we approach thoughts and feelings as our enemies, we will struggle with them. But are they really your enemy? They're thoughts and feelings after all. The struggle with them gets in the way of things that matter to you and that hurts too.

So, now I will offer you an alternative to this struggle with control. I would like to suggest that what you do right now is change your focus a bit. It's like you are in this massive tug of war with a negative thoughts and feelings monster. In between you and the monster is a pit and so far as you can see it is bottomless. If you lose and fall into this pit you will be destroyed. So, you pull and pull, but the harder you pull, the harder the monster pulls (just like the harder you try to control your negative thoughts and feelings, the more negative thoughts and feelings pull at you). So you keep pulling, and it seems like you just keep edging closer and closer to the pit. The hardest thing to see here is that your

69

job is not to win the tug of war. (slowly) Your job is just to drop the rope. Give up the internal struggle, and let the thoughts and feelings just be.

It is not the thoughts and feelings that keep us from doing tasks that are in front of us, such as studying, going to the gym, spending time with friends. Rather, it's getting caught up in the thoughts and feelings that is the problem, when our attention and effort is turned inward to our thoughts and feelings instead of outward to how we are living. I'm suggesting turning towards what your life. The job here is this. When you experience negative thoughts and feelings, notice them, without struggle, without having to turn away from them, gently drop the rope, and then notice the task you are on and allow yourself to gently return to the task. For example, if the thought "I am not smart enough" comes up while studying and you get all caught up in that thought, your job is to notice you are having the thought, let it go, and return to studying. Return as many times as it takes. For example, if you notice this thought 100 times, return to studying 101 times. You can't control your thoughts and feelings but you can control coming back, returning, and taking action to study. Allow yourself to feel whatever you feel and think whatever you think. See if you can quit fighting with your thoughts and emotions, drop the rope and return to your life when you notice you are struggling. This is the key to living well, the gentle return to your life when you notice your thoughts and feelings taking you away.

In a few minutes we are going to begin a computer task. During this task, when you notice thoughts and feelings come up, I would like you notice that and then return to the task in front of you. You may experience a range of emotions; frustration, anger, boredom … I don't want you to try to make any of them go away. Instead of trying actively to control them or push them away, I'd like you to try to notice them, open up to them, let go of any

70

struggle, and return to the task. Remember, the harder you try to, "Not think bad thoughts or feel negative emotions," the more you will be likely to experience both. Instead of battling with your negative thoughts and feelings, try to take a step back from the struggle, drop the rope, return to the task and see what happens. The next task is often found frustrating by people who do it. Imagine that you could use any frustration as practice at noticing difficult thoughts and feelings, letting go of any struggle, and staying with the task.

Instructions For Acceptance Plus Values

I am going to spend some time now discussing a way that you can approach an upcoming task, and negative thoughts and feelings in general. Human beings tend to do what they can to avoid experiencing negative thoughts and feelings. And when we do experience them, we often try to get rid of them in some way. No one likes to feel bad. Take a moment to see if this is true in your experience. What you do when negative thoughts and feelings come up? (pause) What do you try to get rid of them or lessen them? (pause)

Although we engage in these kinds of behaviors in an attempt to make ourselves feel better, it actually makes us feel worse, especially in the long run. Research has shown that the more you try to stop yourself from thinking about things, the more likely these thoughts are to come up and really affect you. You may know this from your own experience.

Have you ever tried really hard to fall asleep, only to discover that you just can't? The more pressure you put on yourself to sleep, the harder it gets, until sleeping becomes almost impossible. Well, it works the same way with negative thoughts and feelings. The harder you try to control them, the stronger they feel.

The thing is, it is part of human experience that we will feel anxious or sad, or uncomfortable at times. Where this process goes awry, is when we get in our own way, by forcefully trying to make the thoughts and emotions go away. Even worse, sometimes our sense of happiness becomes dependent on our ability to control these things, and then when we find that we can't, we end up feeling worse and worse. You see, when we approach thoughts and feelings as our enemies, we will struggle with them. But are they really your enemy? They're thoughts and feelings after all. The struggle with them gets in the way of things that matter to you and that hurts too.

So, now I will offer you an alternative to this struggle with control. I would like to suggest that what you do right now is change your focus a bit. It's like you are in this massive tug of war with a monster---your negative thoughts and feelings. In between you and the monster is a pit and so far as you can see it is bottomless. If you lose and fall into this pit you will be destroyed. So, you pull and pull, but the harder you pull, the harder the monster pulls (just like the harder you try to control your negative thoughts and feelings, the more negative thoughts and feelings you get). So you keep pulling, and it seems like you just keep edging closer and closer to the pit. The hardest thing to see here is that your job is not to win the tug of war. (slowly) Your job is just to drop the rope. Give up the internal struggle, and let the thoughts and feelings just be.

It is not the thoughts and feelings that keep us from doing tasks that are in front of us, such as study, go to the gym, spend time with friends. Rather, it's getting caught up in the thoughts and feelings that is the problem. Engaging in these sorts of activities often moves us closer to things and people we care about, such as being the student or the friend we want to be or taking care of ourselves physically. When we turn our attention and effort

72

inward to our thoughts and feelings, sometimes we get so caught up in them that we neglect the things we care about and over time this eats away at the life we care about living. Rather than try to control thoughts and emotions, you can simply notice them, without struggle, without having to turn away from them, drop the rope and then notice the important life activities you are engaged in and allow yourself to gently return to those activities. For example, if the thought "I am not smart enough" comes up while studying and you get all caught up in that thought, your job is to notice you are having the thought, let it go, and return to studying. Studying will help you succeed and support what you care about as far as learning and education is concerned. Worrying about whether you are smart enough will not. You can return as many times as it takes. For example, if you notice this thought 100 times, return to studying 101 times. You can't control your thoughts and feelings but you can control coming back, returning, and taking action to study. Allow yourself feel whatever you feel and think whatever you think because they can be very hard to control. You can quit fighting with your thoughts and emotions, drop the rope, and return to your life when you notice you are struggling. This is the key to living well, the gentle return to your life when you notice your thoughts and feelings taking you away. This enables you to move towards our values no matter what thoughts and feelings are present.

In a few minutes we are going to begin a computer task. During this task, when you notice thoughts and feelings come up, I would like you notice that and then return to the task in front of you. You may experience a range of emotions; frustration, anger, boredom … I don't want you to try to make any of them go away. Instead of trying actively to control them or push them away, I'd like you to try to notice them, open up to them, give up the struggle, and return to the task. Remember, the harder you try to, "Not think bad thoughts

or feel negative emotions," the more you will experience both. Instead of battling with your

negative thoughts and feelings, try to take a step back from the struggle, drop the rope,

return to the task and see what happens.

Let this task be an opportunity to practice experiencing negative thoughts and

feelings while still doing something that is important to you. For example, think about the

thing you like least about yourself. Where does that thought show up? (pause) Where does

that keep you from going in life? What if this next exercise could be practice for allowing

these sorts of negative thought and feelings and staying engaged in activities you care

about? The next task is often found frustrating by people who do it. Imagine that you could

use any frustration as practice at noticing difficult thoughts and feelings, letting go of any

struggle, and staying with the task the same way you might stay with meaningful activities

in your own life. Another aspect of the study is that your participation will help us better

understand other people who get sidetracked struggling with negative thoughts and

feelings and lose touch with things that really matter to them. Use the task to practice

letting what you are doing guide you, rather then thoughts and feelings.

Instructions for the Suppression Condition

I am going to spend some time now discussing a way that you can approach the

coming task, and your negative thoughts and feelings in general. I would like you to listen

as I describe this to you, and consider whether this fits with your experience.

What I would like to suggest to you is that when you really put your mind to it, you

can control most things in your life, including your thoughts, feelings, and behaviors.

Think about how much control you have over yourself everyday. Have you ever

woken up in the morning, and not really felt like getting out of bed? You might've had a

struggle with yourself, bargaining for a few extra minutes, but eventually, you talk yourself into getting into the shower, because you know you have somewhere to be. Even though you don't feel like it, you do it, because you know it's important. You exercise control over your behavior every day. It's all about mind over matter. And it is the same way with your thoughts and feelings. Without thinking about it, you probably exercise control over your mind and your behavior throughout most of your life.

And it makes sense that you do. If you didn't, your thoughts and feelings would be all over the place. Think about some of the most popular phrases that parents use with their kids, "don't cry, it's okay…don't be scared…be brave…" On some level we have all learned, and we all believe, that it is important for us to be in control of our minds at all times. When we have scary thoughts, we tell ourselves to be brave, when we feel sad about things, we call a friend so that we can cheer up, when we are angry with our bosses at work, we try to stifle our anger so that we do not explode, and when we worry about things, we do whatever we can to reassure ourselves that everything is really okay. Think about what would happen if you just let your emotions rule your life!

Think of some of the accomplishments you have achieved in your life… educational accomplishments, career accomplishments, and physical accomplishments. Now think about how you achieved these goals. Probably through hard work, right? By exercising discipline, training, and control.

The rules that apply to controlling your behavior in order to achieve your goals, well these rules also apply to your thoughts and feelings. Have you ever had a personal problem, and made a big effort to not let it affect your performance in work or school? Even though you feel really upset inside, you can somehow manage to push it away long

enough to perform well. Well, it's the same thing with negative thoughts and feelings. Take anxiety for example. When you are feeling anxious, but you know you have to do something, you can push the feelings away in order to accomplish the task. That's what I am going to encourage you to do today. Try not to feel negative feelings, try not to think bad thoughts, try to just get through the task with as little negative thoughts and feelings as possible.

Think about the people you might see on TV walking over hot coals or lying on a bed of nails. It's not that the coals don't feel hot, or that the nails aren't sharp, it's that these people have a lot of control over their emotional reactions, and are able to tolerate the pain, because they tell themselves not to feel it. By willfully trying to reduce the pain, these people can successfully endure experiences that other people cannot tolerate. The same thing applies to you. If you try very hard to willfully reduce your negative thoughts and feelings, you will have an easier time with them. Don't let your negative thoughts and feelings control you, you control your negative thoughts and feelings.

The thing is, it is part of human experience that we will feel anxious or sad, or uncomfortable at times. Where this process goes awry, is when we let it get in our way, by letting it get out of control. Instead of letting your negative thoughts and feelings be the master of you, you need to be the master of your negative thoughts and feelings. It's like I said before, mind over matter.

Consider this: it's like you are in this massive tug of war with a monster---your negative thoughts and feelings. In between you and the monster is a pit and so far as you can see it is bottomless. If you lose and fall into this pit you will be destroyed. So, you need to pull and pull, and pull your hardest, because the harder you pull, the more likely you are

76

to win. Another way of saying this is, the harder you try to make your negative thoughts and feelings go away, the more likely you are to reduce the uncomfortable thoughts and feelings.

I am not suggesting that if you use these strategies in your life that you will never experience pain or discomfort, but that, rather than just giving into the pain, and accepting it, if you actually pay attention to it, and try actively to make it go away, you will experience less discomfort in the end. As I said before, think mind over matter…you can master these feelings and make them go away.

In a few minutes we are going to begin the computer task that I mentioned earlier. During this exercise I would like you to pay attention to your thoughts and feelings, and actively try to control them by pushing them away. You may experience a range of emotions; frustration, anger, boredom … I'd like you to try to stay in control of your thoughts and emotions throughout the task. Remember, the harder you try to, "Not think bad thoughts or feel negative emotions," the less you will experience them and the better you will do.

APPENDIX C

Quiz on Instructions — Acceptance/Acceptance Plus Values/Suppression

Please answer the following questions <u>based on your understanding of the directions you just heard on the audio recording</u>.

1.   During the upcoming task, if I experience unpleasant thoughts or feelings, I will:

      a.   Try to get rid of them, by focusing on them and pushing them away.
      b.   Try not to focus on the symptoms by distracting my attention.
      c.   Try to understand the source of the symptoms.
      d.   Tell myself that it will be over soon.
      e.   Focus on the symptoms, embrace and accept them, and let them be.
      f.   Focus on the symptoms, embrace and accept them, and let them be in order to move in valued directions.

2. According to the directions on the tape, when I feel unpleasant thoughts or feelings unexpectedly, I should:

      a.   Accept my thoughts and feelings and not try to control them.
      b.   Stay in control of my thoughts and feelings, by pushing the thoughts and feelings away.
      c.   Get out of the situation immediately.
      d.   Accept my thoughts and feelings and focus my attention on acting towards my values.
      e.   Try to determine the cause of my thoughts and feelings.
      f.   Try to distract myself from my thoughts and feelings by focusing on other things.

APPENDIX D

Strategies Used During Mood Induction

Using the scale below, please indicate how much you used each of these strategies during the previous exercise.

0----------1----------2----------3----------4----------5----------6----------7----------8
Never   Some of   Frequently   Most of   All of
               the time   the time   the time

<u>During the exercise, how much did you:</u>

1. Tell yourself to not feel unpleasant emotions or think negative thoughts.   ____

2. Observe your thoughts and feelings without trying to change them. ____

3. Do something to actively change what you were thinking and/or how you were feeling.
     ____

4. Allow yourself to experience whatever thoughts and feelings came up for you. ____

5. Try to control your thoughts and feelings in response to exercise. ____

6. Lean into your symptoms, allowing yourself to feel them fully.   ____

▪▪▪

APPENDIX E

Strategies Used During the MTPT-C

Using the scale below, please indicate how much you used each of these strategies during the previous computer task. Please do not take into account how much you were asked to use each strategy, rather, record how much you actually did the following during the breathing exercise.

During the task, how much did you:

0----------1----------2----------3----------4----------5----------6----------7----------8
Never   Some of   Frequently   Most of   All of
             the time   the time   the time

During the exercise, how much did you:

1. Tell yourself to not feel unpleasant emotions or think negative thoughts. _____

2. Observe your thoughts and feelings without trying to change them. _____

3. Do something to actively change what you were thinking and/or how you were feeling. _____

4. Allow yourself to experience whatever thoughts and feelings came up for you. _____

5. Try to control your thoughts and feelings in response to exercise. _____

6. Lean into your symptoms, allowing yourself to feel them fully. _____

83

APPENDIX F

Willingness to Complete the MTPT-C a Second Time

Please read the following question and write your response in the blank.

1. How willing are you to participate in the computer task again right now?

    0 = Not at all willing
    1 = A little bit willing
    2 = Mostly willing
    3 = Very willing
    4 = Definitely willing

    Response: _____

VITA

Maureen K. Flynn, M.A.
2112 Old Taylor Rd. G6
Oxford, MS 38655
maureen.k.flynn@gmail.com
303-912-6756

Education

Enrolled in Clinical Psychology Doctoral Program
University of Mississippi, University, MS

2008   Master of Arts - *Major: Clinical Psychology*
University of Mississippi, University, MS

2006   Master of Arts – *Major: Clinical Psychology*
Edinboro University of Pennsylvania, Edinboro, PA

2004   Bachelor of Arts - *Major: Psychology*
University of Colorado at Denver, Denver, CO

Research Experience

Dissertation Research Project, Mississippi Center for Contextual Psychology,   Fall 2011 – Present
University of Mississippi, University, MS
Dissertation: The Effects of Adding Values to an Acceptance Intervention on
Willingness to Engage in a Difficult Task
Dissertation Advisor: Kelly Wilson, Ph.D.

Research Team Assistant, Mississippi Center for Contextual Psychology,   Fall 2008 – present
University of Mississippi, University, MS
Duties included writing research proposals, conducting experiments, mentoring
undergraduate research assistants, and managing and analyzing data.
Supervised by Kelly G. Wilson, Ph.D.

Thesis Research Project, Tobacco Research Laboratory,   Fall 2007 – August 2009
University of Mississippi, University, MS
Thesis: *Prevalence and Predictors of Home and Car Smoking Restrictions in Rural
Psychiatric Outpatients*
Thesis Advisor: Tom Lombardo, Ph.D.

Research Team Assistant, Tobacco Research Laboratory,   Fall 2006 – Fall 2008
      University of Mississippi, University, MS
      Duties included writing research proposals, conducting experiments, and managing and
      analyzing data.
      Supervised by Tom Lombardo, Ph.D.

Clinical Experience

Clinical Psychology Trainee, Psychological Services Center,   Fall 2007 – present
      University of Mississippi, University, MS
      Duties included conducting screenings, intakes, and individual psychotherapy for
      University of Mississippi students, faculty, and staff, and community members.
      Group and individual supervision provided by Thomas Lombardo, Ph.D. and Kelly G.
      Wilson, Ph.D.

Therapist, Graceland Nursing Home   Fall 2011-present
      Oxford, MS
      Duties included conducting assessments and individual psychotherapy for nursing home
      residents
      Group and individual supervision provided by Kelly G. Wilson

Assessment Trainee, Psychological Assessment Clinic,   Fall 2008-Spring 2009
      University of Mississippi, University, MS
      Duties included administering psychological assessments, writing reports, and providing
      feedback to clients.
      Supervised by Stefan Schulenberg, Ph.D.

Verification Specialist, Office of Student Disability Services,   Fall 2008-2009
      University of Mississippi, University, MS
      Duties included examining psychological evaluations and communicating with other
      professionals in order to verify students for academic accommodations.
      Supervised by Stefan Schulenberg, Ph.D.

Behavioral Consultant, Baptist Children's Village,   Summer 2008 – Summer 2009
      Water Valley, MS
      Duties included writing behavior plans, evaluating and modifying a token economy
      system, and training staff on behavior principles and procedures.
      Supervised by Alan Gross, Ph.D.

Trainer, Mississippi Youth Programs Around the Clock,   Fall 2008 – Spring 2009
      Jackson, MS
      Duties included conducting trainings for therapists on evidence-based treatments in a
      federally funded project.
      Supervised by John Young, Ph.D.

Therapist, Communicare,   Summer 2007 – Summer 2008
       Pittsboro, MS
       Duties included conducting screenings, intakes, individual and group psychotherapy, pre-evaluations for involuntary commitments, and writing treatment plans in a community mental health setting.
       Supervised by Dixie Church, M.A.

Behavior Therapist,   Fall 2006 – Summer 2007
       Oxford, MS
       Duties included using applied behavior analysis to increase social, verbal, and reasoning skills in a child with autism.
       Supervised by Emily Thomas Johnson, Ph.D.

Psychology Intern, Warren State Hospital,   Spring 2006
       Warren, PA
       Duties included conducting and assisting in assertiveness training, stress management, substance abuse education, and dialectical behavior therapy groups, conducting individual therapy, assessment batteries, and writing assessment reports. Completed rotations in the general, geriatric, and forensic units.
       Supervised by Dennis Geiger, Ph.D.

Teaching Experience

Instructor, General Psychology, Fall 2010 (2 sections), Fall 2011, Spring 2011 Spring 2012
Instructor, Abnormal Psychology, Fall 2009, Spring 2010
Teaching Assistant, Stress in the Modern World, Fall 2011, Spring 2012
Teaching Assistant, Graduate Learning, Fall 2009, Fall 2011
Teaching Assistant, Learning, Spring 2010, Spring 2011
Teaching Assistant, Elementary Statistics, Fall 2009 (3 sections), Spring 2010 (3 sections)
Teaching Assistant, Abnormal Psychology, Fall 2009
Teaching Assistant, Applied Behavior Analysis, Spring 2009
Teaching Assistant, Graduate Cognitive Assessment, Fall 2005

Workshops and Trainings

Wilson, K.G., Flynn, M.K., Bordieri, M., Slater, R.M., Nassar, S.L., Whiteman, K., & Schnetzer, L. (July, 2011). *Treating Addiction with Co-Occurring Anxiety and Depression.* Workshop at the annual meeting of the Association for Contextual Behavioral Science in Parma, Italy.

Wilson, K. G., Schnetzer, L. W., Flynn, M. K., Bordieri, M. J., Nassar, S. L., & Whiteman, K. (July, 2011). *Mindfulness and values interviewing in acceptance and commitment therapy.* Workshop presented at the annual meeting of the Association for Contextual Behavioral Science, Parma, Italy.

Wilson, K.G. & Flynn, M.K. (July, 2011). *Using Appreciation in the Psychological Flexibility Model.* Workshop at the annual meeting of the Association for Contextual Behavioral Science in Parma, Italy.

Wilson, K.G., Flynn, M.K., & Lucas, N.N. (June, 2010). *Using Appreciation in Acceptance and Commitment Therapy*. Workshop at the annual meeting of the Association for Contextual Behavioral Science in Reno, NV.

Wilson, K.G., Flynn, M.K., & Bordieri, M. (June, 2010). *An Experiential Introduction to Acceptance and Commitment Therapy*. Workshop at the annual meeting of the Association for Contextual Behavioral Science in Reno, NV.

Wilson, K.G., Flynn, M.K., & Slater, R.M. (June, 2009). *Acceptance and Commitment Therapy-Combined Introductions and Skill Building Addictions Workshop*. Workshop in Aarhus, Denmark.

Wilson, K.G., Sandoz, E.K., Flynn, M.K., Slater, R.M., Lucas, N.N., & Nassar, S.L. (June, 2009). *Learning Hexaflex Processes Using Mindfulness for Two Videos*. Workshop at the annual meeting of the Association for Contextual Behavioral Science in Enschede, Netherlands.

Publications & Works in Progress

Wilson, K.G., Schnetzer, L., Flynn, M.K., Kurz, A. (in press). Treating Substance Abuse with Acceptance and Commitment Therapy. In S.C. Hayes & M. Levin (Eds.) *Acceptance, Mindfulness, Values, and Addictive Behaviors: Counseling with Contemporary Cognitive Behavioral Therapies*. Oakland, CA: New Harbinger.

Flynn, M.K. & Lombardo, T. (under review). Predictors of Home and Car Smoking Restrictions in Rural Psychiatric Outpatients.

Wilson, K. G., Flynn, M. K., Bordieri, M., Nassar, S., Lucas, N., & Whiteman, K. (in press). Acceptance in Cognitive Behavior Therapy. In W. O'Donohue & J. Fisher (Eds.) *Cognitive Behavior Therapy: Core Principles for Practice*. Hoboken, NJ: Wiley.

Wilson, K. G., Bordieri, M., Flynn, M. K., Lucas, N., & Slater, R. (2010). Understanding Acceptance and Commitment Therapy in Context: A History of Similarities and Differences. In J. Herbert & E. Forman (Eds.) *Acceptance and Mindfulness in Cognitive Behavior Therapy*. Hoboken, NJ: Wiley.

Wilson, K. G., Sandoz, E. K., Flynn, M. K., Slater, R. M., & DuFrene, T. (2010). Understanding, assessing, and treating values processes in mindfulness and acceptance-based therapies. In Baer, R. (Ed.). *Assessing mindfulness and acceptance: Illuminating the processes of change*. Oakland, CA: New Harbinger.

Presentations

Kurz, S., Flynn, M.K., Wilson, K.G., & Kellum, K.K. (May, 2012). The effects of a values and goal setting intervention on academic-related outcomes in college students. Paper to be presented at the annual meeting for the Association for Behavior Analysis International, Seattle, WA.

Schnetzer, L., Flynn, M.K., Kellum, K.K., & Wilson, K.G. (May, 2012). College student coping: Prevalence rates of adaptive and maladaptive strategies. Paper to be presented at the annual meeting for the Association for Behavior Analysis International, Seattle, WA.

Foreman, A., Flynn, M.K., Bordieri, M., Wilson, K.G., & Kellum, K.K. (May, 2012). The effects of a perspective taking intervention on reading comprehension scores in college students. Paper to be presented at the annual meeting for the Association for Behavior Analysis International, Seattle, WA.

Flynn, M.K., Wilson, K.G., & Kellum, K.K. (July, 2011). Explorations in appreciation writing from a contextual behavioral science perspective. Paper presented at the annual meeting for the Association for Contextual Behavioral Science, Parma, Italy.

Slater, R.M., Flynn, M.K., Lucas, N.N., Kellum, K.K., & Wilson, K.G. (May, 2011). Behaving While Teaching: Measuring the Effects of Student Feedback on New Instructor Behavior. Paper presented at the annual meeting for the Association for Behavior Analysis International, Denver, CO.

Oliver, J., Foreman, A., Slater, R.M., Flynn, M.K., Bordieri, M.J., Sandoz, E., Wilson, K.G., & Kellum, K.K. (May, 2011). Behavioral Indices of Conversational Engagement and Content. Paper presented at the annual meeting for the Association for Behavior Analysis International, Denver, CO.

Wilson, K.G., Twohig, M.P., Bach, P., & Flynn, M.K. (May, 2011). Linking Basic Behavioral Principles to the Abstractive Constructs Used in Acceptance and Commitment Therapy: A Case Example. Panellist at the annual meeting for the Association for Behavior Analysis International, Denver, CO.

Wilson, K.G., Twohig, M.P., Bach, P., & Flynn, M.K. (May, 2011). Linking Basic Behavioral Principles to the Abstractive Constructs Used in Acceptance and Commitment Therapy: A Case Example. Panel chair at the annual meeting for the Association for Behavior Analysis International, Denver, CO.

Gentry, J.A., Bordieri, M.J., Flynn, M.K., Slater, R.M., Sandoz, R.M., Wilson, K.G., & Kellum, K.K. (May, 2011). Behavioral Indices of Presence. Paper presented at the annual meeting for the Association for Behavior Analysis International, Denver, CO.

Rodriguez, A., Flynn, M.K., Slater, R.M., Bordieri, M.J., Sandoz, E., Wilson, K.G., & Kellum, K.K. (May, 2011). Behavioral Indices of Core ACT Processes in a Values-Based Interview. Paper presented at the annual meeting for the Association for Behavior Analysis International, Denver, CO.

Flynn, M.K., Wilson, K.G., & Kellum, K.K. (May, 2011). Explorations in appreciation writing from a contextual behavioral science perspective. Paper presented at the annual meeting for the Association for Behavior Analysis International, Denver, CO.

Bordieri, M.J., Flynn, M.K., Wilson, K.G., & Kellum, K.K. (May, 2011). Generalization of Derived Relations to an Analogue Eating Task: A Moderator Analysis. Paper presented at the annual meeting for the Association for Behavior Analysis International, Denver, CO.

Flynn, M. K., Wilson, K. G., & Kellum, K. K., Nassar, S. L., Slater, R. M., Lucas, N. N., Bordieri, M., Bethay, S., Kolivas, E., & Kirkland, K. (June, 2010). Exploring the use of the Hexaflex Functional Dimensional Experiential Interview. Paper presented at the annual meeting for the Association for Contextual Behavioral Science, Reno, NV.

Lucas, N.N, Flynn, M.K., Wilson, K.G., & Kellum, K.K. (June, 2010). Why am I in college? Bringing Values to the classroom. Paper presented at the annual meeting for the Association for Contextual Behavioral Science, Reno, NV.

Flynn, M.K., Lucas, N.N., Kellum, K.K. &Wilson, K.G. (May, 2010). Effects of student and observer feedback on teaching behaviors of new instructors. Paper presented at the annual meeting for the Association for Behavior Analysis International, San Antonio, TX.

Flynn, M.K., Lucas, N.N., Kolivas, E.D., & Bordieri, M.J. (May, 2010). Applying basic behavioral principles to improve academic performance, teaching skills, and research lab management at a southern university. Symposium chair at the annual meeting for the Association for Behavior Analysis International, San Antonio, TX.

Flynn, M. K., Wilson, K. G., Kellum, K. K., Nassar, S. L., Slater, R. M., Lucas, N. N., Bordieri, M., Bethay, S., Kolivas, E., & Kirkland, K. (May, 2010). Exploring the use of the Hexaflex Functional Dimensional Experiential Interview. Paper presented at the annual meeting for the Association for Behavior Analysis International, San Antonio, TX.

Flynn, M.K., Peterson, C., Carstens, B.A., Slater, R.M., Wilson, K.G. & Kellum, K.K. (May, 2010). Mindfulness for Two revisited: Manipulating the therapist. Paper presented at the meeting for the Association for Behavior Analysis International, San Antonio, TX.

Flynn, M.K., Jeane, N.A., & Lombardo, T. (May, 2010). Home and Car Environmental Tobacco Smoke Exposure in Rural Outpatients Psychiatric Smokers and Nonsmokers. Poster presented at the annual meeting for the Association for Behavior Analysis International, San Antonio, TX.

Lucas, N.N., Flynn, M.K., Wilson, K.G., & Kellum, K.K. (May, 2010). Why Am I In College? Bringing Values to the Classroom. Paper presented at the annual meeting for the Association for Behavior Analysis International, San Antonio, TX.

Flynn, M.K., & Wilson, K.G. (July, 2009). Alcoholics anonymous from a contextual behavioural perspective. Paper presented at the annual meeting of the Association for Contextual Behavioral Science, Enschede, Netherlands.

Flynn, M.K., & Wilson, K.G. (July, 2009). Crying out in the dark: A look into ACT and literature. Paper presented at the annual meeting of the Association for Contextual Behavioral Science, Enschede, Netherlands.

Flynn, M.K., & Wilson, K.G. (July, 2009). Explorations into ACT and literature. Symposium chair at the annual meeting of the Association for Contextual Behavioral Science, Enschede, Netherlands.

Flynn, M. K., Wilson, K. G., Kellum, K., & Sandoz, E. K. (May, 2009). Mindfulness for two (Part I): The effects of the Pre-interview Questionnaire Administered. Paper presented at the annual meeting for the Association for Behavior Analysis International, Phoenix, AZ.

Flynn, M. K., Wilson, K. G., Kellum, K., & Sandoz, E. K. (May, 2009). Mindfulness for two (part I). Symposium chair at the annual meeting for the Association for Behavior Analysis International, Phoenix, AZ.

Flynn, M.K., Slater, R.M., Nassar, S.L., Kellum, K.K., & Wilson, K.G. (July, 2009). Values-centered exercises: Impact of values work on psychological well-being. Paper presented at the annual meeting of the Association for Contextual Behavioral Science, Enschede, Netherlands.

Flynn, M. K., Wilson, K. G., Kellum, K., & Sandoz, E. K. (May, 2009). Improving Measurements of Valued Living: Validation of the Valued Living Questionnaire-II (VLQ-2). Paper presented at the annual meeting for the Association for Behavior Analysis International, Phoenix, AZ.

Nassar, S.L., Flynn, M.K., Slater, R.M., Kellum, K.K., & Wilson, K.G. (July, 2009). An improved measure of valued living: The Valued Living Questionnaire-II (VLQ-2). Paper presented at the annual meeting of the Association for Contextual Behavioral Science, Enschede, Netherlands.

Nassar, S.L., Wilson, K.G., Kellum, K.K., & Flynn, M.K. (May, 2009). Values-centered writing: Explorations within the expressive writing paradigm. Paper presented at the annual meeting for the Association for Behavior Analysis International, Phoenix, AZ.

Slater, R.M., Nassar, S.L., Flynn, M.K., Kellum, K.K., & Wilson, K.G. (July, 2009). What are values? Unpacking values as conceptualized in acceptance and commitment therapy. Paper presented at the annual meeting of the Association for Contextual Behavioral Science, Enschede, Netherlands.

Hollis, S., Flynn, M.K., Lombardo, T., Bentley, J., & Payne, T. (February, 2008). Social facilitation in undergraduates: Encouraging and Discouraging Peer Smoking. Poster presented at the annual meeting for the Society for Research on Nicotine and Tobacco, Portland, OR.

Young, C., Flynn, M.K, Lombardo, T., Bentley, J., Riordan, P., Tracy, A., & Surdock, A.(February, 2008). Longitudinal study of a community smoking ban on undergraduate smoking, alcohol use, and perceived ban effects. Poster presented at the annual meeting for the Society for Research on Nicotine and Tobacco, Austin, TX.

Tracy, J., Lombardo, T.W., Bentley, J., Young, C., Flynn, M.K., and Riordan, P. (February, 2007). A smoker identity scale for LITS and regular smokers. Poster presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Austin, TX.

Professional Activities

Guest reviewer in Behavior Analyst Today 2011
Association for Applied Behavior Analysis International (ABAI) Student Program
Representative, 2010-2011

Planning committee member for the Out of the Darkness Community Walk at the University of
Mississippi for the American Foundation for Suicide Prevention, Fall 2010
Student Representative – Clinical psychology faculty meetings, 2009-2010

Professional Association Memberships

American Psychological Association, Member
Association for Behavioral and Cognitive Therapies, Member
Association for Behavioral Analysis International, Member
Association for Contextual Behavioral Science, Member
Alpha Epsilon Lambda, Member
Phi Kappa Phi, Member
Psi Chi, Member
Golden Key International Honour Society, Member