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SELF-REPORTED ACCEPTANCE OF SOCIAL ANXIETY SYMPTOMS:
DEVELOPMENT AND VALIDATION OF THE SOCIAL ANXIETY - ACCEPTANCE
AND ACTION QUESTIONNAIRE

by

Meagan B. MacKenzie
Hons. B.Sc., Trent University, 2004

THESIS

Submitted to the Department of Psychology in partial fulfillment of the requirements
for Master of Arts

Wilfrid Laurier University
2008

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Abstract

Mindfulness-based interventions have been used in the treatment of social anxiety with initial success. Mindfulness is defined as an awareness and acceptance of the present moment. Acceptance when used as a coping strategy is related to reduced distress during anxiety-provoking tasks and increased willingness to experience unpleasant events. The purpose of this research was to examine acceptance, willingness and distress in the context of social anxiety and was threefold. The first study was designed to develop an instrument designed to assess acceptance specific to social anxiety. In Study 1, a sample of 352 undergraduates completed the initial 56-item pool of the Social Anxiety – Acceptance and Action Questionnaire (SA-AAQ) with the goal of item reduction. The second study was designed to validate this measure and clarify the factor structure of the SA-AAQ. Participants ($n = 339$) completed the SA-AAQ in addition to measures of mindfulness and social anxiety. Results indicated that the SA-AAQ is a reliable and valid measure of acceptance specific to social anxiety. The third study was an experimental manipulation that was designed to examine the relationships among acceptance of social anxiety symptoms, willingness and distress. It was hypothesized that individuals who are habitually higher in acceptance would experience reduced anxiety and increased willingness in response to a speech task than those who are low in acceptance. In addition, it was believed that inducing state acceptance using brief instructions would result in decreased distress and increased willingness as compared to suppression and control groups. The results demonstrated that trait acceptance of social anxiety symptoms was associated with lower levels of distress following the speech. It was also found that inducing state acceptance led to similar levels of distress as inducing suppression. Further

research is warranted to further clarify this finding. In sum, these three studies combine to provide support that this instrument is a valid measure of the construct that it was designed to assess, namely acceptance specific to social anxiety. The SA-AAQ could be of benefit for assessing mechanisms of change within mindfulness-based treatment protocols for social anxiety, in addition to contributing to the mindfulness literature.

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Self-Reported Acceptance of Social Anxiety Symptoms:
Development and Validation of the Social Anxiety -Acceptance and Action
Questionnaire

Social anxiety disorder is characterized by persistent negative self-judgment combined with a strong fear of negative evaluation from others in social interactions or performances (Rowa & Antony, 2005). Socially anxious individuals tend to endure situations with the potential for evaluation by others with great distress or avoid these situations completely (American Psychiatric Association [APA], 2000). Social anxiety disorder, also known as social phobia, is the third most common psychiatric disorder after depression and substance abuse, and is associated with significant impairment across many domains (Kessler et al., 1994). Socially anxious individuals can experience symptoms that include, but are not limited to, sweating, abdominal discomfort, muscle tension, and blushing while in a social situation. Statistics Canada (2004) reports that individuals with social anxiety are more likely than non-socially anxious individuals to take disability days off work, describe their lives as less satisfying, and often do not seek treatment for their symptoms. In Ontario, prevalence rates are estimated to be as high as 6.7%, making it one of the most common psychiatric disorders in the province (Offord et al., 1996).

The current “gold standard” of treatment for social anxiety is cognitive behavioural therapy (CBT), however many clients experience only minimal improvement with this method (Hofmann & Bögels, 2006). The fact that CBT does not work for all individuals has led to the development and use of mindfulness and acceptance-based

interventions for this complaint. These novel treatment protocols are being increasingly researched and applied to treatment to determine their efficacy. The current research has been designed to investigate the use of mindfulness and acceptance-based strategies within the framework of social anxiety in a series of three studies. Briefly, mindfulness can be described as an attitude of awareness and nonjudgmental acceptance of internal events, namely thoughts and feelings (Kabat-Zinn, 1994). Recent empirical work has shown that the construct of mindfulness is negatively associated with social anxiety (Kocovski & Battista, 2006). This construct is central to novel efficacious anxiety treatments. In order to evaluate the efficacy of mindfulness and acceptance-based treatments, it is necessary to measure these variables at several points across the treatment protocol. Currently, there are instruments which assess mindfulness and acceptance in general, however there is need for complaint-specific measures in order to better assess mechanisms of change within treatment. The current program of research has been designed to further investigate the measurement of acceptance within the cognitive model of social anxiety. More specifically, the present goals are threefold: 1) to elucidate the relationship between social anxiety and acceptance by developing a new measure, adapted from the existing Acceptance and Action Questionnaire (AAQ), designed to assess acceptance specific to social anxiety; 2) to validate this measure and provide evidence supporting its use; and 3) to use an experimental design which will serve to demonstrate the utility of mindfulness training in a nonclinical student sample. The current research has an additional aim of investigating the possible associations between acceptance of social anxiety symptoms and psychophysiological measures, namely blood pressure and heart rate, which have not been examined to date.

Social anxiety researchers have demonstrated that individuals in the general population frequently experience social anxiety symptoms (Hofmann & Roth, 1996; Purdon, Antony, Monteiro, & Swinson, 2001). Purdon and colleagues found that in a college sample, the vast majority of participants endorsed periodically experiencing social anxiety symptoms such as blushing, sweating and nervous laughter, as measured using an instrument created for that study. Other research has shown that over half of nonclinical individuals surveyed described feeling social anxiety at least occasionally (Hofmann & Roth, 1996; Stein, Walker, & Forde, 1994). This type of anxiety can be described as existing along a continuum on which both clinical and nonclinical individuals fall. The continuum ranges from little or no social anxiety at one end to the other extreme of debilitating and disruptive anxiety experienced in social situations. Due to the prevalence and variability of social anxiety in nonclinical individuals, it was expected that using a student sample for the current research would provide enough variance to adequately study social anxiety.

Cognitive Models of Social Anxiety

Cognitive models of social anxiety are well researched and utilized in psychological literature (Clark & Wells, 1995; Rapee & Heimberg, 1997, Schlenker & Leary, 1982) and have provided insight into the mechanisms and course of this complaint. These models are comprised of several components: beliefs about the self, anticipatory and post-event processing, self-focused attention, and safety behaviours. The first aspect refers to negative beliefs that individuals with social anxiety have about their abilities and worth, as well as maladaptive assumptions that social situations are dangerous (e.g., Amir, Foa, & Coles, 1998). In other words, a socially anxious person

may enter a social situation with the preconceived idea that he/she is inadequate in one or more domains of social interaction (i.e. “I will do something stupid” or “I am boring”). There is no dispute that socially anxious individuals have a negative self-concept, as there is an abundance of research to support this. Studies have demonstrated that individuals with social anxiety have more negative self-statements during social interactions than non-socially anxious controls (Stopa & Clark, 1993), and have negatively biased views of their performances in social situations (Alden & Wallace, 1995). These negative views of the self range across several dimensions of possible inadequacies, from observable signs of anxiety (Scholing & Emmelkamp, 1993, 1996) such as “I will blush” or “I will sweat”, to physical unattractiveness (Rapee & Abbott, 2006) such as “I am ugly”, to personality flaws (Wilson & Rapee, 2006) such as “I am boring” or “I am not funny”. Research has also suggested that these negative beliefs are more activated in situations with potential for negative evaluation (Anderson & Arnoult, 1985). In other words, someone with social anxiety may have this negative self-concept only when he/she is in an anxiety provoking social situation, and may have a more positive self-view when he/she is alone or with close friends. Wilson and Rapee (2006) investigated this idea of certainty of the self and found that individuals with social anxiety are less confident in their self-concepts as compared to people low in social anxiety. In addition, these authors remarked that for individuals who are less confident in their self-concepts, information from peers (i.e., reactions and opinions) may more heavily influence their own self-concept.

Anticipatory processing is another contributory mechanism of social anxiety and refers to thoughts and feelings that occur prior to the social event. During this deliberation, socially anxious individuals often recall perceived past failures and think

about the potential negative consequences of the upcoming social interaction (Hinrichsen & Clark, 2003). This future-oriented information processing can serve to be a self-fulfilling prophecy as the individual is already expecting failure (Vassilopoulos, 2004). Brown and Stopa (2006) tested whether anticipatory processing would have a detrimental effect in socially anxious and non-socially anxious people. Participants were either in a no-anticipatory processing condition or a ten-minute anticipatory processing condition prior to giving a speech. The authors found that in socially anxious individuals, anticipatory processing was associated with greater anxiety. Surprisingly, it was also found that in both socially anxious and non-socially anxious participants, speeches were rated as subjectively better following the anticipatory processing period. This suggests that this type of processing may have both positive and negative effects. However, in the case of negative effects, a socially anxious individual may choose to entirely avoid the situation as a result of these negative cognitions (Mansell, Clark, Ehlers, & Chen, 1999). Alternatively, if a choice is made to enter a social situation, considerable distress and anxiety will likely be experienced.

On a similar note, post-event processing also occurs frequently in socially anxious individuals. This past-oriented period of reflection has been described as a “postmortem” of the event by Clark and Wells (1995) where the individual reviews all of his/her perceived inadequacies and mistakes during the interaction. Post-event processing appears to be particularly relevant for individuals with social anxiety, as opposed to non-socially anxious people (e.g. Dannahy & Stopa, 2007; Fehm, Schneider, & Hoyer, 2007; Mellings & Alden, 2000). Research has also demonstrated that the thoughts replayed during post-event processing tend to be negative. Not only is the valence of thoughts

affected by social anxiety, but the perspective of one's internal events is also related to this complaint. For example, Field and Morgan (2004) examined whether engaging in post-event processing would result in rating autobiographical memories as positive or negative. Participants were asked to describe a social event followed by post-event processing (either focusing on positive or negative aspects of the event). A memory-recall task followed the post-event processing period. The results showed that socially anxious individuals recalled more negative memories than their non-socially anxious comparison group.

Whilst in a social situation, anxious individuals become self-focused (Perowne & Mansell, 2002). Attention is shifted inward and the processing of physical and emotional sensations takes precedence over external cues and events. Increased self-focused attention is maladaptive because it is positively associated with anxiety and negative thoughts about the self (Woody, 1996). This shift in attention also interferes with the processing of situational events and social cues. Although socially anxious individuals have a tendency to shift focus inwards, they remain capable of attending to external stimuli. However, socially anxious individuals have a negative interpretation bias of external environmental cues (e.g., a frown or a yawn). This negative bias confirms the erroneous assumptions held by the socially anxious individual such that he/she engages in self-protective behaviours in order to minimize the negative social consequences.

Safety behaviours such as avoiding eye contact, becoming withdrawn, speaking quickly and nervous laughter serve as avoidance and/or control and are typical procedures used to cope with a social situation (Wells, Clark, Salkovskis, Ludgate, Hackmann, & Gelder, 1995). Empirical research has shown that decreasing the use of

safety behaviours in social phobia patients is associated with decreased levels of anxiety and distress within a social context (Wells et al., 1995). Avoidance itself can be considered the ultimate safety behaviour, and many socially anxious individuals choose to avoid situations where they could potentially feel distressed.

Rapee and Heimberg's (1997) cognitive model varies only slightly from the more often cited Clark and Wells (1995) model. Specifically, the former model emphasizes the importance of the formation of a mental representation of the socially anxious individual's performance as seen by the audience in a social situation. The next component involves comparing this mental representation to a self-generated prediction of what the audience is expecting. The discrepancy between how the individual believes he/she is performing in the situation and the person's perception of what the audience expects of him/her determines the perceived likelihood of negative evaluation from the audience. This negative evaluation elicits anxiety, which again serves to maintain the erroneous assumptions held at the beginning of the cycle.

An earlier model proposed by Schlenker and Leary (1982) also focuses on perceived discrepancies between desired and actual performance. Schlenker and Leary's self-presentation model posits that social anxiety is a result of being highly motivated to impress others in social situations while doubting one's ability to do so. Each of these components described above (negative self-beliefs, anticipatory processing, post-event processing, self-focused attention and safety behaviours in addition to the self-presentation aspects) have been implicated in the maintenance of social anxiety. Each of the cognitive models (Clark & Wells, 1995; Rapee & Heimberg, 1997; Schlenker &

Leary, 1982) provide valuable insight, are empirically validated, and are the underpinnings upon which Cognitive Behavioural Therapy (CBT) is based.

Cognitive Behavioural Therapy

Cognitive Behavioural Therapy (CBT) is the most widely researched therapeutic approach for the treatment of social anxiety disorder (Heimberg, 2002) and is based on the aforementioned cognitive models. This method adopts a cognitive model of social anxiety and emphasizes a client's examination of his/her thoughts and beliefs about feared social situations. CBT teaches an individual how to identify, evaluate and devise alternatives to his/her maladaptive cognitions (Rowa & Antony, 2005). In order to defuse conditioned responses to feared stimuli, exposure is one of the central components of this approach. Exposure techniques are used to assist clients in facing their fears by presenting them with anxiety-producing material in a safe context in order to decrease the intensity of their emotional reaction (Heimberg, 2002). Although CBT is the standard psychotherapeutic approach and has been reliably shown to be efficacious for treating social anxiety, a significant number of patients with social anxiety disorder do not benefit from this treatment or experience only minimal improvement (Hofmann & Bögels, 2006). Predictors of poor CBT outcomes include comorbidity (Turner, Beidel, Wolff, & Spaulding, 1996; Chambless, Tran, & Glass, 1997), lack of homework completion (Edelman & Chambless, 1995) and heightened self-focused attention (Bögels & Mansell, 2004). Although CBT is widely advocated, the existence of these poor indicators may affect the current view of using a treatment based on a cognitive model paradigm for social anxiety. Considering that there are many individuals who show only minimal improvement when treated with CBT, one approach may be to refine or expand the

cognitive model and treatment structure (e.g., Voncken & Bögels, 2006), while another may be to explore novel treatment options such as those that incorporate mindfulness and/or acceptance components (e.g., Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

Mindfulness and Acceptance

Empirical research in the area of mindfulness related to psychopathology has demonstrated a negative relationship between mindfulness and social anxiety (Brown & Ryan, 2003). Herbert and Cardaciotto (2005) proposed the inclusion of mindfulness components into a cognitive model of social anxiety. They suggest that nonjudgmental acceptance is a critical moderator between social anxiety and behavioural disruption. Theoretically, if a person is high in acceptance, he/she will simply note his/her anxious thoughts and not try to control or avoid them, thus leading to minimal behavioural disruption. Conversely, if a person is low in acceptance, he/she may attempt to control the anxious thoughts. These control strategies, including thought suppression, seem to account for experiencing increased levels of anxiety in numerous studies (e.g. Koster, Rassin, Crombez, & Naring, 2003). Taken together, the empirical and clinical lines of research lend support to the theory that mindfulness can be incorporated into a cognitive model of social anxiety, which in turn supports the use of mindfulness and acceptance-based interventions for social anxiety. Kocovski and Battista (2006) examined the addition of mindfulness and acceptance into a cognitive model of social anxiety. They found significant negative correlations between social anxiety and mindfulness, and that acceptance compared to awareness was more strongly negatively correlated with social anxiety. In addition, hierarchical regression analyses revealed that low levels of acceptance were predictive of greater use of avoidant behaviours, greater distress, and

lower quality of life, above and beyond that of social anxiety alone. Overall, low acceptance was associated with greater distress and more avoidance. One limitation of this research was the lack of specificity in the measures used to assess mindfulness and acceptance, namely that these constructs were assessed with existing measures that target mindfulness and acceptance of experience in general.

The concept of mindfulness has been long embraced by Eastern cultures and philosophies, and consciousness and well-being are closely tied in Buddhism in particular (Brown & Ryan, 2003). This component of Eastern meditation traditions is becoming increasingly incorporated and discussed in psychological research and application. Current conceptualizations of mindfulness are being adopted by psychologists and integrated into their therapeutic practices. There have been attempts to characterize and elucidate this concept by several researchers, and although there are many commonalities, the definition of mindfulness remains variable depending on the citation. To summarize, there are two common elements across these definitions. First, mindfulness is an intentional regulation of attention to the present moment (Bishop et al., 2004; Brown & Ryan, 2003; Kabat-Zinn, 1994), and second, mindfulness is a sense of openness, acceptance and curiosity towards life's events (Bishop et al., 2004; Kabat-Zinn, 1994; Lau et al., 2006).

Mindfulness and Acceptance-Based Interventions

Researchers and clinicians have adapted and created what have been termed “third wave” therapies (Hayes, 2004). These techniques that introduce elements of mindfulness and acceptance are an alternative to traditional CBT (Baer, 2003). The final aim of the present research is to examine elements of these novel interventions,

specifically whether inducing mindfulness and acceptance using an instruction protocol is associated with reduced anxiety and distress in the context of a social anxiety provoking event.

Mindfulness has been integrated into intervention techniques for the treatment of several disorders. Baer (2003) reviewed recent literature on mindfulness training as part of the therapeutic process and found that practitioners are using methods like Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), and Acceptance and Commitment Therapy (ACT; spoken as one word rather than an acronym) for a wide spectrum of clinical disorders. The importance of observing one's thoughts in a nonjudgmental manner is emphasized in all of these approaches.

Mindfulness-Based Stress Reduction (MBSR) is a group program where clients are taught mindfulness and meditation skills. This program was developed by Jon Kabat-Zinn to help patients with medical problems like chronic pain and fibromyalgia cope with their ailments and daily stress. Grossman, Niemann, Schmidt, and Walach (2004) conducted a meta-analytic review of MBSR used in a wide range of clinical populations. The authors reported that MBSR is beneficial for patients suffering from chronic pain, fibromyalgia, different cancers, coronary artery diseases, depression, anxiety and eating disorders.

Another group intervention is Mindfulness-Based Cognitive Therapy (MBCT), which incorporates aspects of CBT and MBSR. The focus of this method is to change clients' awareness of and relationship with their own thoughts. This therapy was initially developed in order to prevent relapse in clients who have suffered from depression. The emphasis in this program is not on changing cognitions themselves, but becoming an

objective observer of them; viewing them as mental events which are separate from the self (e.g., "Thoughts are not facts" and "I am not my thoughts"; Teasdale, Segal, Williams, Ridgeway, Soulsby, & Lau, 2000). This therapy has been empirically shown to be efficacious for preventing relapse in patients with depression, notably for patients who have had three or more depressive episodes. For those who received MBCT, the likelihood that they would relapse was almost less than halved at the four month follow-up period as compared to similar patients randomized to a treatment-as-usual condition. In an Australian sample, Kenny and Williams (2007) found that despite the fact that MBCT was developed for use with formerly depressed patients, it significantly reduced dysphoria levels in patients currently suffering from depression. In addition, these authors also found that it was beneficial for clients who were identified as suffering from bipolar depression.

A relatively new therapeutic method to evolve from CBT is Acceptance and Commitment Therapy (ACT). According to Eifert and Forsyth (2005), this method was developed to improve components of CBT. ACT retains some of the fundamentals of CBT, like exposure (albeit following a different rationale), and builds upon them in a mindful and compassionate way. Specifically, ACT aims to assist people in accepting themselves, choosing valued directions for their lives, and committing to actions which are consistent with those values. This intervention consists of two major goals which are comprised of six core processes (acceptance, distancing from thoughts, self as context, committed action, values, and contact with the present moment) that clients work through during therapy (Hayes et al., 2006). The first goal is to foster a sense of nonjudgmental acceptance towards unwanted and uncontrollable thoughts and feelings. Clients are

encouraged to view their thoughts and emotions from an objective observer's point of view and to experience thoughts and emotions without judging them. The second goal is commitment and action towards a life of value. Clients are encouraged to change their behaviours in order to reflect what is important to them. These goals are interrelated and overlap substantially and are both necessary to facilitate change. Hayes and colleagues (2004) have found that this approach is promising for a wide variety of clinical problems, including depression, stress and anxiety. Of particular importance to the current research is the notion of experiential acceptance, or willingness. This concept can be defined as a behavioural mindfulness, where one chooses to experience and accept anxiety without attempting to change the experience (Eifert & Forsyth, 2005). Instead of merely persevering despite anxiety, it is a stance of openness and acceptance towards potentially anxiety-provoking situations.

Recent clinical research has proposed that the constructs of mindfulness and acceptance have emerged as being relevant for the treatment of social anxiety disorder (Bögels, Sijbers, & Voncken, 2006; Dalrymple & Herbert, 2007; Ossman, Wilson, Storaasli, & McNeill, 2006). Bögels and colleagues (2006) presented research on an early version of mindfulness-based treatment for socially phobic patients. Their task concentration training and mindfulness training were demonstrated to produce beneficial results in the treatment of social anxiety disorder, specifically that treatment was highly effective in reducing social anxiety symptoms, and that treatment gains were maintained at a two month follow-up. Despite the promising findings, one of the concerns stemming from this particular research was that it is a pilot study based only on one trial group with no control comparison. Additionally, a notable limitation of this study was the lack of

assessment of mindfulness. Without this, it is difficult to convey that the mindfulness training was in fact a mechanism of change.

Ossman and colleagues (2006) investigated the uses of a group acceptance-based treatment, Acceptance and Commitment Therapy (ACT), for clients suffering from social anxiety. The results of this research indicated that ACT was associated with reports of decreased social anxiety at post-treatment and at follow-up. A major criticism of this study was the very high dropout rates. Following from Ossman's research, Dalrymple and Herbert (2007) piloted a study of individual ACT for social anxiety disorder sufferers. The findings indicated that there were significant improvements in social anxiety symptoms from pre-treatment to follow-up. Again, despite the positive results, this was an open trial study and the lack of control group makes these findings tenuous. Kocovski, Fleming, and Rector (2008) investigated the effectiveness of a Mindfulness and Acceptance-based Group Therapy (MAGT) for patients with social anxiety disorder. Their results demonstrated that this novel therapy significantly reduced social anxiety, depression and rumination following a 12-week treatment course with effect sizes ranging from 1.00 to 1.17 for treatment completers on measures of social anxiety. In addition, mindfulness and acceptance significantly increased following these sessions. These gains were all maintained at a three month follow-up assessment. Despite the encouraging findings, a limitation of this pilot study was the lack of control group.

Mindfulness and Acceptance Experimental Manipulations

Recent empirical studies have demonstrated that the induction of mindfulness is associated with positive outcomes. Research has shown that when acceptance is induced using an instruction paradigm, participants are less likely to be distressed and more likely

to be willing to experience adverse situations than those who are not given acceptance instructions. For example, a study conducted by Wegner and Erskine (2003) examined the effect of thought monitoring on willingness. Participants in this study were given instructions before completing nine mundane tasks such as copying a shopping list, circling vowels in a paragraph and wrapping a pipe cleaner around a pencil. Prior to completing the tasks, participants were given one of three sets of instructions: The first was labeled monitoring (although it closely resembles the current conceptualization of acceptance), where they were asked to notice thoughts without changing them; the second was thought suppression, where they were asked to try not to think about what they were doing; and the third was concentration, where they were asked to think about and concentrate on performing the task. Results indicated that monitoring and concentration instructions were associated with increased willingness and that suppression instructions were associated with decreased willingness. These findings indicate that greater awareness and acceptance was associated with greater willingness.

Arch and Craske (2006) used a similar instruction paradigm whereby participants were given specific instructions in order to complete tasks. In this case, affective images were utilized, and willingness was measured as the extent to which participants would remain in contact with aversive slides. The experimental groups were *focused breathing*, where participants completed a mindfulness meditation exercise; *worry*, where worry and catastrophizing were induced; and *unfocused attention*, where participants were instructed to let their minds wander in any direction. Participants who engaged in the *focused breathing* were significantly more willing to engage in an aversive task (i.e.,

view the negative slides) than the *unfocused attention* group. This finding was also trending in the same direction for the *worry* group.

These types of research designs have also been used with more challenging physical tasks. Carbon dioxide (CO₂) challenges are experimental manipulations where participants inhale CO₂, which causes symptoms analogous to panic attacks. Feldner, Zvolensky, Eifert, and Spira (2003) used this biological challenge to assess the association between experiential avoidance and the affective consequences of a CO₂ task in student participants. Participants were identified as high or low in habitual experiential avoidance, (i.e. a lack of acceptance) and were given instructions to either suppress or accept the symptoms and feelings associated with the CO₂ challenge, which was administered subsequently. For participants who were less habitually accepting, greater cognitive-affective distress was reported when instructed to suppress than when instructed to accept. The lack of a control group makes interpretation of these findings more tenuous, and this was addressed in subsequent studies in this area. Willingness was also assessed in similar studies using CO₂ challenges, and both clinical (Eifert & Heffner, 2003) and nonclinical (Levitt, Brown, Orsillo, & Barlow, 2004) participants who were given acceptance instructions reported greater willingness to experience future challenges.

Most recently, McMullen, Barnes-Holmes, Barnes-Holmes, Stewart, Luciano, and Cochrane (2008) examined the effects of inducing acceptance via brief instructions as compared to longer instructions on pain tolerance. Participants were randomly assigned to one of five conditions: Full-Acceptance, Full-Distraction, Instruction-only-Acceptance, Instruction-only-Distraction and No-Instructions. The two groups labeled “Full” received

the instructions in addition to an experiential metaphor. All participants were given the choice to receive electric shocks and continue, or avoid the shock and terminate the experiment throughout the duration of the experiment. Participants who were given acceptance instructions in the form of an experiential exercise and a brief metaphor were more likely to administer a greater number of self-delivered shocks than participants in all other conditions. These results imply that experiential exercises and metaphors are useful beyond that of brief acceptance instructions for experimental analogues of acceptance-based interventions.

Taken together, this literature supports the idea that people who are given acceptance instructions experience less distress during and greater willingness to engage in aversive tasks than their counterparts who are instructed to suppress what they are feeling. This research demonstrates that an attitude of nonjudgmental acceptance is associated with a stance of openness and willingness to experience events that may be unpleasant. There is no literature to date that examines acceptance/suppression instructions and willingness in a social anxiety context.

Psychophysiology and its Social Anxiety and Mindfulness Correlates

There is a specific pattern of psychophysiology associated with mindfulness and mindfulness training, which will be discussed below, however it is necessary to first review the social anxiety and physiology literature. Clark and Wells (1995) mention the presence of both visible and non-visible physical sensations (e.g., blushing, increased heart rate, abdominal distress), as well as their interaction with other aspects of social anxiety in their cognitive model. Most often an individual with social anxiety will experience symptoms which are potentially visible to others (e.g., blushing, shaking, and

sweating). There is some evidence to suggest that social anxiety, shyness and embarrassment are all associated with a specific pattern of physical responses. Some of these potentially visible signs of anxiety have been empirically demonstrated to occur more frequently in socially anxious individuals than in people who are not socially anxious. Self-reported blushing is often more frequent in socially anxious samples and the actual tendency to blush has been found more frequently in these individuals than in non-anxious controls (c.f. Leary, Britt, Cutlip, & Templeton, 1992, for a review). Self-reported and actual levels of sweating have also been demonstrated to be increased in socially anxious individuals. For example, Cuthbert, Lang, Strauss, Drobles, Patrick, and Bradley (2003) used levels of skin conductance to examine differences in physiological arousal between anxiety disorder diagnoses. These researchers found that as compared to individuals who were diagnosed with panic disorder, post-traumatic stress disorder or healthy controls, individuals with social anxiety disorder responded with significantly greater physiological arousal, when socially-relevant fear memories were elicited.

In addition to visible signs of anxiety, there is evidence that socially anxious individuals have different physiological patterns of arousal for non-visible anxiety symptoms (e.g., heart rate, blood pressure, brain activity) as compared to individuals who are not socially anxious. One of these non-visible signs of physiological arousal has been shown to be associated with anticipatory processing, a component of the Clark and Wells (1995) cognitive model discussed previously. In a study examining social phobics and controls during the period of anticipation before making a speech, it was demonstrated that the anxious group had a significantly elevated heart rate relative to the control

participants, demonstrating a higher level of physiological arousal (Davidson, Marshall, Tomarken, & Henriques, 2000).

Increased heart rate is a standard indicator for arousal, and it has been demonstrated that an increased cardiovascular response has been associated with social anxiety (Hofmann, Moscovitch, & Kim, 2006). This association is troubling, considering that anxiety-induced cardiac reactivity is related to increased risk of cardiovascular disease (Gorman & Sloan, 2000). For example, in a recent study, Gramer and Saria (2007) demonstrated that socially anxious females responded with significantly heightened heart rate and blood pressure when asked to complete an evaluative task compared to a non-socially anxious comparison group. This study demonstrated that this effect is not only found in situations that are typically social anxiety provoking (i.e., a speech task), but also for non-social evaluative tasks (i.e., mental arithmetic).

Edelmann and Baker (2002) demonstrated that although socially anxious and socially phobic participants had higher self-reported ratings of racing heart and sweaty hands than non-anxious controls, their actual measures of heart rate and skin conductance did not differ. Similarly, research comparing high trait socially anxious individuals to low trait socially anxious individuals demonstrated that although the socially anxious participants reported greater self-reports of anxiety than the non-anxious group, there were no differences in physiological responses (i.e., heart rate, blood pressure, facial blush, skin conductance level, respiratory rate, etc.) during or following a speech task (Mauss, Wilhelm, & Gross, 2003). Moreover, Mauss, Wilhelm, and Gross (2004) conducted a small meta-analysis of social anxiety physiology literature and found that out

of 21 studies examined, only 12 demonstrated significant physiological increases in socially anxious groups compared to non-anxious controls.

These findings taken together demonstrate that the pattern of psychophysiology in social anxiety is unclear. It is necessary to note that there are numerous determinants of changes in physiological indicators, and this leads to difficulties in interpretation of what these patterns of response may mean. There is no dispute surrounding increased frequencies of self-reported physiological symptoms of arousal in social anxiety, however physiological reactions do not always match subjective experiences. Despite the fact that researchers do not agree as to whether increased physiological arousal is merely self-reported or an actual occurrence, there is no question that socially anxious individuals are impacted greatly. Due to the discrepant nature of findings in the psychophysiological area, further research examining social anxiety and its physiological correlates is warranted.

The physiological correlates of mindfulness and mindfulness training have also been investigated, and the results also indicate that there are certain associated responses. Ditto, Eclache, and Goldman (2006) demonstrated that participants who are instructed in mindfulness techniques tend to experience a variety of physiological changes. Specifically, compared to participants in a relaxation condition, those instructed in mindfulness had significantly greater increases of respiratory sinus arrhythmia (RSA), which refers to increased variability in heart rate associated with respiration. In other words, those in the mindfulness group had a higher degree RSA fluctuation which has been shown to be more adaptive and to have a protective effect from the development of psychopathology (Butler, Wilhelm, & Gross, 2006; Rottenberg, Clift, Bolden, & Salmon,

2007). Campbell-Sills, Barlow, Brown, and Hoffman (2006) examined the effects of acceptance versus suppression instructions on physiological distress (as measured using an ECG) and subjective emotional distress in response to an emotion provoking film. Participants who listened to a rationale for accepting their emotions reported less negative affect post-film, and had lower heart rates during the film than the suppression group.

Increased pain tolerance has been shown to be associated with mindfulness training in a recent study by Kingston, Chadwick, Meron, and Skinner (2007). The authors offered mindfulness training to participants, and asked them to take part in a cold-pressor task. Those who were given the mindfulness training had significantly higher pain tolerance compared to participants who were instructed in Guided Visual Imagery. Pain tolerance was further investigated in relation to trait experiential avoidance in a study by Feldner, Hekmat, Zvolensky, Vowles, Secrist, and Leen-Feldner (2006). The authors measured experiential avoidance in participants and regressed this on pain threshold, pain tolerance, pain endurance, pain intensity and pain recovery, as related to a cold-pressor task. Results indicated that above and beyond demographics and anticipatory anxiety, higher levels of experiential avoidance significantly negatively predicted pain tolerance and pain endurance. This literature suggests that one's state of mind, whether inherent or instructed, can greatly affect one's own physiological state during distress, thus making tangible the mind-body connection. The preceding reviews of the literature of mindfulness and acceptance in relation to both willingness and physiology demonstrates that less distress and more adaptive behaviour are associated with both induced state acceptance (i.e., via instructions) and habitual trait acceptance (i.e. as measured by the Acceptance and Action Questionnaire).

The Acceptance and Action Questionnaire

General mindfulness measures can be used to assess change during a mindfulness-based intervention. A number of these have been developed and validated (e.g., Baer, Smith, & Allen, 2004; Brown & Ryan, 2003; Lau, et al., 2006) and have been used to evaluate progress through treatment. The AAQ (Hayes et al., 2004) is a measure commonly used by ACT researchers to assess the main processes of change towards positive outcome during therapy. The AAQ was developed to measure experiential avoidance in clinical situations. There are several different versions of this instrument. Initially, this instrument began with a 32-item pool as described by Hayes et al. (2004). This same article described a 9-item version with adequate reliability ($\alpha = .70$) and that yields a single factor. A 16-item version described by Bond and Bunce (2003) is a combination of some of the items from the 32-item initial pool with the addition of newly generated items. This version has good reliability (alphas between .72 and .79) and yields two factors which are consistent with the factor structure reported by Hayes, Strosahl, and Wilson (1999): willingness and action. Specifically, Bond and Bunce state that the factors are “willingness to experience internal events” and “ability to take action, even in the face of unwanted internal events” (p. 1060). These can be conceptualized as the respective cognitive and behavioural components of mindfulness.

A number of concerns have been raised with the initial versions of the AAQ, including unreliable factor structures, and therefore a revised version has been developed (Bond et al., 2008). The AAQ-II is a 10-item instrument also designed to measure experiential avoidance in a more psychometrically sound manner. This currently

unpublished questionnaire has good reliability (alphas ranging from .81 to .85 across six samples) and yields only one factor.

Other researchers have adapted variants of the AAQ for use with specific clinical populations. These include AAQ's that are specific to Body Image (Sandoz & Wilson, 2008), weight (Lillis & Hayes, under review), diabetes (Gregg, Callahan, Hayes, & Glenn-Lawson, 2007), auditory and command hallucinations (Shawyer, Ratcliff, Mackinnon, Farhall, Hayes, & Copolov, 2007), cigarette smoking (Gifford, Antonuccio, Kohlenberg, Hayes, & Piasecki, 2002), chronic pain (McCracken, Vowles, & Eccleston, 2004) and trauma (Braekkan, 2007). Therefore, it appears that rather than measuring acceptance in general, it is beneficial to measure acceptance specific to a particular disorder or complaint. Thus far, a measure to assess acceptance specific to social anxiety does not exist, despite research outlined above highlighting the relevance of acceptance to social anxiety. Theoretically, individuals do not avoid decontextualized "thoughts" or "feelings", but may avoid specific internal events that are associated with particular settings. For example, a socially anxious individual may be better able to report feeling avoidant at a party, rather than feeling avoidant in general. Empirical literature has shown that context-specific measures are sensitive to change within treatment (e.g. Gifford, 2004; McCracken & Eccleston, 2006), which demonstrates the utility of domain-specific acceptance scales. Therefore, one focus of the present study is to create such a measure which is specific to social anxiety.

The Present Research

Empirical literature has demonstrated that mindfulness and acceptance-based protocols have led to promising results in the treatment of social anxiety (Bögels et al.,

2006; Dalrymple & Herbert, 2007; Ossman et al., 2006), yet require further research. The lack of specificity of current measures makes it difficult to evaluate mechanisms of change within the intervention, which is an integral part of investigating therapeutic efficacy. In order to further examine the use of such treatments, it is necessary to measure mindfulness and acceptance specific to the complaint being treated. Therefore, this study was designed to address these shortcomings within the literature. Additionally, the use of acceptance as a coping strategy has also proven to produce positive results when dealing with adverse events. This has not been studied in the context of social anxiety, thus a state acceptance induction was also included in this research.

The first study in this program of research involved the creation of a novel instrument designed to measure this construct in addition to its psychometric evaluation. The Social Anxiety – Acceptance and Action Questionnaire (SA-AAQ) is an instrument adapted from the AAQ and designed to measure acceptance specific to social anxiety symptoms. Because the design of this measure drew heavily upon the 16-item AAQ (Bond & Bunce, 2003), it was hypothesized that a similar two-factor solution would be yielded. The 16-item AAQ is comprised of an acceptance and an action factor, which is consistent with ACT processes. Thus, due to the theoretical underpinnings on which it is based, it was expected that the SA-AAQ would also be comprised of the same two factors.

The second study within this line of research was conducted to provide support for the validity of the SA-AAQ. This was done by administering relevant measures concurrently and examining the relationship between the SA-AAQ and these other instruments. Because increased acceptance as measured using the AAQ has been

positively associated with measures of mindfulness (e.g., Kentucky Inventory of Mindfulness Skills, KIMS; Baer, Smith, & Allen, 2004), it was expected that 1) the SA-AAQ would correlate positively with more general measures of mindfulness. In addition, the AAQ has been shown to be significantly negatively correlated with measures of psychopathology, namely anxiety and depression. Thus, it was expected that 2) the SA-AAQ would correlate negatively with measures of social anxiety. Due to the design of the SA-AAQ measuring acceptance unique to social anxiety, it was also expected that 3) the SA-AAQ would be less associated with measures of depression than with measures of social anxiety. At this point in time, there is a paucity of evidence linking mindfulness and impulsivity; however preliminary work by Roemer and colleagues suggests that there is a significant negative correlation between these two constructs (J. R. Peters, personal communication, June 12, 2007). It is believed that by increasing awareness, reflexive behavioural disruptions may be impeded. In a social anxiety context, the frequency of impulsive safety behaviours may be negatively associated with mindfulness. Therefore, the fourth hypothesis of this study was that 4) impulsivity would be negatively correlated with the SA-AAQ. Additional hypotheses included 5) that the SA-AAQ would be negatively related to thought suppression, such that increased acceptance would be associated with reduced attempts to control internal events; and 6) that the SA-AAQ would not be related to social desirability.

The third study was designed to examine trait acceptance of social anxiety using the SA-AAQ as well as state acceptance induced using brief instructions. The aim of this experimental manipulation was to examine state and trait acceptance of social anxiety symptoms in relation to willingness and distress in response to being asked to give a

speech and the possible interaction between habitual and situational acceptance in the context of social anxiety. An instruction paradigm was used for this study where participants were randomly assigned to an acceptance, suppression, or control instruction condition. They were then asked to give a short speech to the researcher. Indicators of subjective emotional and objective physiological distress were measured throughout the experiment. After concluding their speech, participants were asked about their willingness to participate in a similar study in the future. Literature has shown that inducing levels of state acceptance using an instruction paradigm is associated with reduced levels of distress and increased willingness (Campbell-Sills et al., 2006; Levitt et al., 2004). Therefore, it was hypothesized that: 1) inducing state acceptance with instructions would result in lower levels of subjective and physiological distress prior to, during and after the speech, as well as increased levels of willingness immediately after the speech, and at follow-up, as compared to the other instruction groups. As indicated above, higher levels of trait acceptance are associated with reduced levels of cognitive-affective distress and increased willingness (Eifert & Heffner, 2003; Feldner et al., 2003). This led to the hypothesis that: 2) levels of trait acceptance as measured by the SA-AAQ would be negatively associated with levels of subjective and physiological distress prior to, during and after the speech, as well as levels of willingness immediately after the speech, and at follow-up.

Study 1 – Item Generation, Internal Consistency and Factor Structure

The first study in the current research involved the development of the SA-AAQ, which was designed to assess acceptance and action specific to social anxiety symptoms, the SA-AAQ. The psychometric properties of this measure were initially examined.

Because this measure was adapted from the AAQ, it was expected that a factor analysis of this scale would yield a two-factor solution. Also based on the theoretical underpinnings on which this measure was created, it was hypothesized that it would be comprised of similar factors, namely acceptance and action.

Method

Participants

Participants consisted of male and female undergraduate students at Wilfrid Laurier University in Waterloo, Ontario who chose to complete online mass testing using the Psychology Research Experience Program (PREP) system. After data screening, there were 352 participants, (233 females, 113 males, 6 did not report gender). Tabachnick and Fidell (2007) suggest that as a rule of thumb, studies involving factor analyses should have at least 300 cases. Mean age was 18.58 years ($SD = 1.34$). The majority (78.7%) of participants reported their ethnicity as White, 10% as Asian, and 3.4% as East Indian.

Development of the Social Anxiety – Acceptance and Action Questionnaire

In order to develop the Social Anxiety – Acceptance and Action Questionnaire (SA-AAQ), 95 items were initially generated by closely examining existing mindfulness and acceptance and related measures and adapting items to be more specific to social anxiety. Of paramount importance in this process was the 16-item version of the Acceptance and Action Questionnaire (AAQ; Bond & Bunce, 2003). Items from this measure were only slightly modified in order to measure the same construct specific to social anxiety. Additionally, items were adapted from other scales, including the Body Image-AAQ (Sandoz & Wilson, 2008), the Nonjudging of Experience subscale of the 5-Factor Mindfulness Questionnaire (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006),

the Struggle and Control- Trait questionnaire (Rodebaugh & Heimberg, 2006), the White Bear Suppression Inventory (Wegner & Zanakos, 1994), the Philadelphia Mindfulness Scale (Cardaciotto, Herbert, Forman, Moitra & Farrow, 2008) and the Experiences Questionnaire (Fresco et al., 2007).

The author and an additional researcher, Dr. Nancy Kocovski, who is an expert in this research area, then inspected each of the 95 items to assess whether they captured the constructs in question, namely nonjudgmental acceptance and action. Additionally, there were many items that were very similar in content and the redundant items were removed. Of the 95 items initially adapted for use in the scale, 56 items were retained, 20 of which were constructed to assess action. Sample items included “I criticize myself for having irrational or inappropriate social anxiety” and “I get on with my life even when I feel socially anxious.” Items were in no particular order in terms of the expected factors.

Following the structure of the original AAQ, each item was rated on a 7-point Likert scale ranging from 1- Never True to 7- Always True. The instructions guided participants to respond to the items focusing on situations where they may experience social anxiety (see Appendix B for the complete SA-AAQ including instructions).

Procedure

This study took place online using web based questionnaires coded in HTML format. Students were informed in their first year psychology classes that course credit could be earned by participating in research. They then had the opportunity to go online and access the PREP program and complete several screening measures that were administered to all students.

Results

Data Analysis

Data was screened for outliers and missing data on a case-by-case basis. Outliers to be deleted were defined as participants whose SA-AAQ score was above or below 3 standard deviations from the mean SA-AAQ score of the entire sample. Listwise deletion was used for participants who did not complete more than 10 items. After inspecting the data in this manner, 18 cases were deleted, leaving 352 cases that were considered adequate for this analysis. For participants with fewer missing items, the mean of the item was used for substitution of the missing items. This is preferable over substituting the participant's mean response score in this situation because the assumption that all variables are measuring the same construct is violated. Item frequency histograms were visually examined for skewness.

Factor Analysis

Tabachnick & Fidell (2007) recommend that a series of preliminary steps be conducted prior to the factor analysis, which were followed closely. Items were checked for multicollinearity by examining eigenvalues that are close to zero. The Kaiser-Meyer-Olkin measure of sampling adequacy was conducted to examine factorability. This gives an indication of the reliability of the relationships between pairs of variables. This particular test measures the ratio of the sum of squared correlations to the sum of squared correlations plus sum of squared partial correlations. In other words, this test measures

partial correlations between items and a value of .6 and above is an indicator of low partial correlations, which is required for factor analyses (Tabachnick & Fidell, 2007). Next, a principal components analysis (PCA) was conducted to examine whether the test items loaded on two main factors (acceptance and action), as hypothesized. An oblique rotation (i.e., PROMAX in SPSS) was necessary to interpret factor loadings, as it was expected that the factors would be correlated. The initial PCA yielded 9 factors when examining factors with greater than one Eigenvalue. The scree plot indicated a two factor solution (See Figure 1). Tabachnik and Fidell (2007) report that a rule of thumb is to only interpret variables with loadings of .32 or higher. A more stringent cutoff of .35 was established to facilitate the interpretation of the pattern matrix output.

Items that did not load on the first two factors were deleted. The following PCA resulted in a clear two-factor 19-item solution (see Appendix C for the final 19 items). The factor loadings appear in Table 1. There were three items that loaded on both factors. Despite higher factor loadings on the Acceptance factor, these items were retained as part of the Action factor due to their content. Factor 1 ($M = 48.83$, $SD = 11.93$) appeared to capture the nonjudgmental Acceptance component (or more precisely, the *lack* of acceptance). This factor was comprised of 10 items, with an Eigenvalue of 9.56 and accounted for 50% of the variance. Factor 2 ($M = 45.22$, $SD = 8.36$) appeared to capture the Action component. This factor was comprised of 9 items, with an Eigenvalue of 1.88 and accounted for 10% of the variance. The Acceptance factor had excellent reliability ($\alpha = .94$), and the Action factor had good reliability ($\alpha = .82$). The two factors were correlated at .70, $p < .01$. The strength and magnitude of this correlation appeared to

Figure 1.

Initial Scree Plot of 56-item SA-AAQ

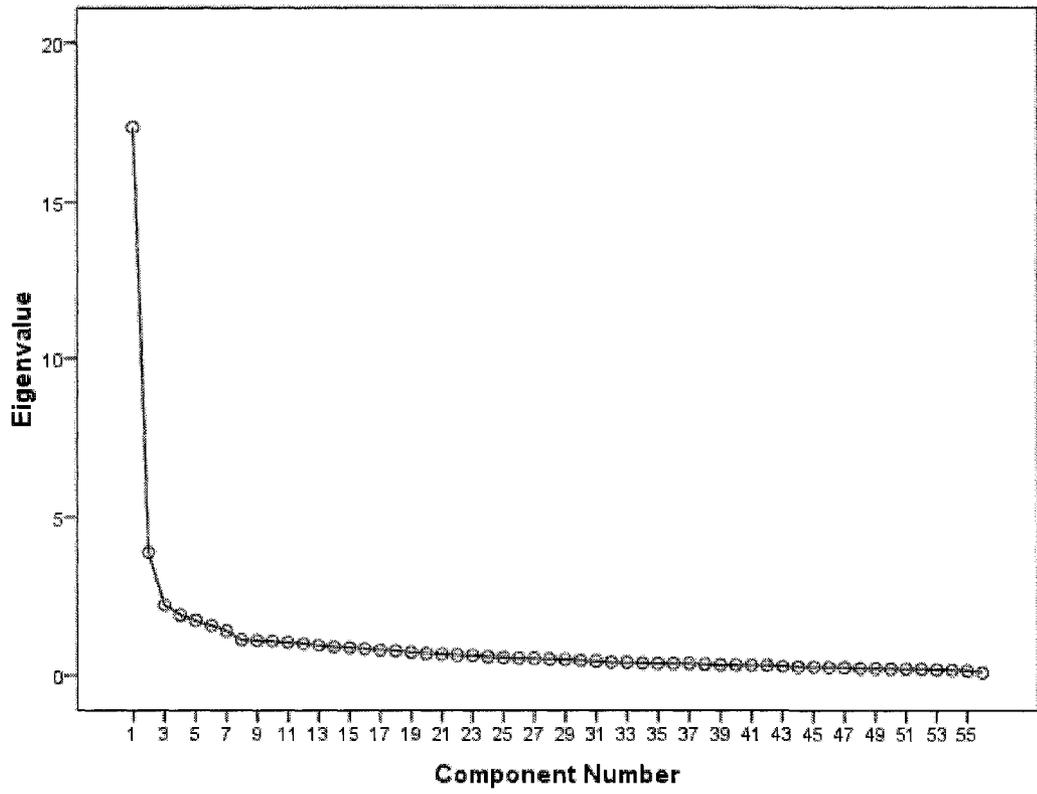


Table 1

Factor Loadings of the Social Anxiety – Acceptance and Action Questionnaire

Item of the SA-AAQ	Acceptance	Action
24. I care too much about whether or not I feel anxious in social situations. (R)	.67	.16
27. I worry about not being able to control social anxiety. (R)	.68	.15
37. I find myself going around and around in circles thinking about my social anxiety. (R)	.78	.11
38. It seems like I'm fighting with myself about my social anxiety. (R)	.76	.17
39. I have thoughts about social anxiety that I get caught up in. (R)	.78	.11
44. I tell myself that I shouldn't have certain thoughts about social anxiety. (R)	.85	-.13
47. I criticize myself for having irrational or inappropriate social anxiety. (R)	.87	-.09
48. I believe that having socially anxious thoughts is abnormal or bad and I shouldn't think that way. (R)	.76	.17
49. I make judgments about whether my thoughts about my social anxiety are good or bad. (R)	.89	-.15
50. I disapprove of myself when I feel socially anxious. (R)	.85	-.11
9. Despite feeling socially anxious at times, I am in control of my life.	.03	.70
10. If I am anxious in a social situation, I can still remain in it.	.07	.74
16. There are not many activities that I stop doing when I am feeling socially anxious.	-.17	.73
21. I get on with my life even when I feel socially anxious.	.11	.73
30. I can move toward important goals, even when I am feeling socially anxious.	.05	.68
32. My social anxiety does not interfere with the way I want to live.	.32	.56
22. Being socially anxious makes it difficult for me to live a life that I value. (R)	.49	.41
23. I would gladly sacrifice important things in my life to be able to stop being socially anxious. (R)	.45	.36
31. My social anxiety must decrease before I can take important steps in my life. (R)	.50	.35

Note. Factor loadings greater than or equal to .35 are in bold.

indicate that these two factors were measuring the same or a very similar construct, suggesting that this scale may be unidimensional.

Discussion

The PCA conducted on the SA-AAQ resulted in a two-factor solution. It is unclear whether this is a result of the measure yielding two distinct factors comprised of acceptance and action, or whether this is due to a method effect where factors emerge based on the valence of the items. Factor 1 consists entirely of reverse scored items, and factor 2 has no reverse scored items with the exception of the three double loaders that are reverse scored, but appear to capture the action component. This effect has also been reported in the development of the Body Image – Acceptance and Action Questionnaire (Sandoz & Wilson, 2008) where positively worded items loaded together on a single factor, and negatively worded items loaded together separately. This suggests that there is one conceptual factor, which is being obscured by method effects. The authors of the BI-AAQ reported completing a second principal factor analysis where one factor was extracted. Similar findings were reported for the AAQ-II (Bond et al, 2008) whereby the researchers reported the emergence of a two-factor solution, and completed additional analyses of the factor structure to test for these types of method effects. The authors state that confirmatory factor analyses on several samples suggest a one-factor solution after specifying a method effect. The single factor AAQ-II was designed to improve upon the questionable psychometrics of the first versions of the AAQ and the newly developed, domain-specific acceptance measures are only one factored as well. The strength and magnitude of the correlation between the two factors provided further support that that the scale is likely one-factored. In addition, the

Eigenvalue-greater-than-one rule is notorious for over-factoring, and therefore the factor structure of this measure may be called into question. Thus, further investigation of the factor structure of the SA-AAQ is necessary, and was conducted in study 2.

Study 2 –Validation of the SA-AAQ

The second of the three studies in this program of research was designed to examine the validity of the SA-AAQ. The newly created SA-AAQ was administered concurrently with existing and empirically validated instruments. It was expected that 1) the SA-AAQ would correlate positively with measures of mindfulness; 2) the SA-AAQ would correlate negatively with measures of social anxiety; 3) the SA-AAQ would be less associated with measures of depression than measures of social anxiety; 4) impulsivity would be negatively correlated with the SA-AAQ; 5) the SA-AAQ would be negatively related to thought suppression; and 6) that the SA-AAQ would not be related to social desirability.

Method

Participants

A total of 381 participants completed the current study. They consisted of male and female undergraduates at Wilfrid Laurier University in Waterloo, Ontario. They were given the opportunity to complete psychology studies for course credit. Due to data being collected in an online format, it was necessary to screen for any participants who may have selected the same response across questionnaires. Any participants who responded in this way were excluded. Participants were also excluded on the basis of large amounts of missing data or scores on measures that were greater than three standard deviations from the mean. Forty-two participants were excluded from the original sample.

Therefore, the analyses that follow are based on a sample of 339 participants. Participants ranged in age from 17 to 43 ($M = 18.89$, $SD = 2.67$) and the majority were female (81.2%). Most participants reported their ethnicity as Caucasian (84.8%) and were in their first year of university (73.9%).

Materials

Demographic Questionnaire. This form asked participants to provide information about their age, gender, year of study, ethnicity and religion in a closed-ended format (see Appendix G).

Acceptance of Social Anxiety Symptoms. The SA-AAQ is a 19 item self-report measure of nonjudgmental acceptance of social anxiety symptoms and action towards valued outcomes (see Appendix C). Psychometric data is reported above. This measure is being validated.

Social Phobia Scale (SPS; Mattick & Clarke, 1998). The SPS is a 20-item self report measure of performance anxiety in social situations. Items refer to common situations where the person is being observed by others, such as eating or writing. Social anxiety is characterized by fears related to being watched by others and potentially showing physical signs of distress, therefore this scale assesses the degree to which participants endorse feeling this type of anxiety. This scale presents a list of statements such as “I worry about shaking or trembling when I’m watched by other people” and asks participants to indicate the degree to which you feel the statement is characteristic or true of them based on a Likert scale ranging from 1 (Not at all) to 5 (Extremely) characteristic. Excellent internal consistency has been found, with Cronbach’s alphas

ranging from .87 to .94 (Heimberg, et al., 1992) and good validity (Mattick & Clark, 1998; See Appendix H).

Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998). The SIAS is also a 20-item self report scale and measures cognitive, affective and behavioural reactions to everyday interactions. This measure is scored using a 5-point Likert scale ranging from 1 (Not at all) to 5 (Extremely) characteristic. Excellent internal consistency has been found, with Cronbach's alphas ranging from .86 to .94 (Heimberg, Mueller, Holt, & Hope, 1992). This scale has been shown to have good validity (Mattick & Clarke, 1998; See Appendix I).

Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987). The 24-item LSAS is used to assess the range of social interaction and performance situations that individuals with social phobia may fear and/or avoid (see Appendix J). Items are rated on anxiety (0 to 3 = none, mild, moderate, severe) and avoidance (0 to 3 = never, occasionally, often, usually). Excellent internal consistency has been found, with Cronbach's alpha ranging from .92 to .95 (Fresco et al., 2001). This measure has been shown to have excellent validity (Heimberg et al., 1999).

Liebowitz Self-Rated Disability Scale (LSRDS; Schneier, Heckelman, Garfinkel, & Campeas, 1994). Current and lifetime impairment related to social anxiety across several different domains was assessed using the 11-item LSRDS. The domains include: alcohol abuse, drug abuse, mood dysregulation, education, career, family relationships, romantic relationships, friendships, hobbies, activities of daily living, and suicidality. Participants were asked to rate how much their social anxiety limits their ability to do various things. Ratings for the LSRDS range from 0 to 3, with 3 being most severe (see

Appendix K for this measure). Adequate internal consistency has been found, with Cronbach's alpha ranging from .75 to .82 and there is data to support its validity (Hambrick, Turk, Heimberg, Schneier, & Liebowitz, 2004).

Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2008). The AAQ-II is a 10-item instrument designed to measure experiential avoidance and was developed to address psychometric concerns of the original version of the AAQ. This questionnaire has good reliability (alpha ranging from .81 to .87) and yields a single factor (Bond et al., 2008). Higher scores on this measure indicate greater acceptance. See Appendix L for this measure.

Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003). One of the measures used to assess mindfulness was the 15-item MAAS. This scale measures the frequency of everyday mindful states, using both general and situation-specific statements (see Appendix M). Participants are asked to rate how frequently or infrequently they have each experience on a scale ranging from 1 (Almost Always) to 6 (Never). Good internal consistency and validity has been found, with Cronbach's alpha ranging from .81 to .87 (Brown, & Ryan, 2003).

Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer & Toney, 2006). This 39-item self report questionnaire measures different aspects of mindfulness (see Appendix N). It includes five subscales measuring nonreactivity, observing, acting with awareness, describing, and nonjudging. Participants were asked to rate how true each statement is of them ranging from 1 (Never, or very rarely true) to 6 (Very often, or always true). Alpha coefficients for each subscale are:

nonreactivity = .75, observing = .83, acting with awareness = .87, describing = .91 and nonjudging = .87.

White Bear Suppression Inventory (WBSI: Wegner & Zanakos, 1994). The WBSI is a 15-item self-report inventory assessing chronic thought suppression (see Appendix O). Responses are based on a 5-point Likert scale ranging from A (strongly disagree) to E (strongly agree). This measure has good reliability with alphas ranging from .87 to .89.

Barratt Impulsiveness Scale (BIS-11: Patton, Stanford, & Barratt, 1995). The BIS measures three different domains of impulsivity which consists of 30 items: Attentional Impulsiveness (9 items), Motor Impulsiveness (10 items) and Nonplanning impulsiveness (11 items). This measure that asks participants to indicate the extent to which each statement applies to them using a four-point scale ranging from 1 (rarely/never) to 4 (always/almost always). The authors report good internal consistency, with alphas ranging from .79 to .83. See Appendix P for this measure.

Beck Depression Inventory (BDI-II: Beck, Steer, & Brown, 1996). Depression was assessed using the BDI, a commonly used 21-item scale that measures endorsement of depression symptoms (see Appendix Q). Participants were asked to choose a statement that best describes how they feel. This measure is composed of items such as hopelessness, irritability, guilt, punishment, fatigue, weight loss, and lack of interest in sex. Excellent internal consistency has been found, with an alpha of .93 (Beck et al., 1996).

Marlowe-Crowne Social Desirability Scale (MCSDS: Crowne & Marlowe, 1960). This 33-item self-report scale was developed to measure social desirability, defined as “the need of Ss to obtain approval by responding in a culturally appropriate and

acceptable manner” (Crowne & Marlowe, 1960, p. 353). This scale was included in this study in order to examine the discriminant validity between social desirability and self-reported acceptance of social anxiety. Items reflect behaviour that are positive, but unlikely (e.g., “I never make a long trip without checking the safety of my car” and “Before voting I thoroughly investigate the qualifications of all the candidates”). This measure has been reported to have adequate internal consistency (alpha ranging from .73 to .74; Barger, 2002). There are short forms of this measure available, however the psychometric properties of these are widely variable, and therefore the original version was used in the present research (see Appendix R).

Procedure

These measures were administered online in the order listed above using web based questionnaires coded in HTML format. Students were informed in their introductory psychology classes that course credit could be earned by participating in research. They then had the opportunity to go online and complete online testing.

Results

Data Screening

As discussed earlier, 42 participants were excluded from the original dataset. The analyses that follow are based on a sample of 339 participants. Reliability analyses were conducted on all of the instruments used in the current research. With the exception of the social desirability scale (the MCSDS), alphas for measures used in this study ranged from .71 to .94, indicating good to excellent reliability. Table 2 presents descriptive statistics for all measures in this study. The MCSDS had an alpha of .31, which is indicative of unacceptable reliability.

Table 2

Descriptive Statistics (N = 339)

Questionnaire	Mean	SD	<i>Alpha</i>
Social Anxiety Measures			
SA-AAQ	98.75	19.47	.94
SPS	19.40	12.61	.92
SIAS	25.48	14.30	.94
LSAS	39.47	20.06	.94
LSRDS	12.21	10.45	.91
Mindfulness Measures			
MAAS	3.66	.78	.88
AAQ-II	46.27	6.93	.80
FFMQ			
Nonreactivity	20.47	3.69	.71
Observe	24.11	4.79	.74
Act with Awareness	25.12	5.49	.88
Describe	25.42	5.73	.88
Nonjudging	26.95	6.43	.92
Other Measures			
WBSI	50.38	10.81	.90
BIS	65.04	9.37	.79
BDI	12.01	9.70	.91
MCSDS	15.83	3.04	.31

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; LSAS = Liebowitz Social Anxiety Scale; LSRDS = Liebowitz Self Reported Disability Scale; MAAS = Mindful Attention and Awareness Scale; AAQ-II = Acceptance and Action Questionnaire II; FFMQ = Five Facet Mindfulness Questionnaire; WBSI = White Bear Suppression Inventory; BIS_TOTAL = Total score for the Barratt Impulsivity Scale; BDI = Beck Depression Inventory; MCSDS = Marlowe-Crown Social Desirability Scale.

Factor Structure of the SA-AAQ

In order to further investigate the factor structure of the SA-AAQ, an oblique principal components analysis using PROMAX rotation was conducted on this data. The PCA again yielded a two-factor solution (see Figure 2) using the Eigenvalue-greater-than-one rule which, upon examination, suggested that items were again loading together based on valence of item wording. Factor loadings of the pattern matrix appear in Table 3. Factor 1 was comprised of 13 items, with an Eigenvalue of 9.55 and accounted for 50.28% of the variance. Factor 2 was comprised of 6 items, with an Eigenvalue of 1.82 and accounted for 9.56% of the variance. There were no items that loaded on both factors. A Pearson's bivariate correlation was calculated for the association between the two factors which resulted in a value of .74, $p < .01$. Correlations were computed to examine each factor's association with all other scales used in this study. These values were of similar strengths and magnitudes, suggesting that the factors are measuring a very similar construct. The factor analyses from Study 2 confirmed that there may be a method effect due to item valence, as the results in Study 1 suggested. In addition, the high correlation between the two factors suggested that the SA-AAQ is a unidimensional measure, and will hereafter be discussed as such.

Hypotheses

1. and 2. *The SA-AAQ would be positively associated with measures of mindfulness, and negatively associated with measures of social anxiety.* Because the SA-AAQ was assumed to be one-factored, a total score was computed for use in the following analyses. Higher scores on the SA-AAQ are indicative of a greater stance of

Figure 2.

Scree Plot of the Final Version of the SA-AAQ

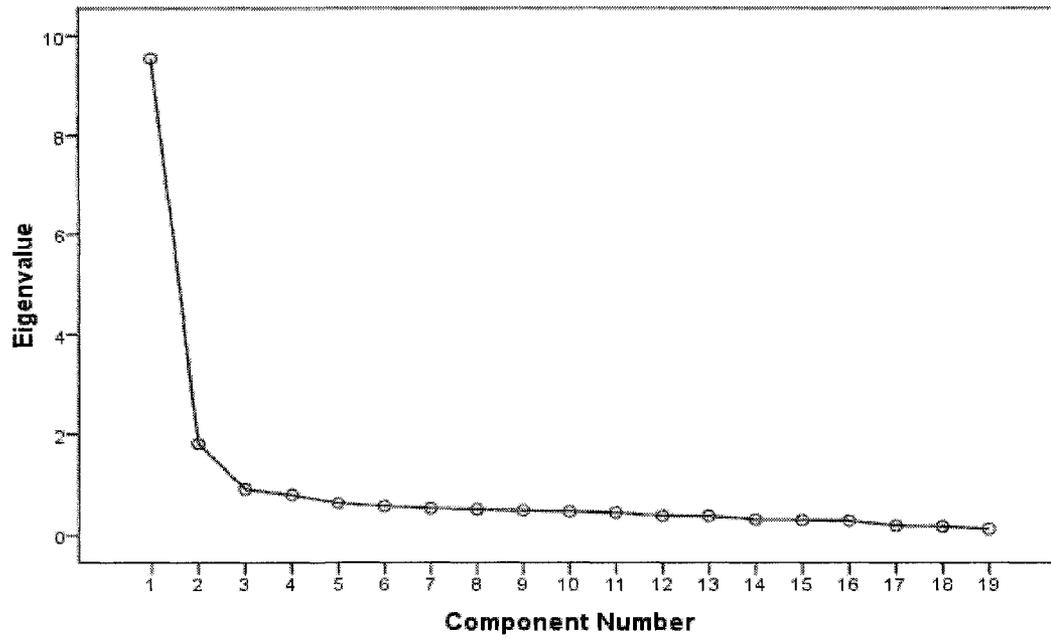


Table 3

Factor Loadings of the SA-AAQ (N = 339)

Item of the SA-AAQ	Factor 1	Factor 2
7. I care too much about whether or not I feel anxious in social situations. (R)	.72	.08
8. I worry about not being able to control social anxiety. (R)	.70	.18
12. I find myself going around and around in circles thinking about my social anxiety. (R)	.76	.13
13. It seems like I'm fighting with myself about my social anxiety. (R)	.83	.09
14. I have thoughts about social anxiety that I get caught up in. (R)	.85	.05
15. I tell myself that I shouldn't have certain thoughts about social anxiety. (R)	.87	-.23
16. I criticize myself for having irrational or inappropriate social anxiety. (R)	.96	-.13
17. I believe that having socially anxious thoughts is abnormal or bad and I shouldn't think that way. (R)	.68	-.02
18. I make judgments about whether my thoughts about my social anxiety are good or bad. (R)	.77	-.13
19. I disapprove of myself when I feel socially anxious. (R)	.81	-.09
1. Despite feeling socially anxious at times, I am in control of my life.	.01	.76
2. If I am anxious in a social situation, I can still remain in it.	-.16	.88
3. There are not many activities that I stop doing when I am feeling socially anxious.	-.10	.77
4. I get on with my life even when I feel socially anxious.	-.05	.87
9. I can move toward important goals, even when I am feeling socially anxious.	.06	.70
11. My social anxiety does not interfere with the way I want to live.	.29	.46
5. Being socially anxious makes it difficult for me to live a life that I value. (R)	.58	.28
6. I would gladly sacrifice important things in my life to be able to stop being socially anxious. (R)	.58	.08
10. My social anxiety must decrease before I can take important steps in my life. (R)	.47	.33

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; “R” in parentheses indicate a reverse scored item; Factor loadings greater than .35 are in bold.

acceptance of social anxiety symptoms. Correlations between the SA-AAQ and the other scales were computed to investigate the relationship between the newly developed measure and existing measures of general mindfulness. As predicted, the SA-AAQ was significantly positively correlated with the MAAS, the AAQ-II and four of five subscales of the FFMQ. All values ranged between .30 and .63. Values are summarized in the top line of Table 4. In order to examine the associations between the SA-AAQ, the SPS, the SIAS, the LSAS and the LSRDS, correlations were calculated. As predicted, the SA-AAQ was significantly negatively correlated with all measures of social anxiety. All values ranged between -.57 and -.71. Correlations between the social anxiety measures were significant and positive, ranging from .57 and .81. Values are presented in Table 5.

Additionally, a hierarchical regression analysis was conducted to further clarify whether the SA-AAQ measures a construct beyond that of social anxiety. This was done by using a hierarchical regression whereby the dependent variable was the SA-AAQ and the independent variables were a social anxiety measure¹ (the SPS) that was entered on Step 1, and a measure of trait acceptance (the AAQ-II) was entered on Step 2. After controlling for social anxiety, which significantly predicted distress ($R^2 = .48, p < .01$), levels of trait acceptance contributed an additional amount of the variance (R^2 Change = .09, $p < .01$) beyond that of social anxiety. Regression coefficients for this analysis are presented in Table 6. Another regression was conducted to examine whether the SA-AAQ predicted distress associated with social anxiety beyond levels of social anxiety alone. This was done using a hierarchical regression where the dependent variable was distress associated with social anxiety (the LSRDS) and the independent variables were

¹ All hierarchical regressions in Study 2 and Study 3 were also done using the other social anxiety scales (SIAS and LSAS) and only marginal differences were found between those results and the results using the SPS.

Table 4

Correlations between SA-AAQ and Mindfulness Measures (N = 339)

	MAAS	AAQ-II	FFMQ_ NR	FFMQ_ OB	FFMQ_ ACT	FFMQ_ DES	FFMQ_ NJ
SA-AAQ	.42**	.63**	.30**	-.01	.41**	.36**	.62**
MAAS	-	.41**	.20**	.03	.73**	.35**	.47**
AAQ-II		-	.34**	.02	.39**	.23**	.59**
FFMQ_NONREACT			-	.29**	.23**	.27**	.26**
FFMQ_OBSERVE				-	-.02	.26**	-.14**
FFMQ_ACTAWARE					-	.26**	.52**
FFMQ_DESCRIBE						-	.29**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; MAAS = Mindful Attention and Awareness Scale; AAQ-II = Acceptance and Action Questionnaire II; FFMQ = Five Facet Mindfulness Questionnaire; NONREACT = Nonreactivity subscale of the FFMQ; FFMQ_OBSERVE = Observe subscale of the FFMQ; FFMQ_ACTAWARE = Acting with Awareness subscale of the FFMQ; FFMQ_DESCRIBE = Describe subscale of the FFMQ; FFMQ_NONJUDGE = Nonjudging subscale of the FFMQ.

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

Table 5

Correlations between SA-AAQ and Social Anxiety Measures (N = 339)

	SPS	SIAS	LSAS	LSRDS
SA-AAQ	-.70**	-.71**	-.57**	-.62**
SPS	-	.81**	.72**	.58**
SIAS		-	.77**	.57**
LSAS			-	.61**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; LSAS = Liebowitz Social Anxiety Scale; LSRDS = Liebowitz Self Reported Disability Scale.

* $p < .05$

** $p < .01$

Table 6

Regression coefficients for hierarchical regression examining the SA-AAQ as the dependent variable (N = 339)

	<i>B</i>	<i>SE B</i>	<i>β</i>
Step 1			
Constant	119.58	1.40	
Social Anxiety (SPS)	-1.07	.06	-.70**
Step 2			
Constant	66.72	6.29	
Social Anxiety (SPS)	-.77	.07	-.50**
Acceptance (AAQ-II)	1.02	.12	.36**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; AAQ-II = Acceptance and Action Questionnaire II

* $p < .05$

** $p < .01$

social anxiety (the SPS) which was entered on Step 1, followed by social anxiety symptom acceptance (the SA-AAQ) on Step 2. After controlling for social anxiety, which significantly predicted 33% of the variance ($p < .01$), the SA-AAQ significantly contributed an additional 10% of the variance ($p < .01$) beyond that of social anxiety. Regression coefficients are presented in Table 7.

3. *The SA-AAQ would be less associated with measures of depression than social anxiety.* It was predicted that correlations between the SA-AAQ and the BDI would be significant and negative, however at a lower magnitude than that of the SA-AAQ and the social anxiety measures. This hypothesis was partially supported. The correlation between the SA-AAQ and the BDI was significant and negative ($r = -.57, p < .01$), however its magnitude was similar to that of the SA-AAQ and other social anxiety measures which ranged from $-.57$ to $-.71$ (refer to Table 5 for these values).

4. *The SA-AAQ would be negatively associated with a measure of impulsivity.* It was hypothesized that acceptance of social anxiety symptoms would be negatively associated with a measure of impulsivity, namely the Barratt Impulsivity Scale. As predicted, bivariate correlations indicated that there is a significant negative relationship between the SA-AAQ and the BIS as well as all subscales that comprise this measure. The values ranged from $-.11$ to $-.45$ and are presented in Table 8. A regression analysis was conducted to investigate whether the SA-AAQ had unique predictive value for impulsivity, beyond that of social anxiety. This was completed using a hierarchical regression where the dependent variable was impulsivity (the total BIS score) and the independent variables were social anxiety (the SPS) which was entered on Step 1, followed by the SA-AAQ on Step 2. After controlling for social anxiety, which

Table 7

Regression coefficients for hierarchical regression examining the LSRDS as the dependent variable (N = 339)

	<i>B</i>	<i>SE B</i>	β
Step 1			
Constant	3.06	1.11	
Social Anxiety (SPS)	.44	.05	.58**
Step 2			
Constant	29.86	4.90	
Social Anxiety (SPS)	.21	.06	.28**
Acceptance (SA-AAQ)	-.23	.04	-.43**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; LSRDS = Liebowitz Self Reported Disability Scale.

* $p < .05$

** $p < .01$

Table 8

Correlations between SA-AAQ and Impulsivity Measures (N = 339)

	BIS_ATTEN	BIS_MOTOR	BIS_NONPLAN	BIS_TOTAL
SA-AAQ	-.45**	-.11*	-.30**	-.37**
BIS				
Attention	-	.35**	.45**	.76**
Motor		-	.36**	.72**
Non-planning			-	.82**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; BIS = Barratt Impulsivity Scale.

* $p < .05$

** $p < .01$

significantly predicted 12% of the variance in impulsivity ($p < .01$), acceptance of social anxiety symptoms significantly predicted an additional 3% of the variance ($p < .01$) beyond that of social anxiety. These values are summarized in Table 9.

5. *The SA-AAQ would be negatively associated with thought suppression.*

Correlations were also computed between the SA-AAQ and a measure of thought suppression, the White Bear Suppression Inventory. As predicted, there was a significant correlation between acceptance of social anxiety symptoms and thought suppression ($r = -.47, p < .01$). A regression analysis was conducted to investigate whether the SA-AAQ had unique predictive value for thought suppression, beyond that of social anxiety. This was completed using a hierarchical regression where the dependent variable was thought suppression (the WBSI) and the independent variables were social anxiety (the SPS) which was entered on Step 1, followed by the SA-AAQ on Step 2. After controlling for social anxiety, which significantly predicted 19% of the variance in impulsivity ($p < .01$), acceptance of social anxiety symptoms significantly predicted an additional 5% of the variance ($p < .01$) beyond that of social anxiety. These values are summarized in Table 10.

6. *The SA-AAQ would not be associated with social desirability.* The correlation was calculated for the relationship between acceptance of social anxiety and the tendency to answer questionnaires in a socially desirable way. Contrary to the hypothesis, there was a significant positive association between the SA-AAQ and social desirability ($r = .25, p < .01$). These findings must be interpreted with caution due to the unacceptable reliability of this scale.

Table 9

Regression coefficients for hierarchical regression examining the BIS as the dependent variable (N = 339)

	<i>B</i>	<i>SE B</i>	<i>β</i>
Step 1			
Constant	60.12	.88	
Social Anxiety (SPS)	.25	.04	.34**
Step 2			
Constant	74.78	4.12	
Social Anxiety (SPS)	.12	.05	.16*
Acceptance (SA-AAQ)	-.12	.03	-.26**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; LSRDS = Liebowitz Self Reported Disability Scale.

* $p < .05$

** $p < .01$

Table 10

Regression coefficients for hierarchical regression examining the WBSI as the dependent variable (N = 339)

	<i>B</i>	<i>SE B</i>	<i>β</i>
Step 1			
Constant	43.07	.97	
Social Anxiety (SPS)	.38	.04	.44**
Step 2			
Constant	63.68	4.48	
Social Anxiety (SPS)	.19	.06	.22*
Acceptance (SA-AAQ)	-.17	.04	-.31**

Note. WBSI = White Bear Suppression Inventory; SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; LSRDS = Liebowitz Self Reported Disability Scale.

* $p < .05$

** $p < .01$

Discussion

The purpose of the second study in this line of research was to provide support that the SA-AAQ was a valid measure of acceptance of social anxiety symptoms. Due to the questions concerning the factor structure that emerged in Study 1, another principal components analysis was conducted in order to further examine the nature of this instrument. The results of this analysis provided a more clear interpretation of the factor structure, namely that the valence of the items was responsible for the two-factor solution. More specifically, the negatively worded items (or reverse scored) loaded together to create factor one, and the positively worded items loaded together on factor two. Contrary to the findings in the previous study, there were no items that loaded on more than one factor, which further supports the idea that a two-factor solution was merely a method effect. Correlations were inspected in order to ensure that each of the two factors had similar associations with other related measures. This was indeed the case. Correlation between each of the factors with other variables were of similar magnitude, indicating that these were in fact measuring a similar and related, if not the same, construct. This finding is again supported by other recent empirical research. As discussed earlier, both the Body Image - Acceptance and Action Questionnaire (Sandoz & Wilson, 2008) and the Acceptance and Action Questionnaire – II (Bond et al., 2008, submitted) report similar method effects causing a two-factor solution. Thus, based on these findings, the SA-AAQ has been determined to be one-factor.

Correlations between the SA-AAQ and the other measures in this study were predominantly in the hypothesized direction. As predicted, the SA-AAQ and measures of mindfulness were positively related such that higher levels of acceptance of social

anxiety were associated with higher levels of general mindfulness. This provides support that the SA-AAQ is measuring a construct related to general mindfulness. The results of correlational analyses provide support that the SA-AAQ is strongly related to both social anxiety and mindfulness separately, however regressions indicate that the SA-AAQ is unique to each of these. In addition, there was a significant negative correlation between the SA-AAQ and a measure of thought suppression, the WBSI. Thought suppression can be seen as an indicator of a lack of acceptance, therefore the findings that increased reports of acceptance of social anxiety are related to decreased thought suppression, adds weight to the notion that the SA-AAQ is indeed measuring acceptance. Similarly, the SA-AAQ was negatively related to measures of social anxiety, indicating that higher levels of acceptance of social anxiety symptoms is associated with lower levels of self-reported social anxiety symptoms. Taken together, these correlational analyses indicate that the SA-AAQ is assessing a construct related to both general mindfulness and social anxiety, supporting the validity of this measure.

Contrary to predictions, the magnitude of the correlation between the SA-AAQ and the BDI was similar to that between the SA-AAQ and measures of social anxiety. It was hypothesized that the correlation with the BDI would be a smaller magnitude due to the nature of the newly developed SA-AAQ. The SA-AAQ was designed to assess acceptance of social anxiety symptoms rather than acceptance of depressive symptoms. However, psychological literature repeatedly demonstrates that social anxiety and depression are highly related (Brown & Barlow, 1992; Kessler et al., 1994). Therefore, it is not surprising that these correlations were found to be similar.

Several other variables were examined in relation to the SA-AAQ. A measure of impulsivity was included, as there is a paucity of literature examining the association between acceptance and impulsivity. As expected, there was a significant negative correlation between these two measures, indicating that the more accepting one is of one's own social anxiety symptoms, the less impulsive he/she reports being. This is in line with the hypothesis that if an individual is higher in self-rated acceptance, he/she may be less likely to engage in impulsive safety behaviours in a social anxiety-inducing context as a function of reduced social anxiety overall. This finding may be particularly useful when applied to treatment interventions such that if a person learns to become more accepting of his/her social anxiety symptoms, he/she may not use safety behaviours as frequently. If a socially anxious individual is able to reduce his/her safety behaviour use, there may be a reduction in distress (Eun-Jung, 2005; Morgan & Raffle, 1999; Wells et al., 1995).

A measure of social desirability was also included in the current study to assess discriminant validity, and contrary to predictions, there was a significant positive relationship between the SA-AAQ and the MCSDS. It must be noted however, that the reliability coefficient of the MCSDS in this research was unacceptable, and any interpretations including this measure may be questionable at best. This was the final measure that was administered, so the low reliability may be due in part to the effects of participants tiring from completing questionnaires. The findings in the current research (i.e. correlations with the MCSDS) do appear to be consistent with empirical studies.

Acceptance, as measured using the SA-AAQ, was negatively correlated with measures of social anxiety in the current research. Results in previous literature show that

social anxiety is negatively correlated with social desirability. Taken together, it is not unexpected that the SA-AAQ is positively correlated with a measure of social desirability, as the results of Study 2 indicated. The direction and magnitudes of the correlations between social anxiety and social desirability in the current research are similar to those reported in existing literature, such as Osman, Gutierrez, Kopper, Barrios, and Chiros (1998), who reported that the SPS and the SIAS were significantly and negatively correlated to a short form of the MCSDS ranging from $-.32$ to $-.30$ respectively. Osman and colleagues (1995) also reported that the Social Phobia and Anxiety Inventory (SPAI; Turner et al., 1989) correlated significantly with the MCSDS. The original version of the AAQ (Hayes et al., 2004) was shown to be significantly related to one measure of social desirability (Edwards Social Desirability Scale; ESDS); however it was not significantly related to the MCSDS. The correlations for two samples using the ESDS ranged from $-.51$ to $-.60$ (both $p < .001$). Additionally, there is no significant association between the AAQ-II and the MCSDS. The mixed findings in the current research are not as surprising upon further consideration. The MCSDS is an instrument which measures the intentional presentation of oneself to an audience (Linden, Paulhus, & Dobson, 1986; Paulhus, 1984); therefore it is intuitive that a measure such as the SA-AAQ, which is highly correlated with social anxiety, would be significantly related to a measure assessing impression management. Few studies examine the relationship between social anxiety and social desirability; however the current correlational analyses resulted in values that are consistent with the literature, (e.g., Osman et al., 1995).

Further support for the validity of the SA-AAQ emerged when it was examined as a variable within regression analyses. First, it was necessary to examine whether the SA-AAQ was assessing a construct beyond that of social anxiety. Using the SA-AAQ as the dependent variable in a hierarchical regression, and entering a measure of social anxiety at step one and entering a measure of general acceptance at step two, results supported that this newly created instrument does in fact assess a construct which is predicted by both social anxiety and general acceptance. Thus, the prediction that this measure is assessing the intended construct was supported. Moreover, additional regressions examining the SA-AAQ as an independent variable, or predictor, also indicate that the newly developed measure is a valid instrument. The analyses indicated that the SA-AAQ significantly predicted general acceptance (as measured by the AAQ-II), social anxiety related disability (as measured by the LSRDS) and impulsivity (as measured by the BIS) beyond that which was predicted by social anxiety.

In sum, upon examination of the correlational and regression analyses, it can be concluded that the SA-AAQ is a valid instrument for assessing acceptance specific to social anxiety symptoms. The subsequent study was conducted to examine this measure in an applied context; specifically to examine the correlates between trait acceptance of social anxiety symptoms and distress associated with a public speaking task.

Study 3 –The Effects of Acceptance Versus Suppression on Distress, Anxiety and Willingness in Social Anxiety

The third study in this line of research was designed to assess a) the use of brief acceptance instructions within a social anxiety provoking context and b) the use of the SA-AAQ as a trait measure of acceptance of social anxiety symptoms. The use of

acceptance as an emotion regulation strategy is related to less distress and increased willingness across a variety of challenges (Arch & Craske, 2006; Campbell-Sills et al., 2006; Levitt, et al., 2004). It was hypothesized that inducing state acceptance using brief instructions would be associated with reduced levels of emotional and physiological distress as well as increased willingness prior to and following an impromptu speech task compared to suppression and control conditions. Additionally, because higher trait acceptance is associated with lower levels of distress in experimental challenges (Eifert & Heffner, 2003; Feldner et al., 2003), it was expected that pre-experimental levels of trait acceptance of social anxiety symptoms, as assessed by the SA-AAQ would be predictive of distress and willingness.

Method

Participants

An online power calculator was used as an aid in the determination of sample size (Friendly, 2007). The following values were inputted: alpha = .05, number of levels = 3, and desired power level = .80. Previous literature examining acceptance in the context of willingness has found effect sizes ranging from .67 to .81 (Levitt et al., 2004), therefore an anticipated effect size of .70 was inputted using the online calculator. This resulted in a minimum required sample size of 40 per each of the three conditions. In order to be more conservative, a total of 159 participants were recruited for this study. However, two individuals were excluded based on a substantial amount of missing information on the main dependent variables. Therefore, the analyses that follow are based on a sample of 157 participants.

These 157 participants consisted of male and female undergraduate students at Wilfrid Laurier University in Waterloo, Ontario taking psychology courses. They were offered the opportunity to complete psychology studies for course credit. Participants ranged in age from 17 to 27 ($M = 18.92$, $SD = 1.41$) and the majority were female (63.1%). Most participants reported their ethnicity as Caucasian (82.8%), were in their first year of university (84.7%) and were single (96.2%). See Table 11 for a summary of participants' demographics across conditions.

Materials

Demographic Questionnaire. A demographic questionnaire was administered to participants asking them to provide information about their age, highest level of education, current living situation, marital and occupational status and ethnicity in a closed-ended format (See Appendix W).

Acceptance of Social Anxiety Symptoms. The SA-AAQ was used to assess trait levels of acceptance of social anxiety symptoms. This measure has been described in detail above. See Appendix C for this scale.

Social Anxiety. Social anxiety was assessed using the SPS and the SIAS (see Appendices H and I respectively). These measures have been described in detail in Study Two.

Subjective Distress. Subjective distress was evaluated using a subjective unit of distress (SUDS; Wolpe, 1958) measure which asked participants about their current level of distress. Participants are asked to write the number corresponding to their distress level. Responses range from 0 – no distress to 100 - highest possible distress (see Appendix X).

Table 11

Demographic Information by Condition (N = 157)

	Acceptance <i>n</i> = 53		Suppression <i>n</i> = 53		Control <i>n</i> = 51	
	Frequency	%	Frequency	%	Frequency	%
Gender						
Male	12	22.6	24	45.3	22	43.1
Female	41	77.4	29	54.7	29	56.9
Education						
First Year	46	86.8	43	81.1	44	86.3
Second Year	5	9.4	8	15.1	5	9.8
Third Year	0	0	1	1.9	2	3.9
Fourth Year	1	1.9	0	0	0	0
Other	1	1.9	1	1.9	0	0
Accommodation						
In Residence	39	73.6	31	58.5	40	78.4
House/Apt/Condo with Parents	5	9.4	3	5.7	4	7.8
House/Apt/Condo with Friends	7	13.2	13	24.5	7	13.7
House/Apt/Condo alone	1	1.9	1	1.9	0	0
House/Apt/Condo with Romantic Partner	0	0	2	3.8	0	0
Other	1	1.9	2	3.8	0	0
Marital Status						
Single	52	98.1	46	92.5	50	98.0
Married	0	0	1	1.9	0	0
Cohabiting	1	1.9	2	3.8	1	2.0
Ethnicity						
Caucasian	45	84.9	39	73.6	46	90.2
Asian	2	3.8	5	9.4	2	3.9
African-Canadian	0	0	0	0	1	2.0
Hispanic	1	1.9	0	0	0	0
Middle Eastern	2	3.8	2	3.8	0	0
South Asian	2	3.8	4	7.5	2	3.9
Other	1	1.9	2	3.8	0	0

State Anxiety. The Endler Multidimensional Anxiety Scale – State (EMAS-State; Endler, Parker, Bagby, & Cox, 1991) was used to assess state anxiety. The EMAS-State is a 20-item self-report measure of state anxiety consisting of a cognitive-worry component and an autonomic-emotional component (see Appendix Y). Subscale or total scores can be used. A total score was computed for this study. Participants are asked to rate how they feel currently and responses range from 1 - “not at all” to 5 - “very much”. Excellent internal consistency has been found for this measure ($\alpha = .92 - .93$; Endler et al., 1991).

Physiological Distress. Heart rate was recorded continuously throughout the study at specific timepoints using a Polar ambulatory heart rate monitor: baseline, anticipation, one minute into the speech, two minutes into the speech, three minutes into the speech, four minutes into the speech and after the speech during a recovery phase. Heart rate is most often measured using an electrocardiogram (ECG). Technological advances have allowed for the measurement of cardiovascular psychophysiology to become ambulatory enabling reliable measurements of heart rate using small devices (Steptoe & Johnston, 1991). These devices consist of a monitor strapped to the chest which transmits heart rate information to a receiver worn on the wrist, which displays current heart rate. Goodie, Larkin, and Schauss (2000) evaluated the use of one such heart rate monitor during physical and mental stress as compared to an ECG and found the average correlation between the heart rate monitor and the ECG was extremely high ($r = .98$). They did note that there was a significant difference between tasks for the two types of heart rate assessment. This difference was statistically significant; however, considering that

difference was 0.4 beats per minute, it is questionable as to whether this finding was clinically significant.

In order to measure physiological distress in the current study, heart rate was assessed using a Polar ambulatory heart rate monitor consisting of a transmitter strapped to the chest that the participant wore for the duration of the study. Electrodes measured the electrical activity of the heart and this information was transmitted to a receiver which was held by the experimenter.

Physiological distress was also assessed using a sphygmomanometer, or a blood pressure cuff at baseline, anticipation, and post-speech. Due to the nature of blood pressure assessment, it was believed that taking a reading during the speech would be interruptive. Systolic and diastolic blood pressures were recorded using a blood pressure cuff. Systolic pressure refers to the peak pressure in the arteries, occurring at the beginning of the cardiac cycle. Typically during distress, systolic blood pressure increases. Diastolic pressure refers to the lowest pressure, occurring at the resting phase. Average values for a healthy adult are below 130 mmHg (milligrams of mercury) systolic and below 85 mmHg diastolic (Health Canada, 1999).

Willingness. Willingness was assessed using a two-question self-report measure created a priori for the purposes of this research. Participants were asked about their willingness to complete a similar task in the future, and their reasons why they would or would not be willing to do so. This measure also included a manipulation check which asked participants to recall their pre-speech instructions.

In addition, participants completed the Willingness Scale (Block, 2002) at two points during the current study, once during the in-lab portion and again within an online

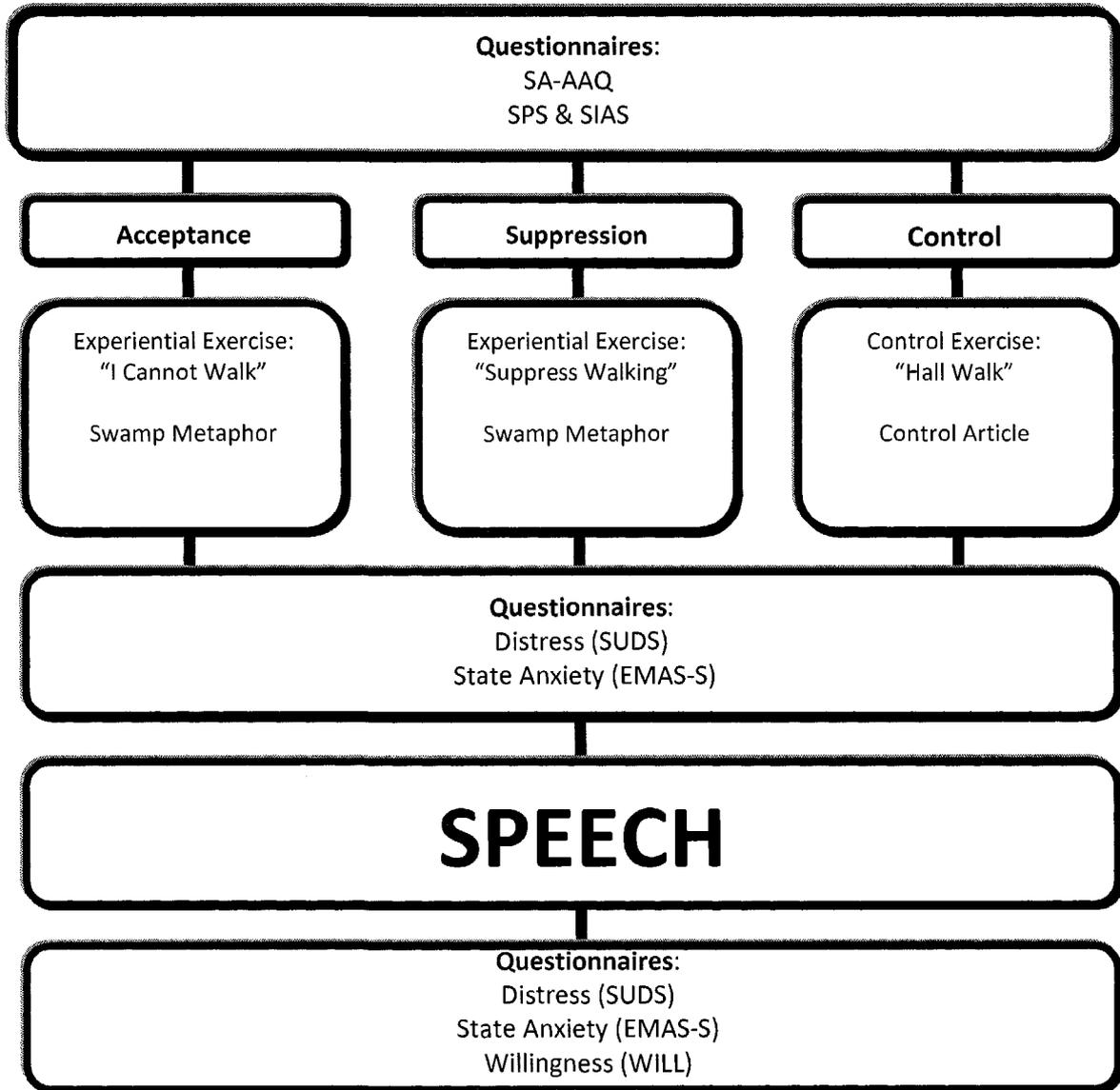
follow-up one day later. This is an 8-item measure that asks about willingness to engage in academic-specific public speaking interactions. Items are rated on a 10-point scale ranging from 1 – completely unwilling to 10 – completely willing. Sample items include “raising your hand in a large classroom setting (e.g., 30-50 people) to ask a question or make a comment” and “giving a presentation in a small seminar class”. No psychometric data are available. The alpha computed in the current research was .85. See Appendix Z for this measure.

Procedure

Participants were recruited using the PREP online system. They signed up for timeslots and were run individually with only one experimenter in the laboratory. A random number generator was used to randomly assign participants to one of three experimental conditions (acceptance, suppression or control) prior to their arrival at the lab. Figure 3 presents a procedural diagram of this study. Informed consent was completed immediately upon their arrival using a form that outlined important aspects of this study. Following informed consent, participants were asked to sit quietly for five minutes after which their baseline physiological arousal was measured. Next, they were given the questionnaire package and asked to complete the first section which included the demographic questionnaire, the SA-AAQ, the SPS and the SIAS. Participants were then given a set of instructions which differed by experimental condition. The instructions, including both the experiential component as well as the metaphor, for the *acceptance* and *suppression* groups were adapted from those used in McMullen and colleagues (2007) and can be found in Appendices AC and AD. Participants in the *acceptance* condition were given an experiential exercise where they were asked to walk

Figure 3.

Procedural diagram outlining the main steps of Study 3.



down the hallway and repeat silently “I cannot walk”. This was designed to help participants understand that their actions could be contrary to their thoughts, in accordance with mindfulness-based intervention principles. Following their walk, the experimenter read a short metaphor aloud for the participants which was about walking through a swamp, and how the best way to approach such a task would be to accept the feelings of revulsion and disgust and continue walking until the swamp was crossed. Similarly, participants in the *suppression* condition were asked to walk down the hall, but were given the instructions to try to suppress all feelings and thoughts of walking. This was designed to enable participants to understand that even though they were not thinking of the task at hand, they could still complete it. These participants also listened to the experimenter read a short metaphor which was very similar to the one described above, however participants were told that the best way to cross the swamp would be to suppress thoughts of the task and continue on with it. The participants in the control condition were asked to take a short walk down the hallway in order for the experimenter to measure their physiological indicators following brief exercise in order to control for novelty of task. They then sat quietly and listened to the experimenter read a short article about polar bears that was taken from National Geographic in order to control for time and attention.

After the instruction manipulation, participants were all told that they would be asked to give an impromptu speech in a few moments. They were asked to first complete a SUDS and the EMAS-S and their heart rate and blood pressure were measured. Next, the experimenter gave the participants these instructions:

You will now give a short speech. Please stand on the square on the floor while you speak. I would like you to talk for a full five minutes. If you run out of things to say, feel free to repeat things you've already said. It is important that you continue to talk for the full five minutes. The topic is "Why I Would Make a Good Date" and I would like you to come up with as many reasons as possible.

Participants were then immediately asked to stand and deliver their speech to the experimenter. As mentioned above, their heart rate was recorded at one minute, two minutes, three minutes and four minutes. The actual amount of time spoken was also recorded using a stopwatch. Immediately after the participant concluded, his/her heart rate and blood pressure were recorded, and they were administered a second SUDS, a second EMAS-S, the Willingness scale, and the post-speech willingness questionnaire created a priori for this research (see Appendix AA). Once they completed these measures, participants were then given information about an online follow-up study to be completed the next day. This follow up was for the purposes of another related research study and will not be discussed in full herein. It is sufficient to mention that their post-study willingness was measured using a question asking them about their willingness to complete a similar study (see Appendix AB) in addition to the Willingness scale. They were then partially debriefed (full debriefing occurred at the conclusion of the online follow up).

Results

Data Screening

As mentioned above, two individuals were missing a substantial amount of information on the main dependent variables. These two participants were excluded from further analyses due to the extent of the missing data. Data was also carefully screened

for outliers; however no participants were excluded as such. The analyses that follow are based on a sample of 157 participants. Reliability analyses were conducted on all of the instruments in the current study and all scales demonstrated good reliability (values are summarized in Table 12).

Instruction Comprehension

Analyses were conducted in order to confirm that participants across all three conditions understood and followed the instructions during the current study. The results of the analyses of this comprehension check indicated no significant differences between experimental groups, indicating that all participants understood and adhered to their respective instructions to an equal extent throughout the duration of the speech (see Table 13 for a summary of these values).

Descriptive Statistics

Table 14 provides a summary of the means and standard deviations for the baseline measures (acceptance of social anxiety symptoms and social anxiety). In order to ensure that there were no differences between the three conditions on any of the baseline measures, one-way ANOVAs were conducted. These analyses resulted in nonsignificant F-values, which indicated that all participants were comparable on these measures.

Hypotheses

1. *Effect of instruction condition on state distress, physiological distress and willingness.* It was hypothesized that individuals who received the acceptance instructions would have lower levels of subjective emotional distress than those in the two comparison groups as measured using self-report measures and physiological indicators. To assess emotional distress, two composite variables were created using the

Table 12

Descriptive Statistics (N = 157)

Questionnaire	Mean	SD	<i>Alpha</i>
Baseline			
SA-AAQ	99.45	19.73	.94
SPS	21.60	13.23	.92
SIAS	29.13	14.27	.93
Pre-Speech			
SUDS_T1 ^a	29.32	21.04	--
EMAS_T1	36.76	14.01	.95
Post-Speech			
SUDS_T2 ^a	40.15	24.53	--
EMAS_T2	41.50	17.38	.96
WILL	49.43	13.04	.85

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; SUDS_T1 = Subjective Units of Distress Scale measured pre-speech; EMAS_T1 = Endler Multidimensional Anxiety Scale - State measured pre-speech; SUDS_T2 = Subjective Units of Distress Scale measured post-speech; EMAS_T2 = Endler Multidimensional Anxiety Scale - State measured post-speech; WILL = Block Willingness Scale

^a The SUDS measure consisted of only one item, thus Cronbach's alpha was not calculated.

Table 13

Comprehension Checks By Condition (N = 157)

	Acceptance <i>n</i> = 53		Suppression <i>n</i> = 53		Control <i>n</i> = 51		<i>F</i>	<i>p</i>
	Mean	SD	Mean	SD	Mean	SD		
“It was easy to understand the instructions”	4.57	.50	4.45	.64	4.57	.54	.73	.48
“I continued to follow the instructions during the speech”	3.40	.99	3.34	1.14	3.25	1.13	.22	.80

Table 14

Social Anxiety Baseline Measures By Condition (N = 157)

	Acceptance <i>n</i> = 53		Suppression <i>n</i> = 53		Control <i>n</i> = 51		<i>F</i>	<i>p</i>
	Mean	SD	Mean	SD	Mean	SD		
SA-AAQ	95.60	19.51	99.15	21.10	103.76	17.90	2.30	.10
SPS	23.28	13.40	22.58	13.38	18.82	12.69	1.86	.16
SIAS	31.40	12.83	29.40	16.11	26.50	13.53	1.72	.18

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale

SUDS and EMAS ratings for anticipation and post-speech separately. The SUDS and total EMAS scores were standardized and averaged. Descriptive statistics for the distress variables are presented in Table 15. A one-way between-subjects ANOVA found a significant effect of Distress during the anticipatory period with experimental condition ($F_{(2, 154)} = 7.14, p < .01$). Tukey's HSD post hoc test revealed that the control group ($M = -.39, SD = .81$) was significantly less distressed than the acceptance ($M = .16, SD = .88$) and suppression ($M = .21, SD = 1.00$) groups. A significant difference was not observed between the acceptance and suppression groups for anticipatory distress. A second one-way between-subjects ANOVA was carried out comparing groups on distress during the post-speech period and a trend was observed ($F_{(2, 154)} = 2.46, p = .09$). Tukey's HSD post hoc test revealed that the control group ($M = -.23, SD = .87$) was less distressed than the acceptance group ($M = .15, SD = .97$) in a direction heading towards significance ($p = .10$). No differences were observed between the acceptance and suppression groups or between the control and suppression groups for post-speech distress.

It was also hypothesized that the group who received acceptance instructions would demonstrate lower levels of physiological distress as assessed by heart rate and blood pressure than the comparison groups. Heart rate was assessed at seven points during the experiment: baseline, anticipation, one minute after the beginning of the speech, two minutes into the speech, three minutes into the speech, four minutes into the speech, and immediately following the conclusion of the speech. Heart rate (HR) was examined in several different ways, including all time points separately, the difference from baseline to anticipation, the difference from baseline to minute one, the difference between anticipation to minute one, and the average of the four measurements during the

Table 15

Descriptive Statistics for Distress Variables (N = 157)

	Acceptance <i>n</i> = 53		Suppression <i>n</i> = 53		Control <i>n</i> = 51	
	Mean	SD	Mean	SD	Mean	SD
SUDS_T1	32.38	20.36	34.59	21.58	20.67	18.71
EMAS_T1	39.30	13.14	39.25	15.45	31.53	11.99
SUDS_T2	42.58	25.95	42.92	25.43	34.75	21.47
EMAS_T2	45.15	17.07	42.27	17.99	37.55	16.62
Distress_T1	.16	.88	.21	1.00	-.39	.81
Distress_T2	.16	.97	.08	.98	-.22	.87

Note. SUDS_T1 = Subjective Units of Distress Scale measured pre-speech; EMAS_T1 = Endler Multidimensional Anxiety Scale - State measured pre-speech; SUDS_T2 = Subjective Units of Distress Scale measured post-speech; EMAS_T2 = Endler Multidimensional Anxiety Scale - State measured post-speech; Distress_T1 = Distress variable measured pre-speech; Distress_T2 = Distress variable measured post-speech

speech. A one-way between subjects ANOVA comparing experimental conditions indicated a trend towards significance for baseline HR ($F_{(2, 129)} = 2.87, p = .06$) as well as a significant effect for anticipatory HR ($F_{(2, 126)} = 4.21, p < .05$) such that the control group demonstrated significantly lower standardized HR than the suppression group for both measurements. Means for physiological variables presented in Table 16.

Additionally, one-way between subjects ANOVAs were conducted to examine group differences for difference between baseline HR and anticipation HR, difference between baseline HR and HR at minute one of the speech, difference between anticipation HR and HR at minute one of the speech and average HR during the speech. No further analyses of HR emerged as significant. A one-way between subjects ANOVA examining raw and standardized blood pressure values (systolic and diastolic separately, as per Gramer & Saria, 2007) by experimental condition indicated no significant differences across conditions.

Finally, it was hypothesized that the acceptance group would report higher levels of willingness as compared to participants in the suppression or control conditions. To examine group differences for willingness, two one-way between-subjects ANOVAs were conducted. Groups did not differ on Willingness at time 1 ($F_{(2, 154)} = 1.84, p = .16$) or at time 2 as assessed during the follow up one day after the manipulation with experimental condition ($F_{(2, 115)} = 1.61, p = .20$). In addition, there were no group differences for the two willingness questions created a priori for this study (“I would be willing to participate in a similar speech study in the future”, $F_{(2, 153)} = 1.64, p = .20$, and “Assuming I had no other time commitments, I would be willing to stay and do another similar speech study right now”, $F_{(2, 152)} = .04, p = .96$). Length of speech was also

Table 16

Descriptive Statistics for Physiological Measures (N = 132)

	Acceptance <i>n</i> = 39		Suppression <i>n</i> = 42		Control <i>n</i> = 51	
	Mean	SD	Mean	SD	Mean	SD
Standardized Heart Rate						
Baseline	.14	1.05	.19	.95	-.26	.97
Anticipation	.01	.93	.33	.99	-.27	1.00
One Minute	.17	.77	.01	1.08	-.13	1.07
Two Minute	.21	.82	-.10	1.08	-.06	1.04
Three Minute	.22	.74	-.01	1.07	-.14	1.09
Four Minute	.11	.93	.05	1.08	-.12	1.00
Post-Speech	.04	.83	.15	1.12	-.15	1.01
Blood Pressure						
Systolic	124.23	12.76	124.28	16.11	123.88	13.67
Diastolic	73.89	11.04	74.13	11.75	70.46	7.46

examined to investigate in situ willingness. A one-way between subjects ANOVA indicated that there were no group differences for length of speech in minutes ($F_{(2, 142)} = 2.14, p = .12$).

Additionally, correlations between willingness and distress variables were examined. The results showed that for the acceptance and suppression instruction groups, distress and willingness variables were mostly significantly and negatively related. However, upon examination of the control group, the associations between these variables were not significant. Table 17 provides a summary of these figures.

2. Effect of trait acceptance of social anxiety symptoms on state distress, physiological distress and willingness. It was hypothesized that individuals who reported higher levels of trait acceptance of social anxiety symptoms (as measured using the SA-AAQ) would experience less emotional distress. Bivariate correlations between the SA-AAQ and the other measures used in the current study are supportive of this prediction. Table 18 presents these correlations. As shown, there are significant negative associations between the SA-AAQ and measures of distress, namely the SUDS and EMAS at both anticipation and post-speech. Tables 19-21 provide a summary of these correlations by experimental condition. As one can see, this pattern holds across the manipulation groups, with the exception of the association between the SA-AAQ and the level of distress at anticipation for the control condition only.

In order to further examine these relationships and to investigate whether trait acceptance of social anxiety symptoms adds any unique predictive value for distress beyond measures of social anxiety, hierarchical multiple regressions were performed. First, a hierarchical regression was conducted where the dependent variable was the level

Table 17

Correlations Between Distress and Willingness Across Conditions (N = 157)

	Acceptance <i>n</i> = 53		Suppression <i>n</i> = 53		Control <i>n</i> = 51	
	Distress Pre- Speech	Distress Post- Speech	Distress Pre- Speech	Distress Post- Speech	Distress Pre- Speech	Distress Post- Speech
Distress						
Pre-Speech	-	.60**	-	.51**	-	.59**
Post-Speech	.60**	-	.51**	-	.59**	-
Willingness Scale						
Post Speech	-.37**	-.34*	-.39**	-.47**	-.15	-.16
One-Day Follow Up	-.35*	-.24	-.45**	-.56**	-.13	-.09
“I would be willing to participate in a similar speech study in the future”	-.30*	-.32*	-.41**	-.50**	-.10	-.18
“Assuming I had no other commitments, I would be willing to stay and do another speech task”	-.25	-.20	-.19	-.49**	-.10	-.13

Note. * $p < .05$, ** $p < .01$

Table 18

Correlations between Measures in Study 3 Across all Conditions (N = 157)

	SPS	SIAS	SUDS _T1	EMAS _T1	SUDS _T2	EMAS _T2	WILL _T1	WILL _T2
SA-AAQ	-.70**	-.67**	-.34**	-.52**	-.35**	-.48**	.40**	.40**
SPS	-	.80**	.43**	.60**	.32**	.45**	-.48**	-.52**
SIAS		-	.38**	.49**	.28**	.37**	-.50**	-.51**
SUDS_T1			-	.77**	.41**	.49**	-.27**	-.31**
EMAS_T1				-	.44**	.70**	-.34**	-.42**
SUDS_T2					-	.81**	-.30**	-.28**
EMAS_T2						-	-.35**	-.36**
WILL_T1							-	.83**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; SUDS_T1 = Subjective Units of Distress Scale measured pre-speech; EMAS_T1 = Endler Multidimensional Anxiety Scale - State measured pre-speech; SUDS_T2 = Subjective Units of Distress Scale measured post-speech; EMAS_T2 = Endler Multidimensional Anxiety Scale - State measured post-speech; WILL_T1 = Block Willingness Scale measured post speech; WILL_T2 = Block Willingness Scale measured at one-day follow up

* $p < .05$

** $p < .01$

Table 19

Correlations between Measures for Acceptance Condition (n = 53)

	SPS	SIAS	SUDS _T1	EMAS _T1	SUDS _T2	EMAS _T2	WILL _T1	WILL _T2
SA-AAQ	-.66**	-.49**	-.34*	-.54**	-.26	-.44**	.31*	.27
SPS	-	.77**	.40**	.70**	.34*	.59**	-.55**	-.50**
SIAS		-	.41**	.64**	.32*	.48**	-.49**	-.43**
SUDS_T1			-	.72**	.41**	.50**	-.31*	-.26
EMAS_T1				-	.42**	.76**	-.39**	-.45**
SUDS_T2					-	.81**	-.28*	-.14
EMAS_T2						-	-.34*	-.33*
WILL_T1							-	.74**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; SUDS_T1 = Subjective Units of Distress Scale measured pre-speech; EMAS_T1 = Endler Multidimensional Anxiety Scale - State measured pre-speech; SUDS_T2 = Subjective Units of Distress Scale measured post-speech; EMAS_T2 = Endler Multidimensional Anxiety Scale - State measured post-speech; WILL_T1 = Block Willingness Scale measured post speech; WILL_T2 = Block Willingness Scale measured at one-day follow up

* $p < .05$

** $p < .01$

Table 20

Correlations between Measures for Suppression Condition (n = 53)

	SPS	SIAS	SUDS _T1	EMAS _T1	SUDS _T2	EMAS _T2	WILL _T1	WILL _T2
SA-AAQ	-.74**	-.82**	-.37**	-.52**	-.40**	-.52**	.52**	.54**
SPS	-	.81**	.39**	.60**	.24	.40**	-.60**	-.62**
SIAS		-	.41**	.50**	.29*	.40**	-.59**	-.58**
SUDS_T1			-	.78**	.38**	.44**	-.32*	-.39**
EMAS_T1				-	.39**	.61**	-.41**	-.51**
SUDS_T2					-	.80**	-.39**	-.44**
EMAS_T2						-	-.49**	-.53**
WILL_T1							-	.88**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; SUDS_T1 = Subjective Units of Distress Scale measured pre-speech; EMAS_T1 = Endler Multidimensional Anxiety Scale - State measured pre-speech; SUDS_T2 = Subjective Units of Distress Scale measured post-speech; EMAS_T2 = Endler Multidimensional Anxiety Scale - State measured post-speech; WILL_T1 = Block Willingness Scale measured post speech; WILL_T2 = Block Willingness Scale measured at one-day follow up

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

Table 21

Correlations between Measures for Control Condition (n = 51)

	SPS	SIAS	SUDS _T1	EMAS _T1	SUDS _T2	EMAS _T2	WILL _T1	WILL _T2
SA-AAQ	-.66**	-.62**	-.22	-.45**	-.35**	-.40**	.27	.25
SPS	-	.80**	.46**	.46**	.33*	.32*	-.24	-.37*
SIAS		-	.25	.29*	.17	.18	-.36**	-.45**
SUDS_T1			-	.74**	.36**	.50**	-.15	-.17
EMAS_T1				-	.49**	.74**	-.14	-.15
SUDS_T2					-	.82**	-.19	-.13
EMAS_T2						-	-.12	-.04
WILL_T1							-	.85**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; SUDS_T1 = Subjective Units of Distress Scale measured pre-speech; EMAS_T1 = Endler Multidimensional Anxiety Scale - State measured pre-speech; SUDS_T2 = Subjective Units of Distress Scale measured post-speech; EMAS_T2 = Endler Multidimensional Anxiety Scale - State measured post-speech; WILL_T1 = Block Willingness Scale measured post speech; WILL_T2 = Block Willingness Scale measured at one-day follow up

* $p < .05$

** $p < .01$

of distress at anticipation and the independent variable measuring social anxiety (SPS) was entered on Step 1, followed by levels of trait acceptance (SA-AAQ) on Step 2. After controlling for social anxiety, which significantly predicted distress ($R^2 = .30, p < .01$), levels of trait acceptance did not contribute an additional amount of the variance (R^2 Change = .01, $p = .12$). Similarly, when examining these analyses separately by condition, social anxiety emerged as a significant predictor for distress at anticipation, however levels of trait acceptance did not account for additional variance beyond that of social anxiety.

Hierarchical multiple regression was also performed where the dependent variable was level of distress at post-speech whereby the independent variable measuring social anxiety (SPS) was entered on Step 1, followed by levels of trait acceptance (SA-AAQ) on Step 2. After controlling for social anxiety, which significantly predicted distress ($R^2 = .17, p < .01$), levels of trait acceptance significantly contributed an additional 5% of the variance ($p < .01$). Regression coefficients for this analysis are presented in Table 22. Interestingly, when examining these regression analyses separately by experimental condition, this pattern only emerged for participants who were given suppression instructions, or who were in the control group. For those participants who were given acceptance instructions, levels of trait acceptance did not emerge as a significant predictor of distress during the post-speech interval, after controlling for social anxiety.

It was also hypothesized that individuals who reported higher levels of trait acceptance of social anxiety symptoms would demonstrate lower levels of physiological distress than those who reported lower levels of trait acceptance. Correlational analyses indicated significant and negative correlations between the SA-AAQ and HR at baseline

Table 22

Regression coefficients for hierarchical regression examining post-speech distress (N = 157)

	<i>B</i>	<i>SE B</i>	β
Step 1			
Constant	-.63	.14	
Social Anxiety (SPS)	.03	.01	.41**
Step 2			
Constant	1.13	.60	
Social Anxiety (SPS)	.02	.01	.20*
Acceptance (SA-AAQ)	-.01	.01	-.30**

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale

* $p < .05$

** $p < .01$

($r = -.29$ $p < .01$), HR at anticipation ($r = -.26$ $p < .01$) and HR at post-speech ($r = -.23$ $p < .01$). Hierarchical multiple regression was performed where the dependent variable was heart rate at several temporal points whereby the independent variable measuring social anxiety (SPS) was entered on Step 1, followed by levels of trait acceptance (SA-AAQ) on Step 2. For the examination of HR during the anticipation phase, a significant finding emerged. After controlling for social anxiety, which did not significantly predict HR at anticipation, levels of trait acceptance did contribute an additional amount of the variance ($R^2 = .07$, $p < .05$). No other regression conducted using any other combination of HR data as the dependent variable emerged as significant. Further analyses were conducted examining the possible prediction of blood pressure levels by acceptance of social anxiety symptoms; however none of these tests yielded significance.

Finally, it was hypothesized that individuals who reported greater levels of trait acceptance of social anxiety symptoms would also report greater levels of willingness as assessed during the in-lab portion of the current study as well as the online follow up one day later. Correlational analyses indicated that the SA-AAQ was significantly and positively correlated with measures of willingness assessed during the in-lab part of this study: the Willingness scale ($r = -.40$ $p < .01$), and the questions asking participants to rate “I would be willing to participate in a similar speech study in the future” ($r = -.26$ $p < .01$) and “Assuming I had no other commitments, I would stay and do another similar speech study” ($r = -.24$ $p < .01$). Hierarchical regression analyses also demonstrated that the SA-AAQ did not have unique predictive ability beyond that of social anxiety for the dependent variables willingness and length of speech.

Discussion

One of the aims of the third study was to examine the effects of inducing acceptance using instructions on distress associated with social anxiety in comparison to inducing suppression. It was predicted that inducing acceptance with an experiential exercise and a brief metaphor would be related to lower levels of emotional and physiological distress, as well as increased reports of willingness to participate in hypothetically similar social anxiety-provoking situations in the future.

The acceptance and suppression groups did not differ when examining levels of emotional and physiological distress throughout the experiment. This could be due in part to participants' inability to a) completely understand the instructions given to them by the experimenter or b) continue to adhere to the instructions throughout the duration of their impromptu speech. However, as the comprehension check data indicates, it is unlikely that participants failed to understand their instructions. It is much more probable that they found it difficult to follow the instructions while attempting to complete a speech task. For example, Wegner (1994) has stated that situations which involve increased cognitive load can lead to enhanced paradoxical effects of suppression. Applied to the current research, this suggests that the speech task, which increases cognitive load substantially, is possibly causing a suppression effect whereby the participant is actually thinking about his/her public speaking anxiety and ignoring his/her respective instructions. Deception research indicates that when an individual attempts to create novel content in speech, his/her ability to perform other cognitive tasks is hindered (Vrij, Fisher, Mann, & Leal, 2006). That is to say, if a person is trying to create a speech, he/she may be unable to also

remember and adhere to his/her instructions due to the increased cognitive load associated with the process of creating the speech.

Additionally, anxiety itself has been conceptualized as a cognitive load which can impair working memory capacity (Sorg & Whitney, 1992). Participants may have been so consumed with their anxious feelings that the instructions were difficult to retrieve or implement in situ. Taken together, the empirical research demonstrates the difficulty in applying acceptance or suppression instructions to this type of context. The nature of an impromptu speech likely increases cognitive load, in addition to increasing anxiety, which also serves to increase mental load, thus making it difficult for participants to adhere to their instructions.

The results also indicated that contrary to predictions, the control group reported experiencing the least amount of emotional and experienced the least amount of physiological distress of all three experimental groups. This was true for anticipatory and post-speech ratings. Although this finding initially appears counterintuitive, it may be the case that the control condition actually functioned more like a distraction condition. Participants were not reminded of their upcoming speech during the control condition instructions as they were in the other two conditions. They were focused on an unrelated article and it is feasible that their thoughts were focused on this article, which is analogous to a distraction condition in other studies. There is research to suggest that distraction can lead to decreased distress and anxiety (Vassilopoulos, 2005) and decreased frequency of unwanted thoughts (Lin & Wicker, 2007), however the use of distraction as a coping strategy has not been extensively researched. One study conducted by Kocovski, Endler, Rector, and Flett, (2005) however, showed that individuals high in

social anxiety report using distraction as a coping strategy less frequently as compared to individuals low in social anxiety. Thus, the findings that the participants assigned to the control condition experienced less distress may tentatively be explained by the construal of this condition as having induced distraction.

It was also predicted that participants who were in the acceptance instruction condition would report being more willing to participate in a future hypothetical similar speech study and more willing to participate in academic-related social anxiety provoking tasks. The results indicated that there were no differences between any of the experimental groups on any of the willingness variables. One could speculate that the experimental manipulation did not work exactly as intended and could be a contributing factor in this finding. Participants' levels of willingness were assessed post-manipulation. Thus, if participants did not experience reduced distress during the task from the instructions, they may not report being willing to experience similar studies in the future. Additionally, the definition of willingness, specifically a sense of openness to experience events, rather than passive resignation, may not have been accurately assessed with the methods chosen in this work. It is possible that participants understood the questions as asking whether or not they would complete the task (i.e., asking a question in a large lecture centre) rather than their openness to experience a potentially anxiety-provoking event. This semantic difficulty would be well suited for future research to reliably assess this construct. Possibly an explicit definition of willingness would assist participants in comprehending the concept as intended.

A secondary aim of this experimental investigation was to examine the effects of trait acceptance of social anxiety symptoms on emotional and physiological distress and

willingness in response to a speech task. It was predicted that individuals who scored high on trait acceptance of social anxiety symptoms, as assessed using the SA-AAQ would experience lower levels of emotional and physiological distress, and increased reports of willingness. The results showed that for distress, trait acceptance did not significantly predict variance beyond that of social anxiety for anticipatory anxiety; however trait acceptance did emerge as a significant predictor for post-speech distress beyond that of social anxiety for the suppression and control groups. That is, after controlling for social anxiety, trait acceptance was a significant negative predictor of self-reported distress following the speech task only for participants who were asked to suppress their emotions or were in the control condition. For physiological variables, a regression analysis indicated that after controlling for social anxiety, trait acceptance of social anxiety symptoms emerged as a significant negative predictor of heart rate measured during the anticipation phase. It is interesting to note these opposing findings, namely that trait acceptance was not a predictor of subjective anxiety, but it was for physiological distress during anticipation, however one must remember that there are multiple determinants of heart rate (e.g., exercise and diet), and there may be some moderating or mediating variable which is influencing heart rate.

Similar to the analysis by experimental condition, willingness was not significantly predicted by trait acceptance of social anxiety symptoms. This may be again due to the difficulty in assessing the construct in question, as addressed above. Participants may not have understood the concept of willingness as the researchers operationally defined this variable in the current work, and this should be investigated further in future research.

General Discussion

The purpose of the present investigation was primarily to develop a measure of acceptance specific to social anxiety symptoms. The need for such an instrument was based on the paucity of complaint-specific acceptance measures. Further, the necessity of such a measure is predicated by the notion that the assessment of acceptance is difficult when it is decontextualized. Hayes (2008) has stated that individuals do not avoid abstract concepts such as “emotions” or “thoughts”; rather they avoid such concepts in relation to particular contexts. An example of this may be thoughts of avoidance pertaining to potentially socially evaluative situations in the case of social anxiety. Hayes elaborates by stating that creating measures which are targeted to specific complaints may be necessary for researchers applying interventions such as Acceptance and Commitment Therapy (ACT) to their respective domains. Currently there are few domain-specific measures of acceptance and this was deemed a critical limitation within the area considering the growing number of researchers and clinicians investigating mindfulness and acceptance-based strategies within the context of certain complaints. Thus, the Social Anxiety – Acceptance and Action Questionnaire (SA-AAQ) was developed and validated in the current research.

Accordingly, the goal of Study 1 was to develop a measure that captured the constructs of nonjudgmental acceptance and action towards valued goals within the framework of social anxiety. The development of the SA-AAQ began with the creation and/or adaptation of items capturing the intended concepts of acceptance and action, based on ACT consistent theory. Based on the definitions of acceptance and action used for the original AAQ (Hayes et al., 2004), an initial item pool was developed. The

content validity of these items was established by the critical evaluation by an expert in the field of mindfulness-based treatment, Dr. Nancy Kocovski. Study 1 also provided an initial evaluation of the factor structure of this instrument. The results indicated a two-factor solution; however this was thought to be caused by a method effect whereby items of similar valence loaded together.

Following from the examination of the factor structure within the first study, one of the goals of Study 2 was to further clarify these findings. The results supported the hypothesis that a two-factor solution was indeed solely a method effect, and the SA-AAQ was determined to be a one-factor solution upon close examination of the factors. As mentioned, this effect has been seen not only in the acceptance domain (e.g. AAQ-II; Bond et al., submitted, and Body Image – Acceptance and Action Questionnaire; BI-AAQ; Sandoz & Wilson, 2008) but also within other lines of psychological research (i.e. Rosenberg Self-Esteem Scale; Rosenberg, 1965). In addition, existing measures of mindfulness and social anxiety were administered concurrently to a) investigate the reliability and content validity of this newly created measure, and b) compare this instrument to measures of related and unrelated constructs to evaluate construct validity. As hypothesized, the SA-AAQ was highly correlated with measures of mindfulness, acceptance and social anxiety, demonstrating that the SA-AAQ was measuring a construct related to these variables. Regression analyses provided further support that this measure had a unique predictive ability beyond that of social anxiety and was a valid and useful measure of social anxiety symptom acceptance.

Having provided a basis for the validity of the SA-AAQ in Study 2, the goals of Study 3 were a) to examine the utility of inducing state acceptance using a brief

instruction paradigm, and b) to examine the correlates of the SA-AAQ within a social anxiety induction paradigm. The results of Study 3 suggest that inducing acceptance by brief instruction may not be as efficacious as distraction conditions. To reiterate, this study produced results indicating that a) inducing acceptance using instructions did not differ from inducing suppression for both subjective and physiological distress, b) levels of trait acceptance of social anxiety symptoms were predictive of post-speech distress and anticipatory heart rate, and c) neither inducing acceptance nor levels of trait acceptance were related to self-reported willingness.

The findings that acceptance did not differ from suppression for levels of distress raises the question of whether acceptance was actually induced in this research. The post-speech comprehension check indicated that participants reported understanding and following instructions, however there is a possibility that they understood acceptance as a stance of passive resignation rather than the nonjudgmental acceptance, or openness to experience, that was intended. Further research with a similar protocol would benefit from a more stringent check of whether participants understood what was meant by acceptance. That being said, the current instructions were adapted from another empirical study which used them with success (McMullen et al., 2008). Acceptance used as a strategy for coping with adverse events has been shown to increase willingness (Arch & Craske, 2006; Wegner & Erskine, 2003) however no research has examined this in relation to distress following a socially evaluative context. Thus, it may be possible that brief acceptance instructions do not reduce anxiety and/or distress relevant to a social anxiety context, therefore warranting further investigation.

The results of Study 3 also suggest that individuals who are high in levels of pre-experimental acceptance of social anxiety symptoms report lower levels of subjective distress following an anxiety-provoking speech task as well as lower levels of physiological arousal preceding the task. These two findings are supportive of the construct validity of the SA-AAQ, as it is predicting its intended concepts.

Despite the promising results indicating that the SA-AAQ is a reliable and valid measure, there are some findings that were contrary to expectations. In Study 2, it was anticipated that the SA-AAQ and the BDI would have a correlation of a lower magnitude than that of the SA-AAQ and either of the social anxiety scales. Had this been the case, the results would have provided support that this newly created instrument is assessing a construct more related to social anxiety than depression. Contrary to what may have been predicted, the correlation between the SA-AAQ and the BDI is very close to that of the SA-AAQ and other social anxiety measures. Results also indicated that the correlations between the BDI and the SPS and SIAS ($r = .55$ and $r = .54$, respectively) are quite similar in magnitude to the correlation between the BDI and the SA-AAQ ($r = -.57$). This may not be as problematic as it appears at first glance, however. The BDI is often highly and significantly related to measures of anxiety, and it is widely understood that depression and anxiety are comorbid complaints (Kessler et al., 1994). Further research with the SA-AAQ should focus on more detailed assessment of its relation to depression. Additionally, regression analyses in Study 3 did not indicate that trait levels of acceptance of social anxiety were predictive of subjective distress during the anticipation phase. This may indicate a need for further investigation of the SA-AAQ's validity.

After examining the findings of all three studies in this line of research, it can be concluded that the SA-AAQ is a reliable, valid one-factor measure of social anxiety symptom acceptance. This instrument can be added to a growing list of domain-specific variants of the AAQ, such as the BI-AAQ (Sandoz & Wilson, 2008), the Acceptance and Action Diabetes Questionnaire (AADQ; Gregg, Callahan, Hayes, & Glenn-Lawson 2007), the trauma specific AAQ (AAQ-TS; Braekkan, 2007) and the Voices Acceptance and Action Scale (VAAS; Shawyer et al., 2007). Additionally, the results lend support for the proposed theoretical model. Acceptance of social anxiety symptoms appears to be an important predictor of who may experience greater distress related to socially relevant contexts beyond that of social anxiety alone. This has direct implications for how the treatment of social anxiety may be approached differently. Researchers have already indicated that mindfulness and acceptance-based strategies are promising for the treatment of social anxiety (Bögels et al., 2006; Dalrymple & Herbert, 2007; Ossman et al., 2006). The SA-AAQ is a tool intended to assess processes of change in acceptance-based protocols. Thus its use may lend support to the use of such treatments as it may verify their utility and demonstrate the mechanisms by which individuals achieve behavioural adjustment.

Acceptance-based interventions, most notably Acceptance and Commitment Therapy (ACT), are not new by any means. ACT was developed 25 years ago in an effort to build upon strengths and weaknesses of CBT. The key difference in an acceptance-based protocol is that unlike CBT, the emphasis is not placed upon changing or correcting thoughts, but on changing one's relationship to the thoughts. Another way to

express this is to say that whereas a CBT clinician may place emphasis on cognitive reappraisal, an ACT clinician may encourage acceptance of thoughts and feelings.

As discussed, the use of acceptance as a strategy is associated with positive outcomes across a variety of situations. Additionally, mindfulness and acceptance-based treatments such as ACT have been garnering attention and producing favourable results in various domains in recent empirical literature. Although these positive outcomes have been empirically demonstrated, some critics have voiced their concerns. For example, Hofmann and Asmundson (2008) have questioned whether mindfulness and acceptance-based treatments are novel therapies, or if they are merely variants of current CBT. The authors argue that acceptance-based treatment strategies are already being employed by practitioners of CBT; thus the “third wave” of interventions is nothing new. This does make sense when considering that clinical practice does not exist in a vacuum and CBT has evolved over time, sometimes including facets that would fit within a “third wave” paradigm. However, if one asserts that ACT is not inherently different from CBT, a distinction must be made between traditional Beckian practice and a more modern conception of CBT. Traditional Beckian CBT emphasizes cognitive restructuring, whereas a more contemporary CBT has the flexibility to incorporate ideas borrowed from third wave interventions such as acceptance.

Öst (in press) also critiqued the efficacy of these mindfulness and acceptance-based treatments. His argument was that the protocols used in this type of research have not been as stringent as that used for studies of CBT. Specifically, Öst suggests that clinical trials for acceptance-based interventions do not have as rigid criteria for conducting these studies and he provides 15 recommendations for future work evaluating

third-wave therapies. Some of these recommendations include: using an active treatment as a comparison group, as opposed to wait list control or treatment as usual conditions; and to use more stringent randomization and assessment protocols. Moreover, Öst recommends using reliable and valid specific and general outcome measures, which would be pertinent to recent lines of study researching complaint-specific acceptance scales. Further research may support the SA-AAQ as a valid and reliable disorder-specific measure for use within the framework of evaluation of acceptance-based interventions for social anxiety.

Additionally, specific to social anxiety disorder, Koszycki, Bengler, Shlik, and Bradwejn (2007) found that a program of Cognitive Behavioral Group Therapy (CBGT; Heimberg & Becker, 2002) had greater response rates for social anxiety disorder than mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1990). The authors fail to note that CBGT is more likely to produce positive results due to its being designed specifically for a socially anxious population in addition to including an exposure component whereas MBSR was not specifically tailored to this group. A treatment protocol designed for use with individuals who have social anxiety may have a more favourable outcome, as shown in uncontrolled studies thus far (Bögels et al., 2006; Dalrymple & Herbert, 2007; Ossman et al., 2006). It appears that researchers have mixed opinions on these new treatments, however as discussed earlier, promising results with a variety of complaints are being produced. Therefore, empirical research must continue to support the use of these therapies, notably within the domain of social anxiety, as there are supportive clinical studies, however no randomized control trials specific to this complaint, other than the Koszycki and colleagues study.

The development of the SA-AAQ and the evidence of its validity are not without limitations. The foremost consideration is that an undergraduate sample was used for all three studies. The SA-AAQ was designed for use in diverse clinical applications; however the use of student participants limits the generalizability of this instrument. An obvious direction for future study is the use of this measure with a clinically socially anxious population in order to provide further support for its application in such a setting. Nevertheless, the student samples used in studies 2 and 3 contained many participants who could qualify as clinically socially anxious according to their scores on the SPS and the SIAS. An additional limitation is the inadequate variability of gender, age, education, and cultural diversity. It will be important to validate this measure using a diverse community sample before confidently administering the SA-AAQ to more heterogeneous populations. Additionally, replication with either nonclinical or clinical participants would provide a more rigorous evaluation of the SA-AAQ's validity and reliability.

Aside from the limitations inherent in the development of a new instrument, there are limitations associated with the experimental component of this work. As discussed earlier, it appears that the manipulation may not have functioned as intended. One hypothesis may be that this particular instructional paradigm works only with a tactile challenge. For example, several studies have demonstrated the utility of brief acceptance instructions within the context of a physical challenge such as a cold pressor (Feldner et al., 2006; Kingston et al., 2007) or an electrical shock (McMullen et al., 2008) as opposed to a more subjective trial. No other research to date has examined this component of acceptance-based interventions in a socially relevant challenge in an analogue experiment. A direction for future study may be to attempt to clarify the context and

mechanism by which brief acceptance instructions can ameliorate an emotionally demanding task. Additionally, the experimental conditions used in Study 3 may not have been suitable for comparison. What was intended to be a control condition functioned more like a distraction task, thus altering the anticipated comparisons. Possibilities for a better-suited control condition include controlling for time, where the participant waits silently for the same duration as the other experimental groups, or a condition where the participant has no preamble whatsoever prior to the speech. Another condition could have included cognitive restructuring, whereby participants would be asked to alter their cognitions, perhaps mirroring a component of Beckian CBT. This comparison could potentially be a precursor to the comparison of traditional CBT to third wave therapies.

Overall, the current research provides evidence that the SA-AAQ is a psychometrically sound instrument and has potential for application in clinical research and treatment. This measure could contribute greatly to the investigation of the utility of mindfulness and acceptance-based treatments for social anxiety, in addition to contributing to the larger body of research examining mechanisms of change within such protocols. This measure seems to be a timely addition to a growing body of work examining mindfulness and acceptance, especially considering that “third wave” interventions are becoming increasingly more common in both social and clinical psychological research.

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Appendix A

WILFRID LAURIER UNIVERSITY
INFORMED CONSENT STATEMENT
Acceptance of Social Anxiety
Meagan MacKenzie and Dr. Nancy Kocovski

You are invited to participate in a research study. The purpose of this study is to investigate certain characteristics of social anxiety, especially thoughts and feelings about anxiety symptoms. The principal researcher is Meagan MacKenzie and the research supervisor is Dr. Nancy Kocovski.

INFORMATION

Your participation in this study will involve the completion of a questionnaire as part of mass testing. This should take approximately 5 to 10 minutes to complete.

All first year psychology students are invited to take part in mass testing. It is expected that 300 students will be participating in this research.

RISKS

Foreseeable risks may include feelings of anxiety or discomfort that may arise from completing the test items. If this should occur, you are free at any time to omit your answer and/or withdraw from this study. If anxiety persists, please contact Laurier Counseling Services (phone 519-884 0710 x2338, <http://www.mylaurier.ca/counselling> or email 22couns@wlu.ca).

BENEFITS

You will have the opportunity to take part in psychological research on social anxiety. In addition, the information obtained from your participation may lead to a better understanding of social anxiety.

CONFIDENTIALITY

All information that is obtained from you during the course of this research is completely confidential and will not be shared with anyone other than the principal researcher (Meagan MacKenzie) or the research supervisor (Dr. Nancy Kocovski). Student ID numbers that are linked to the data will be deleted by the researchers. All information (e.g. answers to questions) will be anonymous and only identified by a research identification number in a password-protected computer file. Your name will not appear in this file. Although the results of this study may be published, they will be reported in a way that makes it impossible to identify individual participants. Only aggregate data will be presented. As such, your specific scores will not be made available to you, though a

general report of the study's findings will be made available to you. In addition, data will be destroyed seven years after the completion of the study.

COMPENSATION

For participating in this study you will receive 0.5 credits. Other ways to earn the same amount of credit are completing a journal article review or completing other research studies. If you withdraw from the study prior to its completion, you will receive 0.5 credits.

CONTACT

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study) you may contact the researcher, Meagan MacKenzie, at (519) 884-0710 ex. 2587 or Dr. Nancy Kocovski at (519) 884-0710 ex. 3519, office N2025. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Bill Marr, Chair, University Research Ethics Board, Wilfrid Laurier University, (519) 884-0710, extension 2468.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be deleted. You have the right to omit any question(s)/procedure(s) you choose.

FEEDBACK AND PUBLICATION

The results of this research may be presented at conferences or submitted for publication. Specifically, this data may be presented at the Laurier thesis poster conference in March 2007. You will be sent information about the final results via email by April 1, 2007.

CONSENT

I have read and understand the above information. I agree to participate in this study.

 Agree Disagree

Appendix B

Social Anxiety – Acceptance and Action Questionnaire Initial Item Pool

Please respond to the following items focusing on social anxiety. Social anxiety is the type of anxiety that is experienced when you are in situations where you may be observed, judged or evaluated by others. People vary in the amount of social anxiety they experience, but most people experience at least some social anxiety in at least a few situations. Common situations that provoke social anxiety include giving a presentation or speech, attending a job interview, going to a party, meeting new people, and going on a blind date. Please think about the anxiety you may experience when you are in these types of situations while you answer the questions below on the following 7-point scale.

Never True	Very Seldom True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True
1	2	3	4	5	6	7

1. When I feel socially anxious, I am unable to take care of my responsibilities.
ACTION
2. I try to suppress socially anxious thoughts and feelings that I don't like by just not thinking about them. ACCEPTANCE
3. It's okay to feel anxious in social situations. ACCEPTANCE
4. I rarely worry about getting my social anxiety under control. ACCEPTANCE
5. I'm not afraid of feeling anxious in social situations. ACCEPTANCE
6. I try hard to avoid feeling socially anxious. ACCEPTANCE
7. Social anxiety is bad. ACCEPTANCE
8. If I could magically remove all the instances in my life where I have experienced social anxiety, I would do so. ACCEPTANCE
9. Despite feeling socially anxious at times, I am in control of my life. ACTION
10. If I am anxious in a social situation, I can still remain in it. ACTION
11. Social anxiety can get in the way of my success. ACTION
12. If I become socially anxious, I should act according to my feelings. ACTION
13. If I promised to attend a social event, I'll go, even if later I feel anxious about it.
ACTION

14. My socially anxious thoughts and feelings are not just reactions, they are “me”.
ACCEPTANCE
15. A person who is really “together” should not experience social anxiety.
ACCEPTANCE
16. There are not many activities that I stop doing when I am feeling socially anxious.
ACTION
17. It’s necessary for me to learn to control my social anxiety in order to handle my life well. ACCEPTANCE
18. I spend a lot of time thinking about things I’ll do once I feel less socially anxious.
ACTION
19. In order for me to be willing to interact with others, I have to feel good about it.
ACTION
20. I don’t usually avoid social situations that might provoke unpleasant thoughts and feelings in me. ACTION
21. I get on with my life even when I feel socially anxious. ACTION
22. Being socially anxious makes it difficult for me to live a life that I value.
ACTION
23. I would gladly sacrifice important things in my life to be able to stop being socially anxious. ACTION
24. I care too much about whether or not I feel anxious in social situations.
ACCEPTANCE
25. Being socially anxious has very little to do with the daily choices I make.
ACTION
26. There are many things I do to try and stop feeling socially anxious.
ACCEPTANCE
27. I worry about not being able to control social anxiety. ACCEPTANCE
28. I do not need to feel better about my social anxiety before doing things that are important to me. ACTION
29. I don’t do things that might make me feel socially anxious. ACTION
30. I can move toward important goals, even when I am feeling socially anxious.
ACTION

31. My social anxiety must decrease before I can take important steps in my life.
ACTION
32. My social anxiety does not interfere with the way I want to live. ACTION
33. I cannot stand feeling socially anxious. ACCEPTANCE
34. If I start to feel socially anxious, I try to think about something else.
ACCEPTANCE
35. Before I can make serious plans, I have to feel less socially anxious. ACTION
36. I avoid putting myself in situations where I might feel socially anxious.
ACCEPTANCE
37. I find myself going around and around in circles thinking about my social anxiety.
ACCEPTANCE
38. It seems like I'm fighting with myself about my social anxiety. ACCEPTANCE
39. I have thoughts about social anxiety that I get caught up in. ACCEPTANCE
40. I always try to put my social anxiety out of my mind. ACCEPTANCE
41. I try to avoid thoughts of my social anxiety. ACCEPTANCE
42. I try to distract myself when I feel socially anxious. ACCEPTANCE
43. I wish I could control my social anxiety more easily. ACCEPTANCE
44. I tell myself that I shouldn't have certain thoughts about social anxiety.
ACCEPTANCE
45. There are things about my social anxiety that I try not to think about.
ACCEPTANCE
46. I tell myself that I shouldn't feel socially anxious. ACCEPTANCE
47. I criticize myself for having irrational or inappropriate social anxiety.
ACCEPTANCE
48. I believe that having socially anxious thoughts is abnormal or bad and I shouldn't
think that way. ACCEPTANCE
49. I make judgments about whether my thoughts about my social anxiety are good or
bad. ACCEPTANCE
50. I disapprove of myself when I feel socially anxious. ACCEPTANCE
51. I observe my feelings of anxiety in social situations without being drawn into
them. ACCEPTANCE

52. I can separate myself from my feelings of social anxiety. ACCEPTANCE

53. I am not easily carried away by my socially anxious thoughts and feelings.

ACCEPTANCE

54. I can see that I am not my socially anxious thoughts. ACCEPTANCE

55. I am kind to myself when I am experiencing social anxiety. ACCEPTANCE

56. I accept feeling socially anxious. ACCEPTANCE

Appendix C

Social Anxiety - Acceptance and Action Questionnaire (SA-AAQ)

Please respond to the following items focusing on social anxiety. Social anxiety is the type of anxiety that is experienced when you are in situations where you may be observed, judged or evaluated by others. People vary in the amount of social anxiety they experience, but most people experience at least some social anxiety in at least a few situations. Common situations that provoke social anxiety include giving a presentation or speech, attending a job interview, going to a party, meeting new people, and going on a blind date. Please think about the anxiety you may experience when you are in these types of situations while you answer the questions below on the following 7-point scale.

Never True	Very Seldom True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True
1	2	3	4	5	6	7

1. Despite feeling socially anxious at times, I am in control of my life.
2. If I am anxious in a social situation, I can still remain in it.
3. There are not many activities that I stop doing when I am feeling socially anxious.
4. I get on with my life even when I feel socially anxious.
5. Being socially anxious makes it difficult for me to live a life that I value. (R)
6. I would gladly sacrifice important things in my life to be able to stop being socially anxious. (R)
7. I care too much about whether or not I feel anxious in social situations. (R)
8. I worry about not being able to control social anxiety. (R)
9. I can move toward important goals, even when I am feeling socially anxious.
10. My social anxiety must decrease before I can take important steps in my life. (R)
11. My social anxiety does not interfere with the way I want to live.
12. I find myself going around and around in circles thinking about my social anxiety. (R)
13. It seems like I'm fighting with myself about my social anxiety. (R)
14. I have thoughts about social anxiety that I get caught up in. (R)
15. I tell myself that I shouldn't have certain thoughts about social anxiety. (R)
16. I criticize myself for having irrational or inappropriate social anxiety. (R)
17. I believe that having socially anxious thoughts is abnormal or bad and I shouldn't think that way. (R)
18. I make judgments about whether my thoughts about my social anxiety are good or bad. (R)
19. I disapprove of myself when I feel socially anxious. (R)

Appendix D

WILFRID LAURIER UNIVERSITY
INFORMED CONSENT STATEMENT

Mind over Matter: The Relationship Between Social Anxiety and Mindfulness
Meagan MacKenzie and Dr. Nancy Kocovski

You are invited to participate in a research study. The purpose of this study is to investigate certain characteristics of social anxiety, especially thoughts and feelings about anxiety symptoms. Social anxiety is the type of anxiety experienced in situations where one may be evaluated by others (e.g., presentation, party, job interview, date). The principal researcher is Meagan MacKenzie and the research supervisor is Dr. Nancy Kocovski.

INFORMATION

Your participation in this study will involve the completion of online questionnaires. These will be used to assess social anxiety, depression, impulsivity and mindfulness. These questionnaires are being used to validate a newly created measure of social anxiety symptoms. This should take approximately 40 minutes to complete. It is expected that 200 students will be participating in this research.

RISKS

Foreseeable risks may include feelings of anxiety or discomfort that may arise from completing the test items. If this should occur, you are free at any time to omit your answer and/or withdraw from this study. If you are experiencing any concerns about social anxiety, please contact Dr. Nancy Kocovski (nkocovski@wlu.ca) and/or Counseling Services (519) 884-0710 extension 2338, 2nd floor, Student Services Building, (<http://www.mylaurier.ca/counselling> or email 22couns@wlu.ca).

BENEFITS

You will have the opportunity to take part in psychological research on social anxiety. In addition, the information obtained from your participation may lead to a better understanding of social anxiety.

CONFIDENTIALITY

All information that is obtained from you during the course of this research is completely confidential and will not be shared with anyone other than the principal researcher (Meagan MacKenzie) or the research supervisor (Dr. Nancy Kocovski). Student ID numbers that are linked to the data will be deleted by the researchers. All information (e.g. answers to questions) will be anonymous and only identified by a research identification number in a password-protected computer file. Your name will not appear in this file. Since the data are being processed in this way, it is impossible to withdraw or destroy your data once it has been submitted. Raw data will be retained for seven years and deleted after that time. Although the results of this study may be published, they will be reported in a way that makes it impossible to identify individual participants. Only aggregate data will be presented. As such, your specific scores will not be made available to you, though a general report of the study's findings will be made available to

you. It is important to note that while you are completing the questionnaires on-line, complete internet security cannot be guaranteed while the data is in transmission to the university's servers.

COMPENSATION

For participating in this study you will receive 1 credit. Other ways to earn the same amount of credit are completing a journal article review or completing other research studies. If you withdraw from the study prior to its completion, you will receive 1 credit.

CONTACT

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study) you may contact the researcher, Meagan MacKenzie, at (519) 884-0710 ex. 2587 or Dr. Nancy Kocovski at (519) 884-0710 ex. 3519, office N2025. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Bill Marr, Chair, University Research Ethics Board, Wilfrid Laurier University, (519) 884-0710, extension 2468.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be deleted. You have the right to omit any question(s)/procedure(s) you choose.

FEEDBACK AND PUBLICATION

The results of this research may be presented at conferences or submitted for publication. You will be sent information about the final results via email by September 1, 2007.

CONSENT

I have read and understand the above information. I agree to participate in this study.

 Agree Disagree

Appendix E

PREP Sign Up Sheet

Title: Mind over Matter: The Relationship Between Social Anxiety and Mindfulness

Researcher: Meagan MacKenzie

Supervisor: Dr. Nancy Kocovski

Credit: 1 credit

Description of Study: This study takes place entirely on-line. You will be asked to complete questionnaires on anxiety and mindfulness.

Appendix F

Debriefing Form

The overall goal of this research is to better understand social anxiety by investigating the relationship to mindfulness and acceptance. Social anxiety is the anxiety that is experienced in social situations like parties, meeting strangers, and speaking in front of groups, in other words, situations where one may be evaluated or judged by others. Mindfulness refers to paying attention moment by moment without judgment. Acceptance is defined as being open to the full experience of the moment, rather than placing expectations on how it should be or judging it. Mindfulness and acceptance are very similar constructs, in fact, some researchers have argued that they are one in the same. Research has shown that mindfulness and acceptance are related to reduced social anxiety. This is hard to measure currently, because existing mindfulness and acceptance scales are very general. The goal of the current research is to develop a new questionnaire assessing mindfulness and acceptance of social anxiety, and to investigate how it is related to other existing scales.

The questionnaires that you completed were used to assess levels of social anxiety and mindfulness and acceptance. We are testing to see if our new questionnaire actually measures what it is intended to. It is hypothesized that participants who score high on acceptance of social anxiety symptoms will be more likely to report high levels of acceptance in general, and low levels of social anxiety. It is hypothesized that the opposite is true: that participants who score low on acceptance of social anxiety symptoms will be more likely to report low levels of acceptance in general and high levels of social anxiety.

Thank you for your participation in this study. Final results will be sent to you via e-mail by September 1, 2007.

If you have any questions about your participation in this study or about the study itself, please contact Meagan MacKenzie, Department of Psychology, Wilfrid Laurier University, (519) 884-0710, extension 2587 or Dr. Nancy Kocovski, Department of Psychology, Wilfrid Laurier University (N2025), (519) 884-0710, extension 3519 (email: nkocovski@wlu.ca). **If you are experiencing any concerns about social anxiety, please contact Dr. Nancy Kocovski and/or Counseling Services (519) 884-0710 extension 2338, 2nd floor, Student Services Building.**

Additionally, if you interested in this research area, you may wish to review the following:

Brown, K.W., Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84, 822-848.

Clark, D.M., & Wells, A. (1995). A cognitive model of social phobia. In R. Heimberg, M. R. Liebowitz, D. A. Hope & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 69-93). New York: Guilford.

Rowa, K., & Antony, M.M. (2005). Psychological Treatments for Social Phobia. *Canadian Journal of Psychiatry*, 50, 308-316.

Appendix G

Demographic Information

1. Gender

Please select one:

- female
- male
- other

2. Age

Please select one:

- 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41
- 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65+

4. Year of Study

Please select one:

- 1st year
- 2nd year
- 3rd year
- 4th year
- other

5. Ethnicity

Please select one:

- Aboriginal
- Asian
- Black
- East Indian
- Hispanic
- Middle Eastern
- White
- Other

6. Religion

Please select one:

- Atheist
- Buddhist
- Catholic
- Christian – other
- Hindu
- Jewish
- Muslim
- Sikh
- Other

Appendix H

SPS

For each question, please circle a number to indicate the degree to which you feel the statement is characteristic or true of you.

	Not at all	Slightly	Moderately	Very	Extremely
1. I become anxious if I have to write in front of other people.	0	1	2	3	4
2. I become self-conscious when using public toilets.	0	1	2	3	4
3. I can suddenly become aware of my own voice and of others listening to me.	0	1	2	3	4
4. I get nervous that people are staring at me as I walk down the street.	0	1	2	3	4
5. I fear I may blush when I am with others.	0	1	2	3	4
6. I feel self-conscious if I have to enter a room where others are already seated.	0	1	2	3	4
7. I worry about shaking or trembling when I'm watched by other people.	0	1	2	3	4
8. I would get tense if I had to sit facing other people on a bus or a train.	0	1	2	3	4
9. I get panicky that others might see me faint or be sick or ill.	0	1	2	3	4
10. I would find it difficult to drink something in a group of people.	0	1	2	3	4
11. It would make me feel self-conscious to eat in front of a stranger in a restaurant.	0	1	2	3	4
12. I am worried people will think my behaviour odd.	0	1	2	3	4
13. I would get tense if I had to carry a tray across a crowded cafeteria.	0	1	2	3	4
14. I worry I'll lose control of myself in front of other people.	0	1	2	3	4
15. I worry I might do something to attract the attention of other people.	0	1	2	3	4
16. When in an elevator, I am tense if people look at me.	0	1	2	3	4
17. I can feel conspicuous standing in a line.	0	1	2	3	4
18. I can get tense when I speak in front of other people.	0	1	2	3	4
19. I worry my head will shake or nod in front of others.	0	1	2	3	4
20. I feel awkward and tense if I know people are watching me.	0	1	2	3	4

Appendix I

SIAS

For each question, please circle a number to indicate the degree to which you feel the statement is characteristic or true of you. The rating scale is as follows:

- 0 = Not at all characteristic or true of me**
1 = Slightly characteristic or true of me
2 = Moderately characteristic or true of me
3 = Very characteristic or true of me
4 = Extremely characteristic or true of me

1. I get nervous if I have to speak with someone in authority (teacher, boss).

0 1 2 3 4

2. I have difficulty making eye-contact with others.

0 1 2 3 4

3. I become tense if I have to talk about myself or my feelings.

0 1 2 3 4

4. I find difficulty mixing comfortably with the people I work with.

0 1 2 3 4

5. I find it easy to make friends of my own age.

0 1 2 3 4

6. I tense-up if I meet an acquaintance on the street.

0 1 2 3 4

7. When mixing socially, I am uncomfortable.

0 1 2 3 4

8. I feel tense if I am alone with just one person.

0 1 2 3 4

9. I am at ease meeting people at parties, etc.

- | | 0 | 1 | 2 | 3 | 4 |
|--|---|---|---|---|---|
| 10. I have difficulty talking with other people. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 11. I find it easy to think of things to talk about. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 12. I worry about expressing myself in case I appear awkward. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 13. I find it difficult to disagree with another's point of view. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 14. I have difficulty talking to attractive persons of the opposite sex. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 15. I find myself worrying that I won't know what to say in social situations. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 16. I am nervous mixing with people I don't know well. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 17. I feel I'll say something embarrassing when talking. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 18. When mixing in a group, I find myself worrying I will be ignored. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 19. I am tense mixing in a group. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |
| 20. I am unsure whether to greet someone I know only slightly. | | | | | |
| | 0 | 1 | 2 | 3 | 4 |

Appendix J

The Liebowitz Social Anxiety Scale (LSAS)

Please indicate the amount of fear or anxiety, and separately, the degree to which you avoid each of the following situations. Also, indicate the amount of distress in your life that is caused by your level of anxiety and/or avoidance in each of the following situations. Make sure you use the proper scale for each of your ratings.

Fear or Anxiety**0 = none****1 = mild****2 = moderate****3 = severe****Avoidance****0 = Never (0%)****1 = Occasionally (1-33%)****2 = Often (33-67%)****3 = Usually (67-100%)****Distress in Your Life****0 = none****1 = mild****2 = moderate****3 = severe**

1. Telephoning in public.
2. Participating in small groups.
3. Eating in public places.
4. Drinking with others in public places.
5. Talking to people in authority.
6. Acting, performing or giving a talk in front of an audience.
7. Going to a party.
8. Working while being observed.
9. Writing while being observed.
10. Calling someone you don't know very well.
11. Talking with people you don't know very well.
12. Meeting strangers.
13. Urinating in a public bathroom.
14. Entering a room when others are already seated.
15. Being the centre of attention.
16. Speaking up at a meeting.
17. Taking a test.
18. Expressing a disagreement or disapproval to people you don't know very well.
19. Looking at people you don't know very well in the eyes.
20. Giving a report to a group.
21. Trying to pick up someone.
22. Returning goods to a store.
23. Giving a party.
24. Resisting a high pressure salesperson.

Appendix K

Liebowitz Self-Rated Disability Scale (LDSRS)

How much does your social anxiety limit your ability to do each of the following?

	Problem does not limit me at all	Problem limits me slightly	Problem limits me a moderate extent	Problem limits me severely
During the past 2 weeks	0	1	2	3
Lifetime/When I was at my worst	0	1	2	3

1. Drinking alcohol in moderation (without overdoing it)?
Circle 0 if you do not drink at all.
2. Avoiding use of nonprescribed drugs?
3. Mainly being in a good mood when things are going well?
4. Going as far in school as my money and intelligence permit?
Complete this item for the past 2 weeks only if you are currently a full-time student.
5. Keeping a job (housework or work outside of the home) that allows me to work to my highest ability?
Complete this item for the past 2 weeks only if you are not a full-time student
6. Having mostly comfortable interactions with member of my family?
7. Having a satisfying romantic/intimate relationship?
8. Having at least a few close friends and small group of acquaintances?
9. Pursuing hobbies and other interests (e.g., religion, sports, etc.)?
10. Taking care of personal shopping, house-hold chores, and personal hygiene (e.g., bathing, showering, brushing your teeth, etc.)?
11. Wanting to live and not thinking about suicide for more than a rare moment?

Appendix L

Acceptance and Action Questionnaire (AAQ)

Below is a list of statements. Please rate how true each statement is for you by clicking the appropriate value. Use the indicated scale to make your choice.

Never True	Very Seldom True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True
1	2	3	4	5	6	7

1. You can't really control what you think and feel.
2. My thoughts and feelings are not just reactions, they are "me".
3. I am able to take action on a problem even if I am uncertain what is the right thing to do.
4. A person who is really "together" should not struggle with things the way I do.
5. There is really nothing anyone can do to keep from having thoughts and feelings that they don't like.
6. I often catch myself daydreaming about things I've done and what I would do differently next time.
7. A person's therapy can be considered successful even if he or she isn't happy or self-confident most of the time afterwards.
8. When I feel depressed or anxious, I am unable to take care of my responsibilities.
9. I try to suppress thoughts and feelings that I don't like by just not thinking about them.
10. There are not many activities that I stop doing when I am feeling depressed or anxious.
11. It's OK to feel depressed or anxious
12. It's unnecessary for me to learn to control my feelings in order to handle my life well.
13. I avoid putting myself in situations where I am uncomfortable.
14. I am hopeful that things will change for me.
15. It is difficult to stick to a decision until I get my thoughts together.
16. I rarely worry about getting my anxieties, worries and feelings under control.
17. In order for me to do something important, I have to have all my doubts worked out.
18. I spend a lot of time thinking about things I'll do once I feel better.
19. I'm not afraid of my feelings.
20. When I evaluate something negatively, I usually recognize that this is just a reaction, not an objective fact.
21. I don't eat or drink more than usual when I'm going through an emotionally upsetting time.
22. In order for me to be willing to do something, I have to feel good about it.
23. What I think and feel are not necessarily good indications of the way things really are in the world.
24. When I compare myself to other people, it seems that most of them are handling their lives better than I do.

25. I try hard to avoid feeling depressed or anxious.
26. I believe that my opinions are usually true.
27. I usually don't avoid situations that might provoke unpleasant thoughts and feelings in me.
28. Anxiety is bad.
29. Despite doubts, I feel as though I can set a course in my life and then stick to it.
30. In order to take action, I have to be sure in my own mind that the course of action I'm taking is correct.
31. If I could magically remove all of the painful experiences I've had in my life, I would do so.
32. I am in control of my life.
33. Its OK if I remember something unpleasant.
34. My painful experiences and memories make it difficult for me to live a life that I would value.
35. My painful memories prevent me from having a fulfilling life.
36. Emotions cause problems in my life.
37. Worries get in the way of my success.
38. My thoughts and feelings do not get in the way of how I want to live my life.
39. If I get bored of a task, I can still complete it.
40. I should act according to my feelings at the time.
41. If I promised to do something, I'll do it, even if later I don't feel like it.

Appendix M

The Mindful Attention Awareness Scale (MAAS)

Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be.

Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Never
1	2	3	4	5	6

1. I could be experiencing some emotion and not be conscious of it until some time later.
2. I break or spill things because of carelessness, not paying attention or thinking of something else.
3. I find it difficult to stay focused on what's happening in the present.
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
6. I forget a person's name almost as soon as I've been told it for the first time.
7. It seems I am "running on automatic" without much awareness of what I'm doing.
8. I rush through activities without being really attentive to them.
9. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.
10. I do jobs or tasks automatically, without being aware of what I'm doing.
11. I find myself listening to someone with one ear, doing something else at the same time.
12. I drive places on "automatic pilot" and then wonder why I went there.
13. I find myself preoccupied with the future or the past.
14. I find myself doing things without paying attention.
15. I snack without being aware that I'm eating.

Appendix N

The Five Facet Mindfulness Questionnaire (5-FMQ)

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1	2	3	4	5
Never or very rarely true	Rarely true	Sometimes true	Often true	Very often or always true

- _____ 1. When I'm walking, I deliberately notice the sensations of my body moving.
- _____ 2. I'm good at finding words to describe my feelings.
- _____ 3. I criticize myself for having irrational or inappropriate emotions.
- _____ 4. I perceive my feelings and emotions without having to react to them.
- _____ 5. When I do things, my mind wanders off and I'm easily distracted.
- _____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
- _____ 7. I can easily put my beliefs, opinions, and expectations into words.
- _____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
- _____ 9. I watch my feelings without getting lost in them.
- _____ 10. I tell myself I shouldn't be feeling the way I'm feeling.
- _____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
- _____ 12. It's hard for me to find the words to describe what I'm thinking.
- _____ 13. I am easily distracted.
- _____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.
- _____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
- _____ 16. I have trouble thinking of the right words to express how I feel about things
- _____ 17. I make judgments about whether my thoughts are good or bad.
- _____ 18. I find it difficult to stay focused on what's happening in the present.
- _____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
- _____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
- _____ 21. In difficult situations, I can pause without immediately reacting.
- _____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.
- _____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.
- _____ 24. When I have distressing thoughts or images, I feel calm soon after.
- _____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.
- _____ 26. I notice the smells and aromas of things.
- _____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.
- _____ 28. I rush through activities without being really attentive to them.
- _____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.
- _____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.
- _____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

- _____ 32. My natural tendency is to put my experiences into words.
- _____ 33. When I have distressing thoughts or images, I just notice them and let them go.
- _____ 34. I do jobs or tasks automatically without being aware of what I'm doing.
- _____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
- _____ 36. I pay attention to how my emotions affect my thoughts and behavior.
- _____ 37. I can usually describe how I feel at the moment in considerable detail.
- _____ 38. I find myself doing things without paying attention.
- _____ 39. I disapprove of myself when I have irrational ideas.

Appendix O

White Bear Suppression Inventory (WBSI)

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

Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
1	2	3	4	5

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

Appendix P

Barratt Impulsiveness Scale (BIS-11)

Directions: Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following rating scale to make your choices. For instance, if you believe a statement is 'Always,' you would write a 4 next to that statement.

Rarely/Never	Occasionally	Often	Almost Always/Always
1	2	3	4

- _____ 1. I plan tasks carefully.
- _____ 2. I do things without thinking.
- _____ 3. I make-up my mind quickly.
- _____ 4. I am happy-go-lucky.
- _____ 5. I don't "pay attention".
- _____ 6. I have "racing" thoughts.
- _____ 7. I plan trips well ahead of time.
- _____ 8. I am self-controlled.
- _____ 9. I concentrate easily.
- _____ 10. I save regularly.
- _____ 11. I "squirm" at plays or lectures.
- _____ 12. I am a careful thinker.
- _____ 13. I plan for job security.
- _____ 14. I say things without thinking.
- _____ 15. I like to think about complex problems.
- _____ 16. I change jobs.
- _____ 17. I act "on impulse".
- _____ 18. I get easily bored when solving thought problems.
- _____ 19. I act on the spur of the moment.
- _____ 20. I am a steady thinker.
- _____ 21. I change residences.
- _____ 22. I buy things on impulse.
- _____ 23. I can only think about one problem at a time.
- _____ 24. I change hobbies.
- _____ 25. I spend or charge more than I earn.
- _____ 26. I often have extraneous thoughts when thinking.
- _____ 27. I am more interested in the present than the future.
- _____ 28. I am restless at the theater or lectures.
- _____ 29. I like puzzles.
- _____ 30. I am future oriented.

Appendix Q

Beck Depression Inventory-II

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past week, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

<p>1. Sadness</p> <p>0 I do not feel sad.</p> <p>1 I feel sad much of the time.</p> <p>2 I am sad all the time.</p> <p>3. I am so sad or unhappy that I can't stand it.</p> <p>2. Pessimism</p> <p>0 I am not discouraged about my future.</p> <p>1 I feel more discouraged about my future than I used to be.</p> <p>2 I do not expect things to work out for me.</p> <p>3 I feel my future is hopeless and will only get worse</p> <p>3. Past Failure</p> <p>0 I do not feel like a failure.</p> <p>1 I have failed more than I should have.</p> <p>2 As I look back, I see a lot of failures.</p> <p>3 I feel I am a total failure as a person.</p> <p>4. Loss of Pleasure</p> <p>0 I get as much pleasure as I ever did from the things I enjoy.</p> <p>1 I don't enjoy things as much as I used to.</p> <p>2 I get very little pleasure from the things I used to enjoy.</p> <p>3 I can't get any pleasure from the things I used to enjoy.</p> <p>5. Guilty Feelings</p> <p>0 I don't feel particularly guilty.</p> <p>1 I feel guilty over many things I have done or should have done.</p> <p>2 I feel quite guilty most of the time.</p> <p>3 I feel guilty all of the time</p>	<p>6. Punishment Feelings</p> <p>0 I don't feel I am being punished.</p> <p>1 I feel I may be punished.</p> <p>2 I expect to be punished.</p> <p>3 I feel I am being punished.</p> <p>7. Self-Dislike</p> <p>0 I feel the same about myself as ever.</p> <p>1 I have lost confidence in myself.</p> <p>2 I am disappointed in myself.</p> <p>3 I dislike myself.</p> <p>8. Self-Criticalness</p> <p>0 I don't criticize or blame myself more than usual.</p> <p>1 I am more critical of myself than I used to be.</p> <p>2 I criticize myself for all of my faults.</p> <p>3 I blame myself for everything bad that happens.</p> <p>9. Suicidal Thoughts or Wishes</p> <p>0 I don't have any thoughts of killing myself.</p> <p>1 I have thoughts of killing myself, but I would not carry them out.</p> <p>2 I would like to kill myself.</p> <p>3 I would kill myself if I had the chance.</p> <p>10. Crying</p> <p>0 I don't cry anymore than I used to.</p> <p>1 I cry more than I used to.</p> <p>2 I cry over every little thing.</p> <p>3 I feel like crying, but I can't.</p>
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<p>11. Agitation</p> <p>0 I am no more restless or wound up than usual. 1 I feel more restless or wound up than usual. 2 I am so restless or agitated that it's hard to stay still. 3 I am so restless or agitated that I have to keep moving or doing something.</p> <p>12. Loss of Interest</p> <p>0 I have not lost interest in other people or activities. 1 I am less interested in other people or things than before. 2 I have lost most of my interest in other people or things. 3 It's hard to get interested in anything.</p> <p>13. Indecisiveness</p> <p>0 I make decisions about as well as ever. 1 I find it more difficult to make decisions than usual. 2 I have much greater difficulty in making decisions than I used to. 3 I have trouble making any decisions.</p> <p>14. Worthlessness</p> <p>0 I do not feel I am worthless. 1 I don't consider myself as worthwhile and useful as I used to. 2 I feel more worthless as compared to other people. 3 I feel utterly worthless.</p> <p>15. Loss of Energy</p> <p>0 I have as much energy as ever. 1 I have less energy than I used to have. 2 I don't have enough energy to do very much. 3 I don't have enough energy to do anything.</p> <p>16. Changes in Sleeping Pattern</p> <p>0 I have not experienced any change in my sleeping pattern. <hr/> 1a I sleep somewhat more than usual. 1b I sleep somewhat less than usual. <hr/> 2a I sleep a lot more than usual. 2b I sleep a lot less than usual. <hr/> 3a I sleep most of the day. 3b I wake up 1-2 hours early and can't get back to sleep.</p>	<p>17. Irritability</p> <p>0 I am no more irritable than usual. 1 I am more irritable than usual. 2 I am much more irritable than usual. 3 I am irritable all the time.</p> <p>18. Changes in Appetite</p> <p>0 I have not experienced an change in my appetite. <hr/> 1a My appetite is somewhat less than usual. 1b My appetite is somewhat greater than usual. <hr/> 2a My appetite is much less than before. 2b My appetite is much greater than usual. <hr/> 3a I have no appetite at all. 3b I crave food all the time.</p> <p>19. Concentration Difficulty</p> <p>0 I can concentrate as well as ever. 1 I can't concentrate as well as usual. 2 It's hard to keep my mind on anything for very long. 3 I find I can't concentrate on anything.</p> <p>20. Tiredness or Fatigue</p> <p>0 I am no more tired or fatigued than usual. 1 I get more tired or fatigued more easily than usual. 2 I am too tired or fatigued to do a lot of the things I used to do. 3 I am too tired or fatigued to do most of the things I used to do.</p> <p>21. Loss of Interest in Sex</p> <p>0 I have not noticed any recent change in my interest in sex. 1 I am less interested in sex than I used to be. 2 I am much less interested in sex now. 3 I have lost interest in sex completely.</p>
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Appendix R

Marlowe-Crowne Social Desirability Scale (MCSDS)

Please complete each item below with your response. There is no right or wrong answer, so please feel free to answer honestly.

True	False
1	2

1. Before voting I thoroughly investigate the qualifications of all the candidates.
2. I never hesitate to go out of my way to help someone in trouble.
3. It is sometimes hard for me to go on with my work if I am not encouraged.
4. I have never intensely disliked anyone.
5. On occasion I have had doubts about my ability to succeed in life.
6. I sometimes feel resentful when I don't get my way.
7. I am always careful about my manner of dress
8. My table manners at home are as good as when I eat out in a restaurant.
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
10. On a few occasions, I have given up doing something because I thought too little of my ability.
11. I like to gossip at times.
12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
13. No matter who I'm talking to, I'm always a good listener.
14. I can remember "playing sick" to get out of something.
15. There have been occasions when I took advantage of someone.
16. There have been occasions when I took advantage of someone.
17. I always try to practice what I preach.
18. I don't find it particularly difficult to get along with loudmouthed, obnoxious people.
19. I sometimes try to get even, rather than forgive and forget.
20. When I don't know something I don't at all mind admitting it.
21. I am always courteous, even to people who are disagreeable.
22. At times I have really insisted on having things my own way.
23. There have been occasions when I felt like smashing things.
24. I would never think of letting someone else be punished for my wrongdoings.
25. I never resent being asked to return a favor.
26. I have never been irked when people expressed ideas very different from my own.
27. I never make a long trip without checking the safety of my car.
28. There have been times when I was quite jealous of the good fortune of others.
29. I have almost never felt the urge to tell someone off.
30. I am sometimes irritated by people who ask favors of me.
31. I have never felt that I was punished without cause.
32. I sometimes think when people have a misfortune they only got what they deserved.
33. I have never deliberately said something that hurt someone's feelings.

Appendix S

PREP Sign Up Sheet

Title: The Effects of Acceptance on Distress, Willingness and Rumination During and Following an Impromptu Speech Task

Researchers: Meagan MacKenzie and Gregory Williams

Supervisor: Dr. Nancy Kocovski

Credit: 1 credit for part one and ¼ credit for part two

Description of Study: Part one of this study takes place in the lab. You will be asked to complete questionnaires on anxiety and mindfulness and complete a speech task. Part two of this study is a follow-up one day later and takes place completely online.

Appendix T

WILFRID LAURIER UNIVERSITY
INFORMED CONSENT STATEMENT

Mindfulness and Anxiety

Meagan MacKenzie, Gregory Williams, and Dr. Nancy Kocovski

You are invited to participate in a research study. The purpose of this study is to investigate certain characteristics of social anxiety and whether different instructions are associated with different levels of distress. Social anxiety is the type of anxiety experienced in situations where one may be evaluated by others (e.g., presentation, party, job interview, date). The principal researcher is Meagan MacKenzie, the co-investigator is Gregory Williams and the research supervisor is Dr. Nancy Kocovski.

INFORMATION

Your participation in this study will involve the completion of questionnaires, the monitoring of your blood pressure and heart rate, and a speech task. Upon entering the lab, you will be asked to complete several questionnaires. The questionnaires will be used to assess social anxiety and mindfulness. You will then be asked to wear a non-invasive heart rate monitoring device that will be strapped around your chest for the duration of the study. In addition, your blood pressure will be assessed using a sphygmomanometer, or a blood pressure cuff. You will then be given some instructions and then you will be asked to perform an impromptu speech. You will also be asked to participate in a short online follow-up one day following the study. The study cannot be fully explained at this time, but the full details of the study will be explained following the conclusion of your participation in this research.

This should take approximately 60 minutes to complete, including 15 to 20 minutes for the second part of the study. It is expected that 150 students will be participating in this research.

RISKS

There are no physical risks associated with the monitoring of blood pressure and/or heart rate. Foreseeable psychological risks may include feelings of anxiety, distress, or discomfort that may arise from completing the speech, the topic of the speech, and/or test items. You are free at any time to omit your answer and/or withdraw from this study. If you are experiencing any concerns about distress that may arise as a result of your participation, please contact Dr. Nancy Kocovski (nkocovski@wlu.ca) and/or Counseling Services (519) 884-0710 extension 2338, 2nd floor, Student Services Building, (<http://www.mylaurier.ca/counselling>) or email 22couns@wlu.ca).

BENEFITS

You will have the opportunity to take part in psychological research on social anxiety. In addition, the information obtained from your participation may lead to a better understanding of social anxiety.

CONFIDENTIALITY

All information that is obtained from you during the course of this research is completely confidential and will not be shared with anyone other than the researchers (Meagan MacKenzie and Gregory Williams) or the research supervisor (Dr. Nancy Kocovski). Student ID numbers will not be linked to the data. The consent form will be kept separately from the data. All raw data (e.g. questionnaires) will be anonymous and only identified by a research identification number in a locked file that can only be accessed by the researchers. All electronic information (e.g. answers to questions) will be anonymous and only identified by the same research identification number in a password-protected computer file. Your name will not appear in this file. There will be no identifying information on the data, however the same research identification number will be assigned to parts one and two. In addition, because the data in part two are being collected online, complete internet security cannot be guaranteed during transmission over the internet.

Participant's Initials _____

If you complete the study, raw data will be retained for seven years and destroyed after that time. If you choose to withdraw from the study at any time before part two, your raw data from part one will be returned to you or otherwise destroyed. Should you choose to withdraw at any time during part two, any data collected during this portion of the study will be deleted. Although the results of this study may be published, they will be reported in a way that makes it impossible to identify individual participants. Only aggregate data will be presented. As such, your specific scores will not be made available to you, though a general report of the study's findings will be made available to you.

COMPENSATION

For participating in part one of this study you will receive 1 credit. For participating in part two of the study, you will receive 0.3 credit and you will be entered into a draw with a chance to win a \$50 restaurant gift certificate. The odds of winning this certificate are approximately 1 in 100. If you choose not to complete portions of part 1 of the study, you will still be compensated 1 credit. If you do not complete any portion of part 2 of the study, then you will not be entered into the draw. However, if you complete some of part 2 of the study, then you will still be given 0.3 credit and entered into the draw.

Other ways to earn the same amount of PREP credits are completing a journal article review or completing other research studies. If you withdraw from part one of the study prior to its completion, you will receive 1 credit. If you login to part two of the study and withdraw prior to its completion, you will receive a total of 1.3 credit.

CONTACT

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study) you may contact the researchers, Meagan MacKenzie or Gregory Williams, at (519) 884-0710 ex. 2587 or Dr. Nancy Kocovski at (519) 884-0710 ex. 3519, office N2025. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Bill Marr, Chair, University Research Ethics Board, Wilfrid Laurier University, at (519) 884-0710, extension 2468, or by email at bmarr@wlu.ca.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be deleted. You may withdraw from either part one or part two at any time without penalty. You have the right to omit any question(s)/procedure(s) you choose.

FEEDBACK AND PUBLICATION

The results of this research may be presented at conferences or submitted for publication. You will be sent information about the final results via email by April 1, 2008.

CONSENT

I have read and understand the above information. I have received a copy of this form. I agree to participate in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

Appendix U

Partial Debriefing Form

Thank you for completing part 1 of our study. Part 2 of this study is to be completed one day from today online or in the lab if you do not have access to a computer.

Please access the following website to complete Part 2 of the study:

<http://wlu.sona-systems.com>

You will then have access to the study entitled
“Mindfulness and Anxiety PART 2”

The invitation code for this study is **“jackrabbit”**

Your study ID number is: _____

You will complete the study on: _____

After completing Part 2 of the study, you will be fully debriefed and all aspects of this study will be explained to you.

If you have any comments or concerns regarding Part 1 of the study, please contact:

Meagan MacKenzie or

Gregory Williams

Department of Psychology
Wilfrid Laurier University

Dr. Nancy Kocovski

Department of Psychology
Wilfrid Laurier University

or

Office: N2059

Phone: 519-884-0710 ext. 2587

Email: mack2645@wlu.ca or
will9670@wlu.ca

Office: N2025

Phone: 519-884-0710 ext. 3519

Email: nkocovski@wlu.ca

If you are concerned about feelings of anxiety please contact the researchers or one of the resources below.

Counseling Services

Wilfrid Laurier University
75 University Avenue West
Waterloo, Ontario, N2L 3C5
(519) 884 0710 x2338

<http://www.mylaurier.ca/counselling/home.htm>

Canadian Mental Health Association

Kitchener Branch

67 King Street East
Kitchener, ON N2G 2K4
Ph: (519) 744-7645
<http://www.cmha.ca>
<http://www.cmhawrb.on.ca>

Appendix V

Full Debriefing Form

It is very important that you read this information. Please take some time to go over it carefully.

The overall goal of this research is to examine the effects of acceptance instructions that are associated with social anxiety. Social anxiety is the anxiety that is experienced in social situations like parties, meeting strangers, and speaking in front of groups, in other words, situations where one may be evaluated or judged by others (for more information, see page 582 in Weiten, & McCann, 2007). Acceptance in this context refers to an attitude of nonjudgmental openness to experience. Previous research has demonstrated that individuals who are told to accept their thoughts and feelings in this way are less likely to feel distressed and more likely to agree to participate in anxiety-provoking tasks. The current study is exploring the effects of acceptance instructions on distress, willingness and rumination in a social-anxiety provoking speech task. Willingness refers to the extent to which a person feels open to experiences, even anxiety-provoking ones. Rumination is the extent to which an individual dwells on a situation.

The questionnaires that you completed when you arrived in the lab were used to assess levels of social anxiety and habitual acceptance. Your heart rate was monitored continuously throughout the experiment, and blood pressure was measured at certain points. You were then randomly chosen to be in one of three groups who received slightly different instructions. These conditions were *acceptance*, *suppression*, and a *control* condition. The acceptance group was told to “Try to notice and observe your feelings, and be willing to experience their thoughts and feelings, both good and bad”. The suppression group was told to “Try to do everything you can to keep your feelings down, try to control your thoughts and push negative ones away”. Finally, the control condition was instructed to “Simply think about whatever comes to mind. Let your mind do whatever comes naturally”. You then took part in a speech task.

After the speech, you completed questionnaires to measure your level of distress, and whether you would agree to participate in similar studies in the future. It is expected that the participants who were instructed to accept their thoughts and feelings will feel less distressed (as measured by self-report, and physiological indicators), and will be more likely to agree to participate in similar tasks.

In part 2 of the study, you completed questionnaires online to investigate whether the instructions that you received had an effect on willingness and rumination. It is expected that participants who were in the acceptance condition will be more likely to agree to take part in similar studies in the future, and will report that they did not ruminate as much, as compared to participants in all other conditions.

Previous research has found that giving participants instructions to accept their thoughts and feelings is associated with lower levels of distress and greater levels of willingness. This type of research has not been done in response to a speech task or in response to any other task that invokes social anxiety. It is hoped that the findings of this research will help in treatments that target social anxiety.

Thank you for your participation in this study. Results of this study will be e-mailed to you by April, 2008.

If you have any questions about your participation in this study or about the study itself, please contact:

Meagan MacKenzie or

Gregory Williams

Department of Psychology
Wilfrid Laurier University

Dr. Nancy Kocovski

Department of Psychology
Wilfrid Laurier University

or

Office: N2059

Phone: 519-884-0710 ext. 2587

Email: mack2645@wlu.ca

will9670@wlu.ca

Office: N2025

Phone: 519-884-0710 ext. 3519

Email: nkocovski@wlu.ca

If you would like to discuss social anxiety further, please refer to the following list of resources:

Counseling Services

Wilfrid Laurier University
75 University Avenue West
Waterloo, Ontario, N2L 3C5
(519) 884 0710 x2338
<http://www.mylaurier.ca/counselling/home.htm>

Canadian Mental Health Association

Kitchener Branch

67 King Street East
Kitchener, ON N2G 2K4
Ph: (519) 744-7645
<http://www.cmha.ca>
<http://www.cmhawrb.on.ca>

If you would like to learn more about research in this area, you may wish to read the following:

Brown, K.W., Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84, 822-848.

Clark, D.M., & Wells, A. (1995). A cognitive model of social phobia. In R. Heimberg, M. R. Liebowitz, D. A. Hope & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 69-93). New York: Guilford.

Rowa, K., & Antony, M.M. (2005). Psychological Treatments for Social Phobia. *Canadian Journal of Psychiatry*, 50, 308-316.

Weiten, W., & McCann, D. (2007). *Psychology: Themes & variations*. Toronto: Nelson

Appendix W

Demographic Questionnaire

What is your gender? _____

What is your age? _____

What is your current level of education? (check only one)

- Currently in First Year
- Currently in Second Year
- Currently in Third Year
- Currently in Fourth Year
- Other _____
(please specify)

What is your current living accommodation?

- In a student residence
- House/apartment/condo with parents
- House/apartment/condo with friends
- House/apartment/condo alone
- House/apartment/condo with a romantic partner
- House/apartment/condo with a romantic partner and children
- Other _____
(please specify)

What is your marital status?

- Single Married Cohabiting
- Separated Divorced Widow(er)

What is your occupational status (check all that apply)?

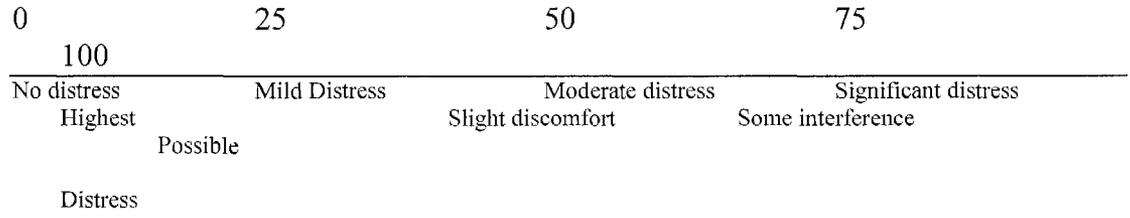
- Unemployed Employed-full time Employed-part time
- Student- full time Student-part time Other _____
(please specify)

What is your ethnicity?

- White/Caucasian Asian Black/African-Canadian
- Hispanic Native Canadian Middle Eastern
- South Asian (e.g. Pakistan, India, Sri Lanka, etc.) Other _____
(please specify)

Appendix X

Subjective Units of Distress Scale (SUDS)



	DISTRESS (1-100)
Please record your level of distress	

Appendix Y

Endler Multidimensional Anxiety Scales – State (EMAS-S)

For each of the following 20 items, please use the 5-point scale to indicate:

How you feel at this particular moment.

		NOT AT ALL	←→	VERY MUCH		
1.	Hands feel moist	1	2	3	4	5
2.	Distrust myself	1	2	3	4	5
3.	Breathing is irregular	1	2	3	4	5
4.	Unable to focus on task	1	2	3	4	5
5.	Have tense feeling in stomach	1	2	3	4	5
6.	Heart beats faster	1	2	3	4	5
7.	Feel helpless	1	2	3	4	5
8.	Unable to concentrate	1	2	3	4	5
9.	Perspire	1	2	3	4	5
10.	Fear defeat	1	2	3	4	5
11.	Mouth feels dry	1	2	3	4	5
12.	Self-preoccupied	1	2	3	4	5
13.	Feel uncertain	1	2	3	4	5
14.	Feel tense	1	2	3	4	5
15.	Feel inadequate	1	2	3	4	5
16.	Hands feel unsteady	1	2	3	4	5
17.	Feel flushed	1	2	3	4	5
18.	Feel self-conscious	1	2	3	4	5
19.	Feel incompetent	1	2	3	4	5
20.	Feel lump in throat	1	2	3	4	5

Appendix Z

Willingness Scale (WILL)

Listed below are several public speaking situations. Please circle a number to indicate how **willing** you are to engage in each of these public speaking activities (1 = completely unwilling; 10 = completely willing).

Raising your hand in a small seminar class (e.g., 3-4 people) to ask a question or make a comment?	1	2	3	4	5	6	7	8	9	10
Raising your hand in a large classroom setting (e.g., 30-50 people) to ask a question or make a comment?	1	2	3	4	5	6	7	8	9	10
Raising your hand in a lecture centre to ask a question or make a comment?	1	2	3	4	5	6	7	8	9	10
Giving a presentation in a small seminar class?	1	2	3	4	5	6	7	8	9	10
Giving a presentation in a large classroom setting?	1	2	3	4	5	6	7	8	9	10
Giving a presentation in a lecture centre?	1	2	3	4	5	6	7	8	9	10
Approaching a TA during office hours to speak with him/her personally?	1	2	3	4	5	6	7	8	9	10
Approaching a professor during office hours to speak with him/her personally?	1	2	3	4	5	6	7	8	9	10

Appendix AA

Post-Speech Questionnaire

1. Were you given any instructions about how to approach the speech task? If so, please list them below.

0	25	50	75	100
Not willing		Moderately willing		Very willing

2. Please rate how willing you were to fully experience the sensations (both positive and negative) that arose during your speech using the scale above:

3. Please rate the following questions on this scale:

Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
1	2	3	4	5

- a) _____ It was easy to understand the instructions that I was given.
- b) _____ I continued to follow the instructions during the speech.
- c) _____ I would recommend a speech study like this to my friends.
- d) _____ I would be willing to participate in a similar speech study in the future.
- e) _____ Assuming I had no other commitments, I would be willing to stay and do another similar speech study right now.

If not, why?

4. Do you have any other comments about this speech study?

Appendix AB

End of Study Questionnaire

1. Please list any feedback (positive or negative) you think the Research Assistant may have about your speech. Please list 5 possibilities.

a) _____

b) _____

c) _____

d) _____

e) _____

2. Please indicate on the following scale which method (and to what degree) you believe would be the best way of coping with an anxiety-provoking social situation.

Being attentive to and accepting of
any negative thoughts or emotions

Trying to suppress
any negative thoughts/emotions

3. Please list any other thoughts you have had about the speech since taking part in it.

4. Please list any thoughts or comments about the study as a whole.

Appendix AC

Acceptance Instructions

In a few minutes you will be asked to give a short speech. I will give you the topic after we complete these instructions.

Some people experience negative thoughts and feelings when they are asked to give a speech or a presentation. This is normal. However, if you experience negative thoughts and/or feelings while you are giving your speech today, please try to *accept* these feelings. This means that you should try to notice and observe these feelings, without getting caught up in them.

Before your speech task, you will be given an envelope. There is a piece of paper inside with a sentence written on it. Please open the envelope and read the sentence. Now, please get up, walk out the door and walk to the end of the hallway and back. While you are doing this, please silently repeat the sentence to yourself the entire time you are walking. Notice that while you are walking, you are saying “I cannot walk, I cannot walk, I cannot walk”.

I would like you to consider that during the speech, you could notice that you are having negative thoughts and feelings and choose not to carry on, or you could just notice these feelings, and continue to go on with the speech. For example, just like saying “I cannot walk” while walking around; you can have the thought “I am feeling nervous and don’t want to do this” and still continue with the speech.

Now I would like you to imagine that the speech task you will experience is a bit like trying to cross a muddy swamp. Imagine that the swamp is full of dirt, pollution, and foul-smelling waste. What kind of thoughts do you think are going to occur in such a situation? It’s likely that thoughts such as “I can’t stand this. This is unbearable. I can’t do anything this unpleasant or disgusting. It’s not worth the effort. It’s nonsense.” will all show up. The best way you could possibly cross the swamp would be to notice all those thoughts and the distress they carry with them and let them be, to notice them and make room for them while you keep crossing the swamp. This technique is about being open to all the thoughts that may show up and the distress associated with them, about carrying them with you while you keep doing what you were trying to do in the first place- that is crossing the swamp and reaching the shore. In the same way that you can embrace all the horrible thoughts and feelings that show up while crossing the swamp, you could embrace all the negative thoughts that show up during the speech task. Notice all the thoughts that show up while you perform the speech and carry them with you because it is possible to act differently to what you think or feel.

For the next part of this study, it’s important that you imagine that completing the speech is a bit like trying to cross the swamp. There may be some emotional discomfort that seems to be standing in the way of doing something that you want. You should think of your anxiety or nervousness in this part of the study as being the discomfort that stands in your way. You can keep performing the task regardless of whatever thoughts you have while doing it. Remember that you can notice your thoughts and act completely different to what they tell you.

Appendix AD

Suppression Instructions

In a few minutes you will be asked to give a short speech. I will give you the topic after we complete these instructions.

Some people experience negative thoughts and feelings when they are asked to give a speech or a presentation. This is normal. However, if you experience negative thoughts and/or feelings while you are giving your speech today, please try to *suppress* these feelings. This means that you should try to push them down and try not to feel them.

Before your speech task, you will be given an envelope. There is a piece of paper inside with instructions written on it. Please open the envelope and read the instructions. Now, please get up, walk out the door and walk to the end of the hallway and back. While you are doing this, please silently repeat the instructions to yourself the entire time you are walking. Notice that while you are walking you are suppressing thoughts of doing so; you are still able to complete that task without the need to focus on any thoughts or feelings that relate directly to it.

I would like you to consider that during the speech, you could notice that you are having negative thoughts and feelings, or you could suppress these feelings, and continue to go on with the speech. For example, just like suppressing the thoughts and feelings of walking while still continuing to do so; you can suppress the thoughts and feelings that you have about the speech and still continue with it.

Now I would like you to imagine that the speech task you will experience is a bit like trying to cross a muddy swamp. Imagine that the swamp is full of dirt, pollution, and foul-smelling waste. What kind of thoughts do you think are going to occur in such a situation? It's likely that thoughts such as "I can't stand this. This is unbearable. I can't do anything this unpleasant or disgusting. It's not worth the effort. It's nonsense." will all show up. The best way you could possibly cross the swamp would be to suppress all those thoughts and the distress they carry with them and push them away while you keep crossing the swamp. It's about trying not to experience all the thoughts that may show up and the distress associated with them, about not carrying them with you while you keep doing what you were trying to do in the first place- crossing the swamp and reaching the shore. In the same way that you can suppress all the horrible thoughts and feelings that show up while crossing the swamp, you could suppress all the negative thoughts that show up during the speech task. Try to push away all the thoughts that show up while you are doing the speech because you can still perform the task without having to pay attention to your thoughts.

For the next part of this study, it's important that you imagine that doing the speech is a bit like trying to cross the swamp. There may be some emotional discomfort that seems to be standing in the way of doing something that you want. You should think of your anxiety or nervousness in this part of the study as being the discomfort that stands in your way. You can keep performing the task while suppressing whatever thoughts you have while doing it. Remember that you can push away your thoughts and still complete a task.