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# ACT process measures : specificity and incremental value

Joshua Holubec Gootzeit  
*University of Iowa*

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ACT PROCESS MEASURES: SPECIFICITY AND INCREMENTAL VALUE

by

Joshua Holubec Gootzeit

A thesis submitted in partial fulfillment  
of the requirements for the Doctor of  
Philosophy degree in Psychology  
in the Graduate College of  
The University of Iowa

August 2014

Thesis Supervisor: Associate Professor Kristian Markon

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CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

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To Beth

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## ABSTRACT

A number of objective personality questionnaires have been published which aim to measure the six processes related to Acceptance and Commitment Therapy's model of treatment (acceptance, defusion, present moment awareness, self-as-context, values, and committed action). These measures operationally define these hypothesized processes in research settings. However, little research has been done to investigate whether these processes, as measured by these questionnaires, are differentiable from each other or from other, seemingly similar constructs such as distress tolerance and coping styles. Additionally, it is unclear whether these questionnaire measures have differing relationships with other potentially relevant constructs, such as psychopathology, functioning, and personality. The structure of these process measures was investigated across two participant samples. A multi-trait structure of ACT processes was found, with three higher order dimensions consisting of psychological inflexibility/cognitive fusion, mindfulness, and avoidance, as well as a number of distinguishable lower order traits. This structure was found across multiple samples, and measures of these factor analytically-derived traits were found to have incremental validity and to be distinguishable from other, superficially similar psychological processes. These results provide guidance for measurement selection and suggest future directions for scale development. Relevance to treatment outcome research is also discussed.

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## CHAPTER I.

### INTRODUCTION

#### Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT) is a third wave cognitive behavioral therapy. It distinguishes itself from other approaches to therapy by positing that psychological distress is normative rather than a sign of abnormality, and that efforts to control or eliminate such distress can paradoxically lead to psychological problems. Rather than attempting to eliminate feelings of distress, ACT emphasizes achieving psychological flexibility, or the ability to mindfully and flexibly maintain or change behavior in order to achieve valued ends, as the primary goal of therapy (Hayes, Strosahl, & Wilson, 2011).

The ACT model posits six relevant processes that are targets for change in therapy. These six processes are all posited to be critical components of psychological flexibility, and are therefore highly interconnected. This six-part model is known as the ACT Hexaflex (Hayes et al, 2011; see Figure B1). Many objective personality questionnaires have been created to measure these proposed ACT processes. Some of these measures have been extensively used in both clinical and research settings. Indeed, because the goal of ACT is to effect change in these areas, rather than to reduce psychopathology, it has been suggested that ACT-specific measures be used in clinical trials due to their hypothesized mediating effect on therapy outcomes (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). However, little research has been done on how these process measures differ from each other, or from measures of similar psychological constructs, such as distress tolerance, anxiety sensitivity, and emotion-focused coping.

## Acceptance Versus Experiential Avoidance

ACT proposes that willingness to experience unwanted internal experiences is an important part of psychological flexibility. This process is conceptually related to the concept of mindfulness, as described by practitioners of mindfulness-based stress reduction, in that it advocates releasing one's struggles with unwanted thoughts, feelings, emotions, memories, and bodily sensations. Acceptance is a process in direct opposition to experiential avoidance, or the unwillingness to remain in contact with unwanted internal experiences.

Hayes, Wilson, Gifford, Follette, and Strosahl (1996) argue that experiential avoidance is a key functional process in behavior problems in a way that transcends traditional syndromal classifications of mental disorders. Most syndromes focus on the topographical characteristics of the behavior, and offer limited etiological guidance; even when treatments have been found to be disorder-specific, the atheoretical nature of the DSM's categories make theory-based improvements to treatment difficult. Conversely, these authors argue that experiential avoidance offers a functional approach to classification of behavior problems, allowing psychologists to tailor their treatments to the functional process that has maintained the problem.

Experiential avoidance is a process implicated in a wide variety of psychological disorders and behavior problems. In a study investigating vulnerability to substance use disorders, Cooper, Russell, Skinner, Frone, and Mudar (1992) investigated a large sample ( $n = 1,316$ ) to test the hypothesis that problem drinking is an avoidant response to feelings of distress. They found that the use of avoidant coping strategies predicted problem drinking behaviors, particularly for men ( $\beta$  weights range from 0.10 to 0.18).

Overall, they found that individual-specific characteristics such as the tendency to avoid are better predictors than stressor-specific characteristics.

Experiential avoidance has also been implicated in models of self-harm behaviors such as cutting, which are particularly prevalent in individuals with borderline personality disorder (Chapman, Gratz, & Brown, 2006). In a study of individuals with a diagnosis of borderline personality disorder, Chapman, Specht, and Cellucci (2005) found that, in a study of 117 female inmates, self-harm frequency and borderline symptoms were correlated with measures of experiential avoidance (self-harm:  $r = 0.15$ ; borderline symptoms:  $r = 0.53$ ), thought suppression (self-harm:  $r = 0.27$ ; borderline symptoms:  $r = 0.50$ ), and avoidant coping (self-harm:  $r = 0.16$ ; borderline symptoms:  $r = 0.45$ ). Additionally, individuals who engage in self-harm behaviors report an avoidant function; in a survey of 75 individuals who engage in deliberate self-harm, 96% report that they do so, at least in part, for emotional relief (Brown, Comtois, & Linehan, 2002). Similarly, experiential avoidance may also be associated with full suicide attempts (Baumeister, 1990).

Anxiety disorders are also thought to be related to experiential avoidance. In a study of panic disorder and emotional avoidance, Tull and Roemer (2007) investigated individuals with ( $n = 91$ ) and without ( $n = 91$ ) a history of uncued panic attacks. They found that individuals with a history of panic attacks scored statistically significantly higher on measures of experiential avoidance ( $\eta^2_p = 0.06$ ) and lack of emotional acceptance ( $\eta^2_p = 0.04$ ). Individuals with histories of panic attacks also reported using more experientially avoidant strategies when assigned to watch an emotionally distressing movie. Similarly, in a study of individuals with generalized anxiety disorder,

Borkovec and Roemer (1995) examined 514 individuals to determine self-reported functions of worrying. They found that individuals meeting DSM-III-R criteria for GAD were more likely to report that worry would prevent undesired outcomes, would lead to better problem solving, and served to distract them from “even more emotional things.” These researchers suggest that the results indicate an avoidant function of worry for individuals with GAD because such worry may suppress negative emotions and suppress the affective consequences of stressful situations.

Finally, it has been suggested that experiential avoidance is related to the development of depression. In a study of 109 research participants, Cribb, Moulds, and Carter (2006) found that a measure of depression was correlated with measures of experiential avoidance ( $r = 0.53$ ), behavioral social avoidance ( $r = 0.50$ ), behavioral nonsocial avoidance ( $r = 0.42$ ), cognitive social avoidance ( $r = 0.44$ ), and cognitive nonsocial avoidance ( $r = 0.37$ ). They also found that a measure of rumination was highly associated with these measures of avoidance (experiential avoidance:  $r = 0.62$ ; behavioral social avoidance:  $r = 0.42$ ; behavioral nonsocial avoidance:  $r = 0.49$ ; cognitive social avoidance:  $r = 0.49$ ; cognitive nonsocial avoidance:  $r = 0.42$ ). These researchers argued that depressive rumination, like generalized worry, may serve an avoidant function, allowing depressed individuals to ruminate rather than to engage behaviors that are potentially distressing in the short term.

In addition to these correlational studies, experimental research also suggests that experiential avoidance is maladaptive (Hayes et al., 1996). Experimental studies of thought suppression indicate that attempts to suppress particular thoughts have several unintended effects. In their classic study, Wegner, Schneider, Carter, and White (1987)



asked participants to either think about white bears (control group) or to suppress thoughts about white bears for five minutes (thought suppression group); the researchers found that the thought suppression group had more thoughts about white bears after the five minutes were up compared with the control group, indicating a rebound effect after individuals ended their focus on suppression. Additionally, participants can have great difficulty maintaining suppression when placed under a cognitive load; Wegner and Erber (1992) found that suppressed thoughts paradoxically become more accessible when participants were asked to complete a time-pressured task or a color-word interference task. Finally, some research suggests attempts to maintain thought suppression increase the frequency of that thought even in the absence of a cognitive load (e.g., Lavy & Van den Hout, 1990).

These experimental findings have been linked to clinical phenomena. For example, Wenzlaff and Bates (1998) found that, when placed under a cognitive load, depressed individuals produce more negative statements and fewer positive statements compared to non-depressed individuals. In contrast with Lavy and Van den Hout's (1990) findings, this difference only occurred when placed under a cognitive load. The researchers argue that these results suggest a tendency among depressed individuals to use thought suppression in an effort to eliminate unwanted thoughts. In sum, thought suppression has been found to relate to substance cravings, pain, trauma memories, obsessive compulsive disorder, and depression (Wenzlaff & Wegner, 2000).

Although acceptance is a central process in Acceptance and Commitment Therapy, it is not unique to this model. Other modern behavioral therapies, such as Dialectical Behavior Therapy (Linehan, 1993) and Integrative Behavioral Couple

Therapy (Jacobson & Christensen, 1996) also strongly emphasize the importance of balancing acceptance with change. Additionally, many humanistic therapists also have promoted self-acceptance and acceptance of emotional experiences as key therapeutic processes (e.g., Greenberg & Safran, 1989; Rogers, 1955).

Studies have shown that acceptance is a key component of therapeutic change in Acceptance and Commitment Therapy. Changes in acceptance have been found to mediate outcomes in the treatment of workplace stress (Bond & Bunce, 2000), diabetes management behaviors (Gregg, Callaghan, Hayes, & Glann-Lawson, 2007), smoking cessation (Gifford et al., 2004), the reduction of prejudice (Lillis & Hayes, 2007), quality of life in seizure patients (Lundgren, Dahl, & Hayes, 2008), weight loss (Lillis, Hayes, Bunting, & Masuda, 2009), and in a mixed-diagnosis effectiveness study (Lappalainen et al., 2007). These results suggest that changes in acceptance do indeed play a role in changes in clinical outcome, and that increased acceptance at least partially drives therapeutic change.

Measures of acceptance have been found to be associated with a variety of clinically relevant measures. Hayes et al. (2006) conducted a meta-analysis on 32 studies, including 6628 participants, to investigate the relations between a particular measure of acceptance (the Acceptance and Action Questionnaire) and other measures of clinical interest. They found that this measure of acceptance is correlated with measures of depression ( $r = 0.50$ ), anxiety ( $r = 0.54$ ), general mental ill-health ( $r = 0.53$ ), and the probability of having a psychiatric disorder ( $r = 0.40$ ). These results indicate that acceptance is highly relevant when conceptualizing and treating a variety of psychiatric problems. Additionally, in a study of its construct validity, acceptance was found to be

distinct from the more established processes of reappraisal and perceived emotional control, indicating that the process of accepting is distinct from the process of changing one's thoughts (Kollman, Brown, & Barlow, 2009).

### Present Moment Awareness

ACT proposes that present moment awareness is an important part of psychological flexibility, and that many therapy clients become so fixated on past or future narratives that they pay little attention to present moment processes. Like acceptance, present moment awareness shares some conceptual similarities with the concept of mindfulness.

Mindfulness meditation is the practice of using focused, detached observation to gain purposeful, present moment awareness and to prevent the mind from drifting. While engaging in mindfulness meditation, both physical and mental experiences are noticed without judgment or struggle, and no internal experience is afforded particular importance over any other (Kabat-Zinn, 1982). This practice originated in the Mahayana Buddhist Zen tradition, and was initially used by providers of Western medicine to reduce stress (Goleman & Schwartz, 1976) and chronic pain (Kabat-Zinn, 1982).

Mindfulness-Based Stress Reduction (MBSR) has been developed as a structured group intervention that uses principles of mindfulness to reduce stress (Kabat-Zinn, 2009); a meta-analysis by Grossman, Niemann, Schmidt, and Walach (2004) has been found that this approach is effective in improving both mental wellbeing (e.g., depression, anxiety, and coping styles) and physical wellbeing (e.g., medical symptoms, physical pain, physical impairment, and quality of life). In all, this meta-analysis found an overall  $d$  value of 0.54 ( $N = 771$ ) for controlled studies examining mental health

variables and a  $d$  value of 0.53 ( $N = 203$ ) for controlled studies examining physical health variables. When examining pre-post (uncontrolled) studies, they found a  $d$  value of 0.50 ( $N = 894$ ) for mental health variables and a  $d$  value of 0.42 ( $N = 466$ ) for physical health variables.

Mindfulness practice has also been used to enhance cognitive therapy for depression, integrated into Mindfulness-Based Cognitive Therapy (MBCT). The creators of MBCT argue that mindfulness practice can prevent relapse of depression following cognitive therapy by giving clients additional tools to notice negative thoughts and to bring themselves back to the present moment (Teasdale, Segal, & Williams, 1995). In a meta-analysis of the efficacy of MBCT, Chiesa and Serretti (2011) found that the addition of mindfulness meditation practice to standard cognitive approaches reduces the rate of relapse in individuals suffering from depression compared with treatment as usual ( $OR = 0.36$ ,  $N = 326$ ). In another meta-analysis, Piet and Hougaard (2011) similarly found that, in a combined sample size of 593, there was a risk reduction of 43% when using MBCT for individuals with at least three depressive episodes. This finding, however, was not obtained for individuals with a history of one or two depressive episodes, suggesting that MBCT is particularly useful for individuals with a more extensive history of depression.

There is some preliminary evidence that mindfulness processes mediate treatment outcomes in ACT interventions. Forman, Herbert, Moitra, Yeomans, and Geller (2007) found that a measure of “acting with awareness” mediated outcomes for an ACT intervention for depression and anxiety, whereas measures of “observing” and “describing” mediated outcomes for Cognitive Therapy. These results suggest that

mindfulness is important for both ACT and CT, but that different facets of mindfulness might be more important for each.

Measures of mindfulness have been found to be related to external variables. In a meta-analysis, Giluk (2009) investigated the relation between mindfulness, Big Five personality traits, and affect. She found that mindfulness was particularly related to neuroticism ( $\rho = -0.58$ ), negative affect ( $\rho = -0.51$ ), positive affect ( $\rho = 0.41$ ), and conscientiousness ( $\rho = 0.44$ ), with moderate, but still significant relationships with agreeableness ( $\rho = 0.30$ ), openness ( $\rho = 0.20$ ), and extraversion ( $\rho = 0.15$ ). These results indicate that levels of mindfulness are linked to clinically and functionally relevant processes.

### Defusion

The originators of ACT coined the term “defusion” to refer to the ability to recognize an unwanted thought as an ongoing mental and verbal process. Unlike traditional cognitive behavioral therapy, ACT does not attempt to change or to refute unwanted thoughts; rather, the goal is to recognize the thought as an example of mental language that has no intrinsic truth or falsity, and that may be observed without being taken literally. Thus, an individual becomes “fused” with a thought if he or she believes that it is a literal representation of the world; in ACT, the therapeutic goal is therefore to reduce the believability of unhelpful thoughts, rather than to reduce the frequency or to change the content.

Fusion/defusion has been found to be a mediator of change in some ACT studies. For example, the believability (but not the frequency) of depressive thoughts was found to mediate outcome for ACT, but not for CBT, in a study of depressed patients (Zettle &

Hayes, 1986; reanalyzed by Hayes et al., 2006). Similarly Varra, Hayes, Roget, and Fisher (2008) found that an ACT intervention to effect behavior change in substance abuse counselors was mediated by believability of barriers. Similarly, Hayes, Bissett et al. (2004) found that believability of thoughts mediated an ACT intervention targeting stigma and burnout in counselors. Finally, Guadiano and Herbert (2006) found that, when providing an ACT intervention to patients with psychosis, hallucination believability, rather than frequency, mediated outcomes. These studies suggest that change in believability of thoughts, rather than change in frequency or content, play an important role in mediating the outcomes of ACT interventions.

Little research currently exists investigating the relation between cognitive fusion and measures of psychopathology and functioning. However, Gillanders et al. (2013) found that a measure of cognitive fusion was correlated with the Beck Depression Inventory ( $r = 0.69$ ), the Center for Epidemiological Studies Depression Scale ( $r = 0.85$ ), the Symptom Checklist 90 General Severity Index ( $r = 0.62$ ), and the WHO Brief Quality of Life Scale ( $r = -0.45$ ). These results are preliminary, but suggest that cognitive fusion is related to measures of distress and function.

### Self-as-Context

ACT emphasizes the ability to flexibly change perspectives, forming a sense of self that goes beyond one's familiar thoughts, feelings, emotions, and memories. Becoming aware of the "I" that observes such mental experiences, rather than defining oneself in terms of them, is an important clinical goal. This self is the self-as-context, or the observing self. Because this observing self exists independently from mental content, it is constant and unchanging. Because it is the observer rather than the observed, self-as-

context “is difficult to describe or contact verbally...it cannot be experienced as an object because describing it would necessitate adopting a perspective on it that was not one’s own perspective, which is impossible” (Stewart, Villatte, & McHugh, 2012).

ACT interventions attempt to strengthen this sense of self through the use of experiential exercises. For example, Harris (2008) uses a series of mindfulness exercises to distinguish self-as-context from ongoing experiences (e.g., “notice what you’re thinking...[then] be aware that you’re noticing them.”). Metaphors can also be used to make self-as-context more accessible to the client. For examples, Hayes et al. (2012) uses a “chessboard metaphor” to illustrate facets of self, in which thoughts, feelings emotions, and memories are the pieces fighting one another on the chessboard, whereas the noticing self is the board itself.

Although few ACT studies examine self-as-context directly, at least one study suggests that ACT interventions that include self-as-context exercises such as those described above outperform ACT interventions that do not include such exercises (Williams, 2006). There are currently no measures explicitly designed to assess patients’ abilities to take a self-as-context perspective. In addition, compared with other ACT processes, there is little research on self-as-context.

### Values

ACT emphasizes helping clients move towards valued areas of life. “Values,” in ACT terms, refer to verbally constructed, freely chosen life domains, such as family, friendship, work, leisure, and education that clients find personally meaningful. Identifying a client’s values is an important part of the ACT therapeutic process.

Within an ACT framework, interventions designed to enhance clients' contact with values have been found to have positive clinical effects. For example, ACT values interventions have been found to be effective in increasing pain tolerance. Páez-Blarrina et al (2008) divided 30 participants into three conditions: the first group received an ACT-consistent values intervention, the second group received an intervention that emphasized the importance of avoiding pain, and the third received no intervention. These researchers found that seven of ten participants in the values group could tolerate maximum pain, whereas only one of ten participants in the avoidance intervention group and two of ten in the control group could do the same. Similarly, in a study of 171 pain patients, Vowles and McCracken (2008) investigated the efficacy of values interventions for chronic pain. They found that changes in values-based action during follow-up is correlated with changes in pain intensity ( $r = -0.30$ ), depression ( $r = -0.41$ ), physical disability ( $r = -0.39$ ), and psychosocial disability ( $r = -0.40$ ).

Additionally, values articulation exercises have been found to have a variety of positive effects. In a study of 243 African American and Caucasian middle school students, Cohen, Garcia, Apfel, and Master (2006) investigated the use of an exercise to elicit values from students. They found that minority students who were prompted to articulate their values had better academic performance compared with minority students who wrote about and articulated values that they did not rate highly. In a similar study, Miyake et al. (2010) investigated a values clarification intervention in 399 undergraduate physics students. They found a narrowed gender gap for students who received the intervention, and that female students who received the intervention increased from a C average in the class to a B average.



In another study of values affirmation exercises, Logel and Cohen (2012) conducted a study on 26 overweight and 19 normal weight individuals who expressed dissatisfaction with their weight. Half participated in a values affirmation exercise, in which they wrote about personally-relevant values unrelated to weight loss. Control participants wrote about values that they did not rate highly. Individuals who participated in this exercise lost significantly more weight ( $d = 0.90$ ) at 2.5 month follow-up compared with participants in the control condition.

Cresswell et al. (2005) studied the effect of values affirmation exercises on stress responses in 85 research participants. Participants were asked to write about either an important or an unimportant value to them. Participants were then exposed to a stressful situation by being asked to give a speech. It was found that individuals in the active condition had significantly lower levels of cortisol ( $\eta^2 = 0.07$ ) compared with participants in the control condition. This study suggests that physiological stress markers can be reduced with a values articulation exercise.

Finally, Lomore, Spencer, and Holmes (2007) investigated the effects of a values exercise on romantic relationships. In their study on 45 partnered women, they found that, among the participants with low self-esteem, an intervention clarifying shared values with one's partner increased feelings of love and regard for one's partner. Values interventions may therefore be useful in couple interventions.

An emphasis on values is not unique to ACT. The existential therapist Viktor Frankl strongly emphasized "meaning," or purpose, in his psychotherapeutic approach. Frankl's logotherapy implicates existential anxiety, or lack of meaning, as a major cause of neurotic disorders, and suggests that filling the client's existential vacuum, helping

him or her find meaning, is an important part of treatment (Frankl, 1985). Frankl's emphasis on searching for personal, individualized meaning is comparable to ACT's emphasis on valuing (Sharp, Schulenberg, Wilson, & Murrell, 2004). Likewise, Carl Rogers suggested that choosing one's personal values freely, rather than valuing due to the influence of others, is the mark of a psychologically "mature" individual (Rogers, 1964). This emphasis on freely chosen values closely mirrors ACT's conceptualization. Motivational Interviewing also makes use of valuing by using a client's individual values to foster motivation and behavior change (Hettema, Steele, & Miller, 2005). Finally, in addition to ACT, other modern CBT approaches have emphasized the importance of values. Some Behavioral Activation (BA) protocols, for instance, share with ACT an emphasis on values, using values assessment to create and guide activation assignments in depressed individuals (Kanter et al., 2010).

Preliminary investigation of a measure of valued living indicates that valued living is negatively correlated with measures of experiential avoidance ( $r = -0.14$ ), depression ( $r = -0.26$ ), anxiety ( $r = -0.14$ ), hostility ( $r = -0.20$ ), and somatization ( $-0.19$ ); it is positively correlated with measures of functioning ( $r = 0.13$ ) and mental health ( $r = 0.23$ ) (Wilson, Sandoz, Kitchens, & Roberts, 2010). Similarly, a study of individuals with chronic pain showed that measures of values discrepancies and values success were significantly correlated with measures of pain-related depression (success:  $r = -0.45$ ; discrepancy:  $r = 0.38$ ), anxiety (success:  $r = -0.29$ ; discrepancy:  $r = 0.33$ ), physical disability (success:  $r = -0.30$ ; discrepancy:  $r = 0.26$ ), and psychosocial disability (success:  $r = -0.47$ ; discrepancy:  $r = 0.39$ ) (McCracken & Yang, 2006).

## Committed Action

The ultimate goal of ACT is to help clients take value-directed actions.

Committed Action refers to the client's ability to commit to valued change and to take actions towards it. The other ACT processes, such as acceptance and mindfulness, serve to help them maintain this movement when mental barriers, such as anxiety, arise.

Committed Action interventions borrow heavily from traditional behavior therapy approaches such as exposure and behavioral activation, as ACT encourages values-based, non-avoidant action by fostering greater acceptance, defusion, and mindfulness. Hayes et al. (2013) argue that, although studies have shown that ACT interventions that do not include behavioral activation or exposure interventions do show some efficacy (e.g., Twohig, Hayes, & Masuda, 2006; Twohig et al., 2010), such an approach tends to “peel ACT away from its own model.” Rather, they argue that comparisons between standard behavioral interventions and full ACT interventions provide a more useful comparison.

For instance, researchers have found a greater tendency for individuals to behaviorally engage in a fear-inducing situation if they had been trained in acceptance and mindfulness techniques rather than in relaxation techniques. For example, in a study of 60 individuals with panic disorder, Levitt, Brown, Orsillo, and Barlow (2004) divided participants into three groups; the first group received a brief ACT-based intervention, the second group received an intervention encouraging them to try to gain control over uncomfortable feelings by changing their thoughts, and the third group received no intervention. All participants then participated in a CO<sub>2</sub> breathing challenge in order to induce panic-like symptoms. Participants who received the brief ACT intervention reported less subjective distress when controlling for resting levels of distress ( $f^2 = 0.16$ )

and a greater willingness to engage in another, similar task ( $\eta^2 = 0.12$ ). In a very similar study, Eifert and Heffner (2003) investigated a sample of 60 participants with high levels of anxiety sensitivity. One third of the participants were given instruction on mindfulness and willingness, one third received instruction in relaxation and controlled breathing, and one third received no clinical intervention. All were then given a series of CO<sub>2</sub> breathing tasks. It was found that the participants who received the ACT-consistent intervention began each CO<sub>2</sub> breathing task more quickly compared with the other groups ( $\eta^2 = 0.26$ ) and were more likely to return for additional sessions ( $\eta^2 = 0.20$ ). These results indicate greater behavioral engagement for individuals who received ACT interventions, indicating that other ACT-relevant processes are important in fostering non-avoidant coping and committed action.

### Potentially Related Constructs and Measures

In addition to the processes discussed above, a number of psychological constructs have been proposed that relate to how individuals respond or react to their suffering. Because ACT emphasizes changing one's response to suffering, rather than the suffering itself, these constructs may be related to the ACT Hexaflex processes, although they do not come from the ACT tradition.

#### Anxiety Sensitivity

Anxiety Sensitivity refers to an individual's belief that anxiety has negative consequences (Reiss, Peterson, Gursky, and McNally, 1986). This "fear of fear" was proposed to be important to the development of panic disorder and other anxiety disorders. Because this construct focuses on an individual's beliefs about his or her symptoms, it may be hypothesized that it relates to the ACT process of cognitive

defusion, which broadly has to do with individuals' interpretation of unwanted mental experiences. On the other hand, anxiety sensitivity may be a narrower construct than defusion, as it focuses entirely on fear processes.

In a meta-analysis, Naragon-Gainey (2010) found that anxiety sensitivity is most strongly related to Panic Disorder ( $\rho = 0.60$ ), Generalized Anxiety Disorder ( $\rho = 0.58$ ), and Posttraumatic Stress Disorder ( $\rho = 0.54$ ), and is also highly related to other internalizing disorders, such as Social Phobia ( $\rho = 0.49$ ), Obsessive Compulsive Disorder ( $\rho = 0.49$ ), Depression ( $\rho = 0.46$ ), Agoraphobia ( $\rho = 0.45$ ), and Specific Phobia ( $\rho = 0.40$ ). This researcher also found that anxiety sensitivity has incremental validity in predicting most of these disorders (with the exception of OCD) above and beyond the predictive power of trait neuroticism. Anxiety sensitivity may therefore be an important contributor to the comorbidity between these internalizing disorders, as well as an important risk factor for the development of these disorders. Furthermore, anxiety sensitivity can be reduced via cognitive behavioral therapy (Smits, Berry, Tart, & Powers, 2008), suggesting the possibility that the reduction of anxiety sensitivity may mediate the treatment of these disorders.

### Distress Tolerance

Distress Tolerance refers to one's ability to tolerate negative emotional states; Simons and Gaher (2005) suggest that this construct includes the ability to tolerate aversiveness, inability to accept distress, avoidant behaviors in response to distress, and inability to mentally disengage from feelings of distress. This construct appears to have commonalities with the ACT process of acceptance, as both relate to one's ability to function while experiencing unwanted emotional and mental experiences. However, it

may be argued (e.g., Wilson & Dufrene, 2010) that acceptance involves a more open, willing stance compared with distress tolerance.

It has been found that intolerance of distress is a risk factor or a maintenance factor for a various symptoms of psychopathology because such an intolerance would cause individuals to use avoidant, maladaptive coping strategies to reduce feelings of distress (Leyro, Zvolensky, & Bernstein, 2010). Distress tolerance has been found to be an important process in the ability of individuals with substance use disorders to abstain, as sobriety in this population requires an ability to tolerate feelings of distress. For instance, in a study of 89 individuals with a history of drug use, Daughters, Lejuez, Kahler, Strong, and Brown (2005) found a correlation of 0.27 between abstinence duration and the ability to sit for a lengthy and stressful computer task.

Additionally, Linehan's (1993) model of borderline personality disorder hypothesizes that low distress tolerance is key to the development of this disorder, as it has been found that individuals with a diagnosis of borderline exhibit lower levels of distress tolerance compared to the general population. In a study comparing individuals with a diagnosis of borderline ( $n = 17$ ) with normal controls ( $n = 18$ ), Gratz, Rosenthal, Tull, Lejuez, and Gunderson (2006) found that, when asked to complete a stressful computer-based task, individuals with a borderline diagnosis were significantly more likely to terminate the task early (24% versus 0%), and were less likely to report a willingness to engage in another, similar task (59% versus 89%). They also spent significantly less time on the task before terminating ( $\eta_p^2 = 0.14$ ).

The enhancement of distress tolerance is a key goal of many therapies. Dialectical Behavior Therapy (Linehan, 1993) identifies increasing distress tolerance as an important

part of treatment. Additionally, it has been suggested (e.g., Leyro et al., 2010) that many other third wave behavioral treatments, including ACT, Mindfulness-Based Cognitive Therapy, Functional Analytic Psychotherapy, and Integrative Behavioral Couple Therapy, directly or indirectly target distress tolerance.

### Discomfort Intolerance

Discomfort Intolerance refers to one's ability to tolerate uncomfortable bodily sensations; the originators of this construct hypothesize that it is relevant to the development of panic disorder, other anxiety disorders, and psychosomatic problems (Schmidt, Richey, & Fitzpatrick, 2006). This intolerance of unpleasant physical sensations may be related to defusion, as both constructs relate to one's interpretation of unwanted internal events.

Discomfort intolerance is thought to be particularly related to panic disorder. Schmidt et al. (2006) found that individuals with a diagnosis of panic disorder had higher levels of discomfort intolerance compared with both normal and anxious controls. The authors hypothesize that intolerance of physical discomfort leads to interoceptive avoidance and to a fear of the physical sensations of fear. These authors also found that nonclinical individuals reporting higher levels of distress intolerance ( $n = 44$ ) were more reactive and reported more symptoms of panic in a high CO<sub>2</sub> environment after controlling for baseline levels of anxiety (SUDs:  $R^2 = 0.10$ ; Agoraphobic Cognitions:  $R^2 = 0.14$ ) (Schmidt, Richey, Cromer, & Buckner, 2007). Discomfort intolerance may also be related to substance use. In a study of 265 participants, Buckner, Keough, and Schmidt (2007) found that discomfort intolerance moderates the relationship between depression

and substance coping, with depressed individuals with high discomfort intolerance being more likely to have substance-related problems ( $\beta = -0.15$ ).

### Coping Styles

Coping styles refer to strategies used by individuals when responding to stress. The exact number of coping strategies that are available tend to be measure specific. For example, some research has divided coping into two broad categories: problem-focused coping, which focuses on changing the environment, and emotion-focused coping, which focus on regulating or avoiding stressful emotions (e.g., Folkman & Lazarus, 1980). Other studies posit a larger variety of more narrowly defined coping styles; for example, Folkman, Lazarus, Gruen, and DeLongis (1986) measure eight coping styles, consisting of confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal.

A great deal of research exists on the correlates of different coping strategies. In a meta-analysis examining the relations between coping styles and the Big Five personality traits, Connor-Smith and Flachsbart (2007) found that active, engaged coping is weakly correlated with extraversion ( $r = 0.15$ ) and openness ( $r = 0.10$ ), whereas avoidant, disengaged coping is correlated with neuroticism ( $r = 0.27$ ) and agreeableness ( $r = -0.13$ ). Conscientiousness was associated with both engaged ( $r = 0.11$ ) and disengaged ( $r = -0.15$ ) coping.

Research shows that maladaptive coping styles are also related to measures of psychopathology. In a meta-analysis, Aldao, Nolen-Hoeksema, and Schweizer (2010) found that overall psychopathology was associated with rumination ( $r = 0.49$ ), avoidance ( $r = 0.38$ ), suppression ( $r = 0.34$ ), problem solving ( $r = -0.31$ ), and reappraisal ( $r = -0.14$ ).



These results were found across a variety of specific psychopathologies. For example, avoidant coping was correlated with anxiety ( $r = 0.37$ ), depression ( $r = 0.48$ ), eating disorders ( $r = 0.18$ ), and substance use disorders ( $r = 0.26$ ), whereas rumination was correlated with anxiety ( $r = 0.42$ ), depression ( $r = 0.55$ ), eating disorders ( $r = 0.26$ ), and substance use disorders ( $r = 0.21$ ). In a follow-up study, these researchers (Aldao & Nolen-Hoeksema, 2012) assessed coping in a sample of 1,317 research participants, and re-assessed them at a one-year follow-up ( $n = 1,132$ ). They found that maladaptive coping strategies during Time 1 significantly predicted a psychopathology composite at Time 2 ( $r = 0.41$ ). Maladaptive coping strategies remained a significant predictor of Time 2 psychopathology even when accounting for Time 1 psychopathology ( $\beta = 0.10$ ). Overall, these studies demonstrate that coping styles are significantly related to psychopathology, and may have causal predictive power.

In another meta-analysis examining the effectiveness of avoidant and non-avoidant coping, Suls and Fletcher (1985) found important differences between short-term and long-term outcomes. Avoidant coping tended to be more effective for short-term outcomes, whereas non-avoidant coping tended to be more effective in the long term. When non-avoidant coping was broken down into sensory monitoring versus emotional monitoring, sensory monitoring was clearly superior to avoidance. These results are consistent with ACT theory, which indicates that avoidance works in the short term but is ineffective in the long term, and posits a difference between mindfulness (similar to this study's sensory monitoring) and emotional rumination.

## General Discussion of Study-Relevant Constructs and Processes

In general, limited research has been done examining the relations among many of the aforementioned processes. Although some of the non-ACT related processes (e.g., distress tolerance and anxiety sensitivity) have a good deal of research examining specificity and incremental validity, most measures of ACT processes have almost no such research.

Gloster, Klotsche, Chaker, Hummel, and Hoyer (2011) tested whether a measure of acceptance/experiential avoidance has incremental power over measures of depression, anxiety sensitivity, and neuroticism in explaining measures of functioning and impairment. Across four samples (total  $n = 1167$ ), they found that the acceptance did indeed explain unique variance in impairment and functioning above and beyond the other measures, with  $\Delta R^2$  values ranging from 0.024 to 0.108. These results suggest that acceptance/avoidance might help to explain some kinds of dysfunction above and beyond other, more established measures.

Conversely, Wheaton, Berman, and Abramowitz (2010) administered measures of acceptance/experiential avoidance and anxiety sensitivity to a sample of 636 research participants in order to determine whether these process measures are associated with a measure of health anxiety. They found that health anxiety is correlated with both experiential avoidance ( $r = -0.28$ ) and facets of anxiety sensitivity (physical anxiety sensitivity:  $r = 0.45$ ; social anxiety sensitivity: 0.32; cognitive anxiety sensitivity:  $r = 0.25$ ). However, the experiential avoidance measure added no statistically significant explanatory power after accounting for anxiety sensitivity ( $\Delta R^2 = 0.02$ ;  $P > 0.05$ ).

Conversely, anxiety sensitivity had significant explanatory power after accounting for experiential avoidance ( $\Delta R^2 = 0.16$ ). These researchers suggest that these results provide evidence for the role of maladaptive beliefs, rather than experiential avoidance, in the development of health anxiety.

Most published ACT measures are at least somewhat related to each other; of particular note, Gillanders et al. (2013) found that their Cognitive Fusion Questionnaire (CFQ), a measure of defusion, had a correlation of 0.80 with the Acceptance and Action Questionnaire-II (AAQ-II), a measure of experiential avoidance. The authors suggested that this may be due either to item overlap or to the fact that both questionnaires are meant to measure different facets of psychological flexibility. These results suggest that some of the processes under discussion may be difficult to differentiate using self-report questionnaires.

Patients and research participants may also have a difficult time in practice distinguishing between measures of avoidance and measures of distress. In a study of 385 healthy research participants and 288 psychiatric outpatients, Gámez, Kotov, and Watson (2010) found that participants make no distinction between avoidance and distress, even when being interviewed. Correlations between self-reported distress and avoidance were 0.79 for healthy participants and 0.91 for outpatients, and did not significantly differ from 1.0. They also found that symptoms of avoidance had no incremental value in explaining psychopathology after accounting for self-reported distress. These results suggest that measures of avoidance will likely have a great deal of overlap with measures of distress, and that they may be difficult to differentiate.

McCracken and Keogh (2009) conducted a study on 125 pain patients to investigate the relation between anxiety sensitivity, emotional distress, dysfunction, and the ACT processes of acceptance, mindfulness, and values. They found that, after accounting for pain, anxiety sensitivity was significantly associated with depression ( $\Delta R^2 = 0.33$ ), pain-related anxiety ( $\Delta R^2 = 0.26$ ), physical disability ( $\Delta R^2 = 0.13$ ), psychosocial disability ( $\Delta R^2 = 0.34$ ), and number of doctor visits ( $\Delta R^2 = 0.14$ ). In a second regression analysis, these researchers first added pain, then measures of ACT-related processes (acceptance, mindfulness, and values), followed by anxiety sensitivity. The ACT-related measures added significant explanatory value over pain intensity (depression:  $\Delta R^2 = 0.51$ ; pain-related anxiety:  $\Delta R^2 = 0.45$ ; physical disability:  $\Delta R^2 = 0.23$ ; psychosocial disability:  $\Delta R^2 = 0.49$ ; doctor visits:  $\Delta R^2 = 0.13$ ). After accounting for the ACT measures, anxiety sensitivity was no longer significantly associated with physical disability, but had a small incremental value for the other variables (depression:  $\Delta R^2 = 0.05$ ; anxiety:  $\Delta R^2 = 0.04$ ; psychosocial disability:  $\Delta R^2 = 0.05$ ; doctor visits:  $\Delta R^2 = 0.08$ ). These results indicate significant overlap in the explanatory power of these processes.

Similarly, Karekla and Panayiotou (2011) tested whether a measure of acceptance/experiential avoidance has incremental power over the subscales of the brief COPE (Carver, 1997), a measure of coping styles, in explaining psychological distress and wellbeing. Using a sample of 197 research participants, these researchers conducted an exploratory factor analysis of the items from the AAQ-II and the COPE. They found that most of the AAQ-II items loaded with the COPE items measuring maladaptive coping, indicating that these two processes may not be distinguishable. They found,

however, that experiential avoidance did provide some significant incremental value when explaining measures of perceived stress ( $\Delta R^2 = 0.11$ ), physical quality of life ( $\Delta R^2 = 0.07$ ), psychological quality of life ( $\Delta R^2 = 0.18$ ), social quality of life ( $\Delta R^2 = 0.14$ ), and environmental quality of life ( $\Delta R^2 = 0.11$ ), indicating that, while experiential avoidance is highly related to maladaptive coping, it may offer some incremental value.

The relation between anxiety sensitivity and psychopathology may be moderated by ACT-relevant processes. In a study of 248 research participants, Vujanovic, Zvolensky, Bernstein, Feldner, and McLeish (2007) found that anxiety sensitivity is strongly associated with a variety of external variables; some of these relationships were moderated by a measure of mindfulness (anxious arousal:  $\beta = -0.64$ ; agoraphobic cognitions:  $\beta = -0.61$ ). Significant moderating effects were not found for anhedonic depression or for body vigilance. These results indicate that low levels of mindfulness strengthen the relationship between anxiety sensitivity and certain measures of psychopathology. In a follow-up study using the same sample, Kashdan, Zvolensky, and McLeish (2008) investigated the relationship between anxiety sensitivity and a measure of emotional non-acceptance. They found that non-acceptance moderated the relationships between anxiety sensitivity and anxious arousal ( $\beta = 0.19$ ) and worry ( $\beta = 0.13$ ), but not for agoraphobic cognitions. These researchers suggest that mindfulness and emotional acceptance may have a partial inoculation effect for individuals with high anxiety sensitivity.

The relationship between discomfort intolerance and anxiety sensitivity has also been investigated. Schmidt et al. (2007) found that, in a study of 44 research participants, discomfort intolerance provides incremental value in explaining fear in a lab-based task

after taking anxiety sensitivity into account ( $\beta = 0.39$ ). Similarly, in a study of 216 participants, Bonn-Miller, Zvolensky, and Bernstein (2009) found that discomfort intolerance has small but statistically significant incremental value over anxiety sensitivity ( $\beta = 0.15$ ) in explaining SUDs and physical panic in a fear-inducing lab-based task. However, a follow-up study of the same sample (Kutz, Marshall, Bernstein, & Zvolensky, 2010) found that neither discomfort intolerance nor distress tolerance had incremental power over anxiety sensitivity in explaining symptoms of panic. These studies show mixed results in their investigations of the utility of discomfort intolerance over anxiety sensitivity as a risk factor for panic.

In another study, Bernstein, Zvolensky, Vujanovic, and Moos (2009) conducted an item level exploratory factor analysis on measures of distress tolerance, discomfort intolerance, and anxiety sensitivity ( $n = 229$ ). They found a three-factor model emerged, indicating that these three processes are distinguishable. Anxiety sensitivity and distress tolerance were found to be related to each other as lower-order factors of a single, higher-order tolerance/sensitivity factor. They did not find that discomfort intolerance was highly related to this construct. A measure of negative affectivity was highly related to this higher-order factor ( $r = -0.47$ ) as well as to the lower-order distress tolerance factor ( $r = -0.43$ ) and anxiety sensitivity factor ( $r = 0.37$ ). It was not significantly correlated with the discomfort intolerance factor. Overall, these results suggest that anxiety sensitivity and distress tolerance may not represent entirely distinct processes.

In another study, Keough, Riccardi, Timpano, Mitchell, and Schmidt (2010) examined the relationship between anxiety symptoms, anxiety sensitivity, and distress tolerance in a sample of 418 participants. They found that distress tolerance had small but

significant incremental power above and beyond anxiety sensitivity when explaining symptoms of OCD ( $\beta = -0.11$ ), panic ( $\beta = -0.11$ ), worry ( $\beta = -0.31$ ), and social anxiety ( $\beta = -0.15$ ). In a similar study, Timpano, Buckner, Richey, Murphy, and Schmidt (2009) examined the relationship between anxiety sensitivity, distress tolerance, and hoarding in three samples (total  $n = 745$ ). All were interrelated, but distress tolerance seemed to play a less important role in hoarding in individuals with low anxiety sensitivity, but increases vulnerability to hoarding in individuals with high anxiety sensitivity (interaction  $\beta = -0.16$ ), indicating that low distress tolerance is associated with hoarding only when anxiety sensitivity is high and that the interpretation of anxiety symptoms as dangerous is important to the development of hoarding behaviors. These results further suggest that anxiety sensitivity and distress tolerance are distinguishable, despite being highly related.

### Psychometrics and Functional Contextualism

The creation and study of ACT-specific questionnaire measures has been hampered by the different philosophies of science that are said to underlie ACT and psychometric theory; in particular, it has been argued that psychometric theory is ultimately a mechanistic approach to understanding human behavior, whereas ACT is a functional contextualist approach (Hayes, Barnes-Holmes, & Wilson, 2012). In order to be able to agree upon the interpretation of ACT measures, a discussion of this philosophical difference is necessary.

Stephen Pepper has suggested that science is rooted in one of several world hypotheses or world views, which guide scientific research and scientific development (Pepper, 1942; Hayes, Hayes, & Reese, 1988). These world views are implicit in any scientific investigation, although they are rarely mentioned or explicitly considered.

Pepper discussed several world hypotheses that commonly guide science; for the purposes of this discussion, the two most important are mechanism and contextualism. Each of these can be said that be guided by a “root metaphor” that guides our understanding of the world (Hayes et al., 1988).

Mechanism’s root metaphor is the machine. A scientist guided by a mechanistic world view seeks to describe a phenomenon of interest by investigating how the relationships between its parts contribute to a unified whole. Although the parts may interact, these interactions do not change the nature of the parts. Mechanists strive to create models of a phenomenon of interest, and much of their work involves testing and refining these models based on how well they correspond with reality. A mechanistic scientific theory is “true” if this correspondence continues to exist as new facts emerge in the world. Mechanistic theories are therefore evaluated using an ontological framework. A mechanistic theory’s truth criterion is ontological; a theory is said to be “true” if it accurately models or represents reality.

In psychology, mechanistic theories are used to model psychological constructs. Although most psychologists do not explicitly discuss or consider the philosophy of science underlying their work, much of psychological research is mechanistic. Biglan and Hayes (1996) discuss a number of areas of psychological research that has an underlying mechanistic framework. For example, they use Bandura’s (1977) self-efficacy theory as a representative mechanistic psychological theory. Self-efficacy theory suggests that changes in self-efficacy underlie individual differences in treatment outcomes, and it has in fact been found that responses to self-efficacy measures predict the effects of various treatments. Biglan and Hayes (1996) argue, however, that the theory is poorly suited to



guide the creation of new treatments, and is therefore mechanistic, descriptive, and ontological.

Contextualism's root metaphor is the ongoing act in context. A scientist guided by a functionalist perspective seeks to understand processes by understanding past and present contextual factors. Contextualists strive to create models that are functional, and that allow them to predict or influence the phenomena under investigation. A contextualist theory is "true" if it is functionally useful in this way. For this reason, contextualism is an a-ontological philosophy of science.

An example of a contextual theory is Isaac Newton's theory of universal gravitation. Newton did not hypothesize that gravity is a hypothetical construct that mechanistically "exists;" rather, he sought to model how physical bodies influence each other in order to be able to predict the motion of planets and other heavenly bodies. From an ontological, mechanistic perspective, Newton's theory was false, as Einstein later proved with his theory of relativity. From an a-ontological, contextualist perspective, Newton's theory was true, as it functionally allowed the scientists of the day to predict the movement of heavenly bodies. Newton's theory can be contrasted with the mechanistic theories of Ptolemy and Copernicus, which were purely descriptive, rather than predictive.

Biglan and Hayes (1996) suggest that behavior analysis is an example of a contextual psychological theory. Behavior analysis is ultimately the study of how contextual factors—particularly histories of reinforcement and punishment—influence behavior. This theory's goal is not to model psychological constructs, but to better

understand how to predict and influence behavior. Acceptance and Commitment Therapy has grown out of this older behavior analytic tradition (Hayes et al., 2011).

The originators of ACT argue that classic psychometric test theory assumes the ontological existence of the latent variable being measured. For example, Hayes et al. (2012) cite the work of Borsboom, Mellenbergh, and van Heerden (2003), who argue that the use and measurement of latent variables is difficult to justify without an ontological philosophical approach. Borsboom et al. (2003) offer three possible ways to interpret a latent variable. The first is to interpret such a variable as being a “numerical trick,” essentially a sum score that has no larger reality and that is merely a simple way to simplify data. The authors reject this interpretation because it requires the assumption that different item sets cannot measure the same latent variable, rendering psychological tests ungeneralizable. The authors’ second approach is to treat latent variables as human constructions; in this view, latent variables are essentially a fiction with no independent existence other than our perception. They object to this interpretation as well, arguing that, if there is no independent truth to a theory, any conclusion drawn from a latent variable must be as true as any other, and that therefore no hypothesis can be falsified. They therefore argue for a “realist” perspective, which assumes both that the underlying latent variable is a real construct and that our measure of the latent variable is an imperfect measure of a real phenomenon.

It may be, however, that hypothetical constructs do not necessitate the existence of a thing or an entity. MacCorquodale and Meehl (1948) define a hypothetical construct as a variable hypothesizing the existence of “an entity, process, or event which is not itself observed.” These hypothetical constructs are distinguished from abstractive

constructs, or intervening variables, which “merely abstract the empirical relationships [between variables]...[which] have no factual content surplus to the empirical functions they serve to summarize.” These definitions would seem to suggest that a test or measure could be indirectly assessing a process or event rather than an entity, and that this process or event could still be considered a hypothetical construct (rather than an intervening variable) if that process encompasses more examples than the test itself.

Hayes et al. (2012) suggest that some psychometric tests can be understood using a functional contextualist framework; for example, a measure with high internal consistency suggests that the different behaviors are under the same contextual control. These authors take as examples two items: “I feel sad” and “I withdraw from people.” From a contextualist perspective, these two behaviors correlate not because of the existence of an underlying hypothetical construct (depression) but because they are under the same contextual control (perhaps a combination of history, genetic vulnerability, and current life circumstances). If, due to therapy, these contextual controls weaken, the correlation between these two test items might decrease, causing a drop in coefficient alpha.

This formulation by itself, however, provides little guidance in the interpretation of *why* these particular processes are contextually related, and why they co-vary across individuals in a predictable manner. The answers to such questions would seem to be functionally important. Using the MacCorquodale and Meehl (1948) formulation described above, it seems clear that depression is a hypothetical construct rather than an intervening variable, as some portion of it exists beyond the processes directly measured by the questionnaire (e.g., other, unassessed behaviors, biological processes, etiological

factors, etc.). The contextual factors that cause individual differences in depression are part of this construct, even if they are not directly measured. A hypothetical construct, in functional contextualist terms, could then be said to be both a series of processes or events and the contextual or etiological factors that link them, and not necessarily a thing or entity. Referring to the construct of “depression” is therefore useful and consistent with the principles of contextualism, as it allows us to model these shared contextual relationships. The “construct” therefore represents real-life relationships between processes, and is not a human invention. A measure of internal consistency would therefore be interpreted as the extent to which the behaviors sampled by a questionnaire measure share common contextual factors at that moment.

Throughout this paper, standard psychometric approaches will be used, and language that is typically used in a mechanistic manner (e.g., “psychological constructs”) may be used. It should be understood that such approaches and terms are used for the sake of function, and that the scales and dimensions under discussion should best be understood as processes sharing contextual factors, rather than as entities or objects.

### Rationale for Current Study

Many of the aforementioned processes and constructs have been found to be highly related to each other. However, no study has yet tried to create a full structural model of ACT-related constructs. In the proposed study, a large number of questionnaires investigating these processes were administered in order to investigate the structure of these ACT constructs. This allowed the investigation into whether these constructs are distinguishable from one another, whether the actual factor structure corresponds with the Hexaflex model described above, and whether a hierarchical structure exists for these

constructs. The relationships among these constructs, and the relationships between these constructs and measures of psychopathology, personality, and functioning, were also investigated.

Further, some research exists that investigates the differential relationships between some of the aforementioned processes and other variables, such as psychopathology and functioning. However, no comprehensive study exists that includes all such processes in determining whether these measures have differential specificity or incremental validity over and above such constructs as anxiety sensitivity, distress tolerance, discomfort intolerance, or coping styles. The current study investigated the incremental value of the ACT process measures under investigation. This research will have treatment implications, as it is important to know which therapeutic process is most related to each type of problem or concern.

The results of this research will be valuable in both clinical and research settings for a number of reasons. First, it will help with scale selection. Clinicians and researchers often have limited time to administer assessment measures; it is likely, given the state of the literature, that psychologists are administering multiple ACT-relevant instruments that are essentially measuring the same process, while ignoring other measures that may sample relevant behaviors and processes. The current study's findings will provide guidance for instrument selection in such situations. Second, it will provide important information for future scale development. The development of new instruments in these domains has been hampered by imprecise knowledge of the exact nature of the processes and constructs underlying these measures. For this reason, it is probable that new process measures have been developed that have essentially duplicated previous measures. An

instrument or set of instruments that fully samples all ACT-relevant processes may be developed based on the structure uncovered in this research. Finally, this research may assist clinicians in selecting ACT-relevant measures that are most related to the processes under consideration.

### Specific Aims of Study

*Specific Aim 1.* I aimed to find the overall structure of the questionnaire measures that purport to measure the processes and constructs discussed above. I hypothesized that the scales and subscales measuring ACT processes will be part of a hierarchical structure, with a higher-order psychological flexibility factor and lower-order factors consisting of acceptance vs. avoidance, values, committed action, defusion, and present moment awareness. This hypothesis was consistent with the ACT model proposed by Hayes et al. (2011). I also hypothesized that values and committed action may not separate into distinct factors due to the small number of scales available to model these processes.

*Specific Aim 2.* I also aimed to determine whether the scales under consideration have differential relationships with other clinically relevant constructs, such as internalizing and externalizing psychopathology, personality traits, and functioning. I hypothesized that experiential avoidance/acceptance and cognitive fusion will relate to internalizing psychopathology, externalizing psychopathology, and neuroticism, as many of these constructs and processes have individually been found to be related to psychopathology. Consistent with the ACT hypothesis that a successful therapeutic outcome is related to valued living rather than a reduction of symptoms (Hayes et al., 2011), I hypothesized that values and committed action will show specificity to functioning.

*Specific Aim 3.* Third, I aimed to investigate the short-term test-retest reliability of the included measures. There has been little-to-no research on the short-term stability of ACT process measures. Because these measures often operationally define these processes in research settings, it would be fruitful to examine reliability over time. This allowed me to further measure to what extent these measures are differentiable; if the test-retest reliabilities are significantly lower than the correlations among the scales, this would indicate little scale specificity. This also allowed me to examine whether these ACT constructs are trait-like or state-like.

*Specific Aim 4.* I aimed to use item-level factor analysis on a subset of items to determine whether the six-factor ACT Hexaflex model of psychological flexibility can be recreated structurally, and whether ACT processes are differentiable in this way. Few questionnaires exist to measure values and committed action, and none exist to specifically measure self-as-context. I hypothesized that a five or six-factor model of psychological flexibility will emerge, with self-as-context possibly not emerging, given the difficulty measuring such a process using objective personality measures.

*Specific Aim 5.* I aimed to determine whether measures of ACT processes have incremental value in explaining psychopathology and functioning over and above measures of anxiety sensitivity, distress tolerance, discomfort intolerance, and coping styles. Little research has been done to test whether ACT processes are distinguishable from these other psychological processes. I hypothesized that ACT process measures will be distinguishable from these other, non-ACT processes, and will provide significant incremental value.

## CHAPTER II

### METHODS

#### Participants and Procedures

Participants in this study consisted of two samples: a sample of college students from the University of Iowa (T1 student sample; N = 485) and a community sample recruited through Amazon.com's Mechanical Turk system (MT sample; N = 345). A subset of the T1 student sample returned two weeks after completing the initial study to provide Time 2 data (T2 student sample, N = 342) in order to provide retest information. All participants completed online self-report measures.

University of Iowa Elementary Psychology students were recruited through the research pool website. Subjects were required to be 18 years of age or older to participate. Students who signed up for this study were directed to a set of online questionnaires on the REDCap survey system website hosted by the University of Iowa (Harris et al., 2009). Students who completed the online survey received one research credit towards a course requirement. The T1 student sample was 71% female with a mean and median age of 19. The self-reported racial makeup of this sample was as follows: 2 American Indian/Native American, 77 Asian, 19 Black or African American, 362 White or Caucasian, 0 Hawaiian or Pacific Islander, 15 multiracial, 10 did not report. Additionally, 29 participants self-identified as Hispanic or Latino of any race. 41 participants (8.5% of the total) reported a history of mental health or substance abuse treatment. The breakdown was as follows: 33 treated for depression, 5 for bipolar disorder, 14 for generalized anxiety disorder, 2 for posttraumatic stress disorder, 4 for obsessive compulsive disorder, 2 for panic disorder, 1 for social phobia, 7 for other



problems with fear or anxiety, 1 for alcohol use problems, 2 for drug use problems, 1 for borderline personality disorder, and 2 for some other disorder or psychiatric problem.

Two weeks after completing the Time 1 administration of the study, all student participants received an email asking them to participate in a second administration of the study for a second research credit towards their course requirement. Of these student participants, about 71% elected to participate in this Time 2 administration. This smaller subset of the student sample had a mean and median age of 19, and was 74% female. The self-reported racial makeup of the T2 sample was as follows: 1 American Indian/Native American, 47 Asian, 12 Black or African American, 267 White or Caucasian, 0 Hawaiian or Pacific Islander, 7 multiracial, 8 did not report. Additionally, 19 participants self-identified as Hispanic or Latino of any race. 29 participants (8.5% of the total) reported a history of mental health or substance abuse treatment. The breakdown was as follows: 24 treated for depression, 2 for bipolar disorder, 11 for generalized anxiety disorder, 1 for posttraumatic stress disorder, 3 for obsessive compulsive disorder, 4 for other problems with fear or anxiety, 1 for alcohol use problems, 2 for drug use problems, 1 for borderline personality disorder, and 1 for some other disorder or psychiatric problem.

Additionally, a community sample was recruited through Amazon.com's Mechanical Turk System. Mechanical Turk is a service that allows its members to choose among thousands of paid "microtasks." This service has been found by previous researchers to be an excellent source of high-quality data that is comparable to data collected from other community sources (see Paolacci, Chandler, & Ipeirotis 2010; Mason & Suri, 2011; Buhrmester, Kwang, & Gosling, 2011).

A total of 345 individuals completed at least part of the survey, and 301 individuals completed the entire survey. The sample was 52% male, and had a mean age of 33 and a median age of 30. The self-reported racial makeup of the MT sample was as follows: 9 American Indian/Native American, 189 Asian, 14 Black or African American, 122 White or Caucasian, 1 Hawaiian or Pacific Islander, 7 multiracial, 3 did not report. Additionally, 23 participants self-identified as Hispanic or Latino of any race. 22 participants (6.4% of the total) reported a history of mental health or substance abuse treatment. The breakdown was as follows: 17 treated for depression, 1 for bipolar disorder, 1 for schizophrenia, 3 for generalized anxiety disorder, 1 for obsessive compulsive disorder, 2 for social phobia, 6 for other problems with fear or anxiety, 4 for alcohol use problems, 2 for drug use problems, 2 for some other disorder or psychiatric problem.

### Study Measures

*The Acceptance and Action Questionnaire, version II (AAQ-II)* is a common ACT measure that was created primarily as a measure of avoidance versus acceptance (Hayes, et al., 2004), although it is ultimately meant to encompass different aspects of psychological flexibility (Hayes et al., 2006). The AAQ has been found to be related to a number of psychopathology-relevant constructs. In their review of the literature, Hayes et al. (2006) found that the AAQ is moderately-to-strongly related to psychopathology measures, including measures of depression, trauma, fear, and generalized anxiety. In all cases, low levels of acceptance (high levels of avoidance) were related to higher levels of psychopathology.

Bond et al. (2011) developed a revised version of the AAQ. *The AAQ-II* is a seven-item, one factor measure of experiential avoidance/psychological inflexibility that uses a seven-point Likert response scale. (Example item: “It seems like most people are handling their lives better than I am.”) These researchers found that the AAQ-II has improved reliability compared with the original AAQ; across six samples with a total sample size of 2,816, the average coefficient alpha was found to be 0.84, the average 3-month and 12-month test-retest reliabilities (investigated in a sample size of 583) were found to be 0.81 and 0.79, respectively (Bond et al., 2011). The relationship between the AAQ-II and other, external measures, such as depression and anxiety, remained essentially unchanged compared with the AAQ, with average correlations of 0.70 with the Beck Depression Inventory (N = 487), 0.61 with the Beck Anxiety Inventory (N = 206), 0.59 with the White Bear Suppression Inventory (N = 1,661), 0.61 with the DASS Depression Scale (N = 432), 0.49 with the DASS Anxiety Scale (N=432), 0.57 with the DASS Stress Scale (N = 432), 0.43 with the General Health Questionnaire-12 (N = 1,661), and 0.70 with the Symptom Checklist-90 Revised (N = 206), indicating good convergent validity; the measure was also able to predict future absences from work ( $r = 0.25$ ; N = 583), indicating the measure can predict behaviors longitudinally (Bond et al., 2011).

*The White Bear Suppression Inventory (WBSI)* is a 15-item measure of thought suppression that using a five-point Likert response scale (Wegner & Zanakos, 1994). (Example item: “I wish I could stop thinking of certain things.”) It was designed as a measure of thought suppression, which the authors hypothesized was related to obsessive thinking. Across five samples consisting of a total of 2,746 participants, the coefficient

alpha ranged from 0.87 to 0.89. In a follow-up study (N = 162), these researchers found test-retest reliabilities of 0.69, with time intervals ranging from three weeks to three months. They also found that the WBSI was moderately correlated with the Beck Depression Inventory (rs range from 0.44 to 0.52), the Maudsley Obsessive Compulsive Inventory (rs range from 0.38 to 0.40), the State-Trait Anxiety Inventory (r = 0.53), and the Anxiety Sensitivity Inventory (r = 0.49).

The WBSI has been used by ACT researchers as an additional measure of avoidance. The reduction of thought suppression is thought to mediate some of the gains from mindfulness-based therapy interventions (Bowen, Witkiewitz, Dillworth, & Marlatt, 2007), and is related to other measures of acceptance versus avoidance (Hayes et al., 2004; Bond et al., 2011; Gámez, Chmielewski, Kotov, Ruggero, & Watson, 2011). Bond et al. (2011) suggests that thought suppression is a specific kind of experiential avoidance, and that the WBSI is therefore measuring a narrower construct than the AAQ-II.

*The Multidimensional Experiential Avoidance Questionnaire (MEAQ)* is a 62-item measure of experiential avoidance that was designed as a measure of experiential avoidance that uses a six-point Likert response scale (Gámez et al., 2011). (Example item: “When a negative thought comes up, I immediately try to think of something else.”) It was designed to be a more comprehensive measure of avoidance than the AAQ or the AAQ-II. Whereas that AAQ is a unidimensional measure, the MEAQ is a six-factor measure consisting of behavioral avoidance, distress aversion, procrastination, distraction/suppression, repression/denial, and distress endurance. Across five samples

with a total sample size of 1,358, the scale-level coefficient alphas averaged 0.83, ranging from 0.76 to 0.90 (Gámez et al., 2011).

The authors found that these six scales are differentially related to various psychopathology measures, and that, as a whole, the MEAQ had better correlations with external variables than did the AAQ or the AAQ-II, and the partial correlations between the MEAQ scales and external variables, when controlling for the AAQ-II, were higher than the partial correlations between the AAQ-II and external variables when controlling for the MEAQ. Across two samples with Ns of 314 and 201, the total MEAQ has correlations of 0.66 and 0.74 with the AAQ-II and 0.54 and 0.56 with the WBSI, indicating good convergent validity. The authors suggest that, although the MEAQ is a more comprehensive measure of avoidance compared with the AAQ, the AAQ has come to be seen as a broader measure of psychological inflexibility in general, and that the two measures may be tapping into subtly different processes. Because it is a new measure, little follow-up research has yet been done with the MEAQ.

*The Mindful Attention Awareness Scale (MAAS)* is a unidimensional, 15-item scale measuring mindfulness, using a six-point Likert response scale (Brown & Ryan, 2003). (Example item: “I find myself doing things without paying attention.”) Across seven samples with a total sample size of 1,492, the coefficient alphas ranged from 0.80 to 0.87. The four-week test-retest reliability coefficient, conducted with a sample of 60 participants, was 0.81.

The authors suggest that mindfulness is an important and unique component of wellbeing; they found that their measure of mindfulness had moderate negative correlations with depression ( $r$ s range from -0.37 to -0.42), anxiety ( $r$ s range from -0.26

to -0.42), and neuroticism ( $r = -0.56$ ), and had moderate positive correlations with self-esteem ( $r$ s range from 0.36 to 0.50), emotional wellbeing ( $r$ s range from 0.16 to 0.39), and physical wellbeing ( $r$ s range from 0.25 to 0.51) (Brown & Ryan, 2003). Further research shows that the MAAS has moderate negative correlations with the AAQ ( $r = -0.32$ ) and the WBSI (-0.32) in a sample of 88 individuals, indicating a relationship with measures of experiential avoidance and thought suppression (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). It is negatively associated with anxiety sensitivity ( $r = -0.46$ ;  $N = 122$ ), indicating a possible relationship between the processes of mindfulness and anxiety sensitivity (McCracken & Keogh, 2009).

*The Philadelphia Mindfulness Scale (PHLMS)* is a 20-item measure of mindfulness which uses a five-point Likert response scale (Cardaciotto, Herbert, Forman, Moitra, and Farrow, 2008). (Example item: “Whenever my emotions change, I am conscious of them immediately.”) Unlike the MAAS, the PHLMS posits a two-factor model of mindfulness, consisting of present-moment awareness and acceptance. Across five samples totaling 923 participants, coefficient alphas ranged from 0.75 to 0.86 for the awareness subscale and from 0.75 to 0.91 for the acceptance subscale.

These researchers found that the PHLMS acceptance scale was significantly associated with measures of acceptance/avoidance such as the AAQ ( $r$ s range from 0.31 to 0.54) and the WBSI ( $r$ s range from -0.35 to -0.52), as well as with the Beck Depression Inventory ( $r$ s range from -0.28 to -0.51) and the Beck Anxiety Inventory ( $r$ s range from -0.29 to -0.39). Both the PHLMS awareness scale and the PHLMS acceptance scale showed an association with the MAAS (acceptance subscale:  $r$ s range from 0.17 to 0.32; awareness subscale:  $r$ s range from 0.21 to 0.40).

*The Five Facet Mindfulness Questionnaire (FFMQ)* is a 39-item measure of mindfulness, using a five-point Likert response scale (Baer et al., 2008). (Example item: “I watch my feelings without getting lost in them.”) It is the result of previous research showing that a factor analysis of a large number of self-report items suggests a five-factor structure of mindfulness (Baer et al., 2006). The FFMQ facets consist of observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. Across four samples that include 1017 participants, Baer et al. (2008) reported that all subscale coefficient alphas were in the good range (ranging from 0.72 to 0.92), with the exception of the nonreactivity to inner experience scale, whose alphas ranged from 0.67 to 0.86.

The facets have differential relationships with other measures; in another study of the FFMQ's psychometric properties, Bohlmeijer, ten Klooster, Fledderus, Veehof, and Baer (2011) investigated a sample of 376 participants. They found that the different scales had different correlates. In particular, the nonjudging scale has the strongest relationship with the AAQ-II ( $r = -0.54$ ) and the NEO Neuroticism scale ( $r = -0.46$ ), as well as significant correlations with measures of anxiety ( $r = -0.24$ ), depression ( $r = -0.25$ ), and positive mental health ( $r = 0.20$ ). The observe subscale has strong relationships with the NEO Openness scale ( $r = 0.44$ ) and positive mental health ( $r = 0.30$ ). The describing subscale has significant relationships with the AAQ-II ( $r = 0.31$ ), openness ( $r = 0.30$ ), neuroticism ( $r = -0.21$ ), and positive mental health ( $r = 0.37$ ). The act with awareness subscale has significant correlations with the AAQ ( $r = 0.30$ ), neuroticism ( $r = -0.28$ ), anxiety ( $r = -0.22$ ), depression ( $r = -0.20$ ), and positive mental health ( $r = 0.20$ ). Nonreactivity to inner experiences is significantly correlated with the AAQ ( $r = 0.37$ ),

neuroticism, ( $r = -0.39$ ), anxiety ( $r = -0.20$ ), depression ( $r = -0.16$ ), and positive mental health ( $r = 0.23$ ). These results suggest that, while the facet subscales have significant overlap, they also have unique variance.

*The Automatic Thoughts Questionnaire (ATQ)* was first developed by Hollon and Kendall (1980) as a measure of the frequency of problematic thoughts. It consisted of 30 self-statements. (Example item: “I’m no good.”) The questionnaire was modified by Zettle and Hayes (1986), who added a believability scale as a measure of cognitive fusion, creating the ATQ-B. Each statement in the ATQ-B is rated on a five-point Likert scale for both frequency and believability. The ATQ-B believability scale has been used as an outcome measure for ACT clinical trials (e.g., Zettle, Rains, & Hayes, 2011); these researchers report that, in two samples consisting of 177 mental health patients and 249 non-clinical individuals, the ATQ-B has a coefficient alpha of 0.95 and 0.97, respectively, and has correlations with the BDI equal to 0.53 and 0.58, respectively. For the nonclinical sample, the three month test-retest reliability is 0.85. Little additional research exists on this measure’s psychometric properties.

*The Cognitive Fusion Questionnaire (CFQ)* is a 13-item measure of cognitive fusion, using a seven-point Likert response scale (Gillanders et al., 2013). (Example item: “I get upset with myself for having certain thoughts.”) In five samples totaling 1,849 individuals, coefficient alphas ranged from 0.88 to 0.93. The authors of the scale have found that the scale is highly correlated with the AAQ-II ( $r$ s range from 0.72 to 0.87), various measures of mindfulness ( $r$ s range from -0.50 to -0.70), and the ATQ-B ( $r = 0.61$ ). In addition, it is highly correlated with measures of depression ( $r$ s range from 0.45



to 0.85), and moderately negatively correlated with measures of life satisfaction ( $r$ s range from -0.39 to -0.45) and quality of life ( $r = -0.45$ ).

The CFQ is highly correlated with the AAQ-II. However, the authors found that the CFQ had incremental validity in explaining a measure of distress ( $\Delta R^2 = 0.05$ ). The authors suggest that this high overlap is due to the fact that the AAQ-II is a general measure of psychological inflexibility, whereas the CFQ measures a facet of inflexibility (cognitive fusion). In an item-level factor analysis of the items from the AAQ-II and the CFQ, the authors found that the items formed two factors in three of their five samples, and formed one factor in the remaining two samples.

*The Experiences Questionnaire (EQ)* is a 20-item measure of decentering and ruminating which uses a five-point Likert response scale (Fresco et al., 2007). (Example item: “I can observe unpleasant feelings without being drawn into them.”). Its authors define decentering as “the ability to observe one’s thoughts and feelings as temporary, objective events in the mind, as opposed to reflections of the self that are necessarily true,” (Fresco et al., 2007), a concept that appears conceptually related to defusion, mindfulness, and self-as-context. In a validation sample of 1,669 individuals, the decentering scale (11 items) had a coefficient alpha of 0.83, and the rumination scale (9 items) had a coefficient alpha of 0.70.

The authors found that their measure of decentering was correlated the AAQ-II ( $r = -0.49$ ) and the Beck Depression Inventory ( $r = -0.40$ ) (Fresco et al., 2007).

Furthermore, McCracken, Gutiérrez-Martínez, and Smyth (2012), found that, in a sample of 150 chronic pain patients, the EQ Decentering scale is correlated with measures of pain-related distress ( $r = -0.33$ ), depression ( $r = -0.47$ ), pain-related anxiety ( $r = -0.46$ ),

and psychosocial disability ( $r = -0.47$ ), suggesting that decentering may play a role in the development of good functioning in this population.

*The Valued Living Questionnaire (VLQ)* is 10-item list of areas of life that might be valued. Participants rate each area of life in terms both importance and consistency of behavior using 10-point Likert response scales (Wilson et al., 2010). (Example domain: “Friendships/Social Relations.”) In two samples totaling 310 individuals, coefficient alpha for the importance scale ranged from 0.77 to 0.83, and the coefficient alpha for the consistency scale ranged from 0.58 to 0.75. In a subset of 57 participants for whom one to two week test-retest data were collected, the importance scale had a test-retest reliability of 0.90, and the consistency scale had a test-retest reliability of 0.58. These results suggest that chosen valued domains are relatively stable, but that efforts to move towards these domains vary over time. Correlations between the difficulties with valued living and other measures tend to be relatively low. The VLQ has a correlation of -0.14 with the AAQ, -0.26 with a measure of depression, -0.14 with a measure of anxiety, -0.20 with a measure of hostility, 0.13 with a measure of relationship functioning, and 0.23 with a measure of mental health. These modest correlations suggest that variability in valuing behaviors is not primarily accounted for by symptoms of psychopathology.

*The Anxiety Sensitivity Index (ASI)* is a sixteen-item measure of an individual’s belief that anxiety has negative consequences rated using a five-point Likert response scale (Reiss et al., 1986). (Example item: “It scares me when my heart beats rapidly.”) In an initial validation sample of 127 individuals, it was found that this scale had a test-retest reliability of 0.75 at two week follow-up. Internal consistency was not reported in

this initial study, but other studies have suggested good internal consistency (e.g.,  $\alpha = 0.88$ ; Zinbarg, Barlow, & Brown, 1997).

The ASI has been found to be a multidimensional scale; Zinbarg et al. (1997) investigated a sample of 432 participants in order to investigate its structure. They found the best fit for a hierarchical structure consisting of a higher-order general factor and the three specific factors of physical concerns, mental incapacitation concerns, and social concerns. Rodriguez, Bruce, Pagano, Spencer, and Keller (2004) also found support for this structure in a sample of 206 individuals with anxiety disorder diagnoses. Correlations among these three lower-order factors ranged from 0.44 to 0.49. They also found acceptable test-retest correlations (ranging from 0.64 to 0.78 for the subscales and 0.72 for the total score) in a subset of 89 individuals who were re-assessed at a one-year follow-up.

It has been found that the ASI is associated with the presence of all internalizing disorders, especially posttraumatic stress disorder and generalized anxiety disorder (Naragon-Gainey, 2010). This meta-analysis also showed that the three lower-order scales have differential specificity. For example agoraphobia is more strongly associated with the physical ( $\rho = 0.51$ ) compared with the social ( $\rho = 0.40$ ) and cognitive ( $\rho = 0.37$ ) subfactor. Similarly, depression is more strongly associated with the cognitive subfactor ( $\rho = 0.53$ ) compared with the physical ( $\rho = 0.40$ ) and social ( $\rho = 0.28$ ) subfactors. Additionally, social anxiety is more associated with social anxiety sensitivity ( $\rho = 0.70$ ) compared with the cognitive ( $\rho = 0.45$ ) and physical ( $\rho = 0.31$ ) subfactors.

*The Distress Tolerance Scale (DTS)* is a 15-item measure of one's ability to tolerate negative emotional states rated using a five-point Likert scale (Simons & Gaher,

2005). (Example item: “I can’t handle being distressed or upset.”) This scale is defined hierarchically, with a general distress tolerance factor and four lower-order factors, consisting of tolerance, appraisal, absorption, and regulation. Distress intolerance is associated with negative affectivity (Simons & Gaher, 2005). In a validation sample of 823 participants, the coefficient alpha of the overall scale was 0.82, and alphas for the lower-order factors ranged from 0.70 to 0.82. Six-month test-retest reliability was 0.61, and men reported higher distress tolerance than women ( $d = 0.32$ ). Overall distress tolerance was negatively correlated with negative affectivity ( $r = -0.57$ ) and substance use problems ( $r = -0.23$ ). Thus far, there is limited research on distress tolerance’s relationship with psychopathology measures (Zvolensky, Vujanovic, Bernstein, & Leyro, 2010), and it has been suggested that more work needs to be done to investigate the relationship between distress tolerance and other, related constructs (Leyro et al., 2010).

*The Discomfort Intolerance Scale (DIS)* is a 5-item measure of one’s ability to tolerate unwanted physical sensations, rated using a seven-point Likert scale (Schmidt et al., 2006). (Example item: “I have a high pain threshold.”) These researchers found a two-factor model of the construct, consisting of discomfort avoidance and discomfort intolerance. In a sample of 1,296 participants, coefficient alpha for the measure was 0.70, with an alpha of 0.78 for the discomfort intolerance subfactor and an alpha of 0.92 for the discomfort avoidance subfactor. Across a nonclinical ( $N = 1,296$ ) and a clinical ( $N = 193$ ) samples, correlations between the DIS and the ASI ranged from 0.33 to 0.38, correlations between the DIS and the Beck Anxiety Inventory ranged from 0.18 to 0.31, and correlations between the DIS and the Beck Depression Inventory ranged from 0.05 to 0.24.

*The COPE* is a widely used measure of coping (Carver, Scheier, & Weintraub, 1989) that broadly measures various coping styles. It is the mostly widely used measure of coping styles in the literature (Kato, 2013). It is a 53-item scale that is rated using a four-point Likert scale. It was published with fourteen subscales, consisting of the following: active coping, planning, suppression of competing activities, restraint coping, seeking social support for instrumental reasons, seeking social support for emotional reasons, positive reinterpretation and growth, acceptance, turning to religion, focusing on/venting emotions, denial, behavioral disengagement, mental disengagement, and alcohol/drug disengagement. In Carver et al.'s (1989) validation sample of 978 participants, coefficient alphas for these scales ranged from 0.45 (mental disengagement) to 0.92 (turning to religion). Six week test-retest reliabilities, calculated for a subset of 116 participants, ranged from 0.42 (behavioral disengagement) to 0.89 (turning to religion). In a meta-analysis, Kato (2013) found that the coefficient alphas of the scales range from 0.53 (mental disengagement) to 0.91 (turning to religion). This meta-analysis also examined the external correlates of the COPE scales, and found particularly high correlations between behavioral disengagement and negative affect ( $r = 0.40$ ), self-blame and depression ( $r = 0.43$ ), and self-blame and physical symptoms ( $r = 0.43$ ).

The reliabilities of these fourteen rationally derived scales suggest that they are not all robust measures, and subsequent factor-analytic studies have suggested that fewer scales can be used. For example, Lyne and Roger (2000) investigated a sample of 539 individuals to investigate the factor structure of the COPE. They found that the original scales could not easily be extracted using item-level analyses, and that a simpler three-scale solution emerged. This new structure consists of rational/active coping (18 items,  $\alpha$

= 0.89), emotion-focused coping (8 items,  $\alpha = 0.83$ ), and avoidance coping/hopelessness (8 items,  $\alpha = 0.69$ ). These three scales are highly differentiable, with low intercorrelations (ranging from 0 to 0.21) and differential specificity. In particular, they found that avoidance coping is the most highly associated with distress ( $r = 0.35$ ), with emotion coping having a smaller but statistically significant correlation with distress ( $r = 0.13$ ) and active coping having no significant association.

*The Kessler Psychological Distress Scale (K10)*. The K10 is a 10-item measure of internalizing psychopathology symptoms, using a five-point Likert response scale (Kessler et al., 2002). (Example item: “During the last 30 days, about how often did you feel hopeless?”) This scale was included as a measure of depression in order to investigate the relationship between internalizing psychopathology and ACT constructs. In a validation sample of 1,574 participants, the K10 had a coefficient alpha of 0.92. In a sample of 155 individuals with mental health problems, the K10 had good discrimination between those with and without a diagnosis based on the Structured Clinical Interview for DSM-IV (SCID), with a discrimination of 0.876. Additionally, in a study of 502 participants (Donker, van Straten, Marks, & Cuijpers, 2010), the K10 had a correlation of 0.84 with the CES-D. Additionally these researchers found that, in a subset of 157 individuals who received a DSM-IV Composite International Diagnostic Interview (CIDI), the K10 and the CES-D were equally effective in predicting the diagnosis of a depressive disorder.

*Externalizing Spectrum Inventory, brief disinhibition scale (ESI<sub>dis</sub>)*. The Externalizing Spectrum Inventory is a measure of problematic behavior, using a four-point Likert response scale (Krueger, Markon, Patrick, Benning, & Kramer, 2007). A

brief form of this measure, consisting of 20 items (example item: “Others have told me they are concerned about my lack of self-control.”) was developed to measure disinhibition (Patrick, Kramer, Krueger, & Markon, 2013). This measure was included to investigate the relationship between externalizing psychopathology and ACT constructs. In a sample of 599 participants, these researchers found that the  $ESI_{dis}$  had a coefficient alpha of 0.94, and, in a sample of 612 individuals, showed correlations with measures of negative emotionality ( $r = 0.69$ ), positive emotionality ( $r = -0.22$ ), social closeness ( $r = -0.36$ ), alienation ( $r = 0.60$ ), aggression ( $r = 0.58$ ), and control ( $r = -0.59$ ). Overall, the  $ESI_{dis}$  appears to be a robust measure of externalizing behavior.

*The Mini-IPIP.* The Mini-IPIP is a brief measure of the Big Five personality traits, consisting of Neuroticism, Extraversion, Agreeableness, Conscientiousness, and Openness (Donnellan, Oswald, Baird, & Lucas, 2006). It consists of 20 items that are rated using a five-point Likert response scale. This measure was included to investigate the relationship between personality traits and ACT constructs. In two initial validation samples with a combined sample size of 2,992, coefficient alphas for the subscales ranged from 0.65 to 0.82. The authors characterize these measures of internal consistency as “acceptable, given their reduced length.” Additionally, in these two samples, convergent correlations between the Mini-IPIP scales and the larger IPIP-FFM scales were found to be good, ranging from 0.83 to 0.93, indicating that the shorter scales are acceptable approximations of the larger scales. Short-term, three week test-retest correlations of the Mini-IPIP subscales ranged from 0.72 to 0.89 in a sample of 216 individuals. Long-term, six to nine month test-retest correlations ranged from 0.68 to 0.86 in a sample of 148 participants. Additionally, for this sample, self-report corresponded

with informant reports with correlations ranging from 0.26 to 0.53. Overall, the Mini-IPIP was found to be an adequate brief measure of the Big Five personality traits.

*Selected modules from the World Health Organization Disability Assessment Schedule (WHODAS-II).* Three modules from the 36-item self-report version of the WHODAS-II will be used as measures of basic daily functioning (World Health Organization, 2001). These scales were included to investigate the relationship between levels of functioning and ACT constructs. These modules measure understanding and communicating (six items; example item: “In the last 30 days, how much difficulty did you have in remembering to do important things?”), getting along with other people (five items; example item: “In the last 30 days, how much difficulty did you have in getting along with people who are close to you?”), and life activities (eight items; example item: “In the last 30 days, how much difficulty did you have in getting all the work done that you need to do?”). All items use a five-point Likert response scale.

In a study of the psychometric properties of the WHODAS-II in several samples of rehabilitation patients with a total sample size of 904, Pösl, Cieza, and Stucki (2007) found coefficient alphas of 0.83 to 0.87 for understanding and communicating, 0.69 to 0.81 for getting along with others, and 0.94 to 0.97 for life activities. They also found high correlations with measures of mental symptoms ( $r$ s range from -0.40 to -0.68) and physical symptoms ( $r$ s range from -0.48 to -0.62).

*Study-specific Variable Response Inventory (VRIN).* In order to create a measure of inconsistent responding, fourteen pairs of items with the highest correlations in the student Time 1 sample were identified. Pair correlations ranged from 0.54 to 0.64. (Example item pair: “I think some of my emotions are bad or inappropriate and I



shouldn't feel them” and “I tell myself that I shouldn't have certain thoughts.”) Items were standardized in order to account for different response scales, and the absolute value of the difference between scores for each pair was calculated. These pair differences were summed to create a total VRIN score. Individuals who scored highly on this scale can be assumed to have responded to study questions in a more inconsistent or random manner than someone who has a low score. Correlations between the VRIN item pairs were somewhat higher than the pair correlations for the Minnesota Multiphasic Personality Inventory-2, whose VRIN pairs have an average correlation of about 0.40 (Ketterer, Han, Hur, & Moon, 2010).

#### Data Analysis

The data were analyzed using the Mplus and SAS statistical programs. Maximum likelihood estimators were used for all structural equation modeling. Because most item-level data used at least a five-point response scale, these data were treated as continuous, as suggested by Rhemtulla, Brosseau-Liard, and Savalei (2012).

When calculating scale scores, missing item-level data were prorated using other items in the same scale, such that each missing data point was assumed to be equal to the average of the other items in that scale.

When examining the validity of scales and conducting factor analyses, a standard rule of thumb is to investigate a sample size of at least 300 individuals (Clark & Watson, 1995). However, simulations conducted by MacCallum, Widaman, Zhang, and Hong (1999) suggest that a sample size as low as 200 is adequate for factor analysis in most situations, unless both the communalities between variables are low and there are few variables defining each factor. Due to the high correlations between the constructs under

consideration and to the over-determination of the factors investigated in this study, the sample sizes in this study, which ranged from 342 to 485, were more than adequate for the analyses that were run.

## CHAPTER III

### RESULTS

#### Univariate Statistics

Univariate statistics and group comparisons for all scales are shown in Tables A1 and A2. Coefficient alphas for most scales were in the moderate-to-high range, indicating good internal consistency. The IPIP scales had slightly lower alphas, ranging from 0.65 to 0.82 across samples. Given the brief nature of these scales, their lower reliabilities were not surprising. The ASI Social subscale showed notably low internal consistency, with coefficient alphas ranging from 0.42 to 0.54 across the three samples. These results indicate that this subscale might not be unidimensional, or it may simply be due to the scale being relatively short (three items). All ACT-relevant scales had acceptable internal consistencies.

#### Group Comparisons

Group comparisons are shown in Table A3. Overall, there were almost no differences in student responses between Time 1 (T1) and Time 2 (T2); students showed significantly higher social anxiety sensitivity during Time 1 than they did during Time 2, but no other significant differences existed. Given the number of comparisons and the lack of a theoretical rationale for this difference, it is quite possible that this represents a type I error. Some significant group differences were found between student T1 responses and Mechanical Turk (MT) responses. Overall, the student population reported significantly lower mental anxiety sensitivity, higher tolerance for physical discomfort, fewer attempts to self-regulate feelings of distress, higher distress tolerance, higher extraversion, higher functioning in social situations, and higher functioning in work or

school. These results indicate a somewhat higher functioning student sample. There was no significant difference between the two populations in rates of variable responding; these results indicate that the Mechanical Turk sample was not significantly more careless in their responding, despite the nature of their online recruitment.

### Correlations

Tables A4, A5, and A6 show the correlations among the ACT-related scales for the Mechanical Turk sample, the Student Time 1 sample, and the Student Time 2 sample respectively. The Acceptance and Action Questionnaire, the Cognitive Fusion Questionnaire, and the Automatic Thoughts Questionnaire-Believability are significantly correlated across the three samples, with correlations ranging from 0.62 to 0.76. Other correlations were more moderate, even when one would expect a theoretical link. For example, the Mindful Attention Awareness Scale and the Philadelphia Mindfulness Scale Awareness scales showed little relationship, ranging from 0.06 to 0.37. The Valued Living Questionnaire scales showed little relationship with other ACT scales, with no correlations consistently above 0.25 across the three samples. These results indicate some gaps in our theoretical understanding of how these processes interact.

Tables A7, A8 and A9 show the correlations among the non-ACT-related scales across the three samples. Overall, most of the correlations are in the low-to-moderate range. Notably high correlations include that between the ASI Physical scale and the ASI Mental scale ( $r_s$  range from 0.63 to 0.72), those between the DTS scales ( $r_s$  range from 0.44 to 0.79), that between the K10 depression scale and the Automatic Thoughts Questionnaire-Frequency ( $r_s$  range from 0.71 to 0.79), and those between the WHODAS functioning scales ( $r_s$  range from 0.49 to 0.78). Overall, these higher correlations are

unsurprising given the nature of these scales; indeed most of the high correlations exist between subscales of the same scale.

Tables A10, A11, and A12 show correlations between ACT-related scales and non-ACT-related scales across the three samples. Most correlations fall within the low-to-moderate range. However, some notably high correlations exist. The Automatic Thoughts Questionnaire-Frequency has high correlations with the Acceptance and Action Questionnaire, Cognitive Fusion Questionnaire, and Automatic Thoughts Questionnaire-Believability ( $r$ s range from 0.63 to 0.89). The high correlations between the Automatic Thoughts Questionnaire-Frequency and the Automatic Thoughts Questionnaire-Believability ( $r$ s range from 0.88 to 0.89) are particularly striking, and suggest that, despite the ostensible difference between the scales, participants have difficulty distinguishing between the frequency and believability of depressive thoughts. It is possible that experience with an ACT intervention would increase the ability of individuals to discriminate between these things, but this is speculative. Likewise, the K10 depression scale has high correlations with the Acceptance and Action Questionnaire, Automatic Thoughts Questionnaire-Believability, and Cognitive Fusion Questionnaire ( $r$ s range from 0.60 to 0.74). Again, these results may suggest that untrained participants might have difficulty distinguishing between suffering on one hand and the ACT conceptualizations of cognitive fusion and psychological inflexibility on the other hand, or that the two constructs are simply indistinguishable in a self-report measure due to the overlap of causal factors.

Tables A13 and A14 show correlations between student T1 scores and student T2 scores for ACT and non-ACT measures, respectively. Test-retest correlations are strong

for most scales. As was the case when looking at coefficient alpha, the ASI Social subscale shows low reliability, with a test-retest correlation of only 0.49, perhaps due in part to the shortness of the scale (three items).

### Scale Level Exploratory Factor Analyses

In order to better understand the relationships among the ACT-related scales, an exploratory factor analysis was conducted. In order to determine the number of factors to extract, parallel analysis was used using SAS code published by O'Connor (2002). For each of the three samples, 500 simulations were run using a confidence interval of 95%. Permutation datasets were generated for each simulation to match the empirical distribution of the samples, and principal components analysis was used. For each factor, eigenvalues from the raw data were compared to the average eigenvalues in the simulated datasets. If the raw eigenvalue was higher than the 95% of the eigenvalues from the simulated datasets, then the raw eigenvalue was higher than one would expect given chance. The results of these analyses are shown in Table A15. For the MT and T1 datasets, the first four factors extracted explained significantly more of the variance than one would expect given chance. For the T2 dataset, the first three factors extracted explained significantly more of the variance than one would expect given chance.

In order to determine whether a three-factor model or a four-factor model of the ACT scales was superior, factor loadings were calculated for each model for each of the three samples in order to see how well each factor replicated across the three samples. Table A16 shows the three-factor structure across the three samples. These factors replicated well, with factor loading correlations ranging from 0.84 to 0.97 (see Table A17). Table A18 shows the four-factor structure across the three samples. Not every

factor in this solution replicated across samples, indicating that this structure is not reliable (see Table A19). These results indicate that the three-factor solution (shown in Table A16) is more reliable across samples.

In general, the first factor is most strongly defined by the Acceptance and Action Questionnaire, the Automatic Thoughts Questionnaire-Believability, and the Cognitive Fusion Questionnaire, with the Mindful Attention Awareness Scale, the FFMQ Act with Awareness scale, and the FFMQ Nonjudge scale also loading primarily on this factor. Given the dominance of psychological inflexibility, cognitive fusion, and believability of depressive thoughts, this first factor appears to represent Fusion/Inflexibility.

The second factor is defined primarily by the EQ Decentering scale, the FFMQ Describe scale, the FFMQ Nonreact scale, the FFMQ Observe scale, the MEAQ Distress Endurance scale, and the PHLMS Awareness scale. Because of the dominance of mindful awareness measures, this second factor appears to represent Awareness.

The third factor is defined primarily by the MEAQ Behavioral Avoidance scale, the MEAQ Distraction/Suppression scale, the MEAQ Distress Aversion scale, and the PHLMS Acceptance scale. This third factor appears to represent Avoidance.

#### Item Level Exploratory Factor Analyses

In order to examine the lower-order structure of these processes, item level analyses were performed on the items of scales loading most highly on each of these three factors. This was operationalized as scales loading  $\geq 0.35$  on a factor for all three samples (see Table A16). Using these criteria, the Acceptance and Action Questionnaire, Automatic Thoughts Questionnaire-Believability, Cognitive Fusion Questionnaire, FFMQ Act with Awareness, and the FFMQ Nonjudge, and the Mindful Attention

Awareness Scale were found to be the best markers of Factor 1 (Fusion/Inflexibility). The EQ Decentering, the FFMQ Observe, the FFMQ Describe, the FFMQ Nonresponse, the MEAQ Distress Endurance, and the PHLMS Awareness scales were found to be the best markers of Factor 2 (Awareness). Finally, the MEAQ Behavior Avoidance, the MEAQ Distress Aversion, the MEAQ Distraction/Suppression, and the PHLMS Acceptance scales were found to be the best markers of Factor 3 (Avoidance). The MEAQ Procrastination, MEAQ Repression/Denial, White Bear Suppression Inventory, VLQ Importance, and VLQ Consistency scales did not clearly load on one of these factors across all samples, and were not included in item-level analysis.

Item-level factor analyses were conducted for each of these three clusters of scales across samples. In order to determine how many lower-order factors to extract for each factor, correlations between factor loadings were calculated for each solution across samples in order to see which lower-order factors tended to replicate.

For Factor 1 (Fusion/Inflexibility), parallel analysis found that up to five or six lower-order factors could be extracted that have significantly higher eigenvalues than expected due to chance (Table A20). However, when correlations between factor loadings across samples were calculated, only solutions extracting three or four factors were found to be robust, with high correlations between the loadings across samples (Table A21). The fourth subfactor extracted was difficult to rationally interpret, and appeared to be a combination of self-judgment (e.g., “I tell myself that I shouldn’t be feeling the way I’m feeling”) and a facet of cognitive fusion (e.g., “I struggle with my thoughts”). These items were difficult to rationally distinguish from markers of the purer cognitive fusion/inflexibility factor (e.g., “My thoughts cause me distress or emotional



pain.”) Additionally, some items cross-loaded between this self-judgment/fusion factor and the inflexibility/fusion factor (e.g., “I need to control the thoughts that come into my head” had strong loadings for both factors, despite the oblique rotation used). For the sake of parsimony, a three-subfactor model was therefore used. This three-subfactor solution consisted of an Inflexibility subfactor (best defined by AAQ items, CFQ items, and FFMQ nonjudge items; example item: “I tend to get very entangled in my thoughts”), an Internalizing Belief subfactor (defined by ATQ-B items; example item: “I’m worthless”), and a Detachment subfactor (defined by MAAS items and FFMQ Act with Awareness items; example item: “I do jobs or tasks automatically, without being aware of what I’m doing”) (see Tables A22, A23, and A24).

For Factor 2 (Awareness), parallel analysis found that up to five or six lower-order factors could be extracted whose eigenvalues were significantly higher than would be expected due to chance (Table A25). However, when factor loading correlations between samples were calculated, it was found that only the first four factors were the same across samples (Table A26). This four-subfactor solution consisted of a Perspective Taking subfactor (defined by EQ Decentering items and FFMQ Nonreact items; example item: “I can observe unpleasant feelings without being drawn into them”), a Committed Action subfactor (defined by MEAQ Distress Endurance items; example item: “I don’t let pain and discomfort stop me from getting what I want”), an Expressive Awareness subfactor (defined by FFMQ Describe items; example item: “It’s hard for me to find the words to describe what I’m thinking”), and a Physical Awareness subfactor (defined by a few EQ decentering items, FFMQ Observe items, and PHLMS Awareness items;

example item: “I pay attention to sensations, such as the wind in my hair or sun on my face”) (Tables A27, A28, and A29).

For Factor 3 (Avoidance), parallel analysis found that four lower-order factors could be extracted that have eigenvalues significantly greater than would be expected due to chance (Table A30). When factor loading correlations were calculated across samples, it was found that these four factors were robust and interpretable across all three samples (Table A31). These four subfactors consisted of Physical Avoidance (defined by MEAQ Behavioral Avoidance items and some MEAQ Distress Aversion items; example item: “I’m quick to leave any situation that makes me feel uneasy”), Pain Aversion (defined by MEAQ Distress Aversion items; example item: “The key to a good life is never feeling any pain”), Distraction (defined by MEAQ Distraction/Suppression items; example item: “When upsetting memories come up, I try to focus on other things”), and Mental Avoidance (defined by PHLMS Acceptance items; example item: “There are aspects of myself I don’t want to think about”) (Tables A32, A33, and A34).

#### Factor Sum Scores

Sum scores were then calculated for each of the eleven subfactors listed above. The score for each item was standardized before being added to the sum score in order to make items using different response formats comparable. For each subfactor, items were chosen that had a loading of  $\geq 0.35$  for all samples, and whose next highest loading was at least 0.15 lower than the primary loading for all samples (see Tables A22-A24, A27-A29, and A32-A34).

Tables A35 and A36 show the correlations among these sum scores for all three samples, as well as test-retest correlations for the sum scores for the student sample. The

test-retest reliabilities for the sum scores tended to be high in the student sample. Overall, the correlation between Inflexibility and Internalizing Beliefs appears to be particularly high ( $r_s$  range from 0.62 to 0.73), with most other correlations among the sum scores falling in the low-to-moderate range. It is noteworthy that the Mental Avoidance sum score is highly correlated with Inflexibility ( $r_s$  range from 0.65 to 0.73), despite being derived from a different higher-order factor. These results suggest that these sub-factors may not fall into a simple hierarchical structure.

An exploratory factor analysis was then performed on these sum scores in order to recreate the higher-order factor structure (Table A37). In general, the higher-order structure was recreated. Mental Avoidance appeared to cross load between Fusion/Inflexibility and Avoidance, with higher loadings on Fusion/Inflexibility. This is surprising, given its initial derivation from the Avoidance higher-order factor. Similarly, Distraction cross loaded between Avoidance and Awareness, although it tended to load more highly on its “parent” factor of Avoidance.

Correlations between these sum scores and other scales of interest (all scales whose items were not used for any sum scales, including ACT scales) were calculated across the three samples (Tables A38-A40). The Inflexibility and Internalizing Belief sum scores were highly correlated with a wide variety of scales, including measures of anxiety sensitivity ( $r_s$  range from 0.48 to 0.63), distress tolerance ( $r_s$  range from -0.26 to -0.65), depression ( $r_s$  range from 0.63 to 0.74), neuroticism ( $r_s$  range from 0.36 to 0.57), and functioning ( $r_s$  range from 0.28 to 0.55). Mental avoidance also correlated highly with a number of scales, including measures of anxiety sensitivity ( $r_s$  range from 0.40 to 0.46) and distress tolerance ( $r_s$  range from -0.33 to -0.59). It was also noteworthy that

discomfort intolerance, extraversion, agreeableness, openness/imagination, and values were not highly correlated with any of the ACT sum scores. The lack of relationship between measures of values and valuing on one hand and the ACT sum scales on the other is particularly striking, given the hypothesized interrelationships between values and other ACT processes in the Hexaflex model.

### Confirmatory Factor Analyses

For each sample, three item-level CFAs were conducted in order to determine the best overall structure for the constructs under consideration. The first structure (model 1) tested was a hierarchical model, consisting of three higher-order factors consisting of Fusion/Inflexibility, Awareness, and Avoidance, eleven lower-order factors consisting of Inflexibility, Internalizing Belief, Detachment, Perspective Taking, Expressive Awareness, Committed Action, Physical Awareness, Physical Avoidance, Pain Aversion, Distraction, and Mental Avoidance, and the 126 items that were used to create the subfactor sum scales. For model 1, the lower-order factors loaded only on the “parent” factors from which they were derived (see Figure B2). Given the structure shown in Table A34, a second hierarchical model (model 2) was tested in which Mental Avoidance was allowed to load on both Avoidance and Fusion/Inflexibility and Distraction was allowed to load on both Avoidance and Awareness (see Figure B3 for an illustration of this structure). The third model tested (model 3) was a correlated factor model, in which the higher-order factors were not included and the mid-level factors were allowed to correlate freely (see Figure B4). Because item level data for most scales included at least a five-point Likert scale, the data were treated as continuous, as suggested by Rhemtulla et al. (2012). In order to compare the two models, the Akaike's Information Criterion

(AIC) and the Bayesian Information Criterion (BIC) were calculated for each model. The AIC and the BIC are used to compare the goodness of fit for different models. For both indices, a smaller calculated value indicates a better fit.

Across all three samples, the correlated model (model 3) showed a better fit compared with either hierarchical model across all three samples, using both the AIC and the BIC (see Table A41). These results indicate that these ACT factors are better understood as simple interrelated processes rather than as part of a greater hierarchical structure. Across the three samples, the Root Mean Square Error of Approximation (RMSEA) for this best-fitting model ranged from 0.045 to 0.052, and the Standardized Root Mean Square Residual (SRMR) ranged from 0.067 to 0.078. These values are within the commonly used acceptable limits set by Hu and Bentler (1999), which establishes a cutoff of 0.06 for the RMSEA statistic and 0.08 for the SRMR statistic. These results indicate an acceptable fit for this model.

#### Predictions Across Time

The ACT model predicts that Hexaflex processes such as experiential avoidance and psychological inflexibility lead to symptoms of psychopathology. Therefore, correlations between psychopathology measures and ACT sum scores were calculated across timepoints in the student sample (see Table A42). It was hypothesized that, if ACT processes play a causal role in the development of psychopathology, the correlation between the Time 1 sum score and the Time 2 psychopathology score would be higher than the correlation between the Time 1 psychopathology score and the Time 2 sum score. As can be seen in Table A42, this was not universally the case. Across eleven sum scores and two psychopathology scores (a total of 22 comparisons), the expected

relationship was found in sixteen cases, and the reverse was found in six cases. However, the difference tended to be quite small. For the sixteen comparisons that were found to be in the expected direction, the average difference between the correlations was only 0.04, with a standard deviation of 0.025. For all 22 comparisons, including the six in which the relationship was opposite of what was hypothesized, the difference between the correlations was 0.02 in the hypothesized direction, with a standard deviation of 0.042. The only relationship in which the difference was more than 0.06 in the expected direction was that between Expressive Awareness and Depression. For this relationship, the correlation between Time 1 Expressive Awareness and Time 2 Depression was 0.10 higher than the relationship between Time 2 Expressive Awareness and Time 1 Depression. However, even this difference was not statistically significant ( $p = 0.14$ ). Therefore, no significant relationships in the hypothesized direction were found.

#### Incremental Validity

In order to investigate whether these ACT processes had incremental value in explaining psychopathology, personality, and functioning, partial correlations between the ACT sum scores and these external measures were calculated, partialing out variance explained by anxiety sensitivity, distress tolerance, discomfort intolerance, and coping styles (see Tables A43-A45). Most of the partial correlations were in the low range, but some noteworthy partial correlations emerged. The Inflexibility sum score had moderate-to-high correlations with Depression ( $r$ s range from 0.29 to 0.40) and Neuroticism ( $r$ s range from 0.21 to 0.39). Likewise, the Internalizing Belief sum score had notably high partial correlations with Depression ( $r$ s range from 0.38 to 0.51). Additionally, Mental Avoidance had moderate correlations with Depression ( $r$ s range from 0.19 to 0.26) and

Neuroticism ( $r_s$  range from 0.25 to 0.29). Perspective Taking had moderate partial correlations with Neuroticism ( $r_s$  range from -0.20 to -0.34). Expressive Awareness had moderate partial correlations with Openness/Imagination ( $r_s$  range from 0.15 to 0.29). Finally, Physical Avoidance had moderate partial correlations with Extraversion ( $r_s$  range from -0.22 to -0.27). These results indicate some incremental value among the ACT Sum Scores.

In order to further investigate the incremental validity of these ACT process measures, squared multiple correlations were calculated between explanatory variables and measures of psychopathology, personality, and functioning (see Tables A46-A48). For all criterion variables, squared multiple correlations first calculated for measures of anxiety sensitivity, distress tolerance, discomfort intolerance, and coping, then for the eleven ACT sum scores, and then for all of the explanatory variables combined. It was found that the ACT sum scores were nearly universally better than the combined ASI, DTS, DIS, and COPE scores in explaining these criterion variables. On average, the ACT sum scores explained  $\Delta R^2 = 0.056$  more of the variance than the non-ACT measures for the Mechanical Turk sample ( $SD = 0.070$ ),  $\Delta R^2 = 0.059$  for the Student Time 1 sample ( $SD = 0.039$ ), and  $\Delta R^2 = 0.042$  for the Student Time 2 sample ( $SD = 0.058$ ). Furthermore, in addition to being slightly better explanatory variables by themselves, the ACT sum scores added incremental power above and beyond measures of anxiety sensitivity, distress tolerance, discomfort intolerance, and coping. On average, the incremental value for the ACT sum scores was  $\Delta R^2 = 0.114$  for the Mechanical Turk sample ( $SD = 0.064$ ),  $\Delta R^2 = 0.106$  for the Student Time 1 sample ( $SD = 0.024$ ), and  $\Delta R^2 = 0.102$  for the Student Time 2 sample ( $SD = 0.034$ ). These results indicate that the ACT

processes are robust explanatory variables for personality, psychopathology, and functioning.



## CHAPTER IV

### DISCUSSION

The aim of this study was to investigate the interrelationships among ACT process measures in order to determine whether the ACT Hexaflex model emerges when using questionnaire measures, to determine the differential relationships between ACT processes and other, similar constructs such as distress tolerance, anxiety sensitivity, and coping styles, and to investigate whether ACT processes can be differentiated in self-report format. Additionally, the psychometric properties of the measures, including test-retest reliability and incremental validity, were to be investigated.

It was predicted that scales measuring ACT processes would be part of a hierarchical structure, with a higher-order psychological flexibility factor and lower-order factors consisting of Hexaflex processes such as acceptance vs. avoidance, values, committed action, defusion, and present moment awareness. It was found that most of these Hexaflex processes were distinguishable using factor analysis; however it was also found that a simple correlated model fit the data better than a hierarchical model, and that a questionnaire measure of values was only minimally related to measures of other ACT processes. It was also hypothesized that the ACT process measures would have differential relationships with measures of psychopathology, personality, and functioning. In particular, it was hypothesized that avoidance/acceptance and cognitive fusion would be highly associated with measures of internalizing and externalizing psychopathology and neuroticism. It was found that factors related to inflexibility/cognitive fusion in particular had high correlations with internalizing psychopathology, externalizing psychopathology, and neuroticism. However, it is unclear to what extent these processes were distinguishable from the frequency of suffering by participants. Mental avoidance

was highly associated with internalizing psychopathology and neuroticism, but only moderately associated with externalizing psychopathology. It was also predicted that ACT process measures would have be distinguishable from and have incremental explanatory power over processes such as anxiety sensitivity, distress tolerance, discomfort intolerance, and coping styles. It was found that ACT process measures do indeed have incremental validity over and above these measures when explaining psychopathology, personality, and functioning.

### Scale Relationships

This study examined correlations between scales in order to preliminarily investigate the relationships between the processes under consideration. In particular, these results can be used to begin to determine the overall structure and interrelationships between the ACT process measures and other measures of interest.

High correlations were found between the AAQ (a measure of psychological inflexibility), the CFQ (a measure of cognitive fusion), and the ATQ-B (another measure of cognitive fusion and the believability of depressive thoughts). All three measures were highly associated with measures of depression and frequency of depressive thoughts. These results suggest that it might be difficult, if not impossible, to psychometrically separate psychological inflexibility from cognitive fusion. Gillanders et al. (2013) suggest that this is due to the structure of the Hexaflex model, as cognitive fusion is a facet of psychological flexibility. However, it is noteworthy that other facets of inflexibility in the Hexaflex model, such as measures of mindfulness and avoidance, have much more modest associations with the AAQ. These results also suggest that participants have great difficulty separating these processes from the frequency and intensity of suffering, or that

current measures lack the specificity to make such a distinction. These results are consistent with the findings of Gámez et al. (2010), who found that participants do not make a distinction between experiential avoidance and psychological distress on self-report measures.

The strong associations between these processes may indicate that these scales are measuring the same hypothetical constructs. This would indicate that ACT measures may not “exist” separately from psychopathology, but rather are simply facets of or alternative names for more established constructs. Alternatively using a functional contextual perspective, it is possible that these processes are distinct, but correlate highly because they are under the control of the same contextual factors, or because one causes the other (Hayes et al., 2012). For instance, an individual may report high cognitive fusion and high depression because both are caused by the same genetic and social vulnerabilities, or because the fusion has caused the depression. Because an explicit goal of ACT is to weaken this contextual control, these relationships might weaken in individuals who have received ACT interventions. More research is necessary to test this hypothesis.

Additionally, it is noteworthy that the associations between the AAQ and the MEAQ subscales are moderate rather than strong. In the literature, the AAQ is sometimes called a measure of experiential avoidance and sometimes a measure of psychological inflexibility. The associations between the AAQ and the MEAQ are consistent with those found by Gámez et al. (2011). These results suggest that the AAQ measure a broader process than avoidance, and that it may better be conceptualized as a measure of inflexibility rather than avoidance.

Another striking finding when looking at simple scale correlations is that the Valued Living Questionnaire scales have low correlations with process measures that are thought to be theoretically connected in the Hexaflex model. This may be due to psychometric weaknesses in the scale itself; the VLQ is often used as a clinical instrument to help the ACT therapist and the client collaboratively explore the client's values. The VLQ may not be a good measure of client values without this collaboration. Alternatively, the low associations may suggest a looser relationship between values and other Hexaflex processes, such as acceptance and defusion. A third possibility is that the relationship between chosen values and other processes of interest might be expected to strengthen among individuals who have received an ACT intervention.

#### The Structure of ACT Processes

Another aim of the study was to investigate the structure of the ACT processes under investigation in order to determine whether the Hexaflex model could be derived structurally, and to investigate whether these processes were distinguishable. To this end, exploratory factor analyses of ACT process measures were conducted at the scale level. Items from scales defining each higher-order factor were further factor analyzed in order to investigate possible hierarchical structure.

A stable, three-factor model found at the scale level across three samples suggests that many of these processes are indeed distinguishable. This is a particularly important finding because the three factors appear to correspond to Hexaflex processes; cognitive fusion, present awareness, and avoidance were found to be distinguishable at the scale level. The AAQ, which is typically said to be a measure of psychological inflexibility or experiential avoidance, loaded on the fusion factor rather than the avoidance factor,

suggesting that the scale is better conceptualized as a measure of psychological inflexibility, and that this process cannot be distinguished from cognitive fusion when using questionnaire measures. Overall, the Hexaflex model holds up quite well in this initial factor analysis; three of the six ACT processes (fusion, awareness, and avoidance) are represented. The VLQ scales, representing values, were not strongly associated with other scales, and were therefore not well modeled by any factor. Self-as-context and committed action likely did not emerge because they were underrepresented at the scale level.

When the items in the scales representing each of these three factors are themselves subjected to factor analysis, eleven stable lower-order factors emerge that can be observed across the three study samples. The Inflexibility/Fusion factor can be broken into an Inflexibility subfactor (defined by items from the AAQ, CFQ, and FFMQ Nonjudge), an Internalizing Belief subfactor (defined by items from the ATQ-B), and a detachment subfactor (defined mostly by items from the MAAS). These results further suggest that the AAQ and the CFQ are either measuring the same process or measuring two processes that are under such similar contextual control as to be indistinguishable when assessed using questionnaire measures. Overall, these subfactors all seem conceptually related to the ACT process of cognitive fusion.

The Awareness factor can be broken into four lower-order factors at the item level, consisting of Perspective Taking (mostly defined by items from the EQ Decentering scale), Expressive Awareness (defined by items from the FFMQ Describe scale), Committed Action (defined by items from the MEAQ Distress Endurance scale), and Physical Awareness (defined by items from the FFMQ Observe scale). These

subfactors are important, as they may represent additional Hexaflex processes. The Perspective Taking subfactor (defined by items such as “I can separate myself from my thoughts and feelings” and “I can observe unpleasant feelings without being drawn into them”) may be conceptually related to ACT’s self-as-context, or the self that exists beyond ever-changing mental content. This facet is self is thought to be related to the ability to flexibly shift perspectives (Foody, Barnes-Holmes, & Barnes-Holmes, 2012). Additionally, the Committed Action subfactor, defined by some of the items from the MEAQ Distress Endurance scale (example item: “When working on something important, I won’t quit even if things get difficult”) appears to be measuring the ACT Hexaflex process of committed action. Expressive Awareness and Physical Awareness both appear to be facets of present moment awareness. Thus, these subfactors appear to represent the Hexaflex processes of present moment awareness, self as context, and committed action. It is unclear why committed action is most closely associated with awareness and self-as-context, but it may be that the ability to be mindful and to dissociate one’s sense of self from one’s unpleasant mental content is an important prerequisite for engaging in committed action while feeling distress. If this is the case, it would make conceptual sense for these three points of the Hexaflex to be strongly related.

Finally, the Avoidance factor was found to consistently be composed of four lower-order factors consisting of Physical Avoidance, Pain Aversion, Distraction, and Mental Avoidance. Physical Avoidance, defined by some items from the MEAQ Behavioral Avoidance scale, and Pain Aversion, defined by some items from the MEAQ Distress Aversion scale, and Mental Avoidance, defined by items from the PHLMS

Acceptance scale, seem to conceptually relate to the ACT Hexaflex process of avoidance/acceptance. Distraction, defined by items from the MEAQ Distraction/Suppression scale (sample item: “When upsetting memories come up, I try to focus on other things”) also appears conceptually related to the Hexaflex process of avoidance/acceptance, but may also be conceptually related to a lack of present awareness.

Of the six points of the ACT Hexaflex, as many as five emerge in these item-level factor analyses. Inflexibility/cognitive fusion, avoidance, mindful awareness, and committed action all appear to be distinguishable at an item level. Additionally, self-as-context may be related to the perspective taking factor that is defined by some items from the EQ. Values did not emerge in the initial factor analysis due to the VLQ’s inability to strongly correlate with other measures. It is possible that this is due to the process of valuing being under the control of fundamentally different contextual factors compared with the other ACT Hexaflex processes. Alternatively, it may be that the VLQ has low construct validity, and is not properly measuring the process of valuing.

#### Characteristics of ACT Process Sum Scales

Another aim of the study was to investigate the nature of these ACT processes. To this end, sum scores of the eleven lower-order scales were calculated, and their interrelationships, external relationships, and longitudinal relationships were investigated.

In order to investigate the interrelationships between these process sum scores to determine if a three-factor structure emerges, the scores were re-factor analyzed. Despite emerging from the Avoidance higher-order factor, the Mental Avoidance sum score cross loaded on Avoidance and Inflexibility/Fusion across all three samples. Likewise,

Distraction appeared to cross-load with both the Awareness and the Avoidance higher-order factors. Item-level confirmatory factor analysis suggests that a simple correlated factor model better accounts for the data compared with a hierarchical model, even when taking these cross loadings into account. These results suggest that these processes are all highly interrelated. Whereas a hierarchical model might have suggested different contextual factors controlling different groups of processes, these results suggest that the contextual factors underlying these processes have significant overlap across the different processes.

When examining the relationships between these ACT-related processes and external variables, Inflexibility, Internalizing Beliefs, Detachment, and Mental Avoidance are most strongly related to psychopathology and poor functioning. Again, it is likely that common contextual factors account for these findings. Given that the study participants have not undergone ACT interventions, the strong relationship between fusion-related processes and measures of suffering and functioning makes conceptual sense in light of the ACT model. The very nature of cognitive fusion is that individuals have difficulty separating thoughts, symptoms, and personal identity. It is possible that these relationships would be weaker among individuals who have experience with ACT interventions (Hayes et al., 2012).

Notably, Perspective Taking, Expressive Awareness, and Committed Action were only moderately associated with measures of psychopathology and functioning. These associations were in the expected direction (greater awareness and committed action were associated with less psychopathology and greater functioning), but the relationships were not particularly strong compared with the Cognitive Fusion and Mental Avoidance's



relationships with these variables. Physical Awareness and Distraction fared even more poorly, with essentially no association with psychopathology and functioning. These results may indicate that Acceptance and Defusion are particularly important Hexaflex processes for increasing levels of functioning. It also suggests that mindfulness exercises may be particularly useful when they help clients to increase their ability to verbally describe their ongoing experiences, as this facet of present awareness appears to be the most highly associated with functioning.

Because the ACT model suggests that unnecessary suffering is caused by experiential avoidance, cognitive fusion, and a conceptualized, non-mindful viewpoint, longitudinal analyses were conducted in order to determine whether the ACT processes at Time 1 predict psychopathology at Time 2. Although, on average, this pattern was observed, the results were neither statistically nor clinically significant. These results may be because the two week test-retest period is too short to detect cause and effect relationships. Alternatively, it is possible that the ACT processes do not play the hypothesized causal role, but rather vary along with psychopathology. To truly shed light on the causal relationships between these processes, longer-term longitudinal studies would be necessary.

Despite the test-retest interval likely being too short to examine cause and effect relationships, the simple longitudinal course of the ACT processes under consideration is informative. The ACT process sum scores were quite reliable over time compared with many of the study scales. These results offer preliminary evidence that these processes are “traitlike” in the sense of being relatively stable over time. The reliabilities compare favorably to that of the Mini IPIP scales; however, it is possible that longer and more

robust measures of the Big Five personality traits would show higher reliability (Donnellan et al., 2006). The stability of these processes over time suggests that they might function as a diathesis for the development of psychopathology. Longer-term longitudinal research would be useful to investigate this question further.

This study also aimed to determine whether ACT process measures have incremental validity for measures of psychopathology, personality, and functioning over and above superficially similar measures such as distress tolerance, discomfort intolerance, anxiety sensitivity, and coping styles. It was found that ACT process measures do indeed have incremental value, particularly processes related to Inflexibility/Cognitive Fusion (Inflexibility, Internalizing Beliefs, Detachment, and Mental Avoidance). These results suggest that cognitive fusion may be particularly differentiable from non-ACT processes. Overall, the eleven ACT sum scores had significant incremental value when added to the combined ASI, DTS, DIS, and COPE (a total of twelve scales) in explaining most of the external study variables, including measures of internalizing and externalizing psychopathology, personality traits, and functioning. These results indicate that these process measures are not merely slight variations of these other constructs, but rather add unique information about individual differences.

### General Discussion

This study set out to determine the validity and utility of ACT process measures, to determine whether these processes can be distinguished from one another when self-report measures are used, and to investigate whether there is evidence for the ACT Hexaflex model in the structure of these self-report measures. Strengths of this study

include the use of two large samples, collection of two week longitudinal data, and the inclusion of a number of assessment measures, including measures never before collected together. Because of these strengths, this study was very well suited to answer questions about the utility and validity of these ACT process measures.

Overall, the results were positive for these process measures. Measures of ACT processes have incremental value above and beyond measures of seemingly similar psychological processes such as anxiety sensitivity, distress tolerance, discomfort intolerance, and coping styles. Further, it was found that the ACT measures were assessing a number of distinguishable processes, including nearly all of the Hexaflex processes. Cognitive fusion, acceptance/avoidance, present awareness, committed action, and possibly self-as-context were all psychometrically distinguishable. Values, as operationalized by the VLQ, were not strongly related to any other study measure, including measures of ACT processes. The other ACT processes were related to some degree. Many of these Hexaflex processes, such as avoidance, awareness, and fusion, could be broken into several interrelated processes. Committed action and self-as-context could not. This may be due to there being fewer items that were explicitly measuring these two processes.

At the measure level, there was some conceptual overlap. Most notably, the AAQ and the CFQ could not be distinguished from one another, either at the scale level or at the item level. These two scales were therefore either measuring the same process or were measuring two different processes (psychological inflexibility and cognitive fusion) that were under such similar contextual control as to be indistinguishable.

Because it is a measure of “psychological inflexibility,” which is placed at the center of the Hexaflex, the AAQ is often used as a standalone measure of ACT-related processes. Although this measure is likely important to include when conducting outcomes research for ACT interventions, this study’s structural analyses suggest that it does not fully measure a number of Hexaflex processes, including present moment awareness, self-as-context, committed action, and acceptance/avoidance. This is particularly interesting because the AAQ is often called a measure of experiential avoidance; however, the results of this study suggest that it is much more closely related to the ACT process of cognitive fusion, as it is nearly indistinguishable from the CFQ and highly related to the ATQ-B. Additionally, these measures are strongly related to a measure of depression. These results suggest that naïve test takers may not be able to distinguish cognitive fusion from symptoms of depression.

Overall, in order to fully assess and track these Hexaflex processes, several measures must be used. Some measures can be used to assess multiple Hexaflex processes. The FFMQ can be used to measure both mindful awareness and inflexibility/fusion; the MEAQ can be used to measure both acceptance/avoidance and committed action; the PHLMS can be used to measure both mindful awareness and acceptance/avoidance. However, no measure exists to fully assess all Hexaflex constructs. Such a comprehensive ACT measure could be developed relatively easily, and the current study suggests that the ACT Hexaflex processes can be readily differentiated at the scale level. The current study offers clear guidance to distinguish four Hexaflex processes. Acceptance (related to the current study’s Mental Avoidance subfactor), Defusion (related to the Inflexibility subfactor), Committed Action (related to the

Committed Action subfactor), and Present Moment Awareness (related to the Expressive Awareness subfactor) are clearly modeled in this study. The current study may also offer guidance for measuring Perspective Taking using a self-report measure; however, more research is needed to confirm the hypothesis that such a measure is associated with the Hexaflex process of self-as-context. Likewise, more research is needed to determine whether Values can be fully modeled using self-report measures, and, if so, how this can best be done.

The results of this study are relevant to future research. From a purely measurement perspective, it demonstrates that ACT Hexaflex processes can be distinguished at the scale level, and the most ACT outcome studies that only use the AAQ to measure changes in participants are not assessing all relevant processes. It is recommended that future outcome studies begin to take these findings into account by more broadly assessing changes in Hexaflex processes.

The study also suggests a high association between psychological inflexibility/cognitive fusion and depression, offering some confirmation to the findings of Gámez et al. (2010) that naïve participants have difficulty distinguishing between ACT processes and symptoms of psychopathology. Hayes et al. (2012) suggest that, since an explicit goal of ACT is to loosen the associations between these processes, these relations would change due to ACT interventions. Future research should test this hypothesis by including a sample that has undergone ACT interventions. ACT interventions may also change the relationships found in this study in other ways, such as by strengthening the associations between self-reported values and other Hexaflex processes. A study in which

the structure of these process measures was examined before and after an ACT intervention would address many of these issues.

This study also included a two week longitudinal component in order to test relationships over time. Although this demonstrated that the test-retest correlations for ACT processes were robust, suggesting that they are more trait-like than state-like, causal relationships between the ACT processes and measures of psychopathology could not be established. This may be due to the short timeframe between the test and the retest. Future research should examine whether ACT processes affect future psychopathology by examining longer timeframes.

This study also did not examine behavioral measures of the Hexaflex processes. Therefore, although incremental validity, convergent validity, and discriminant validity could be examined, full construct validity for these process measures has not been established. Although it has been established that these processes are distinguishable and that self-report measures of these processes have incremental validity, in future research it would be fruitful to examine differential correlates between ACT process measures and behavioral measures. Some such research has already been done. For example, Gratz et al. (2006) found that a behavioral measure of willingness to experience distress correlated  $r = -0.76$  with the AAQ. Testing whether this relationship is stronger than that between the behavioral measure and a measure of depression or internalizing psychopathology would investigate whether psychological inflexibility is psychometrically distinguishable from psychopathology measures in this context. Mindfulness analogue behavioral measures have also been tested; Frewen, Evans, Maraj, Dozois, and Partridge (2008) examined a mindfulness behavioral measure in which participants' level of mindfulness

was periodically queried during a mindful meditation exercise. This behavioral measure had only a modest ( $r = 0.34$ ) association with the MAAS. Overall, there has been limited research to compare whether such measures are more valid or reliable than self-report measures.

### Conclusion

The current study had multiple strengths, including two large independent samples, a longitudinal component, and a large number of scales to fully investigate the structure, incremental validity, stability over time, and clinical utility of ACT process measures. It was found that the ACT Hexaflex model could largely be recreated structurally, with acceptance/avoidance, cognitive fusion, mindful awareness, committed action, and self-as-context all being differentiable at an item level. Values, as operationalized by the VLQ, were not related to the other processes. These processes were differentiable and had incremental validity when explaining measures of psychopathology, personality, and functioning. It was also found that these processes were stable and had high reliabilities over time. It was also found that measures of psychological inflexibility and cognitive fusion had very strong relationships with a measure of depression, leading to questions of whether naïve participants could distinguish between this ACT process and psychological distress in a self-report format. It is possible that this relationship would be weakened in participants who have undergone an ACT intervention due to the weakening of cognitive fusion's contextual control on symptoms of depression. Additionally, it was found that most ACT outcome studies only poorly measure these ACT processes; most such studies use the AAQ-II, which, of the ACT Hexaflex processes, is most closely related to cognitive fusion. Other

measures may be used to more completely track the changes caused by these interventions. Future research should also investigate how well these process measures correspond with behavioral measures.



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## APPENDIX A

## TABLES

Table A1. Mechanical Turk Univariate Statistics

Variable	N	Mean	SD	Alpha
AAQ	344	22.11	9.07	0.89
ASI Mental	342	4.62	3.94	0.84
ASI Physical	342	11.60	7.11	0.87
ASI Social	342	6.35	2.44	0.48
ASI total	342	24.06	12.52	0.91
ATQ Believability	333	66.69	26.70	0.97
ATQ Frequency	333	61.59	24.68	0.97
CFQ	330	46.00	11.44	0.79
COPE Active Coping	323	51.29	9.64	0.88
COPE Avoidant Coping	324	23.10	6.88	0.86
COPE Emotion Focused Coping	324	19.41	5.37	0.83
DIS Discomfort Avoidance	323	9.20	3.90	0.68
DIS Discomfort Tolerance	323	6.25	3.17	0.82
DTS Absorbtion	320	9.45	3.18	0.79
DTS Appraisal	320	19.83	5.36	0.80
DTS Regulation	320	8.59	3.13	0.79
DTS Tolerance	320	9.44	2.95	0.71
Experiences Decentering	321	36.46	6.78	0.82
Externalizing	318	39.16	9.81	0.88
FFMQ Act with Awareness	315	27.94	6.76	0.89
FFMQ Describe	315	27.29	6.34	0.85
FFMQ Nonjudge	315	26.01	6.31	0.85
FFMQ Nonreact	315	21.56	4.72	0.79
FFMQ Observe	315	26.37	6.19	0.82
IPIP Agreeableness	309	14.63	3.72	0.77
IPIP Conscientiousness	309	14.52	3.29	0.64
IPIP Extraversion	309	11.39	3.74	0.72
IPIP Openness	309	14.89	3.39	0.69
IPIP Neuroticism	309	11.25	3.48	0.62
K10	313	23.21	8.43	0.92
MAAS	309	62.70	13.61	0.90
MEAQ Behavior Avoidance	312	41.58	10.60	0.88
MEAQ Distraction/Suppression	312	28.60	6.85	0.84
MEAQ Distress Aversion	312	50.63	12.22	0.87
MEAQ Distress Endurance	311	46.46	9.90	0.87
MEAQ Procrastination	311	23.70	6.85	0.80
MEAQ Repression/Denial	312	37.75	12.73	0.88

Table A1. Continued

Variable	N	Mean	SD	Alpha
PHLMS Acceptance	306	31.21	7.36	0.85
PHLMS Awareness	307	36.20	6.69	0.85
VLQ Consistence	303	71.12	17.29	0.87
VLQ Importance	303	75.67	16.06	0.85
WBSI	306	49.56	11.11	0.91
WHODAS Understand/Comm	305	13.17	5.75	0.91
WHODAS Getting Along	305	11.10	4.87	0.84
WHODAS Life Activities	305	9.27	4.17	0.93
WHODAS Work/School	274	9.29	4.16	0.92
VRIN	334	10.04	3.65	0.48

*Note.* AAQ = Acceptance and Action Questionnaire; ASI = Anxiety Sensitivity Index; ATQ = Automatic Thoughts Questionnaire; CFQ = Cognitive Fusion Questionnaire; DIS = Discomfort Intolerance Scale; DTS = Distress Tolerance Scale; FFMQ = Five Facet Mindfulness Questionnaire; IPIP = International Personality Item Pool; K10 = Kessler Psychological Distress Scale; MAAS = Mindful Attention Awareness Scale; MEAQ = Multidimensional Experiential Avoidance Questionnaire; PHLMS = Philadelphia Mindfulness Scale; VLQ = Valued Living Questionnaire; WBSI = White Bear Suppression Inventory; WHODAS = World Health Organization Disability Assessment; VRIN = Variable Response Inventory

Table A2. Student Univariate Statistics

Variable	Student Time 1				Student Time 2			
	N	Mean	SD	Alpha	N	Mean	SD	Alpha
AAQ	482	18.49	8.30	0.91	339	17.51	8.26	0.92
ASI Mental	482	3.00	3.18	0.81	338	3.01	3.29	0.85
ASI Physical	482	9.06	6.39	0.86	339	8.45	6.44	0.89
ASI Social	482	5.69	2.20	0.42	339	4.91	2.36	0.54
ASI total	482	19.11	10.54	0.88	339	17.60	11.22	0.91
ATQ believability	481	54.63	22.27	0.97	339	52.88	23.65	0.98
ATQ frequency	481	51.88	20.67	0.97	339	51.47	22.69	0.98
CFQ	482	44.64	10.75	0.80	340	43.08	11.07	0.80
COPE Active Coping	483	50.88	8.63	0.87	336	49.49	9.34	0.89
COPE Avoidant Coping	483	20.78	5.41	0.83	338	20.80	5.45	0.82
COPE Emotion Focused Coping	483	20.48	5.71	0.88	336	20.21	5.69	0.88
DIS Discomfort Avoidance	483	8.33	3.51	0.72	339	8.16	3.40	0.73
DIS Discomfort Tolerance	483	7.10	3.00	0.88	339	6.82	3.06	0.91
DTS Absorbtion	482	10.20	2.96	0.80	339	10.37	3.00	0.83
DTS Appraisal	482	21.73	5.12	0.85	339	21.69	5.19	0.86
DTS Regulation	482	9.68	2.79	0.79	338	9.99	2.58	0.75
DTS Tolerance	482	10.30	2.87	0.79	339	10.61	3.01	0.85
Experiences Decentering	482	36.94	6.06	0.84	339	36.38	5.95	0.83
Externalizing	482	35.23	7.23	0.81	339	34.78	7.67	0.85



Table A2. Continued

Variable	Student Time 1				Student Time 2			
	N	Mean	SD	Alpha	N	Mean	SD	Alpha
FFMQ Act with Awareness	481	26.47	5.37	0.87	338	26.22	5.61	0.89
FFMQ Describe	480	26.69	4.88	0.81	338	26.45	5.31	0.86
FFMQ Nonjudge	480	27.05	6.59	0.91	338	27.97	6.28	0.92
FFMQ Nonreact	480	20.94	3.79	0.73	338	20.87	4.02	0.79
FFMQ Observe	481	24.93	5.12	0.79	338	24.64	5.68	0.85
IPIP Agreeableness	482	15.45	2.90	0.69	340	15.20	3.06	0.76
IPIP Conscientiousness	482	14.41	3.15	0.69	340	14.48	3.14	0.74
IPIP Extraversion	482	12.96	3.60	0.80	340	13.02	3.56	0.82
IPIP Openness	482	14.20	2.86	0.66	340	13.93	2.91	0.70
IPIP Neuroticism	482	11.02	3.19	0.66	340	11.00	2.99	0.65
K10	482	20.83	6.92	0.89	340	20.29	7.20	0.92
MAAS	482	59.61	11.60	0.89	340	59.36	12.16	0.90
MEAQ Behavior Avoidance	482	36.43	8.62	0.84	340	35.29	8.82	0.88
MEAQ Distraction/Suppression	481	26.12	6.38	0.87	340	25.19	6.35	0.89
MEAQ Distress Aversion	482	43.77	10.64	0.85	340	40.85	10.40	0.87
MEAQ Distress Endurance	481	48.09	8.17	0.84	340	46.68	9.49	0.90
MEAQ Procrastination	481	23.70	6.42	0.83	340	22.80	6.30	0.83
MEAQ Repression/Denial	481	33.61	10.41	0.87	340	34.32	10.74	0.88
PHLMS Acceptance	482	29.48	7.01	0.88	340	28.54	7.05	0.90
PHLMS Awareness	482	34.63	5.82	0.81	340	33.74	6.61	0.87
VLQ Consistence	482	69.02	14.51	0.77	340	71.18	15.01	0.83
VLQ Importance	482	79.92	12.57	0.83	340	78.55	13.97	0.87

Table A2. Continued

Variable	Student Time 1				Student Time 2			
	N	Mean	SD	Alpha	N	Mean	SD	Alpha
WBSI	482	47.32	12.36	0.93	340	44.67	12.37	0.94
WHODAS Understand/Comm	482	10.90	3.81	0.82	340	10.87	4.08	0.87
WHODAS Getting Along	482	8.52	3.50	0.79	340	8.69	3.68	0.82
WHODAS Life Activities	482	6.93	3.16	0.89	340	7.02	3.19	0.92
WHODAS Work/School	458	8.55	3.30	0.88	323	8.14	3.38	0.90
VRIN	485	9.55	3.42	0.57	342	9.54	3.80	0.65

*Note.* AAQ = Acceptance and Action Questionnaire; ASI = Anxiety Sensitivity Index; ATQ = Automatic Thoughts Questionnaire; CFQ = Cognitive Fusion Questionnaire; DIS = Discomfort Intolerance Scale; DTS = Distress Tolerance Scale; FFMQ = Five Facet Mindfulness Questionnaire; IPIP = International Personality Item Pool; K10 = Kessler Psychological Distress Scale; MAAS = Mindful Attention Awareness Scale; MEAQ = Multidimensional Experiential Avoidance Questionnaire; PHLMS = Philadelphia Mindfulness Scale; VLQ = Valued Living Questionnaire; WBSI = White Bear Suppression Inventory; WHODAS = World Health Organization Disability Assessment; VRIN = Variable Response Inventory

Table A3. Cohen's d Statistics

Variable	T1-T2 Differences	T1-MT Differences
	d (95% CI)	d (95% CI)
AAQ	0.12 (-0.62, 1.00)	-0.42 (-1.16, 0.54)
ASI Mental	0.00 (-0.29, 0.35)	-0.46 (-0.75, -0.05)*
ASI Physical	0.09 (-0.48, 0.78)	-0.38 (-0.95, 0.37)
ASI Social	0.34 (0.15, 0.60)*	-0.29 (-0.48, -0.03)
ASI total	0.14 (-0.80, 1.33)	-0.43 (-1.37, 0.89)
ATQ believability	0.08 (-1.91, 2.59)	-0.50 (-2.49, 2.37)
ATQ frequency	0.02 (-1.83, 2.43)	-0.43 (-2.28, 2.22)
CFQ	0.14 (-0.82, 1.32)	-0.12 (-1.08, 1.11)
COPE Active Coping	0.16 (-0.61, 1.15)	-0.05 (-0.82, 1.01)
COPE Avoidant Coping	0.00 (-0.49, 0.58)	-0.38 (-0.87, 0.36)
COPE Em Focused Coping	0.05 (-0.46, 0.65)	0.19 (-0.32, 0.78)
DIS Discomfort Avoidance	0.05 (-0.26, 0.41)	-0.24 (-0.55, 0.19)
DIS Discomfort Tolerance	0.09 (-0.18, 0.42)	0.28 (0.01, 0.62)*
DTS Absorbtion	-0.06 (-0.32, 0.26)	0.25 (-0.02, 0.59)
DTS Appraisal	0.01 (-0.45, 0.56)	0.37 (-0.09, 0.95)
DTS Regulation	-0.11 (-0.36, 0.16)	0.37 (0.13, 0.72)*
DTS Tolerance	-0.10 (-0.36, 0.22)	0.30 (0.04, 0.62)*
Experiences Decentering	0.09 (-0.45, 0.73)	0.08 (-0.47, 0.82)
Externalizing	0.06 (-0.58, 0.88)	-0.47 (-1.12, 0.61)
FFMQ Act with Awareness	0.05 (-0.43, 0.64)	-0.25 (-0.73, 0.50)
FFMQ Describe	0.05 (-0.39, 0.61)	-0.11 (-0.55, 0.59)
FFMQ Nonjudge	-0.14 (-0.73, 0.53)	0.16 (-0.43, 0.86)
FFMQ Nonreact	0.02 (-0.32, 0.45)	-0.15 (-0.49, 0.37)
FFMQ Observe	0.05 (-0.40, 0.66)	-0.26 (-0.72, 0.42)
IPIP Agreeableness	0.08 (-0.18, 0.41)	0.25 (-0.01, 0.67)
IPIP Conscientiousness	-0.02 (-0.30, 0.31)	-0.03 (-0.31, 0.33)
IPIP Extraversion	-0.02 (-0.34, 0.36)	0.43 (0.11, 0.85)*
IPIP Openness	0.09 (-0.16, 0.40)	-0.23 (-0.48, 0.15)
IPIP Neuroticism	0.01 (-0.28, 0.32)	-0.07 (-0.35, 0.32)
K10	0.08 (-0.54, 0.84)	-0.32 (-0.93, 0.62)
MAAS	0.02 (-1.01, 1.31)	-0.25 (-1.28, 1.27)

Table A3. Continued

Variable	T1-T2 Differences	T1-MT Differences
	d (95% CI)	d (95% CI)
MEAQ Behavior Avoidance	0.13 (-0.64, 1.07)	-0.55 (-1.32, 0.63)
MEAQ Distraction/Suppression	0.15 (-0.42, 0.82)	-0.38 (-0.95, 0.38)
MEAQ Distress Aversion	0.28 (-0.67, 1.38)	-0.61 (-1.56, 0.75)
MEAQ Distress Endurance	0.16 (-0.57, 1.17)	0.18 (-0.55, 1.28)
MEAQ Procrastination	0.14 (-0.43, 0.81)	0.00 (-0.57, 0.76)
MEAQ Repression/Denial	-0.07 (-1.00, 1.07)	-0.36 (-1.29, 1.05)
PHLMS Acceptance	0.13 (-0.49, 0.88)	-0.24 (-0.87, 0.58)
PHLMS Awareness	0.14 (-0.37, 0.85)	-0.25 (-0.77, 0.49)
VLQ Consistence	-0.15 (-1.44, 1.45)	-0.13 (-1.43, 1.81)
VLQ Importance	0.10 (-1.02, 1.59)	0.30 (-0.82, 2.11)
WBSI	0.21 (-0.89, 1.53)	-0.19 (-1.29, 1.06)
WHODAS Understand/Commun	0.01 (-0.33, 0.44)	-0.49 (-0.83, 0.16)
WHODAS Getting Along	-0.05 (-0.36, 0.34)	-0.63 (-0.95, -0.09)*
WHODAS Life Activities	-0.03 (-0.31, 0.31)	-0.65 (-0.94, -0.19)*
WHODAS Work/School	0.12 (-0.18, 0.49)	-0.20 (-0.51, 0.29)
VRIN	0.00 (-0.30, 0.41)	-0.14 (-0.44, 0.25)

*Note.* \* denotes statistically significant d values. T1 and T2 = Students Time 1 and Time 2; MT = Mechanical Turk. AAQ = Acceptance and Action Questionnaire; ASI = Anxiety Sensitivity Index; ATQ = Automatic Thoughts Questionnaire; CFQ = Cognitive Fusion Questionnaire; DIS = Discomfort Intolerance Scale; DTS = Distress Tolerance Scale; FFMQ = Five Facet Mindfulness Questionnaire; IPIP = International Personality Item Pool; K10 = Kessler Psychological Distress Scale; MAAS = Mindful Attention Awareness Scale; MEAQ = Multidimensional Experiential Avoidance Questionnaire; PHLMS = Philadelphia Mindfulness Scale; VLQ = Valued Living Questionnaire; WBSI = White Bear Suppression Inventory; WHODAS = World Health Organization Disability Assessment; VRIN = Variable Response Inventory

Table A4. Correlations among ACT scales--Mechanical Turk

	1	2	3	4	5	6	7	8
1. AAQ	--							
2. ATQ Believability	0.73	--						
3. CFQ	0.73	0.68	--					
4. EQ decentering	-0.29	-0.24	-0.44	--				
5. FFMQ Observe	0.05	0.12	0.10	0.38	--			
6. FFMQ Describe	-0.35	-0.25	-0.27	0.36	0.30	--		
7. FFMQ Act with Awareness	-0.61	-0.56	-0.61	0.27	-0.02	0.37	--	
8. FFMQ Nonjudge	-0.52	-0.53	-0.55	0.08	-0.35	0.18	0.52	--
9. FFMQ Nonreact	-0.11	-0.02	-0.28	0.61	0.32	0.23	-0.01	-0.08
10. MEAQ Behavior Avoidance	0.32	0.24	0.35	-0.03	0.16	-0.12	-0.25	-0.43
11. MEAQ Distress Aversion	0.26	0.23	0.32	-0.01	0.22	0.03	-0.16	-0.44
12. MEAQ Procrastination	0.48	0.39	0.48	-0.25	-0.04	-0.36	-0.53	-0.40
13. MEAQ Distraction/Suppression	0.00	0.00	-0.02	0.31	0.29	0.06	0.04	-0.29
14. MEAQ Repression/Denial	0.46	0.44	0.39	-0.06	-0.07	-0.44	-0.52	-0.45
15. MEAQ Distress Endurance	-0.26	-0.21	-0.30	0.52	0.33	0.31	0.20	0.02
16. MAAS	-0.49	-0.44	-0.52	0.47	0.27	0.40	0.61	0.25
17. PHLMS Awareness	-0.04	0.01	-0.01	0.44	0.68	0.40	0.14	-0.20
18. PHLMS Acceptance	0.38	0.34	0.36	0.07	0.27	-0.13	-0.33	-0.60
19. WBSI	0.55	0.46	0.59	-0.20	0.18	-0.25	-0.46	-0.57
20. VLQ Importance	-0.21	-0.16	-0.17	0.31	0.21	0.16	0.20	-0.08
21. VLQ Consistence	-0.14	-0.15	-0.21	0.33	0.15	0.22	0.21	0.03

Table A4. Continued

	9	10	11	12	13	14	15	16
9. FFMQ Nonreact	--							
10. MEAQ Behavior Avoidance	0.06	--						
11. MEAQ Distress Aversion	0.02	0.70	--					
12. MEAQ Procrastination	-0.12	0.50	0.34	--				
13. MEAQ Distraction/Suppression	0.30	0.56	0.58	0.18	--			
14. MEAQ Repression/Denial	0.10	0.37	0.27	0.52	0.14	--		
15. MEAQ Distress Endurance	0.53	0.03	0.09	-0.29	0.44	-0.11	--	
16. MAAS	0.23	-0.07	0.04	-0.37	0.19	-0.44	0.35	--
17. PHLMS Awareness	0.37	0.22	0.25	-0.10	0.40	-0.20	0.50	0.37
18. PHLMS Acceptance	0.13	0.55	0.56	0.39	0.63	0.36	0.15	-0.09
19. WBSI	-0.05	0.54	0.54	0.48	0.44	0.42	0.02	-0.30
20. VLQ Importance	0.13	0.06	0.19	-0.06	0.32	0.03	0.18	0.23
21. VLQ Consistence	0.15	0.08	0.11	-0.09	0.17	0.04	0.13	0.19

Table A4. Continued

	17	18	19	20	21
17. PHLMS Awareness	--				
18. PHLMS Acceptance	0.38	--			
19. WBSI	0.20	0.72	--		
20. VLQ Importance	0.23	0.13	0.01	--	
21. VLQ Consistence	0.17	0.00	-0.06	0.63	--

*Note.* Ns range from 302 to 333. AAQ = Acceptance and Action Questionnaire; ATQ = Automatic Thoughts Questionnaire; CFQ = Cognitive Fusion Questionnaire; FFMQ = Five Facet Mindfulness Questionnaire; MAAS = Mindful Attention Awareness Scale; MEAQ = Multidimensional Experiential Avoidance Questionnaire; PHLMS = Philadelphia Mindfulness Scale; VLQ = Valued Living Questionnaire; WBSI = White Bear Suppression Inventory

Table A5. Correlations among ACT scales--Student Time 1

	1	2	3	4	5	6	7	8
1. AAQ	--							
2. ATQ Believability	0.70	--						
3. CFQ	0.72	0.62	--					
4. EQ decentering	-0.41	-0.31	-0.50	--				
5. FFMQ Observe	0.14	0.18	0.14	0.16	--			
6. FFMQ Describe	-0.30	-0.22	-0.29	0.36	0.19	--		
7. FFMQ Act with Awareness	-0.44	-0.40	-0.42	0.20	-0.24	0.24	--	
8. FFMQ Nonjudge	-0.58	-0.53	-0.64	0.32	-0.30	0.24	0.46	--
9. FFMQ Nonreact	-0.10	-0.07	-0.27	0.46	0.33	0.26	-0.06	0.06
10. MEAQ Behavior Avoidance	0.32	0.25	0.32	-0.16	0.05	-0.21	-0.33	-0.33
11. MEAQ Distress Aversion	0.43	0.34	0.44	-0.19	0.13	-0.18	-0.33	-0.44
12. MEAQ Procrastination	0.36	0.29	0.26	-0.22	0.08	-0.26	-0.52	-0.27
13. MEAQ Distraction/Suppression	0.22	0.11	0.22	-0.05	0.09	-0.09	-0.26	-0.34
14. MEAQ Repression/Denial	0.37	0.32	0.33	-0.16	-0.05	-0.55	-0.44	-0.40
15. MEAQ Distress Endurance	-0.14	-0.13	-0.20	0.36	0.29	0.29	0.14	0.06
16. MAAS	-0.39	-0.36	-0.44	0.28	-0.11	0.29	0.67	0.40
17. PHLMS Awareness	0.04	0.06	0.05	0.24	0.59	0.29	-0.11	-0.12
18. PHLMS Acceptance	0.51	0.45	0.60	-0.25	0.22	-0.22	-0.45	-0.65
19. WBSI	0.54	0.45	0.60	-0.34	0.24	-0.22	-0.49	-0.59
20. VLQ Importance	-0.12	-0.13	-0.07	0.20	0.07	0.16	0.06	0.09
21. VLQ Consistence	-0.23	-0.20	-0.21	0.34	0.04	0.21	0.16	0.14



Table A5. Continued

	9	10	11	12	13	14	15	16
9. FFMQ Nonreact	--							
10. MEAQ Behavior Avoidance	-0.10	--						
11. MEAQ Distress Aversion	-0.13	0.57	--					
12. MEAQ Procrastination	-0.04	0.51	0.34	--				
13. MEAQ Distraction/Suppression	-0.02	0.46	0.56	0.20	--			
14. MEAQ Repression/Denial	-0.09	0.41	0.40	0.41	0.27	--		
15. MEAQ Distress Endurance	0.33	-0.23	-0.09	-0.25	0.15	-0.29	--	
16. MAAS	-0.01	-0.20	-0.24	-0.39	-0.19	-0.40	0.14	--
17. PHLMS Awareness	0.24	0.05	0.08	0.03	0.09	-0.21	0.30	0.06
18. PHLMS Acceptance	-0.13	0.37	0.54	0.31	0.58	0.40	-0.01	-0.40
19. WBSI	-0.11	0.28	0.41	0.33	0.41	0.29	0.03	-0.53
20. VLQ Importance	-0.03	-0.07	0.10	-0.16	0.17	-0.19	0.26	0.16
21. VLQ Consistence	0.12	-0.05	-0.05	-0.21	0.06	-0.13	0.19	0.25

Table A5. Continued

	17	18	19	20	21
17. PHLMS Awareness	--				
18. PHLMS Acceptance	0.28	--			
19. WBSI	0.21	0.71	--		
20. VLQ Importance	0.13	0.02	0.00	--	
21. VLQ Consistence	0.09	-0.10	-0.18	0.47	--

*Note.* Ns range from 478 to 481. AAQ = Acceptance and Action Questionnaire; ATQ = Automatic Thoughts Questionnaire; CFQ = Cognitive Fusion Questionnaire; FFMQ = Five Facet Mindfulness Questionnaire; MAAS = Mindful Attention Awareness Scale; MEAQ = Multidimensional Experiential Avoidance Questionnaire; PHLMS = Philadelphia Mindfulness Scale; VLQ = Valued Living Questionnaire; WBSI = White Bear Suppression Inventory

Table A6. Correlations among ACT scales--Student Time 2

	1	2	3	4	5	6	7	8
1. AAQ	--							
2. ATQ Believability	0.68	--						
3. CFQ	0.76	0.67	--					
4. EQ decentering	-0.44	-0.38	-0.49	--				
5. FFMQ Observe	0.12	0.18	0.12	0.33	--			
6. FFMQ Describe	-0.36	-0.32	-0.37	0.45	0.32	--		
7. FFMQ Act with Awareness	-0.45	-0.38	-0.50	0.21	-0.26	0.26	--	
8. FFMQ Nonjudge	-0.57	-0.46	-0.69	0.26	-0.25	0.25	0.49	--
9. FFMQ Nonreact	-0.15	-0.14	-0.33	0.56	0.42	0.32	-0.06	0.02
10. MEAQ Behavior Avoidance	0.45	0.29	0.42	-0.21	0.11	-0.28	-0.37	-0.40
11. MEAQ Distress Aversion	0.47	0.30	0.42	-0.23	0.09	-0.20	-0.32	-0.43
12. MEAQ Procrastination	0.49	0.40	0.44	-0.25	0.12	-0.34	-0.56	-0.37
13. MEAQ Distraction/Suppression	0.36	0.17	0.36	-0.12	0.15	-0.09	-0.27	-0.42
14. MEAQ Repression/Denial	0.46	0.43	0.44	-0.30	-0.10	-0.56	-0.38	-0.39
15. MEAQ Distress Endurance	-0.18	-0.22	-0.25	0.39	0.26	0.42	0.16	0.13
16. MAAS	-0.46	-0.39	-0.49	0.32	-0.05	0.37	0.67	0.39
17. PHLMS Awareness	-0.01	0.00	-0.03	0.39	0.69	0.41	-0.09	-0.11
18. PHLMS Acceptance	0.56	0.40	0.60	-0.23	0.23	-0.21	-0.45	-0.68
19. WBSI	0.57	0.41	0.62	-0.27	0.16	-0.22	-0.47	-0.60
20. VLQ Importance	-0.18	-0.29	-0.16	0.20	0.01	0.19	0.12	0.09
21. VLQ Consistence	-0.27	-0.27	-0.22	0.18	-0.02	0.25	0.23	0.15

Table A6. Continued

	9	10	11	12	13	14	15	16
9. FFMQ Nonreact	--							
10. MEAQ Behavior Avoidance	-0.08	--						
11. MEAQ Distress Aversion	-0.13	0.66	--					
12. MEAQ Procrastination	-0.05	0.57	0.46	--				
13. MEAQ Distraction/Suppression	0.01	0.57	0.65	0.41	--			
14. MEAQ Repression/Denial	-0.09	0.47	0.44	0.53	0.27	--		
15. MEAQ Distress Endurance	0.35	-0.14	-0.08	-0.16	0.23	-0.32	--	
16. MAAS	0.08	-0.27	-0.23	-0.44	-0.18	-0.45	0.24	--
17. PHLMS Awareness	0.37	0.03	0.06	-0.02	0.15	-0.27	0.40	0.16
18. PHLMS Acceptance	-0.06	0.48	0.54	0.45	0.62	0.39	-0.02	-0.35
19. WBSI	-0.10	0.45	0.47	0.46	0.57	0.37	0.07	-0.45
20. VLQ Importance	-0.01	0.01	0.11	-0.10	0.15	-0.15	0.15	0.28
21. VLQ Consistence	0.00	-0.05	0.01	-0.20	0.06	-0.16	0.12	0.33

Table A6. Continued

	17	18	19	20	21
17. PHLMS Awareness	--				
18. PHLMS Acceptance	0.29	--			
19. WBSI	0.13	0.73	--		
20. VLQ Importance	0.17	-0.01	-0.06	--	
21. VLQ Consistence	0.12	-0.13	-0.16	0.61	--

*Note.* Ns range from 337 to 340. AAQ = Acceptance and Action Questionnaire; ATQ = Automatic Thoughts Questionnaire; CFQ = Cognitive Fusion Questionnaire; FFMQ = Five Facet Mindfulness Questionnaire; MAAS = Mindful Attention Awareness Scale; MEAQ = Multidimensional Experiential Avoidance Questionnaire; PHLMS = Philadelphia Mindfulness Scale; VLQ = Valued Living Questionnaire; WBSI = White Bear Suppression Inventory

Table A7. Correlations among non-ACT scales--Mechanical Turk

	1	2	3	4	5
1. ASI Physical	--				
2. ASI Mental	0.72	--			
3. ASI Social	0.48	0.43	--		
4. ATQ Frequency	0.50	0.56	0.24	--	
5. COPE Active Coping	-0.08	-0.04	0.09	-0.21	--
6. COPE Emotion-Focused Coping	0.28	0.34	0.17	0.25	0.32
7. COPE Avoidant Coping	0.43	0.53	0.22	0.50	0.08
8. DIS Tolerance	-0.04	0.01	0.02	0.03	0.20
9. DIS Avoidance	0.24	0.29	0.16	0.03	0.13
10. DTS Tolerance	-0.23	-0.25	-0.19	-0.18	0.21
11. DTS Appraisal	-0.40	-0.41	-0.22	-0.44	0.30
12. DTS Absorbtion	-0.32	-0.33	-0.19	-0.31	0.25
13. DTS Regulation	-0.19	-0.22	-0.30	-0.06	0.01
14. Externalizing	0.42	0.46	0.21	0.55	-0.15
15. K10	0.49	0.55	0.23	0.79	-0.23
16. IPIP Extraversion	-0.07	-0.01	-0.03	-0.22	0.24
17. IPIP Agreeableness	-0.05	-0.13	0.04	-0.15	0.25
18. IPIP Conscientiousness	-0.30	-0.34	-0.08	-0.42	0.24
19. IPIP Neuroticism	0.33	0.37	0.12	0.52	-0.39
20. IPIP Openness	-0.24	-0.28	-0.05	-0.24	0.18
21. WHODAS Understand/Comm	0.42	0.57	0.22	0.56	-0.13
22. WHODAS Getting Along	0.38	0.46	0.20	0.51	-0.16
23. WHODAS Life Activities	0.31	0.41	0.13	0.46	-0.15
24. WHODAS Work/School	0.30	0.45	0.16	0.46	-0.12
25. VRIN	0.18	0.22	0.25	0.19	-0.15

Table A7. Continued

	6	7	8	9	10	11	12	13
6. COPE Emotion-Focused Coping	--							
7. COPE Avoidant Coping	0.49	--						
8. DIS Tolerance	0.00	0.03	--					
9. DIS Avoidance	0.09	0.12	-0.08	--				
10. DTS Tolerance	-0.12	-0.15	0.24	-0.03	--			
11. DTS Appraisal	-0.17	-0.36	0.16	0.01	0.64	--		
12. DTS Absorbtion	-0.19	-0.30	0.18	-0.05	0.70	0.78	--	
13. DTS Regulation	-0.10	-0.06	0.11	-0.10	0.44	0.44	0.48	--
14. Externalizing	0.20	0.47	0.02	0.01	-0.12	-0.35	-0.27	-0.05
15. K10	0.31	0.57	0.06	0.01	-0.24	-0.51	-0.43	-0.09
16. IPIP Extraversion	0.17	-0.06	0.07	0.07	0.11	0.17	0.20	0.00
17. IPIP Agreeableness	0.24	-0.13	0.08	0.09	0.15	0.14	0.13	-0.01
18. IPIP Conscientiousness	-0.11	-0.40	0.04	0.05	0.22	0.29	0.30	0.04
19. IPIP Neuroticism	0.16	0.28	-0.06	-0.04	-0.38	-0.52	-0.48	-0.20
20. IPIP Openness	-0.12	-0.26	0.11	0.00	0.13	0.19	0.14	0.01
21. WHODAS Understand/Comm	0.33	0.62	0.03	0.05	-0.17	-0.39	-0.25	-0.10
22. WHODAS Getting Along	0.22	0.55	0.05	0.03	-0.16	-0.37	-0.29	-0.11
23. WHODAS Life Activities	0.25	0.46	0.00	0.05	-0.17	-0.30	-0.25	-0.10
24. WHODAS Work/School	0.24	0.52	0.01	0.07	-0.15	-0.33	-0.24	-0.08
25. VRIN	0.08	0.31	-0.06	-0.02	-0.13	-0.24	-0.22	-0.18

Table A7. Continued

	14	15	16	17	18	19	20	21
14. Externalizing	--							
15. K10	0.60	--						
16. IPIP Extraversion	-0.01	-0.18	--					
17. IPIP Agreeableness	-0.31	-0.17	0.27	--				
18. IPIP Conscientiousness	-0.47	-0.45	0.13	0.28	--			
19. IPIP Neuroticism	0.27	0.62	-0.32	-0.14	-0.34	--		
20. IPIP Openness	-0.39	-0.29	0.08	0.36	0.27	-0.19	--	
21. WHODAS Understand/Comm	0.56	0.63	0.08	-0.21	-0.43	0.34	-0.36	--
22. WHODAS Getting Along	0.49	0.59	-0.05	-0.26	-0.39	0.35	-0.32	0.78
23. WHODAS Life Activities	0.45	0.51	0.08	-0.22	-0.48	0.30	-0.34	0.76
24. WHODAS Work/School	0.45	0.52	0.04	-0.15	-0.41	0.28	-0.31	0.78
25. VRIN	0.33	0.26	0.03	-0.18	-0.19	0.15	-0.22	0.31



Table A7. Continued

	22	23	24	25
22. WHODAS Getting Along	--			
23. WHODAS Life Activities	0.72	--		
24. WHODAS Work/School	0.67	0.73	--	
25. VRIN	0.28	0.24	0.27	--

*Note.* Ns range from 272 to 342. ASI = Anxiety Sensitivity Index; ATQ = Automatic Thoughts Questionnaire; DIS = Discomfort Intolerance Scale; DTS = Distress Tolerance Scale; IPIP = International Personality Item Pool; K10 = Kessler Psychological Distress Scale; WHODAS = World Health Organization Disability Assessment; VRIN = Variable Response Inventory

Table A8. Correlations among non-ACT scales--Student Time 1

	1	2	3	4	5
1. ASI Physical	--				
2. ASI Mental	0.63	--			
3. ASI Social	0.41	0.38	--		
4. ATQ Frequency	0.42	0.62	0.27	--	
5. COPE Active Coping	0.01	-0.05	0.08	-0.17	--
6. COPE Emotion-Focused Coping	0.19	0.11	0.03	0.05	0.36
7. COPE Avoidant Coping	0.35	0.50	0.16	0.50	0.07
8. DIS Tolerance	-0.07	0.02	0.12	0.03	0.16
9. DIS Avoidance	0.27	0.22	0.15	0.14	0.09
10. DTS Tolerance	-0.32	-0.36	-0.19	-0.37	0.15
11. DTS Appraisal	-0.41	-0.53	-0.27	-0.50	0.16
12. DTS Absorbtion	-0.37	-0.43	-0.20	-0.48	0.13
13. DTS Regulation	-0.32	-0.30	-0.25	-0.28	-0.02
14. Externalizing	0.22	0.32	0.20	0.47	-0.11
15. K10	0.39	0.53	0.28	0.71	-0.17
16. IPIP Extraversion	-0.10	-0.08	-0.03	-0.15	0.15
17. IPIP Agreeableness	0.00	-0.17	0.04	-0.13	0.24
18. IPIP Conscientiousness	-0.11	-0.20	0.04	-0.26	0.18
19. IPIP Neuroticism	0.28	0.35	0.13	0.39	-0.13
20. IPIP Openness	-0.09	-0.02	0.04	0.03	0.21
21. WHODAS Understand/Comm	0.28	0.41	0.20	0.45	-0.15
22. WHODAS Getting Along	0.25	0.39	0.16	0.46	-0.05
23. WHODAS Life Activities	0.22	0.34	0.10	0.36	-0.10
24. WHODAS Work/School	0.26	0.35	0.18	0.46	-0.05
25. VRIN	0.28	0.37	0.22	0.41	-0.08

Table A8. Continued

	6	7	8	9	10	11	12	13
6. COPE Emotion-Focused Coping	--							
7. COPE Avoidant Coping	0.27	--						
8. DIS Tolerance	-0.21	-0.07	--					
9. DIS Avoidance	0.17	0.16	-0.25	--				
10. DTS Tolerance	-0.18	-0.25	0.21	-0.28	--			
11. DTS Appraisal	-0.24	-0.42	0.17	-0.22	0.68	--		
12. DTS Absorbtion	-0.26	-0.35	0.15	-0.20	0.77	0.74	--	
13. DTS Regulation	-0.22	-0.26	0.12	-0.28	0.57	0.59	0.55	--
14. Externalizing	0.11	0.40	-0.06	0.16	-0.30	-0.35	-0.38	-0.24
15. K10	0.10	0.44	-0.03	0.17	-0.44	-0.57	-0.53	-0.32
16. IPIP Extraversion	0.16	0.00	0.00	0.04	0.05	0.06	0.02	-0.05
17. IPIP Agreeableness	0.24	-0.19	0.01	-0.01	0.04	0.08	0.05	0.00
18. IPIP Conscientiousness	0.00	-0.32	0.08	-0.11	0.11	0.23	0.16	0.06
19. IPIP Neuroticism	0.28	0.28	-0.21	0.06	-0.39	-0.55	-0.51	-0.26
20. IPIP Openness	0.04	-0.06	0.12	-0.01	0.14	0.11	0.04	0.12
21. WHODAS Understand/Comm	0.04	0.39	-0.12	0.20	-0.26	-0.38	-0.31	-0.25
22. WHODAS Getting Along	0.02	0.33	-0.07	0.12	-0.22	-0.30	-0.24	-0.14
23. WHODAS Life Activities	0.06	0.35	-0.11	0.14	-0.20	-0.28	-0.27	-0.16
24. WHODAS Work/School	0.11	0.32	0.02	0.18	-0.24	-0.31	-0.30	-0.21
25. VRIN	0.08	0.35	-0.09	0.16	-0.26	-0.31	-0.26	-0.17

Table A8. Continued

	14	15	16	17	18	19	20	21
14. Externalizing	--							
15. K10	0.42	--						
16. IPIP Extraversion	0.02	-0.12	--					
17. IPIP Agreeableness	-0.10	-0.11	0.25	--				
18. IPIP Conscientiousness	-0.36	-0.25	0.10	0.20	--			
19. IPIP Neuroticism	0.21	0.51	-0.12	-0.03	-0.14	--		
20. IPIP Openness	0.06	0.00	0.10	0.22	0.04	0.04	--	
21. WHODAS Understand/Comm	0.42	0.56	-0.17	-0.25	-0.37	0.31	-0.09	--
22. WHODAS Getting Along	0.40	0.44	-0.32	-0.26	-0.24	0.27	-0.01	0.68
23. WHODAS Life Activities	0.39	0.39	-0.07	-0.14	-0.38	0.24	-0.06	0.60
24. WHODAS Work/School	0.35	0.48	-0.07	-0.06	-0.26	0.24	0.00	0.61
25. VRIN	0.24	0.44	-0.08	-0.13	-0.16	0.31	-0.03	0.30

Table A8 Continued

	22	23	24	25
22. WHODAS Getting Along	--			
23. WHODAS Life Activities	0.56	--		
24. WHODAS Work/School	0.49	0.55	--	
25. VRIN	0.27	0.22	0.26	--

*Note.* Ns range from 454 to 483. ASI = Anxiety Sensitivity Index; ATQ = Automatic Thoughts Questionnaire; DIS = Discomfort Intolerance Scale; DTS = Distress Tolerance Scale; IPIP = International Personality Item Pool; K10 = Kessler Psychological Distress Scale; WHODAS = World Health Organization Disability Assessment; VRIN = Variable Response Inventory

Table A9. Correlations Among Non-ACT Scales--Student Time 2

	1	2	3	4	5
1. ASI Physical	--				
2. ASI Mental	0.69	--			
3. ASI Social	0.52	0.48	--		
4. ATQ Frequency	0.46	0.54	0.39	--	
5. COPE Active Coping	-0.10	-0.15	0.07	-0.26	--
6. COPE Emotion-Focused Coping	0.15	0.06	0.06	0.02	0.38
7. COPE Avoidant Coping	0.31	0.45	0.25	0.49	0.00
8. DIS Tolerance	-0.12	-0.08	0.10	-0.01	0.19
9. DIS Avoidance	0.24	0.21	0.14	0.11	0.05
10. DTS Tolerance	-0.37	-0.39	-0.21	-0.55	0.19
11. DTS Appraisal	-0.44	-0.54	-0.31	-0.56	0.20
12. DTS Absorbtion	-0.41	-0.42	-0.29	-0.59	0.18
13. DTS Regulation	-0.31	-0.37	-0.30	-0.39	0.00
14. Externalizing	0.29	0.35	0.32	0.50	-0.21
15. K10	0.48	0.54	0.32	0.73	-0.26
16. IPIP Extraversion	-0.19	-0.12	-0.15	-0.27	0.23
17. IPIP Agreeableness	-0.09	-0.21	-0.03	-0.22	0.38
18. IPIP Conscientiousness	-0.24	-0.27	-0.16	-0.37	0.35
19. IPIP Neuroticism	0.30	0.29	0.18	0.39	-0.22
20. IPIP Openness	-0.18	-0.18	-0.01	-0.06	0.20
21. WHODAS Understand/Comm	0.38	0.54	0.28	0.57	-0.27
22. WHODAS Getting Along	0.34	0.46	0.23	0.56	-0.23
23. WHODAS Life Activities	0.38	0.45	0.29	0.58	-0.26
24. WHODAS Work/School	0.28	0.41	0.28	0.52	-0.21
25. VRIN	0.23	0.29	0.18	0.34	-0.19

Table A9. Continued

	6	7	8	9	10	11	12	13
6. COPE Emotion-Focused Coping	--							
7. COPE Avoidant Coping	0.17	--						
8. DIS Tolerance	-0.19	-0.05	--					
9. DIS Avoidance	0.14	0.06	-0.24	--				
10. DTS Tolerance	-0.14	-0.35	0.16	-0.27	--			
11. DTS Appraisal	-0.21	-0.46	0.17	-0.22	0.75	--		
12. DTS Absorbtion	-0.22	-0.39	0.14	-0.23	0.79	0.78	--	
13. DTS Regulation	-0.18	-0.27	0.08	-0.26	0.69	0.65	0.67	--
14. Externalizing	0.02	0.31	-0.03	0.05	-0.31	-0.34	-0.35	-0.29
15. K10	0.07	0.43	-0.10	0.19	-0.47	-0.54	-0.54	-0.33
16. IPIP Extraversion	0.17	-0.10	0.01	0.04	0.12	0.14	0.12	0.01
17. IPIP Agreeableness	0.32	-0.21	0.01	0.02	0.09	0.11	0.08	0.03
18. IPIP Conscientiousness	0.06	-0.33	0.09	-0.12	0.28	0.34	0.34	0.16
19. IPIP Neuroticism	0.27	0.17	-0.23	0.15	-0.37	-0.49	-0.48	-0.28
20. IPIP Openness	0.06	-0.14	0.07	0.05	0.10	0.14	0.06	0.08
21. WHODAS Understand/Comm	-0.06	0.42	-0.14	0.12	-0.39	-0.45	-0.40	-0.30
22. WHODAS Getting Along	-0.08	0.35	-0.10	0.08	-0.35	-0.41	-0.35	-0.23
23. WHODAS Life Activities	-0.02	0.35	-0.19	0.13	-0.41	-0.44	-0.42	-0.30
24. WHODAS Work/School	-0.04	0.31	-0.08	0.16	-0.30	-0.34	-0.35	-0.27
25. VRIN	-0.02	0.26	0.00	-0.03	-0.23	-0.28	-0.26	-0.21

Table A9. Continued

	14	15	16	17	18	19	20	21
14. Externalizing	--							
15. K10	0.41	--						
16. IPIP Extraversion	-0.05	-0.24	--					
17. IPIP Agreeableness	-0.15	-0.24	0.32	--				
18. IPIP Conscientiousness	-0.40	-0.38	0.24	0.36	--			
19. IPIP Neuroticism	0.23	0.50	-0.15	-0.02	-0.22	--		
20. IPIP Openness	-0.01	-0.13	0.06	0.24	0.09	-0.01	--	
21. WHODAS Understand/Comm	0.46	0.58	-0.26	-0.29	-0.47	0.33	-0.15	--
22. WHODAS Getting Along	0.41	0.53	-0.37	-0.34	-0.37	0.30	-0.07	0.77
23. WHODAS Life Activities	0.46	0.51	-0.25	-0.29	-0.48	0.30	-0.08	0.78
24. WHODAS Work/School	0.39	0.48	-0.16	-0.17	-0.40	0.28	-0.08	0.72
25. VRIN	0.28	0.40	-0.07	-0.19	-0.24	0.17	-0.07	0.23



Table A9. Continued

	22	23	24	25
22. WHODAS Getting Along	--			
23. WHODAS Life Activities	0.71	--		
24. WHODAS Work/School	0.60	0.68	--	
25. VRIN	0.23	0.26	0.22	--

*Note.* Ns range from 318 to 340. ASI = Anxiety Sensitivity Index; ATQ = Automatic Thoughts Questionnaire; DIS = Discomfort Intolerance Scale; DTS = Distress Tolerance Scale; IPIP = International Personality Item Pool; K10 = Kessler Psychological Distress Scale; WHODAS = World Health Organization Disability Assessment; VRIN = Variable Response Inventory

Table A10. Correlations Among ACT and Non-ACT Scales—Mechanical Turk

	AAQ	ATQ-b	CFQ	EQ
ASI Physical	0.53	0.48	0.50	-0.11
ASI Mental	0.59	0.58	0.58	-0.12
ASI Social	0.26	0.24	0.27	0.07
ATQ Frequency	0.73	0.89	0.69	-0.31
COPE Active Coping	-0.20	-0.13	-0.26	0.59
COPE Emotion-Focused Coping	0.26	0.27	0.26	0.07
COPE Avoidant Coping	0.52	0.56	0.47	-0.04
DIS Tolerance	0.04	0.07	-0.07	0.22
DIS Avoidance	0.05	0.09	0.07	0.23
DTS Tolerance	-0.25	-0.18	-0.28	0.31
DTS Appraisal	-0.50	-0.43	-0.52	0.40
DTS Absorbtion	-0.43	-0.33	-0.49	0.38
DTS Regulation	-0.12	-0.13	-0.19	0.11
Externalizing	0.51	0.50	0.43	-0.15
K10	0.68	0.74	0.68	-0.33
IPIP Extraversion	-0.26	-0.14	-0.24	0.30
IPIP Agreeableness	-0.17	-0.09	-0.16	0.28
IPIP Conscientiousness	-0.40	-0.40	-0.36	0.32
IPIP Neuroticism	0.55	0.49	0.62	-0.51
IPIP Openness	-0.21	-0.17	-0.11	0.21
WHODAS				
Understand/Comm	0.51	0.54	0.47	-0.15
WHODAS Getting Along	0.49	0.51	0.44	-0.20
WHODAS Life Activities	0.42	0.43	0.38	-0.20
WHODAS Work/School	0.42	0.46	0.44	-0.12
VRIN	0.18	0.23	0.19	-0.08

Table A10. Continued

	FFMQ Obs	FFMQ Des	FFMQ Act	FFMQ Nonj
ASI Physical	0.15	-0.18	-0.38	-0.45
ASI Mental	0.08	-0.23	-0.46	-0.53
ASI Social	0.15	-0.03	-0.12	-0.35
ATQ Frequency	0.09	-0.29	-0.61	-0.50
COPE Active Coping	0.29	0.29	0.16	-0.02
COPE Emotion-Focused Coping	0.13	-0.02	-0.24	-0.28
COPE Avoidant Coping	0.06	-0.32	-0.53	-0.44
DIS Tolerance	0.23	0.09	-0.10	-0.10
DIS Avoidance	0.19	0.15	0.01	-0.15
DTS Tolerance	0.11	0.23	0.17	0.20
DTS Appraisal	0.01	0.33	0.41	0.42
DTS Absorbtion	0.03	0.24	0.33	0.32
DTS Regulation	-0.05	0.06	0.01	0.27
Externalizing	0.01	-0.26	-0.58	-0.37
K10	0.10	-0.29	-0.68	-0.53
IPIP Extraversion	0.08	0.28	0.22	0.13
IPIP Agreeableness	0.35	0.40	0.25	-0.03
IPIP Conscientiousness	0.17	0.38	0.51	0.21
IPIP Neuroticism	-0.01	-0.30	-0.46	-0.39
IPIP Openness	0.34	0.39	0.29	0.11
WHODAS Understand/Comm	-0.02	-0.33	-0.54	-0.40
WHODAS Getting Along	-0.02	-0.34	-0.46	-0.41
WHODAS Life Activities	-0.09	-0.30	-0.42	-0.29
WHODAS Work/School	-0.07	-0.26	-0.45	-0.30
VRIN	-0.11	-0.23	-0.12	-0.15

Table A10. Continued

	FFMQ	MEAQ BA	MEAQ	MEAQ Pr
	Nonr		DAv	
ASI Physical	0.02	0.34	0.25	0.32
ASI Mental	-0.01	0.37	0.34	0.37
ASI Social	0.10	0.37	0.34	0.19
ATQ Frequency	-0.06	0.19	0.19	0.38
COPE Active Coping	0.53	0.10	0.08	-0.16
COPE Emotion-Focused Coping	0.07	0.23	0.18	0.24
COPE Avoidant Coping	0.11	0.33	0.17	0.52
DIS Tolerance	0.21	-0.10	-0.10	-0.05
DIS Avoidance	0.12	0.29	0.30	0.09
DTS Tolerance	0.25	-0.34	-0.36	-0.24
DTS Appraisal	0.26	-0.35	-0.33	-0.33
DTS Absorbtion	0.26	-0.40	-0.34	-0.32
DTS Regulation	0.02	-0.38	-0.45	-0.12
Externalizing	0.06	0.18	0.09	0.37
K10	-0.12	0.28	0.23	0.41
IPIP Extraversion	0.16	-0.22	-0.08	-0.26
IPIP Agreeableness	0.14	0.00	0.11	-0.12
IPIP Conscientiousness	0.14	-0.08	0.04	-0.48
IPIP Neuroticism	-0.39	0.25	0.22	0.31
IPIP Openness	0.05	-0.13	0.02	-0.19
WHODAS				
Understand/Comm	-0.07	0.25	0.16	0.38
WHODAS Getting Along	-0.08	0.26	0.13	0.35
WHODAS Life				
Activities	-0.10	0.23	0.10	0.34
WHODAS Work/School	-0.11	0.27	0.16	0.34
VRIN	-0.06	0.09	-0.01	0.11

Table A10. Continued

	MEAQ D/S	MEAQ R/D	MEAQ DE	MAAS
ASI Physical	0.17	0.35	-0.16	-0.29
ASI Mental	0.14	0.51	-0.17	-0.36
ASI Social	0.28	0.21	0.02	0.00
ATQ Frequency	-0.06	0.40	-0.26	-0.47
COPE Active Coping	0.39	-0.01	0.55	0.27
COPE Emotion-Focused Coping	0.25	0.25	0.00	-0.20
COPE Avoidant Coping	0.07	0.60	-0.23	-0.44
DIS Tolerance	0.07	0.06	0.25	0.06
DIS Avoidance	0.22	0.07	0.03	0.17
DTS Tolerance	-0.13	-0.19	0.30	0.25
DTS Appraisal	-0.05	-0.36	0.32	0.43
DTS Absorbtion	-0.10	-0.29	0.25	0.36
DTS Regulation	-0.35	-0.15	-0.02	0.11
Externalizing	-0.02	0.55	-0.15	-0.42
K10	-0.02	0.51	-0.25	-0.52
IPIP Extraversion	0.03	0.02	0.05	0.15
IPIP Agreeableness	0.25	-0.34	0.23	0.36
IPIP Conscientiousness	0.12	-0.37	0.38	0.50
IPIP Neuroticism	-0.06	0.22	-0.39	-0.44
IPIP Openness	0.03	-0.41	0.24	0.27
WHODAS				
Understand/Comm	0.00	0.57	-0.28	-0.48
WHODAS Getting Along	-0.03	0.49	-0.25	-0.40
WHODAS Life Activities	-0.04	0.44	-0.29	-0.40
WHODAS Work/School	-0.04	0.41	-0.28	-0.36
VRIN	-0.01	0.31	-0.25	-0.22

Table A10. Continued

	PHLMS			
	Aw	PHLMS Ac	WBSI	VLQ I
ASI Physical	0.08	0.34	0.38	-0.02
ASI Mental	0.01	0.37	0.41	0.07
ASI Social	0.22	0.38	0.29	0.02
ATQ Frequency	-0.03	0.31	0.43	-0.22
COPE Active Coping	0.40	0.18	-0.01	0.28
COPE Emotion-Focused Coping	0.16	0.36	0.22	0.30
COPE Avoidant Coping	-0.01	0.36	0.38	0.03
DIS Tolerance	0.25	0.10	0.06	0.00
DIS Avoidance	0.16	0.18	0.10	0.17
DTS Tolerance	0.13	-0.19	-0.24	0.04
DTS Appraisal	0.09	-0.29	-0.38	0.13
DTS Absorbtion	0.02	-0.28	-0.41	0.17
DTS Regulation	-0.10	-0.33	-0.32	-0.02
Externalizing	-0.09	0.19	0.31	-0.15
K10	-0.02	0.38	0.50	-0.19
IPIP Extraversion	0.06	-0.11	-0.20	0.31
IPIP Agreeableness	0.48	0.13	-0.05	0.36
IPIP Conscientiousness	0.27	-0.10	-0.23	0.21
IPIP Neuroticism	-0.11	0.29	0.45	-0.16
IPIP Openness	0.32	-0.14	-0.10	0.10
WHODAS				
Understand/Comm	-0.16	0.24	0.34	0.02
WHODAS Getting Along	-0.10	0.27	0.34	-0.11
WHODAS Life Activities	-0.16	0.19	0.27	-0.03
WHODAS Work/School	-0.08	0.21	0.29	-0.03
VRIN	-0.09	0.07	0.11	-0.12

Table A10. Continued

	VLQ C
ASI Physical	0.00
ASI Mental	0.09
ASI Social	-0.02
ATQ Frequency	-0.23
COPE Active Coping	0.24
COPE Emotion-Focused Coping	0.17
COPE Avoidant Coping	0.10
DIS Tolerance	0.01
DIS Avoidance	0.14
DTS Tolerance	0.03
DTS Appraisal	0.11
DTS Absorbtion	0.15
DTS Regulation	0.04
Externalizing	-0.13
K10	-0.20
IPIP Extraversion	0.25
IPIP Agreeableness	0.19
IPIP Conscientiousness	0.20
IPIP Neuroticism	-0.20
IPIP Openness	0.12
WHODAS Understand/Comm	0.00
WHODAS Getting Along	-0.13
WHODAS Life Activities	-0.07
WHODAS Work/School	-0.06
VRIN	-0.08

Table A10. Continued

*Note.* Ns range from 273 to 342; *Note.* Ns range from 273 to 342; AAQ = Acceptance and Action Questionnaire 2; ATQ-b = Automatic Thought Questionnaire believability; CFQ = Cognitive Fusion Questionnaire; EQ = Experiences Questionnaire decentering scale; FFMQ Obs = Five Factor Mindfulness Questionnaire Observe; FFMQ des = Five Factor Mindfulness Questionnaire Describe; FFMQ Act = Five Factor Mindfulness Questionnaire Act with Awareness; FFMQ Nonj = Five Factor Mindfulness Questionnaire Nonjudge; FFMQ Nonr = Five Factor Mindfulness Questionnaire Nonreact; MEAQ BA = Multidimensional Experiential Avoidance Scale Behavioral Avoidance; MEAQ DA<sub>v</sub> = Multidimensional Experiential Avoidance Scale Distress Aversion; MEAQ Pr = Multidimensional Experiential Avoidance Scale Procrastination; MEAQ D/S = Multidimensional Experiential Avoidance Scale Distraction/Suppression; MEAQ R/D = Multidimensional Experiential Avoidance Scale Repression/Denial; MEAQ DE = Multidimensional Experiential Avoidance Scale Distress Endurance; MAAS = Mindful Attention Awareness Scale; PHLMS Aw = Philadelphia Mindfulness Scale Awareness; PHLMS Ac = Philadelphia Mindfulness Scale Acceptance; WBSI = White Bear Suppression Inventory; VLQ I = Valued Living Questionnaire Importance; VLQ C = Valued Living Questionnaire Consistency



Table A11. Correlations Among ACT and Non-ACT Scales—Student Time 1

	AAQ	ATQ-b	CFQ	EQ
ASI Physical	0.47	0.45	0.41	-0.14
ASI Mental	0.60	0.61	0.54	-0.25
ASI Social	0.37	0.32	0.30	-0.05
ATQ Frequency	0.72	0.88	0.63	-0.36
COPE Active Coping	-0.16	-0.12	-0.17	0.39
COPE Emotion-Focused Coping	0.09	0.10	0.18	-0.05
COPE Avoidant Coping	0.44	0.46	0.40	-0.19
DIS Tolerance	0.04	0.05	-0.03	0.18
DIS Avoidance	0.17	0.11	0.16	-0.03
DTS Tolerance	-0.43	-0.34	-0.51	0.36
DTS Appraisal	-0.56	-0.49	-0.66	0.46
DTS Absorbtion	-0.50	-0.46	-0.60	0.43
DTS Regulation	-0.34	-0.27	-0.36	0.15
Externalizing	0.39	0.43	0.34	-0.25
K10	0.60	0.65	0.60	-0.35
IPIP Extraversion	-0.18	-0.18	-0.13	0.18
IPIP Agreeableness	-0.12	-0.10	-0.07	0.13
IPIP Conscientiousness	-0.16	-0.24	-0.17	0.16
IPIP Neuroticism	0.44	0.38	0.58	-0.38
IPIP Openness	-0.02	0.06	0.02	0.13
WHODAS				
Understand/Comm	0.39	0.38	0.40	-0.23
WHODAS Getting Along	0.39	0.40	0.37	-0.24
WHODAS Life Activities	0.31	0.35	0.28	-0.16
WHODAS Work/School	0.40	0.44	0.36	-0.19
VRIN	0.36	0.42	0.35	-0.11

Table A11. Continued

	FFMQ Obs	FFMQ Des	FFMQ Act	FFMQ Nonj
ASI Physical	0.20	-0.06	-0.24	-0.38
ASI Mental	0.16	-0.20	-0.38	-0.51
ASI Social	0.19	-0.04	-0.23	-0.34
ATQ Frequency	0.16	-0.28	-0.44	-0.53
COPE Active Coping	0.23	0.32	0.17	0.02
COPE Emotion-Focused Coping	0.11	0.23	-0.05	-0.15
COPE Avoidant Coping	0.10	-0.23	-0.38	-0.42
DIS Tolerance	0.24	0.04	-0.08	-0.03
DIS Avoidance	0.10	0.06	-0.16	-0.15
DTS Tolerance	-0.08	0.21	0.32	0.40
DTS Appraisal	-0.12	0.28	0.40	0.59
DTS Absorbtion	-0.12	0.22	0.41	0.46
DTS Regulation	-0.11	0.09	0.27	0.35
Externalizing	0.10	-0.12	-0.43	-0.30
K10	0.18	-0.24	-0.49	-0.53
IPIP Extraversion	0.08	0.22	0.01	0.09
IPIP Agreeableness	0.21	0.30	0.03	0.03
IPIP Conscientiousness	0.05	0.22	0.39	0.15
IPIP Neuroticism	0.11	-0.20	-0.28	-0.45
IPIP Openness	0.25	0.19	0.00	0.00
WHODAS				
Understand/Comm	0.03	-0.31	-0.41	-0.32
WHODAS Getting Along	0.04	-0.25	-0.21	-0.32
WHODAS Life Activities	-0.01	-0.20	-0.31	-0.23
WHODAS Work/School	0.10	-0.20	-0.36	-0.30
VRIN	0.13	-0.17	-0.26	-0.35

Table A11. Continued

	FFMQ	MEAQ BA	MEAQ	MEAQ Pr
	Nonr		DAv	
ASI Physical	0.02	0.33	0.37	0.22
ASI Mental	-0.04	0.23	0.35	0.21
ASI Social	0.05	0.17	0.18	0.12
ATQ Frequency	-0.06	0.26	0.34	0.29
COPE Active Coping	0.26	-0.14	-0.08	-0.21
COPE Emotion-Focused Coping	-0.07	0.08	0.15	0.04
COPE Avoidant Coping	-0.04	0.27	0.29	0.34
DIS Tolerance	0.23	-0.19	-0.11	-0.06
DIS Avoidance	0.05	0.22	0.24	0.16
DTS Tolerance	0.23	-0.33	-0.47	-0.24
DTS Appraisal	0.28	-0.35	-0.51	-0.28
DTS Absorbtion	0.27	-0.31	-0.47	-0.30
DTS Regulation	0.08	-0.32	-0.52	-0.17
Externalizing	-0.06	0.17	0.17	0.33
K10	-0.11	0.25	0.37	0.29
IPIP Extraversion	0.08	-0.25	0.01	-0.19
IPIP Agreeableness	0.07	-0.08	-0.11	-0.09
IPIP Conscientiousness	0.09	-0.18	-0.14	-0.44
IPIP Neuroticism	-0.35	0.23	0.36	0.22
IPIP Openness	0.13	-0.23	-0.20	-0.07
WHODAS				
Understand/Comm	-0.09	0.26	0.23	0.28
WHODAS Getting Along	-0.07	0.17	0.12	0.19
WHODAS Life Activities	-0.03	0.18	0.12	0.27
WHODAS Work/School	-0.06	0.16	0.20	0.33
VRIN	-0.07	0.24	0.29	0.20

Table A11. Continued

	MEAQ D/S	MEAQ R/D	MEAQ DE	MAAS
ASI Physical	0.24	0.22	-0.02	-0.29
ASI Mental	0.12	0.35	-0.13	-0.37
ASI Social	0.16	0.15	0.11	-0.27
ATQ Frequency	0.10	0.36	-0.20	-0.37
COPE Active Coping	0.10	-0.22	0.40	0.10
COPE Emotion-Focused Coping	0.19	-0.17	0.08	-0.04
COPE Avoidant Coping	0.15	0.42	-0.25	-0.31
DIS Tolerance	-0.11	0.01	0.25	-0.04
DIS Avoidance	0.15	0.10	-0.14	-0.15
DTS Tolerance	-0.24	-0.21	0.21	0.33
DTS Appraisal	-0.25	-0.34	0.27	0.42
DTS Absorbtion	-0.23	-0.24	0.22	0.43
DTS Regulation	-0.40	-0.21	0.05	0.33
Externalizing	0.08	0.26	-0.18	-0.39
K10	0.16	0.40	-0.20	-0.50
IPIP Extraversion	0.04	-0.17	0.08	0.06
IPIP Agreeableness	0.05	-0.35	0.27	0.08
IPIP Conscientiousness	-0.01	-0.33	0.28	0.33
IPIP Neuroticism	0.18	0.21	-0.14	-0.27
IPIP Openness	-0.14	-0.21	0.24	0.01
WHODAS				
Understand/Comm	0.11	0.42	-0.29	-0.45
WHODAS Getting Along	0.02	0.29	-0.21	-0.32
WHODAS Life Activities	0.00	0.28	-0.24	-0.35
WHODAS Work/School	0.02	0.24	-0.21	-0.41
VRIN	0.13	0.32	-0.15	-0.25

Table A11. Continued

	PHLMS Aw	PHLMS Ac	WBSI	VLQ I
ASI Physical	0.08	0.34	0.28	0.01
ASI Mental	0.04	0.38	0.33	-0.10
ASI Social	0.15	0.27	0.29	-0.04
ATQ Frequency	0.03	0.44	0.45	-0.15
COPE Active Coping	0.21	-0.01	-0.03	0.19
COPE Emotion-Focused Coping	0.17	0.23	0.16	0.19
COPE Avoidant Coping	-0.01	0.36	0.30	-0.10
DIS Tolerance	0.15	0.03	0.04	0.01
DIS Avoidance	0.09	0.14	0.14	0.06
DTS Tolerance	-0.06	-0.40	-0.40	0.02
DTS Appraisal	-0.03	-0.53	-0.49	0.08
DTS Absorbtion	-0.05	-0.45	-0.51	0.03
DTS Regulation	-0.09	-0.45	-0.39	-0.06
Externalizing	0.00	0.26	0.30	-0.19
K10	0.02	0.49	0.52	-0.14
IPIP Extraversion	0.12	-0.05	-0.04	0.19
IPIP Agreeableness	0.24	-0.01	0.04	0.24
IPIP Conscientiousness	0.09	-0.18	-0.19	0.15
IPIP Neuroticism	0.06	0.43	0.41	0.01
IPIP Openness	0.24	-0.04	0.07	0.02
WHODAS				
Understand/Comm	-0.13	0.31	0.36	-0.16
WHODAS Getting Along	-0.12	0.26	0.27	-0.23
WHODAS Life				
Activities	-0.12	0.18	0.23	-0.20
WHODAS Work/School	-0.02	0.28	0.37	-0.10
VRIN	0.15	0.31	0.24	-0.13

Table A11. Continued

	VLQ C
ASI Physical	-0.11
ASI Mental	-0.17
ASI Social	-0.02
ATQ Frequency	-0.24
COPE Active Coping	0.25
COPE Emotion-Focused Coping	0.06
COPE Avoidant Coping	-0.07
DIS Tolerance	0.06
DIS Avoidance	-0.04
DTS Tolerance	0.18
DTS Appraisal	0.17
DTS Absorbtion	0.19
DTS Regulation	0.03
Externalizing	-0.17
K10	-0.25
IPIP Extraversion	0.15
IPIP Agreeableness	0.08
IPIP Conscientiousness	0.11
IPIP Neuroticism	-0.19
IPIP Openness	0.02
WHODAS Understand/Comm	-0.16
WHODAS Getting Along	-0.19
WHODAS Life Activities	-0.20
WHODAS Work/School	-0.23
VRIN	-0.13

Table A11. Continued

*Note.* Ns range from 454 to 482; AAQ = Acceptance and Action Questionnaire 2; ATQ-b = Automatic Thought Questionnaire believability; CFQ = Cognitive Fusion Questionnaire; EQ = Experiences Questionnaire decentering scale; FFMQ Obs = Five Factor Mindfulness Questionnaire Observe; FFMQ des = Five Factor Mindfulness Questionnaire Describe; FFMQ Act = Five Factor Mindfulness Questionnaire Act with Awareness; FFMQ Nonj = Five Factor Mindfulness Questionnaire Nonjudge; FFMQ Nonr = Five Factor Mindfulness Questionnaire Nonreact; MEAQ BA = Multidimensional Experiential Avoidance Scale Behavioral Avoidance; MEAQ DA<sub>v</sub> = Multidimensional Experiential Avoidance Scale Distress Aversion; MEAQ Pr = Multidimensional Experiential Avoidance Scale Procrastination; MEAQ D/S = Multidimensional Experiential Avoidance Scale Distraction/Suppression; MEAQ R/D = Multidimensional Experiential Avoidance Scale Repression/Denial; MEAQ DE = Multidimensional Experiential Avoidance Scale Distress Endurance; MAAS = Mindful Attention Awareness Scale; PHLMS Aw = Philadelphia Mindfulness Scale Awareness; PHLMS Ac = Philadelphia Mindfulness Scale Acceptance; WBSI = White Bear Suppression Inventory; VLQ I = Valued Living Questionnaire Importance; VLQ C = Valued Living Questionnaire Consistency

Table A12. Correlations Among ACT and Non-ACT Scales--Student Time 2

	AAQ	ATQ-b	CFQ	EQ
ASI Physical	0.53	0.42	0.47	-0.24
ASI Mental	0.59	0.47	0.54	-0.29
ASI Social	0.51	0.35	0.41	-0.12
ATQ Frequency	0.76	0.88	0.71	-0.40
COPE Active Coping	-0.24	-0.24	-0.28	0.46
COPE Emotion-Focused Coping	0.03	-0.02	0.11	0.00
COPE Avoidant Coping	0.44	0.44	0.43	-0.28
DIS Tolerance	-0.07	-0.05	-0.05	0.22
DIS Avoidance	0.19	0.06	0.16	0.01
DTS Tolerance	-0.49	-0.50	-0.54	0.36
DTS Appraisal	-0.59	-0.53	-0.64	0.45
DTS Absorbtion	-0.57	-0.55	-0.66	0.42
DTS Regulation	-0.39	-0.35	-0.40	0.22
Externalizing	0.43	0.46	0.44	-0.23
K10	0.66	0.68	0.65	-0.37
IPIP Extraversion	-0.27	-0.29	-0.20	0.27
IPIP Agreeableness	-0.16	-0.22	-0.12	0.15
IPIP Conscientiousness	-0.34	-0.40	-0.33	0.29
IPIP Neuroticism	0.45	0.36	0.52	-0.40
IPIP Openness	-0.09	-0.04	-0.08	0.16
WHODAS				
Understand/Comm	0.56	0.52	0.50	-0.40
WHODAS Getting Along	0.49	0.53	0.47	-0.33
WHODAS Life Activities	0.53	0.55	0.47	-0.36
WHODAS Work/School	0.51	0.52	0.42	-0.30
VRIN	0.28	0.41	0.34	-0.17



Table A12. Continued

	FFMQ Obs	FFMQ Des	FFMQ Act	FFMQ Nonj
ASI Physical	0.12	-0.19	-0.31	-0.42
ASI Mental	0.08	-0.27	-0.37	-0.50
ASI Social	0.21	-0.10	-0.32	-0.34
ATQ Frequency	0.17	-0.35	-0.43	-0.52
COPE Active Coping	0.23	0.37	0.16	0.13
COPE Emotion-Focused Coping	0.13	0.28	-0.06	-0.12
COPE Avoidant Coping	0.01	-0.29	-0.33	-0.37
DIS Tolerance	0.19	0.04	0.00	0.10
DIS Avoidance	0.20	0.02	-0.21	-0.22
DTS Tolerance	-0.10	0.28	0.33	0.46
DTS Appraisal	-0.08	0.34	0.39	0.57
DTS Absorbtion	-0.16	0.24	0.41	0.52
DTS Regulation	-0.15	0.18	0.31	0.39
Externalizing	0.16	-0.18	-0.42	-0.24
K10	0.12	-0.39	-0.51	-0.54
IPIP Extraversion	0.14	0.32	0.07	0.13
IPIP Agreeableness	0.14	0.28	0.10	0.07
IPIP Conscientiousness	0.03	0.31	0.39	0.24
IPIP Neuroticism	0.02	-0.22	-0.32	-0.39
IPIP Openness	0.19	0.30	0.01	0.06
WHODAS Understand/Comm	-0.01	-0.36	-0.42	-0.34
WHODAS Getting Along	0.01	-0.34	-0.30	-0.36
WHODAS Life Activities	0.04	-0.27	-0.40	-0.34
WHODAS Work/School	0.15	-0.23	-0.41	-0.31
VRIN	0.11	-0.20	-0.23	-0.31

Table A12. Continued

	FFMQ	MEAQ BA	MEAQ	MEAQ Pr
	Nonr		DAv	
ASI Physical	-0.05	0.40	0.37	0.34
ASI Mental	-0.08	0.37	0.41	0.29
ASI Social	0.09	0.26	0.30	0.29
ATQ Frequency	-0.12	0.34	0.32	0.42
COPE Active Coping	0.32	-0.18	-0.14	-0.26
COPE Emotion-Focused Coping	-0.12	0.08	0.17	-0.03
COPE Avoidant Coping	-0.14	0.30	0.33	0.33
DIS Tolerance	0.18	-0.23	-0.22	-0.10
DIS Avoidance	0.08	0.25	0.27	0.22
DTS Tolerance	0.22	-0.30	-0.41	-0.32
DTS Appraisal	0.28	-0.37	-0.44	-0.32
DTS Absorbtion	0.25	-0.33	-0.41	-0.34
DTS Regulation	0.10	-0.32	-0.45	-0.28
Externalizing	-0.01	0.21	0.17	0.36
K10	-0.12	0.34	0.37	0.40
IPIP Extraversion	0.07	-0.25	-0.04	-0.26
IPIP Agreeableness	0.03	-0.16	-0.09	-0.15
IPIP Conscientiousness	0.10	-0.20	-0.22	-0.49
IPIP Neuroticism	-0.32	0.23	0.31	0.24
IPIP Openness	0.13	-0.17	-0.19	-0.02
WHODAS				
Understand/Comm	-0.15	0.33	0.30	0.40
WHODAS Getting Along	-0.11	0.29	0.19	0.30
WHODAS Life Activities	-0.14	0.28	0.23	0.41
WHODAS Work/School	-0.11	0.23	0.27	0.44
VRIN	-0.10	0.18	0.14	0.18

Table A12. Continued

	MEAQ D/S	MEAQ R/D	MEAQ DE	MAAS
ASI Physical	0.29	0.33	-0.13	-0.35
ASI Mental	0.20	0.42	-0.30	-0.38
ASI Social	0.31	0.23	0.12	-0.32
ATQ Frequency	0.20	0.46	-0.26	-0.42
COPE Active Coping	0.04	-0.34	0.43	0.21
COPE Emotion-Focused Coping	0.21	-0.26	0.16	0.02
COPE Avoidant Coping	0.21	0.47	-0.31	-0.39
DIS Tolerance	-0.11	-0.05	0.19	0.03
DIS Avoidance	0.20	0.02	-0.08	-0.15
DTS Tolerance	-0.20	-0.30	0.32	0.34
DTS Appraisal	-0.25	-0.41	0.38	0.42
DTS Absorbtion	-0.25	-0.30	0.28	0.39
DTS Regulation	-0.34	-0.25	0.19	0.35
Externalizing	0.11	0.30	-0.11	-0.39
K10	0.16	0.49	-0.30	-0.49
IPIP Extraversion	-0.03	-0.22	0.14	0.11
IPIP Agreeableness	0.09	-0.40	0.29	0.17
IPIP Conscientiousness	-0.05	-0.42	0.26	0.38
IPIP Neuroticism	0.18	0.19	-0.17	-0.28
IPIP Openness	-0.01	-0.23	0.27	0.10
WHODAS				
Understand/Comm	0.12	0.50	-0.33	-0.41
WHODAS Getting Along	0.05	0.43	-0.27	-0.32
WHODAS Life Activities	0.08	0.41	-0.28	-0.41
WHODAS Work/School	0.12	0.31	-0.19	-0.35
VRIN	0.08	0.32	-0.26	-0.30

Table A12. Continued

	PHLMS			
	Aw	PHLMS Ac	WBSI	VLQ I
ASI Physical	0.00	0.38	0.36	-0.13
ASI Mental	-0.07	0.40	0.36	-0.13
ASI Social	0.16	0.38	0.36	-0.10
ATQ Frequency	0.00	0.47	0.44	-0.23
COPE Active Coping	0.26	-0.14	-0.09	0.24
COPE Emotion-Focused Coping	0.14	0.13	0.11	0.19
COPE Avoidant Coping	-0.14	0.27	0.29	-0.06
DIS Tolerance	0.12	-0.07	-0.08	0.09
DIS Avoidance	0.14	0.26	0.22	0.07
DTS Tolerance	0.01	-0.40	-0.39	0.18
DTS Appraisal	0.08	-0.47	-0.40	0.19
DTS Absorbtion	-0.02	-0.47	-0.45	0.15
DTS Regulation	-0.02	-0.40	-0.34	0.08
Externalizing	-0.03	0.22	0.26	-0.33
K10	-0.06	0.46	0.45	-0.17
IPIP Extraversion	0.12	-0.12	-0.20	0.20
IPIP Agreeableness	0.27	0.03	0.01	0.23
IPIP Conscientiousness	0.17	-0.21	-0.24	0.22
IPIP Neuroticism	-0.01	0.43	0.38	-0.04
IPIP Openness	0.23	0.02	0.06	0.06
WHODAS				
Understand/Comm	-0.20	0.33	0.38	-0.24
WHODAS Getting Along	-0.19	0.28	0.30	-0.31
WHODAS Life Activities	-0.14	0.29	0.36	-0.27
WHODAS Work/School	-0.02	0.32	0.39	-0.14
VRIN	0.02	0.28	0.21	-0.12

Table A12. Continued

	VLQ C
ASI Physical	-0.17
ASI Mental	-0.19
ASI Social	-0.15
ATQ Frequency	-0.24
COPE Active Coping	0.22
COPE Emotion-Focused Coping	0.14
COPE Avoidant Coping	-0.12
DIS Tolerance	0.03
DIS Avoidance	0.05
DTS Tolerance	0.17
DTS Appraisal	0.20
DTS Absorbtion	0.17
DTS Regulation	0.12
Externalizing	-0.28
K10	-0.26
IPIP Extraversion	0.20
IPIP Agreeableness	0.14
IPIP Conscientiousness	0.19
IPIP Neuroticism	-0.10
IPIP Openness	0.16
WHODAS Understand/Comm	-0.28
WHODAS Getting Along	-0.27
WHODAS Life Activities	-0.25
WHODAS Work/School	-0.25
VRIN	-0.12

Table A12. Continued

*Note.* Ns range from 318 to 340; AAQ = Acceptance and Action Questionnaire 2; ATQ-b = Automatic Thought Questionnaire believability; CFQ = Cognitive Fusion Questionnaire; EQ = Experiences Questionnaire decentering scale; FFMQ Obs = Five Factor Mindfulness Questionnaire Observe; FFMQ des = Five Factor Mindfulness Questionnaire Describe; FFMQ Act = Five Factor Mindfulness Questionnaire Act with Awareness; FFMQ Nonj = Five Factor Mindfulness Questionnaire Nonjudge; FFMQ Nonr = Five Factor Mindfulness Questionnaire Nonreact; MEAQ BA = Multidimensional Experiential Avoidance Scale Behavioral Avoidance; MEAQ DA<sub>v</sub> = Multidimensional Experiential Avoidance Scale Distress Aversion; MEAQ Pr = Multidimensional Experiential Avoidance Scale Procrastination; MEAQ D/S = Multidimensional Experiential Avoidance Scale Distraction/Suppression; MEAQ R/D = Multidimensional Experiential Avoidance Scale Repression/Denial; MEAQ DE = Multidimensional Experiential Avoidance Scale Distress Endurance; MAAS = Mindful Attention Awareness Scale; PHLMS Aw = Philadelphia Mindfulness Scale Awareness; PHLMS Ac = Philadelphia Mindfulness Scale Acceptance; WBSI = White Bear Suppression Inventory; VLQ I = Valued Living Questionnaire Importance; VLQ C = Valued Living Questionnaire Consistency

Table A13. Student T1-T2 Correlations Among ACT scales

	1. T1	2. T1	3. T1	4. T1	5. T1	6. T1	7. T1	8. T1	9. T1
1. T2 AAQ	<b><u>0.74</u></b>	0.61	0.65	-0.41	0.09	-0.34	-0.41	-0.57	-0.12
2. T2 ATQ Believability	0.58	<b><u>0.71</u></b>	0.50	-0.29	0.18	-0.30	-0.38	-0.45	-0.05
3. T2 CFQ	0.67	0.59	<b><u>0.75</u></b>	-0.43	0.14	-0.32	-0.45	-0.63	-0.22
4. T2 EQ decentering	-0.33	-0.32	-0.42	<b><u>0.63</u></b>	0.20	0.38	0.21	0.27	0.42
5. T2 FFMQ Observe	0.15	0.17	0.14	0.17	<b><u>0.69</u></b>	0.20	-0.23	-0.19	0.28
6. T2 FFMQ Describe	-0.27	-0.23	-0.24	0.29	0.19	<b><u>0.71</u></b>	0.21	0.19	0.26
7. T2 FFMQ Act with Awareness	-0.43	-0.39	-0.43	0.21	-0.16	0.24	<b><u>0.74</u></b>	0.38	0.03
8. T2 FFMQ Nonjudge	-0.49	-0.47	-0.57	0.24	-0.21	0.18	0.39	<b><u>0.76</u></b>	0.03
9. T2 FFMQ Nonreact	-0.12	-0.10	-0.29	0.39	0.27	0.20	0.00	0.09	<b><u>0.67</u></b>
10. T2 MEAQ Behavior Avoidance	0.30	0.22	0.28	-0.15	0.08	-0.24	-0.32	-0.33	-0.15
11. T2 MEAQ Distress Aversion	0.36	0.31	0.35	-0.15	0.06	-0.17	-0.29	-0.33	-0.15
12. T2 MEAQ Procrastination	0.41	0.33	0.33	-0.18	0.11	-0.28	-0.51	-0.30	-0.05
13. T2 MEAQ Distraction/Suppression	0.28	0.20	0.32	-0.12	0.13	-0.09	-0.27	-0.34	-0.08
14. T2 MEAQ Repression/Denial	0.36	0.34	0.31	-0.17	-0.07	-0.48	-0.35	-0.33	-0.10
15. T2 MEAQ Distress Endurance	-0.11	-0.13	-0.13	0.14	0.21	0.27	0.14	0.06	0.19
16. T2 MAAS	-0.41	-0.34	-0.44	0.26	-0.07	0.32	0.59	0.40	0.03
17. T2 PHLMS Awareness	0.05	0.09	0.04	0.25	0.58	0.30	-0.09	-0.09	0.28
18. T2 PHLMS Acceptance	0.50	0.43	0.56	-0.16	0.26	-0.20	-0.42	-0.57	-0.06
19. T2 WBSI	0.52	0.42	0.58	-0.32	0.18	-0.21	-0.41	-0.54	-0.10
20. T2 VLQ Importance	-0.17	-0.13	-0.09	0.19	0.02	0.14	0.11	0.13	-0.06
21. T2 VLQ Consistence	-0.24	-0.16	-0.14	0.20	0.03	0.20	0.20	0.13	-0.01

Table A13. Continued

	10. T1	11. T1	12. T1	13. T1	14. T1	15. T1	16. T1	17. T1	18. T1
1. T2 AAQ	0.35	0.40	0.34	0.19	0.40	-0.19	-0.39	0.00	0.48
2. T2 ATQ Believability	0.21	0.26	0.32	0.05	0.35	-0.20	-0.34	0.04	0.33
3. T2 CFQ	0.30	0.40	0.33	0.22	0.35	-0.19	-0.42	0.05	0.52
4. T2 EQ decentering	-0.22	-0.21	-0.28	-0.04	-0.27	0.33	0.28	0.29	-0.22
5. T2 FFMQ Observe	0.00	0.09	0.09	0.09	-0.08	0.22	-0.12	0.54	0.20
6. T2 FFMQ Describe	-0.21	-0.13	-0.23	-0.02	-0.48	0.33	0.24	0.32	-0.15
7. T2 FFMQ Act with Awareness	-0.23	-0.26	-0.42	-0.19	-0.34	0.13	0.62	-0.06	-0.40
8. T2 FFMQ Nonjudge	-0.27	-0.38	-0.21	-0.31	-0.33	0.06	0.37	-0.09	-0.55
9. T2 FFMQ Nonreact	-0.07	-0.10	-0.05	0.05	-0.06	0.32	0.03	0.23	-0.08
10. T2 MEAQ Behavior Avoidance	<b><u>0.66</u></b>	0.39	0.39	0.37	0.35	-0.19	-0.22	0.07	0.36
11. T2 MEAQ Distress Aversion	0.48	<b><u>0.68</u></b>	0.27	0.48	0.35	-0.13	-0.22	0.09	0.46
12. T2 MEAQ Procrastination	0.40	0.26	<b><u>0.70</u></b>	0.25	0.41	-0.23	-0.40	0.01	0.33
13. T2 MEAQ Distraction/Suppression	0.44	0.47	0.23	<b><u>0.66</u></b>	0.24	0.11	-0.17	0.12	0.49
14. T2 MEAQ Repression/Denial	0.28	0.26	0.34	0.15	<b><u>0.74</u></b>	-0.26	-0.33	-0.15	0.31
15. T2 MEAQ Distress Endurance	-0.15	-0.09	-0.16	0.10	-0.24	<b><u>0.59</u></b>	0.11	0.26	0.01
16. T2 MAAS	-0.21	-0.18	-0.37	-0.12	-0.43	0.18	<b><u>0.66</u></b>	0.11	-0.31
17. T2 PHLMS Awareness	0.05	0.07	-0.01	0.14	-0.25	0.37	0.03	<b><u>0.70</u></b>	0.22
18. T2 PHLMS Acceptance	0.41	0.47	0.29	0.56	0.32	0.05	-0.31	0.24	<b><u>0.76</u></b>
19. T2 WBSI	0.31	0.37	0.25	0.39	0.27	0.05	-0.38	0.13	0.59
20. T2 VLQ Importance	-0.01	0.11	-0.14	0.11	-0.17	0.22	0.15	0.08	-0.02
21. T2 VLQ Consistence	-0.04	0.04	-0.17	0.07	-0.17	0.19	0.23	0.09	-0.07



Table A13. Continued

	19. T1	20. T1	21. T1
1. T2 AAQ	0.51	-0.06	-0.21
2. T2 ATQ Believability	0.38	-0.16	-0.15
3. T2 CFQ	0.58	-0.06	-0.26
4. T2 EQ decentering	-0.26	0.20	0.29
5. T2 FFMQ Observe	0.19	0.06	0.01
6. T2 FFMQ Describe	-0.15	0.18	0.21
7. T2 FFMQ Act with Awareness	-0.47	0.07	0.20
8. T2 FFMQ Nonjudge	-0.53	0.04	0.16
9. T2 FFMQ Nonreact	-0.08	0.02	0.12
10. T2 MEAQ Behavior Avoidance	0.33	0.01	-0.08
11. T2 MEAQ Distress Aversion	0.37	0.18	-0.01
12. T2 MEAQ Procrastination	0.36	-0.08	-0.21
13. T2 MEAQ Distraction/Suppression	0.41	0.20	0.01
14. T2 MEAQ Repression/Denial	0.30	-0.13	-0.11
15. T2 MEAQ Distress Endurance	0.05	0.15	0.12
16. T2 MAAS	-0.42	0.20	0.28
17. T2 PHLMS Awareness	0.15	0.19	0.11
18. T2 PHLMS Acceptance	0.64	0.05	-0.12
19. T2 WBSI	<b><u>0.75</u></b>	-0.03	-0.17
20. T2 VLQ Importance	-0.06	<b><u>0.72</u></b>	0.36
21. T2 VLQ Consistence	-0.16	0.43	<b><u>0.57</u></b>

Table A13 Continued

*Note.* Ns range from 337 to 340. Test-retest reliability coefficients are **bolded**. AAQ = Acceptance and Action Questionnaire 2; ATQ-b = Automatic Thought Questionnaire believability; CFQ = Cognitive Fusion Questionnaire; EQ = Experiences Questionnaire decentering scale; FFMQ Obs = Five Factor Mindfulness Questionnaire Observe; FFMQ des = Five Factor Mindfulness Questionnaire Describe; FFMQ Act = Five Factor Mindfulness Questionnaire Act with Awareness; FFMQ Nonj = Five Factor Mindfulness Questionnaire Nonjudge; FFMQ Nonr = Five Factor Mindfulness Questionnaire Nonreact; MEAQ BA = Multidimensional Experiential Avoidance Scale Behavioral Avoidance; MEAQ DAv = Multidimensional Experiential Avoidance Scale Distress Aversion; MEAQ Pr = Multidimensional Experiential Avoidance Scale Procrastination; MEAQ D/S = Multidimensional Experiential Avoidance Scale Distraction/Suppression; MEAQ R/D = Multidimensional Experiential Avoidance Scale Repression/Denial; MEAQ DE = Multidimensional Experiential Avoidance Scale Distress Endurance; MAAS = Mindful Attention Awareness Scale; PHLMS Aw = Philadelphia Mindfulness Scale Awareness; PHLMS Ac = Philadelphia Mindfulness Scale Acceptance; WBSI = White Bear Suppression Inventory; VLQ I = Valued Living Questionnaire Importance; VLQ C = Valued Living Questionnaire Consistency

Table A14. Student T1-T2 Correlations Among Non-ACT Scales

	1. T1	2. T1	3. T1	4. T1	5. T1
1. T2 ASI Physical	<b><u>0.70</u></b>	0.52	0.27	0.38	0.00
2. T2 ASI Mental	0.47	<b><u>0.70</u></b>	0.28	0.50	0.01
3. T2 ASI Social	0.36	0.43	<b><u>0.49</u></b>	0.41	0.01
4. T2 ATQ Frequency	0.33	0.50	0.20	<b><u>0.76</u></b>	-0.12
5. T2 COPE Active Coping	-0.01	-0.08	0.05	-0.16	<b><u>0.56</u></b>
6. T2 COPE Emotion-Focused Coping	0.22	0.07	0.04	0.06	0.26
7. T2 COPE Avoidant Coping	0.20	0.37	0.08	0.44	0.05
8. T2 DIS Tolerance	-0.10	-0.05	0.03	-0.01	0.11
9. T2 DIS Avoidance	0.32	0.20	0.09	0.11	0.12
10. T2 DTS Tolerance	-0.33	-0.34	-0.15	-0.39	0.06
11. T2 DTS Appraisal	-0.35	-0.45	-0.17	-0.44	0.09
12. T2 DTS Absorbtion	-0.32	-0.37	-0.18	-0.44	0.05
13. T2 DTS Regulation	-0.28	-0.32	-0.23	-0.29	-0.04
14. T2 Externalizing	0.12	0.24	0.11	0.41	-0.15
15. T2 K10	0.38	0.45	0.20	0.63	-0.16
16. T2 IPIP Extraversion	-0.13	-0.09	-0.03	-0.21	0.16
17. T2 IPIP Agreeableness	-0.01	-0.15	0.01	-0.15	0.21
18. T2 IPIP Conscientiousness	-0.15	-0.22	0.03	-0.27	0.20
19. T2 IPIP Neuroticism	0.27	0.30	0.07	0.35	-0.18
20. T2 IPIP Openness	-0.07	-0.05	0.01	-0.02	0.13
21. T2 WHODAS Understand/Comm	0.25	0.44	0.15	0.47	-0.17
22. T2 WHODAS Getting Along	0.21	0.41	0.11	0.49	-0.12
23. T2 WHODAS Life Activities	0.28	0.45	0.14	0.50	-0.15
24. T2 WHODAS Work/School	0.17	0.33	0.15	0.46	-0.12
25. T2 VRIN	0.17	0.21	0.17	0.22	-0.08

Table A14. Continued

	6. T1	7. T1	8. T1	9. T1	10. T1
1. T2 ASI Physical	0.16	0.40	-0.03	0.30	-0.29
2. T2 ASI Mental	0.10	0.45	0.01	0.24	-0.30
3. T2 ASI Social	0.00	0.33	0.12	0.18	-0.24
4. T2 ATQ Frequency	0.04	0.51	0.10	0.17	-0.32
5. T2 COPE Active Coping	0.22	-0.10	0.10	0.01	0.11
6. T2 COPE Emotion-Focused Coping	<b><u>0.69</u></b>	0.15	-0.22	0.15	-0.18
7. T2 COPE Avoidant Coping	0.11	<b><u>0.59</u></b>	0.02	0.11	-0.17
8. T2 DIS Tolerance	-0.25	-0.16	<b><u>0.76</u></b>	-0.30	0.13
9. T2 DIS Avoidance	0.14	0.10	-0.27	<b><u>0.54</u></b>	-0.28
10. T2 DTS Tolerance	-0.17	-0.34	0.06	-0.26	<b><u>0.54</u></b>
11. T2 DTS Appraisal	-0.21	-0.38	0.09	-0.22	0.45
12. T2 DTS Absorbtion	-0.24	-0.36	0.03	-0.20	0.50
13. T2 DTS Regulation	-0.19	-0.29	0.02	-0.31	0.43
14. T2 Externalizing	0.00	0.29	0.06	0.12	-0.25
15. T2 K10	0.07	0.45	-0.01	0.25	-0.38
16. T2 IPIP Extraversion	0.18	-0.05	-0.02	0.02	0.03
17. T2 IPIP Agreeableness	0.28	-0.21	-0.06	-0.07	0.02
18. T2 IPIP Conscientiousness	0.03	-0.33	0.00	-0.14	0.10
19. T2 IPIP Neuroticism	0.23	0.17	-0.21	0.09	-0.36
20. T2 IPIP Openness	0.01	-0.08	0.07	-0.05	0.08
21. T2 WHODAS Understand/Comm	0.00	0.42	-0.12	0.20	-0.26
22. T2 WHODAS Getting Along	-0.02	0.40	-0.05	0.14	-0.19
23. T2 WHODAS Life Activities	0.01	0.44	-0.10	0.20	-0.28
24. T2 WHODAS Work/School	0.02	0.40	-0.07	0.18	-0.20
25. T2 VRIN	-0.02	0.23	0.10	0.14	-0.17

Table A14. Continued

	11. T1	12. T1	13. T1	14. T1	15. T1
1. T2 ASI Physical	-0.41	-0.37	-0.26	0.26	0.39
2. T2 ASI Mental	-0.47	-0.35	-0.28	0.29	0.47
3. T2 ASI Social	-0.35	-0.28	-0.28	0.26	0.35
4. T2 ATQ Frequency	-0.47	-0.41	-0.24	0.38	0.63
5. T2 COPE Active Coping	0.14	0.12	0.02	-0.19	-0.16
6. T2 COPE Emotion-Focused Coping	-0.24	-0.24	-0.16	0.09	0.16
7. T2 COPE Avoidant Coping	-0.33	-0.26	-0.13	0.29	0.35
8. T2 DIS Tolerance	0.15	0.14	0.07	-0.10	-0.10
9. T2 DIS Avoidance	-0.23	-0.21	-0.33	0.04	0.14
10. T2 DTS Tolerance	0.56	0.54	0.47	-0.24	-0.45
11. T2 DTS Appraisal	<b><u>0.70</u></b>	0.52	0.44	-0.28	-0.49
12. T2 DTS Absorbtion	0.59	<b><u>0.61</u></b>	0.42	-0.29	-0.48
13. T2 DTS Regulation	0.46	0.47	<b><u>0.55</u></b>	-0.23	-0.36
14. T2 Externalizing	-0.28	-0.32	-0.20	<b><u>0.64</u></b>	0.32
15. T2 K10	-0.47	-0.42	-0.27	0.34	<b><u>0.70</u></b>
16. T2 IPIP Extraversion	0.08	0.02	-0.03	-0.03	-0.16
17. T2 IPIP Agreeableness	0.06	0.02	-0.01	-0.09	-0.13
18. T2 IPIP Conscientiousness	0.24	0.17	0.11	-0.32	-0.26
19. T2 IPIP Neuroticism	-0.47	-0.46	-0.26	0.18	0.43
20. T2 IPIP Openness	0.05	0.01	0.05	0.04	-0.08
21. T2 WHODAS Understand/Comm	-0.39	-0.32	-0.17	0.46	0.52
22. T2 WHODAS Getting Along	-0.31	-0.25	-0.11	0.38	0.46
23. T2 WHODAS Life Activities	-0.41	-0.35	-0.18	0.48	0.50
24. T2 WHODAS Work/School	-0.32	-0.32	-0.18	0.38	0.47
25. T2 VRIN	-0.20	-0.19	-0.15	0.14	0.31

Table A14. Continued

	16. T1	17. T1	18. T1	19. T1	20. T1
1. T2 ASI Physical	-0.12	-0.05	-0.18	0.23	-0.11
2. T2 ASI Mental	-0.08	-0.18	-0.20	0.27	-0.07
3. T2 ASI Social	-0.10	-0.04	-0.09	0.17	-0.04
4. T2 ATQ Frequency	-0.18	-0.13	-0.31	0.33	0.02
5. T2 COPE Active Coping	0.13	0.30	0.23	-0.14	0.13
6. T2 COPE Emotion-Focused Coping	0.09	0.33	0.01	0.28	0.05
7. T2 COPE Avoidant Coping	-0.02	-0.13	-0.36	0.18	-0.07
8. T2 DIS Tolerance	0.02	0.01	0.07	-0.23	0.07
9. T2 DIS Avoidance	0.07	0.06	-0.06	0.11	-0.01
10. T2 DTS Tolerance	0.04	-0.01	0.19	-0.35	0.05
11. T2 DTS Appraisal	0.08	0.07	0.25	-0.43	0.10
12. T2 DTS Absorbtion	0.08	0.01	0.27	-0.44	0.01
13. T2 DTS Regulation	-0.01	0.03	0.07	-0.27	0.12
14. T2 Externalizing	0.01	-0.11	-0.30	0.13	-0.01
15. T2 K10	-0.19	-0.12	-0.27	0.37	-0.04
16. T2 IPIP Extraversion	<b><u>0.80</u></b>	0.20	0.12	-0.07	-0.02
17. T2 IPIP Agreeableness	0.26	<b><u>0.63</u></b>	0.26	0.03	0.16
18. T2 IPIP Conscientiousness	0.13	0.18	<b><u>0.76</u></b>	-0.13	0.01
19. T2 IPIP Neuroticism	-0.14	-0.04	-0.12	<b><u>0.71</u></b>	0.07
20. T2 IPIP Openness	0.06	0.11	0.02	0.02	<b><u>0.69</u></b>
21. T2 WHODAS Understand/Comm	-0.15	-0.23	-0.40	0.30	-0.03
22. T2 WHODAS Getting Along	-0.23	-0.28	-0.28	0.27	0.05
23. T2 WHODAS Life Activities	-0.12	-0.23	-0.42	0.28	0.01
24. T2 WHODAS Work/School	-0.09	-0.15	-0.34	0.27	-0.03
25. T2 VRIN	-0.06	-0.10	-0.10	0.17	-0.03

Table A14. Continued

	21. T1	22. T1	23. T1	24. T1	25. T1
1. T2 ASI Physical	0.30	0.27	0.30	0.30	0.26
2. T2 ASI Mental	0.36	0.37	0.35	0.34	0.33
3. T2 ASI Social	0.23	0.30	0.25	0.27	0.24
4. T2 ATQ Frequency	0.45	0.41	0.34	0.42	0.34
5. T2 COPE Active Coping	-0.20	-0.14	-0.21	-0.08	-0.13
6. T2 COPE Emotion-Focused Coping	-0.02	-0.05	-0.03	0.10	0.07
7. T2 COPE Avoidant Coping	0.23	0.21	0.25	0.25	0.34
8. T2 DIS Tolerance	-0.12	-0.06	-0.14	0.00	-0.16
9. T2 DIS Avoidance	0.14	0.06	0.06	0.12	0.12
10. T2 DTS Tolerance	-0.34	-0.17	-0.25	-0.33	-0.27
11. T2 DTS Appraisal	-0.34	-0.25	-0.26	-0.31	-0.31
12. T2 DTS Absorbtion	-0.31	-0.21	-0.25	-0.34	-0.27
13. T2 DTS Regulation	-0.28	-0.13	-0.19	-0.30	-0.20
14. T2 Externalizing	0.34	0.34	0.36	0.33	0.25
15. T2 K10	0.45	0.40	0.34	0.38	0.35
16. T2 IPIP Extraversion	-0.26	-0.36	-0.15	-0.13	-0.07
17. T2 IPIP Agreeableness	-0.27	-0.21	-0.19	-0.09	-0.17
18. T2 IPIP Conscientiousness	-0.38	-0.26	-0.36	-0.27	-0.21
19. T2 IPIP Neuroticism	0.25	0.20	0.14	0.23	0.18
20. T2 IPIP Openness	-0.08	0.02	-0.12	-0.04	-0.07
21. T2 WHODAS Understand/Comm	<b>0.61</b>	0.52	0.53	0.47	0.24
22. T2 WHODAS Getting Along	0.59	<b>0.62</b>	0.47	0.43	0.28
23. T2 WHODAS Life Activities	0.53	0.50	<b>0.59</b>	0.44	0.27
24. T2 WHODAS Work/School	0.48	0.45	0.47	<b>0.56</b>	0.21
25. T2 VRIN	0.20	0.15	0.17	0.24	<b>0.48</b>

*Note.* Ns range from 314 to 342. Test-retest reliability coefficients are **bolded**. ASI = Anxiety Sensitivity Index; ATQ = Automatic Thoughts Questionnaire; DIS = Discomfort Intolerance Scale; DTS = Distress Tolerance Scale; IPIP = International Personality Item Pool; K10 = Kessler Psychological Distress Scale; WHODAS = World Health Organization Disability Assessment; VRIN = Variable Response Inventory

Table A15. Parallel Analyses for Scale-Level Factor Analysis of ACT Measures

Factor number	Mechanical Turk		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	6.51	1.47	1.55
2	4.49	1.38	1.44
3	1.63	1.32	1.37
4	1.40	1.27	1.32
5	1.24	1.22	1.26
6	0.71	1.18	1.21
7	0.65	1.13	1.17
8	0.55	1.09	1.13
9	0.50	1.06	1.09
10	0.44	1.02	1.05
11	0.37	0.98	1.01
12	0.36	0.95	0.98
13	0.33	0.91	0.94
14	0.31	0.88	0.91
15	0.29	0.84	0.87
16	0.27	0.81	0.84
17	0.24	0.78	0.81
18	0.21	0.74	0.77
19	0.20	0.70	0.74
20	0.17	0.66	0.70
21	0.13	0.61	0.65



Table A15 Continued

Factor number	Student Time 1		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	6.66	1.39	1.46
2	2.83	1.32	1.37
3	1.72	1.27	1.31
4	1.50	1.23	1.26
5	1.06	1.19	1.22
6	0.94	1.15	1.18
7	0.90	1.11	1.14
8	0.74	1.08	1.11
9	0.60	1.05	1.08
10	0.52	1.02	1.04
11	0.50	0.99	1.01
12	0.43	0.96	0.99
13	0.40	0.93	0.95
14	0.35	0.90	0.92
15	0.34	0.87	0.90
16	0.31	0.84	0.87
17	0.29	0.81	0.84
18	0.27	0.78	0.80
19	0.23	0.75	0.77
20	0.22	0.71	0.74
21	0.17	0.66	0.70

Table A15 Continued

Factor number	Student Time 2		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	7.25	1.47	1.55
2	3.24	1.39	1.44
3	1.95	1.32	1.37
4	1.26	1.27	1.31
5	1.02	1.22	1.26
6	0.85	1.18	1.21
7	0.71	1.13	1.17
8	0.63	1.09	1.13
9	0.53	1.06	1.09
10	0.42	1.02	1.05
11	0.41	0.98	1.01
12	0.4	0.95	0.98
13	0.36	0.91	0.94
14	0.33	0.88	0.91
15	0.3	0.84	0.88
16	0.28	0.81	0.84
17	0.26	0.78	0.81
18	0.25	0.74	0.77
19	0.23	0.7	0.73
20	0.17	0.66	0.7
21	0.14	0.61	0.65

*Note.* 500 simulations using a significance level of 95%.  
 Non-normal random datasets used (based on raw data).  
 Principal components analysis used.

Table A16. Three-Factor ACT Model Promax Exploratory Factor Analysis

	Mechanical Turk			Student Time 1			Student Time 2		
	F1	F2	F3	F1	F2	F3	F1	F2	F3
AAQ	<b><u>0.84</u></b>	-0.06	0.06	<b><u>0.82</u></b>	-0.01	-0.03	<b><u>0.60</u></b>	-0.02	<b><u>0.40</u></b>
ATQ-Believability	<b><u>0.87</u></b>	-0.17	-0.04	<b><u>0.81</u></b>	-0.07	-0.14	<b><u>0.71</u></b>	-0.08	0.15
CFQ	<b><u>0.87</u></b>	-0.06	0.05	<b><u>0.84</u></b>	0.01	-0.01	<b><u>0.65</u></b>	0.00	<b><u>0.39</u></b>
EQ decentering	-0.27	<b><u>-0.52</u></b>	0.07	<b><u>-0.44</u></b>	<b><u>-0.39</u></b>	0.10	-0.33	<b><u>-0.48</u></b>	-0.15
FFMQ Observe	0.41	<b><u>-0.87</u></b>	-0.05	<b><u>0.46</u></b>	<b><u>-0.73</u></b>	-0.08	0.30	<b><u>-0.84</u></b>	0.08
FFMQ Describe	-0.14	<b><u>-0.52</u></b>	-0.19	-0.22	<b><u>-0.47</u></b>	-0.08	-0.30	<b><u>-0.49</u></b>	-0.15
FFMQ Act with Awareness	<b><u>-0.69</u></b>	-0.07	-0.08	<b><u>-0.56</u></b>	0.06	-0.14	<b><u>-0.49</u></b>	0.16	-0.31
FFMQ Nonjudge	<b><u>-0.62</u></b>	0.25	-0.31	<b><u>-0.72</u></b>	0.14	-0.16	<b><u>-0.46</u></b>	0.17	<b><u>-0.47</u></b>
FFMQ Nonreact	-0.08	<b><u>-0.45</u></b>	0.09	-0.03	<b><u>-0.46</u></b>	-0.05	-0.07	<b><u>-0.53</u></b>	-0.06
MEAQ Behavioral Avoidance	0.06	0.07	<b><u>0.75</u></b>	0.13	0.18	<b><u>0.50</u></b>	0.00	0.11	<b><u>0.71</u></b>
MEAQ Distress Aversion	0.05	-0.03	<b><u>0.72</u></b>	0.24	0.06	<b><u>0.58</u></b>	-0.09	0.11	<b><u>0.80</u></b>
MEAQ Procrastination	0.30	0.29	<b><u>0.44</u></b>	0.33	0.15	0.18	0.26	0.06	<b><u>0.50</u></b>
MEAQ Distraction/Suppression	-0.31	-0.13	<b><u>0.87</u></b>	-0.09	-0.01	<b><u>0.90</u></b>	-0.27	-0.01	<b><u>0.92</u></b>
MEAQ Repression/Denial	0.27	0.29	<b><u>0.39</u></b>	0.27	<b><u>0.35</u></b>	0.30	0.28	0.30	<b><u>0.38</u></b>
MEAQ Distress Endurance	-0.23	<b><u>-0.50</u></b>	0.19	-0.12	<b><u>-0.54</u></b>	0.13	<b><u>-0.35</u></b>	<b><u>-0.42</u></b>	0.15

Table A16 Continued

	Mechanical Turk			Student Time 1			Student Time 2		
	F1	F2	F3	F1	F2	F3	F1	F2	F3
MAAS	<b><u>-0.48</u></b>	<b><u>-0.38</u></b>	0.02	<b><u>-0.54</u></b>	-0.06	-0.05	<b><u>-0.54</u></b>	-0.06	-0.18
PHLMS Awareness	0.24	<b><u>-0.90</u></b>	0.08	0.30	<b><u>-0.76</u></b>	0.00	0.04	<b><u>-0.83</u></b>	0.14
PHLMS Acceptance	0.25	-0.18	<b><u>0.70</u></b>	<b><u>0.55</u></b>	-0.17	<b><u>0.47</u></b>	0.25	-0.19	<b><u>0.70</u></b>
WBSI	<b><u>0.45</u></b>	-0.05	<b><u>0.57</u></b>	<b><u>0.67</u></b>	-0.18	0.24	0.28	-0.10	<b><u>0.64</u></b>
VLQ Importance	-0.28	-0.15	0.29	-0.23	-0.21	0.27	<b><u>-0.50</u></b>	-0.02	0.27
VLQ Consistence	-0.26	-0.12	0.16	<b><u>-0.35</u></b>	-0.19	0.21	<b><u>-0.49</u></b>	0.01	0.15

Note. Correlations  $\geq 0.35$  are **highlighted**. Scales used to define factor are underlined.

Table A17. Factor Correlations for Three-Factor ACT Model

	MT-T1	MT-T2	T1-T2
Factor 1	0.97	0.97	0.95
Factor 2	0.94	0.94	0.96
Factor 3	0.94	0.91	0.84

Table A18. Four-Factor ACT Model Promax Exploratory Factor Analysis

	Mechanical Turk			
	Factor 1	Factor 2	Factor 3	Factor 4
AAQ	<b>0.83</b>	0.06	0.09	0.02
ATQ-Believability	<b>0.87</b>	-0.02	0.15	-0.08
CFQ	<b>0.78</b>	0.34	0.22	0.11
EQ decentering	-0.14	<b>-0.69</b>	0.18	-0.05
FFMQ Observe	0.29	-0.22	<b>0.70</b>	0.02
FFMQ Describe	-0.25	-0.05	<b>0.48</b>	-0.09
FFMQ Act with Awareness	<b>-0.82</b>	0.16	0.14	0.06
FFMQ Nonjudge	<b>-0.62</b>	0.08	-0.17	-0.28
FFMQ Nonreact	0.16	<b>-0.84</b>	0.07	-0.13
MEAQ Behavioral Avoidance	0.06	0.09	-0.06	<b>0.77</b>
MEAQ Distress Aversion	-0.02	0.17	0.06	<b>0.81</b>
MEAQ Procrastination	0.37	0.08	-0.26	<b>0.39</b>
MEAQ Distraction/Suppression	-0.25	-0.19	0.00	<b>0.84</b>
MEAQ Repression/Denial	<b>0.49</b>	-0.31	<b>-0.44</b>	0.21
MEAQ Distress Endurance	-0.14	<b>-0.51</b>	0.25	0.11
MAAS	<b>-0.58</b>	-0.08	0.31	0.12
PHLMS Awareness	0.10	-0.18	<b>0.77</b>	0.17
PHLMS Acceptance	0.26	-0.07	0.11	<b>0.68</b>
WBSI	<b>0.42</b>	0.12	0.08	<b>0.59</b>
VLQ Importance	-0.27	-0.13	0.04	0.30
VLQ Consistence	-0.24	-0.17	0.02	0.16

Table A18. Continued

	Student Time 1			
	Factor 1	Factor 2	Factor 3	Factor 4
AAQ	<b>0.74</b>	0.00	0.12	-0.01
ATQ-Believability	<b>0.68</b>	-0.07	0.14	-0.11
CFQ	<b>0.90</b>	0.07	-0.06	0.02
EQ decentering	<b>-0.55</b>	<b>-0.43</b>	0.07	0.06
FFMQ Observe	0.24	<b>-0.74</b>	0.14	-0.08
FFMQ Describe	-0.09	<b>-0.41</b>	-0.31	-0.06
FFMQ Act with Awareness	-0.10	0.23	<b>-0.75</b>	-0.04
FFMQ Nonjudge	<b>-0.61</b>	0.13	-0.13	-0.17
FFMQ Nonreact	-0.32	<b>-0.57</b>	0.33	-0.11
MEAQ Behavioral Avoidance	-0.02	0.14	0.30	<b>0.47</b>
MEAQ Distress Aversion	0.22	0.08	0.08	<b>0.58</b>
MEAQ Procrastination	-0.05	0.02	<b>0.64</b>	0.12
MEAQ Distraction/Suppression	-0.05	0.02	0.00	<b>0.87</b>
MEAQ Repression/Denial	-0.04	0.24	<b>0.56</b>	0.25
MEAQ Distress Endurance	-0.05	<b>-0.48</b>	-0.23	0.14
MAAS	-0.17	0.09	<b>-0.64</b>	0.04
PHLMS Awareness	0.22	<b>-0.70</b>	-0.08	0.03
PHLMS Acceptance	<b>0.52</b>	-0.12	0.04	<b>0.49</b>
WBSI	<b>0.57</b>	-0.17	0.13	0.25
VLQ Importance	-0.04	-0.13	-0.31	0.30
VLQ Consistence	-0.22	-0.13	-0.22	0.22

Table A18. Continued

	Student Time 2			
	Factor 1	Factor 2	Factor 3	Factor 4
AAQ	<b>0.57</b>	0.02	0.27	0.19
ATQ-Believability	<b>0.56</b>	-0.04	<b>0.36</b>	-0.04
CFQ	<b>0.79</b>	0.07	0.18	0.09
EQ decentering	<b>-0.42</b>	<b>-0.54</b>	-0.07	-0.02
FFMQ Observe	0.21	<b>-0.82</b>	0.15	-0.04
FFMQ Describe	-0.03	<b>-0.46</b>	<b>-0.38</b>	-0.18
FFMQ Act with Awareness	-0.14	0.22	<b>-0.56</b>	-0.25
FFMQ Nonjudge	<b>-0.54</b>	0.14	-0.16	-0.26
FFMQ Nonreact	<b>-0.39</b>	<b>-0.63</b>	0.24	0.06
MEAQ Behavioral Avoidance	-0.02	0.07	0.12	<b>0.73</b>
MEAQ Distress Aversion	0.08	0.10	-0.07	<b>0.76</b>
MEAQ Procrastination	-0.04	-0.01	<b>0.44</b>	<b>0.53</b>
MEAQ Distraction/Suppression	0.08	-0.02	-0.24	<b>0.84</b>
MEAQ Repression/Denial	-0.05	0.24	<b>0.46</b>	<b>0.44</b>
MEAQ Distress Endurance	-0.09	<b>-0.41</b>	-0.33	0.13
MAAS	-0.13	0.00	<b>-0.61</b>	-0.13
PHLMS Awareness	0.21	<b>-0.78</b>	-0.17	0.01
PHLMS Acceptance	<b>0.45</b>	-0.16	0.00	<b>0.51</b>
WBSI	<b>0.43</b>	-0.08	0.06	<b>0.45</b>
VLQ Importance	-0.07	0.01	<b>-0.51</b>	0.28
VLQ Consistence	-0.08	0.05	<b>-0.51</b>	0.17

Note. Correlations  $\geq 0.35$  are **highlighted**.



Table A19. Factor Correlations for Four-Factor ACT Model

	MT-T1	MT-T2	T1-T2
Factor 1	0.76	0.74	0.99
Factor 2	0.61	0.61	0.97
Factor 3	-0.42	-0.31	0.90
Factor 4	0.92	0.92	0.89

Table A20. Item-Level Parallel Analyses for ACT Factor 1  
(Fusion/Inflexibility)

Factor number	Mechanical Turk		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	27.94	2.20	2.30
2	5.48	2.11	2.18
3	3.77	2.04	2.10
4	2.76	1.98	2.03
5	2.22	1.93	1.98
6	1.80	1.88	1.93
7	1.55	1.83	1.87
8	1.47	1.79	1.83
9	1.25	1.75	1.79
10	1.17	1.71	1.75
11	1.12	1.67	1.71
12	1.06	1.64	1.68
13	1.01	1.61	1.64
14	0.97	1.57	1.61
15	0.93	1.54	1.57

Table A20. Continued

Factor number	Student Time 1		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	26.25	1.93	2.00
2	6.46	1.86	1.91
3	4.01	1.81	1.85
4	2.92	1.77	1.81
5	2.16	1.73	1.76
6	1.86	1.69	1.72
7	1.49	1.66	1.69
8	1.41	1.62	1.66
9	1.29	1.60	1.62
10	1.18	1.57	1.60
11	1.09	1.54	1.57
12	1.01	1.51	1.54
13	0.98	1.48	1.51
14	0.93	1.46	1.48
15	0.91	1.44	1.46

Table A20. Continued

Table A20. Item-Level Parallel Analyses for ACT Factor 1 (Fusion/Inflexibility)			
Factor number	Student Time 2		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	28.82	2.14	2.23
2	7.58	2.05	2.12
3	4.80	1.99	2.04
4	3.28	1.93	1.98
5	2.20	1.88	1.93
6	1.89	1.84	1.88
7	1.45	1.79	1.83
8	1.40	1.75	1.79
9	1.16	1.71	1.75
10	1.14	1.68	1.71
11	0.98	1.65	1.68
12	0.93	1.61	1.64
13	0.88	1.58	1.61
14	0.86	1.55	1.58
15	0.83	1.52	1.55

*Note.* 500 simulations using a significance level of 95%. Non-normal random datasets used (based on raw data). Principal components analysis used.

Table A21. Correlations Between Subfactor Loadings for 1st Scale-Level EFA factor

<b><u>1 factor solution</u></b> <i>Internalizing Belief/Inflexibility</i>			<b><u>2 factor solution</u></b> <i>Depressive Belief/Inflexibility</i>			<b><u>3 factor solution</u></b> <i>Internalizing Belief</i>		
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
-0.99	0.99	-0.99	0.97	0.93	0.95	0.96	0.96	0.97
			<i>Detachment</i>			<i>Inflexibility</i>		
			MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
			0.94	0.90	0.98	0.88	0.93	0.96
						<i>Detachment</i>		
						MT-T1	MT-T2	T1-T2
						0.91	0.94	0.97
<b><u>4 factor solution</u></b> <i>Internalizing Belief</i>			<b><u>5 factor solution</u></b> <i>Internalizing Belief</i>					
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
0.96	0.97	0.97	0.96	0.95	0.97	0.96	0.95	0.97
<i>Fusion</i>			<i>Inflexibility</i>					
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
0.85	0.77	0.79	0.77	0.65	0.93	0.77	0.65	0.93
<i>Detachment</i>			<i>???</i>					
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
0.92	0.94	0.98	0.89	0.88	0.96	0.89	0.88	0.96
<i>???</i>			<i>Detachment</i>					
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
0.90	0.89	0.95	0.83	0.84	0.98	0.83	0.84	0.98
			<i>???</i>					
			MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
			-0.09	-0.20	0.91	-0.09	-0.20	0.91

Table A22. Mechanical Turk Subfactors of ACT Factor 1 (Fusion/Inflexibility), Using Promax Rotation

Item	Scale	Int		
		Inflexibility	Belief	Detachment
My painful experiences and memories make it difficult for me to live a life that I would value.	AAQ	0.41	0.33	0.11
I'm afraid of my feelings.	AAQ	<u>0.41</u>	0.28	0.11
I worry about not being able to control my worries and feelings.	AAQ	<u>0.60</u>	0.15	0.08
My painful memories prevent me from having a fulfilling life.	AAQ	0.43	0.26	0.14
Emotions cause problems in my life.	AAQ	<u>0.52</u>	0.19	0.02
It seems like most people are handling their lives better than I am.	AAQ	0.37	0.28	0.11
Worries get in the way of my success.	AAQ	<u>0.49</u>	0.15	0.10
I feel like I'm up against the world.	ATQ-b	0.17	<u>0.39</u>	0.02
I'm no good.	ATQ-b	0.02	<u>0.72</u>	-0.05
Why can't I ever succeed?	ATQ-b	0.12	<u>0.61</u>	0.02
No one understands me.	ATQ-b	0.07	0.59	0.05
I've let people down.	ATQ-b	0.06	<u>0.62</u>	0.01
I don't think I can go on.	ATQ-b	0.05	<u>0.62</u>	0.05
I wish I were a better person.	ATQ-b	0.16	<u>0.47</u>	-0.05
I'm so weak.	ATQ-b	0.03	<u>0.70</u>	0.02
My life's not going the way I want it to.	ATQ-b	0.21	<u>0.38</u>	0.06
I'm so disappointed in myself.	ATQ-b	0.15	<u>0.64</u>	0.08
Nothing feels good anymore.	ATQ-b	0.06	<u>0.72</u>	0.05
I can't stand this anymore.	ATQ-b	0.04	<u>0.70</u>	0.06
I can't get started.	ATQ-b	0.10	<u>0.62</u>	0.06

Table A22. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
What's wrong with me?	ATQ-b	0.11	<u>0.68</u>	-0.04
I wish I were somewhere else.	ATQ-b	0.12	<u>0.55</u>	-0.05
I can't get things together.	ATQ-b	0.14	<u>0.69</u>	0.02
I hate myself.	ATQ-b	-0.05	<u>0.84</u>	-0.03
I'm worthless.	ATQ-b	-0.03	<u>0.89</u>	-0.04
Wish I could just disappear.	ATQ-b	0.02	<u>0.75</u>	-0.06
What's the matter with me?	ATQ-b	0.08	<u>0.71</u>	-0.03
I'm a loser.	ATQ-b	0.01	<u>0.78</u>	0.03
My life is a mess.	ATQ-b	0.07	<u>0.63</u>	0.09
I'm a failure.	ATQ-b	0.05	<u>0.79</u>	0.00
I'll never make it.	ATQ-b	-0.02	<u>0.81</u>	0.06
I feel so hopeless.	ATQ-b	0.05	<u>0.76</u>	0.01
Something has to change.	ATQ-b	0.41	0.38	-0.16
There must be something wrong with me.	ATQ-b	0.11	<u>0.75</u>	-0.04
My future is bleak.	ATQ-b	-0.04	<u>0.78</u>	0.07
It's just not worth it.	ATQ-b	-0.05	<u>0.80</u>	-0.05
I can't finish anything.	ATQ-b	0.07	<u>0.67</u>	0.01
My thoughts cause me distress or emotional pain	CFQ	<u>0.56</u>	0.26	0.02
I get so caught up in my thoughts that I am unable to do the things that I most want to do	CFQ	0.65	0.16	0.07
Even when I am having distressing thoughts, I know that they may become less important eventually	CFQ	0.41	-0.23	-0.29

Table A22. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I over-analyse situations to the point where it's unhelpful to me	CFQ	0.62	0.06	0.08
I struggle with my thoughts	CFQ	<u>0.67</u>	0.06	0.15
Even when I'm having upsetting thoughts, I can see that those thoughts may not be literally true	CFQ	0.42	-0.19	-0.20
I get upset with myself for having certain thoughts	CFQ	<u>0.63</u>	0.06	0.02
I need to control the thoughts that come into my head	CFQ	<u>0.69</u>	-0.03	-0.11
I find it easy to view my thoughts from a different perspective	CFQ	0.13	0.06	-0.33
I tend to get very entangled in my thoughts	CFQ	<u>0.70</u>	0.00	0.09
I tend to react very strongly to my thoughts	CFQ	<u>0.50</u>	0.16	-0.08
Its possible for me to have negative thoughts about myself and still know that I am an OK person	CFQ	0.43	-0.24	-0.02
It's such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful	CFQ	<u>0.67</u>	0.12	0.04
I could be experiencing some emotion and not be conscious of it until some time later.	MAAS	0.14	-0.15	<u>-0.52</u>
I break or spill things because of carelessness, not paying attention, or thinking of something else.	MAAS	0.18	-0.14	<u>-0.64</u>
I find it difficult to stay focused on what's happening in the present.	MAAS	-0.12	-0.06	<u>-0.62</u>
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	MAAS	-0.13	0.13	<u>-0.58</u>
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	MAAS	0.18	-0.02	<u>-0.50</u>
I forget a person's name almost as soon as I've been told it for the first time.	MAAS	-0.04	0.13	<u>-0.45</u>
It seems I am "running on automatic" without much awareness of what I'm doing.	MAAS	-0.10	0.04	<u>-0.74</u>



Table A22. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I rush through activities without being really attentive to them.	MAAS	-0.14	0.06	<u>-0.76</u>
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.	MAAS	-0.04	-0.03	<u>-0.56</u>
I do jobs or tasks automatically, without being aware of what I'm doing.	MAAS	-0.08	-0.01	<u>-0.76</u>
I find myself listening to someone with one ear, doing something else at the same time.	MAAS	-0.22	0.16	<u>-0.49</u>
I drive places on "automatic pilot" and then wonder why I went there.	MAAS	0.18	-0.20	<u>-0.65</u>
I find myself preoccupied with the future or the past.	MAAS	-0.32	0.04	-0.33
I find myself doing things without paying attention.	MAAS	-0.12	0.14	<u>-0.76</u>
I snack without being aware that I'm eating.	MAAS	0.13	-0.24	<u>-0.63</u>
When I do things, my mind wanders off and I'm easily distracted.	FFMQ AwA	-0.49	0.01	-0.35
I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted	FFMQ AwA	-0.39	0.02	-0.38
I am easily distracted.	FFMQ AwA	-0.39	-0.03	-0.38
I find it difficult to stay focused on what's happening in the present.	FFMQ AwA	-0.41	-0.07	-0.34
It seems I am "running on automatic" without much awareness of what I'm doing.	FFMQ AwA	-0.35	-0.02	-0.39
I rush through activities without being really attentive to them.	FFMQ AwA	-0.34	0.02	-0.37
I do jobs or tasks automatically without being aware of what I'm doing.	FFMQ AwA	-0.21	-0.08	<u>-0.39</u>
I find myself doing things without paying attention.	FFMQ AwA	-0.33	-0.03	<u>-0.45</u>

Table A22. Continued.

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I criticize myself for having irrational or inappropriate emotions.	FFMQ NJ	<u>-0.48</u>	-0.06	0.00
I tell myself I shouldn't be feeling the way I'm feeling.	FFMQ NJ	<u>-0.40</u>	-0.19	-0.01
I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	FFMQ NJ	<u>-0.45</u>	-0.11	-0.07
I make judgments about whether my thoughts are good or bad.	FFMQ NJ	-0.34	-0.12	0.25
I tell myself that I shouldn't be thinking the way I'm thinking.	FFMQ NJ	<u>-0.51</u>	-0.05	-0.03
I think some of my emotions are bad or inappropriate and I shouldn't feel them.	FFMQ NJ	<u>-0.44</u>	-0.17	0.01
When I have distressing thoughts or images, I judge myself as good or bad, depending on what the thought/image is about	FFMQ NJ	<u>-0.36</u>	-0.16	0.17
I disapprove of myself when I have irrational ideas.	FFMQ NJ	-0.30	-0.18	0.01

Note. **Underlined** loadings indicate that the item is used to calculate the subfactor subscore.

Table A23. Student Time 1 Subfactors of ACT Factor 1 (Fusion/Inflexibility), Using Promax Rotation

Item	Scale	Int		
		Inflexibility	Belief	Detachment
My painful experiences and memories make it difficult for me to live a life that I would value.	AAQ	0.34	0.44	0.01
I'm afraid of my feelings.	AAQ	<u>0.60</u>	0.19	-0.01
I worry about not being able to control my worries and feelings.	AAQ	<u>0.64</u>	0.14	0.01
My painful memories prevent me from having a fulfilling life.	AAQ	0.33	0.40	0.00
Emotions cause problems in my life.	AAQ	<u>0.56</u>	0.25	-0.05
It seems like most people are handling their lives better than I am.	AAQ	0.41	0.35	0.07
Worries get in the way of my success.	AAQ	<u>0.44</u>	0.27	0.03
I feel like I'm up against the world.	ATQ-b	0.20	<u>0.50</u>	0.02
I'm no good.	ATQ-b	0.17	<u>0.67</u>	-0.05
Why can't I ever succeed?	ATQ-b	0.15	<u>0.66</u>	0.02
No one understands me.	ATQ-b	0.33	0.43	0.01
I've let people down.	ATQ-b	0.20	<u>0.51</u>	0.01
I don't think I can go on.	ATQ-b	-0.13	<u>0.79</u>	0.03
I wish I were a better person.	ATQ-b	0.16	<u>0.57</u>	0.04
I'm so weak.	ATQ-b	-0.01	<u>0.66</u>	0.07
My life's not going the way I want it to.	ATQ-b	0.06	<u>0.63</u>	0.02
I'm so disappointed in myself.	ATQ-b	0.06	<u>0.69</u>	0.04
Nothing feels good anymore.	ATQ-b	0.02	<u>0.72</u>	0.02
I can't stand this anymore.	ATQ-b	0.08	<u>0.62</u>	-0.01
I can't get started.	ATQ-b	-0.09	<u>0.63</u>	0.15

Table A23. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
What's wrong with me?	ATQ-b	0.31	<u>0.54</u>	-0.06
I wish I were somewhere else.	ATQ-b	0.19	<u>0.46</u>	-0.02
I can't get things together.	ATQ-b	0.08	<u>0.65</u>	0.07
I hate myself.	ATQ-b	-0.01	<u>0.83</u>	-0.06
I'm worthless.	ATQ-b	-0.08	<u>0.86</u>	-0.05
Wish I could just disappear.	ATQ-b	0.02	<u>0.75</u>	-0.07
What's the matter with me?	ATQ-b	0.27	<u>0.62</u>	-0.10
I'm a loser.	ATQ-b	-0.09	<u>0.72</u>	0.01
My life is a mess.	ATQ-b	0.05	<u>0.65</u>	0.03
I'm a failure.	ATQ-b	-0.10	<u>0.86</u>	-0.03
I'll never make it.	ATQ-b	-0.20	<u>0.82</u>	0.07
I feel so hopeless.	ATQ-b	-0.04	<u>0.79</u>	0.04
Something has to change.	ATQ-b	0.30	0.39	0.01
There must be something wrong with me.	ATQ-b	0.22	<u>0.67</u>	-0.13
My future is bleak.	ATQ-b	-0.14	<u>0.74</u>	0.11
It's just not worth it.	ATQ-b	-0.08	<u>0.71</u>	0.04
I can't finish anything.	ATQ-b	-0.08	<u>0.68</u>	0.09
My thoughts cause me distress or emotional pain	CFQ	<u>0.60</u>	0.25	-0.02
I get so caught up in my thoughts that I am unable to do the things that I most want to do	CFQ	0.41	0.32	0.15
Even when I am having distressing thoughts, I know that they may become less important eventually	CFQ	0.28	-0.11	-0.11

Table A23. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I over-analyse situations to the point where it's unhelpful to me	CFQ	<u>0.60</u>	0.02	0.05
I struggle with my thoughts	CFQ	<u>0.73</u>	0.14	-0.04
Even when I'm having upsetting thoughts, I can see that those thoughts may not be literally true	CFQ	0.21	-0.19	0.02
I get upset with myself for having certain thoughts	CFQ	<u>0.77</u>	0.01	-0.01
I need to control the thoughts that come into my head	CFQ	<u>0.75</u>	-0.01	-0.03
I find it easy to view my thoughts from a different perspective	CFQ	0.07	-0.06	-0.02
I tend to get very entangled in my thoughts	CFQ	<u>0.61</u>	0.06	0.06
I tend to react very strongly to my thoughts	CFQ	<u>0.56</u>	0.08	-0.02
Its possible for me to have negative thoughts about myself and still know that I am an OK person	CFQ	0.20	-0.12	-0.07
It's such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful	CFQ	<u>0.64</u>	-0.03	0.04
I could be experiencing some emotion and not be conscious of it until some time later.	MAAS	-0.05	0.01	<u>-0.38</u>
I break or spill things because of carelessness, not paying attention, or thinking of something else.	MAAS	0.02	0.02	<u>-0.47</u>
I find it difficult to stay focused on what's happening in the present.	MAAS	-0.12	-0.01	<u>-0.58</u>
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	MAAS	-0.04	0.04	<u>-0.49</u>
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	MAAS	0.05	0.11	<u>-0.52</u>
I forget a person's name almost as soon as I've been told it for the first time.	MAAS	0.00	0.06	<u>-0.34</u>
It seems I am "running on automatic" without much awareness of what I'm doing.	MAAS	0.05	0.01	<u>-0.73</u>

Table A23. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I rush through activities without being really attentive to them.	MAAS	0.12	-0.01	<u>-0.80</u>
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.	MAAS	0.02	-0.04	<u>-0.66</u>
I do jobs or tasks automatically, without being aware of what I'm doing.	MAAS	0.14	-0.05	<u>-0.79</u>
I find myself listening to someone with one ear, doing something else at the same time.	MAAS	-0.19	0.08	<u>-0.47</u>
I drive places on "automatic pilot" and then wonder why I went there.	MAAS	0.09	-0.06	<u>-0.58</u>
I find myself preoccupied with the future or the past.	MAAS	-0.42	0.10	-0.36
I find myself doing things without paying attention.	MAAS	0.00	0.08	<u>-0.76</u>
I snack without being aware that I'm eating.	MAAS	-0.06	0.04	<u>-0.46</u>
When I do things, my mind wanders off and I'm easily distracted.	FFMQ AwA	-0.09	0.01	-0.49
I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted	FFMQ AwA	-0.02	-0.06	-0.55
I am easily distracted.	FFMQ AwA	-0.02	-0.01	-0.47
I find it difficult to stay focused on what's happening in the present.	FFMQ AwA	-0.14	-0.06	-0.54
It seems I am "running on automatic" without much awareness of what I'm doing.	FFMQ AwA	-0.04	-0.14	-0.60
I rush through activities without being really attentive to them.	FFMQ AwA	-0.08	-0.04	-0.59
I do jobs or tasks automatically without being aware of what I'm doing.	FFMQ AwA	0.02	-0.02	<u>-0.64</u>
I find myself doing things without paying attention.	FFMQ AwA	-0.06	0.06	<u>-0.69</u>

Table A23. Continued.

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I criticize myself for having irrational or inappropriate emotions.	FFMQ NJ	<u>-0.59</u>	-0.08	-0.02
I tell myself I shouldn't be feeling the way I'm feeling.	FFMQ NJ	<u>-0.64</u>	-0.02	-0.01
I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	FFMQ NJ	<u>-0.62</u>	-0.06	-0.07
I make judgments about whether my thoughts are good or bad.	FFMQ NJ	-0.59	0.07	-0.04
I tell myself that I shouldn't be thinking the way I'm thinking.	FFMQ NJ	<u>-0.68</u>	0.02	-0.03
I think some of my emotions are bad or inappropriate and I shouldn't feel them.	FFMQ NJ	<u>-0.63</u>	-0.03	-0.09
When I have distressing thoughts or images, I judge myself as good or bad, depending on what the thought/image is about	FFMQ NJ	<u>-0.54</u>	0.01	-0.13
I disapprove of myself when I have irrational ideas.	FFMQ NJ	-0.50	-0.04	-0.12

*Note.* **Underlined** loadings indicate that the item is used to calculate the subfactor subscore

Table A24. Student Time 2 Subfactors of ACT Factor 1 (Fusion/Inflexibility), Using Promax Rotation

Item	Scale	Int		
		Inflexibility	Belief	Detachment
My painful experiences and memories make it difficult for me to live a life that I would value.	AAQ	0.36	0.34	0.10
I'm afraid of my feelings.	AAQ	<u>0.44</u>	0.23	0.16
I worry about not being able to control my worries and feelings.	AAQ	<u>0.62</u>	0.17	0.03
My painful memories prevent me from having a fulfilling life.	AAQ	0.36	0.40	0.06
Emotions cause problems in my life.	AAQ	<u>0.58</u>	0.17	0.03
It seems like most people are handling their lives better than I am.	AAQ	0.50	0.32	0.04
Worries get in the way of my success.	AAQ	<u>0.52</u>	0.19	0.07
I feel like I'm up against the world.	ATQ-b	0.06	<u>0.62</u>	0.05
I'm no good.	ATQ-b	0.13	<u>0.68</u>	0.02
Why can't I ever succeed?	ATQ-b	0.21	<u>0.58</u>	0.03
No one understands me.	ATQ-b	0.21	0.57	0.03
I've let people down.	ATQ-b	0.22	<u>0.59</u>	-0.07
I don't think I can go on.	ATQ-b	-0.23	<u>0.89</u>	0.01
I wish I were a better person.	ATQ-b	0.17	<u>0.60</u>	0.00
I'm so weak.	ATQ-b	-0.01	<u>0.76</u>	0.03
My life's not going the way I want it to.	ATQ-b	0.11	<u>0.64</u>	0.02
I'm so disappointed in myself.	ATQ-b	0.06	<u>0.68</u>	0.07
Nothing feels good anymore.	ATQ-b	-0.07	<u>0.90</u>	-0.05
I can't stand this anymore.	ATQ-b	0.06	<u>0.77</u>	0.00
I can't get started.	ATQ-b	0.05	<u>0.71</u>	0.06



Table A24. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
What's wrong with me?	ATQ-b	0.25	<u>0.69</u>	-0.04
I wish I were somewhere else.	ATQ-b	0.17	<u>0.49</u>	0.09
I can't get things together.	ATQ-b	0.12	<u>0.72</u>	0.01
I hate myself.	ATQ-b	-0.07	<u>0.89</u>	-0.04
I'm worthless.	ATQ-b	-0.03	<u>0.86</u>	-0.04
Wish I could just disappear.	ATQ-b	-0.11	<u>0.89</u>	0.01
What's the matter with me?	ATQ-b	0.23	<u>0.77</u>	-0.11
I'm a loser.	ATQ-b	0.01	<u>0.77</u>	-0.05
My life is a mess.	ATQ-b	0.06	<u>0.72</u>	0.01
I'm a failure.	ATQ-b	0.00	<u>0.83</u>	-0.03
I'll never make it.	ATQ-b	0.02	<u>0.78</u>	-0.01
I feel so hopeless.	ATQ-b	-0.01	<u>0.86</u>	-0.07
Something has to change.	ATQ-b	0.38	0.47	-0.07
There must be something wrong with me.	ATQ-b	0.15	<u>0.78</u>	-0.10
My future is bleak.	ATQ-b	-0.06	<u>0.82</u>	0.03
It's just not worth it.	ATQ-b	-0.01	<u>0.79</u>	0.01
I can't finish anything.	ATQ-b	-0.01	<u>0.72</u>	0.04
My thoughts cause me distress or emotional pain	CFQ	<u>0.73</u>	0.21	-0.03
I get so caught up in my thoughts that I am unable to do the things that I most want to do	CFQ	0.60	0.26	0.06
Even when I am having distressing thoughts, I know that they may become less important eventually	CFQ	0.46	-0.23	-0.22

Table A24. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I over-analyse situations to the point where it's unhelpful to me	CFQ	<u>0.77</u>	-0.09	0.08
I struggle with my thoughts	CFQ	<u>0.71</u>	0.18	0.02
Even when I'm having upsetting thoughts, I can see that those thoughts may not be literally true	CFQ	0.44	-0.22	-0.21
I get upset with myself for having certain thoughts	CFQ	<u>0.73</u>	0.11	-0.01
I need to control the thoughts that come into my head	CFQ	<u>0.71</u>	0.09	-0.03
I find it easy to view my thoughts from a different perspective	CFQ	0.32	-0.09	-0.20
I tend to get very entangled in my thoughts	CFQ	<u>0.71</u>	0.07	0.05
I tend to react very strongly to my thoughts	CFQ	<u>0.58</u>	0.11	0.02
Its possible for me to have negative thoughts about myself and still know that I am an OK person	CFQ	0.38	-0.31	-0.20
It's such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful	CFQ	<u>0.68</u>	0.06	0.02
I could be experiencing some emotion and not be conscious of it until some time later.	MAAS	0.07	-0.19	<u>-0.38</u>
I break or spill things because of carelessness, not paying attention, or thinking of something else.	MAAS	0.20	-0.15	<u>-0.51</u>
I find it difficult to stay focused on what's happening in the present.	MAAS	0.02	-0.12	<u>-0.58</u>
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	MAAS	-0.08	0.05	<u>-0.61</u>
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	MAAS	0.04	-0.02	<u>-0.46</u>
I forget a person's name almost as soon as I've been told it for the first time.	MAAS	0.02	-0.06	<u>-0.37</u>
It seems I am "running on automatic" without much awareness of what I'm doing.	MAAS	0.07	0.01	<u>-0.81</u>

Table A24. Continued

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I rush through activities without being really attentive to them.	MAAS	0.02	0.07	<u>-0.85</u>
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.	MAAS	-0.04	0.07	<u>-0.72</u>
I do jobs or tasks automatically, without being aware of what I'm doing.	MAAS	0.11	-0.01	<u>-0.86</u>
I find myself listening to someone with one ear, doing something else at the same time.	MAAS	-0.13	0.12	<u>-0.54</u>
I drive places on "automatic pilot" and then wonder why I went there.	MAAS	0.13	-0.07	<u>-0.65</u>
I find myself preoccupied with the future or the past.	MAAS	-0.28	-0.02	-0.38
I find myself doing things without paying attention.	MAAS	-0.03	0.11	<u>-0.84</u>
I snack without being aware that I'm eating.	MAAS	-0.03	0.06	<u>-0.54</u>
When I do things, my mind wanders off and I'm easily distracted.	FFMQ AwA	-0.23	0.04	-0.43
I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted	FFMQ AwA	-0.14	-0.08	-0.51
I am easily distracted.	FFMQ AwA	-0.09	0.06	-0.52
I find it difficult to stay focused on what's happening in the present.	FFMQ AwA	-0.15	-0.09	-0.47
It seems I am "running on automatic" without much awareness of what I'm doing.	FFMQ AwA	-0.07	0.02	-0.67
I rush through activities without being really attentive to them.	FFMQ AwA	-0.20	0.08	-0.57
I do jobs or tasks automatically without being aware of what I'm doing.	FFMQ AwA	-0.08	0.14	<u>-0.68</u>
I find myself doing things without paying attention.	FFMQ AwA	-0.12	0.10	<u>-0.66</u>

Table A24. Continued.

Item	Scale	Int		
		Inflexibility	Belief	Detachment
I criticize myself for having irrational or inappropriate emotions.	FFMQ NJ	<u>-0.59</u>	-0.09	-0.08
I tell myself I shouldn't be feeling the way I'm feeling.	FFMQ NJ	<u>-0.61</u>	0.02	-0.10
I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	FFMQ NJ	<u>-0.63</u>	-0.02	-0.09
I make judgments about whether my thoughts are good or bad.	FFMQ NJ	-0.59	0.13	0.01
I tell myself that I shouldn't be thinking the way I'm thinking.	FFMQ NJ	<u>-0.63</u>	0.08	-0.11
I think some of my emotions are bad or inappropriate and I shouldn't feel them.	FFMQ NJ	<u>-0.58</u>	-0.01	-0.14
When I have distressing thoughts or images, I judge myself as good or bad, depending on what the thought/image is about	FFMQ NJ	<u>-0.51</u>	-0.01	-0.17
I disapprove of myself when I have irrational ideas.	FFMQ NJ	-0.52	0.00	-0.13

Note. **Underlined** loadings indicate that the item is used to calculate the subfactor subscore

Table A25. Item-Level Parallel Analyses for ACT Factor 2  
(Awareness)

Factor number	Mechanical Turk		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	12.88	1.94	2.03
2	4.35	1.85	1.92
3	3.65	1.78	1.84
4	2.59	1.72	1.77
5	2.04	1.67	1.72
6	1.62	1.62	1.66
7	1.40	1.58	1.63
8	1.23	1.54	1.58
9	1.19	1.50	1.54
10	1.09	1.46	1.50
11	1.06	1.43	1.46
12	0.98	1.39	1.42
13	0.96	1.36	1.39
14	0.92	1.32	1.36
15	0.91	1.29	1.32

Table A25. Continued

Factor number	Student Time 1		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	9.69	1.73	1.80
2	4.71	1.66	1.72
3	3.08	1.61	1.66
4	3.05	1.57	1.61
5	2.07	1.53	1.56
6	1.60	1.49	1.53
7	1.49	1.46	1.49
8	1.36	1.43	1.46
9	1.16	1.39	1.43
10	1.09	1.37	1.40
11	1.07	1.34	1.36
12	1.01	1.31	1.34
13	0.96	1.29	1.31
14	0.94	1.26	1.29
15	0.91	1.24	1.26

Table A25. Continued

Factor number	Student Time 2		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	13.53	1.89	1.98
2	5.11	1.80	1.86
3	3.45	1.74	1.79
4	3.04	1.68	1.73
5	1.95	1.64	1.68
6	1.58	1.59	1.64
7	1.40	1.55	1.59
8	1.21	1.51	1.55
9	1.16	1.47	1.51
10	1.01	1.44	1.47
11	0.97	1.40	1.43
12	0.93	1.37	1.40
13	0.88	1.34	1.37
14	0.86	1.31	1.34
15	0.81	1.28	1.31

*Note.* 500 simulations using a significance level of 95%. Non-normal random datasets used (based on raw data). Principal components analysis used.

Table A26. Correlations Between Subfactor Loadings for 2nd Scale-Level EFA Factor

<p style="text-align: center;"><b><u>1 factor solution</u></b> <i>Awareness</i></p> <p>MT-T1   MT-T2   T1-T2 0.76   0.78   0.74</p>	<p style="text-align: center;"><b><u>2 factor solution</u></b> <i>Accepting Awareness</i></p> <p>MT-T1   MT-T2   T1-T2 0.72   0.71   0.83</p> <p style="text-align: center;"><i>Physical/Mindful Awareness</i></p> <p>MT-T1   MT-T2   T1-T2 -0.82   0.83   -0.90</p>	<p style="text-align: center;"><b><u>3 factor solution</u></b> <i>Accepting Awareness</i></p> <p style="text-align: right;">T1- T2</p> <p>MT-T1   MT-T2   T2 0.83   0.69   0.66</p> <p style="text-align: center;"><i>Expressive/Mindful Awareness</i></p> <p style="text-align: right;">T1- T2</p> <p>MT-T1   MT-T2   T2 0.89   0.86   0.89</p> <p style="text-align: center;"><i>Physical Awareness</i></p> <p style="text-align: right;">T1- T2</p> <p>MT-T1   MT-T2   T2 -0.92   0.90   -0.90</p>
<p style="text-align: center;"><b><u>4 factor solution</u></b> <i>Perspective taking</i></p> <p>MT-T1   MT-T2   T1-T2 0.90   0.92   0.92</p> <p style="text-align: center;"><i>Expressive Awareness</i></p> <p>MT-T1   MT-T2   T1-T2 0.90   0.93   0.94</p> <p style="text-align: center;"><i>Committed Action</i></p> <p>MT-T1   MT-T2   T1-T2 0.83   0.90   0.94</p> <p style="text-align: center;"><i>Physical Awareness</i></p> <p>MT-T1   MT-T2   T1-T2 -0.92   -0.95   0.97</p>	<p style="text-align: center;"><b><u>5 factor solution</u></b> <i>Perspective taking</i></p> <p>MT-T1   MT-T2   T1-T2 0.62   0.80   0.89</p> <p style="text-align: center;"><i>Committed Action</i></p> <p>MT-T1   MT-T2   T1-T2 0.86   0.90   0.94</p> <p style="text-align: center;"><i>Physical Awareness</i></p> <p>MT-T1   MT-T2   T1-T2 -0.85   -0.95   0.93</p> <p style="text-align: center;"><i>Expressive Awareness</i></p> <p>MT-T1   MT-T2   T1-T2 0.92   0.90   0.94</p> <p style="text-align: center;"><i>???</i></p> <p>MT-T1   MT-T2   T1-T2 -0.35   0.42   -0.89</p>	



Table A27. Mechanical Turk Subfactors of ACT Factor 2 (Awareness), Using Promax Rotation

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I am better able to accept myself as I am.	EQ	0.45	0.20	-0.08	0.05
I can slow my thinking at times of stress.	EQ	<u>0.56</u>	-0.01	0.02	-0.02
I notice that I don't take difficulties so personally.	EQ	<u>0.65</u>	-0.17	0.01	-0.12
I can separate myself from my thoughts and feelings.	EQ	<u>0.61</u>	0.06	0.00	-0.14
I can take time to respond to difficulties.	EQ	<u>0.44</u>	0.18	-0.15	0.11
I can treat myself kindly.	EQ	<u>0.53</u>	0.15	-0.04	-0.01
I can observe unpleasant feelings without being drawn into them.	EQ	<u>0.63</u>	0.01	0.02	-0.12
I have the sense that I am fully aware of what is going on around me and inside me.	EQ	0.27	0.26	-0.06	0.30
I can actually see that I am not my thoughts.	EQ	<u>0.45</u>	-0.17	0.10	-0.05
I am consciously aware of a sense of my body as a whole.	EQ	0.27	0.18	0.01	0.35
I view things from a wider perspective.	EQ	0.26	0.28	0.07	0.22
I'm good at finding words to describe my feelings.	FFMQ Des	0.11	<u>0.60</u>	-0.09	0.21
I can easily put my beliefs, opinions, and expectations into words.	FFMQ Des	0.03	<u>0.64</u>	0.02	0.12
Even when I'm feeling terribly upset, I can find a way to put it into words.	FFMQ Des	0.14	0.51	-0.02	0.18
My natural tendency is to put my experiences into words.	FFMQ Des	0.13	0.45	-0.06	0.26

Table A27. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I can usually describe how I feel at the moment in considerable detail.	FFMQ Des	0.04	<u>0.45</u>	0.07	0.26
It's hard for me to find the words to describe what I'm thinking.	FFMQ Des	-0.15	<u>0.82</u>	-0.01	-0.29
I have trouble thinking of the right words to express how I feel about things	FFMQ Des	-0.08	<u>0.85</u>	-0.01	-0.32
When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	FFMQ Des	-0.18	<u>0.67</u>	0.10	-0.25
I perceive my feelings and emotions without having to react to them.	FFMQ Nonr	0.49	-0.06	0.16	-0.01
I watch my feelings without getting lost in them.	FFMQ Nonr	<u>0.55</u>	-0.08	0.22	-0.08
When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.	FFMQ Nonr	0.32	-0.16	0.05	0.22
In difficult situations, I can pause without immediately reacting.	FFMQ Nonr	0.33	-0.08	0.22	0.07
When I have distressing thoughts or images, I feel calm soon after.	FFMQ Nonr	<u>0.56</u>	-0.01	0.04	-0.07
When I have distressing thoughts or images I am able just to notice them without reacting	FFMQ Nonr	<u>0.61</u>	-0.08	0.18	-0.10
When I have distressing thoughts or images, I just notice them and let them go.	FFMQ Nonr	<u>0.61</u>	-0.08	0.00	0.11

Table A27. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
When I'm walking, I deliberately notice the sensations of my body moving.	FFMQ Obs	0.12	-0.10	-0.28	<u>0.60</u>
When I take a shower or bath, I stay alert to the sensations of water on my body.	FFMQ Obs	0.00	-0.16	-0.07	<u>0.75</u>
I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	FFMQ Obs	0.03	-0.08	-0.19	<u>0.60</u>
I pay attention to sensations, such as the wind in my hair or sun on my face.	FFMQ Obs	0.03	-0.12	-0.10	<u>0.79</u>
I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	FFMQ Obs	-0.11	-0.01	-0.02	<u>0.69</u>
I notice the smells and aromas of things.	FFMQ Obs	-0.06	0.14	0.10	<u>0.48</u>
I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	FFMQ Obs	-0.01	0.05	0.12	<u>0.54</u>
I pay attention to how my emotions affect my thoughts and behavior.	FFMQ Obs	0.02	0.03	-0.03	<u>0.59</u>
People should face their fears	MEAQ DE	0.16	0.10	0.26	0.09
Even when I feel uncomfortable, I don't give up working toward things I value	MEAQ DE	0.16	0.01	<u>0.57</u>	-0.02
I am willing to put up with pain and discomfort to get what I want	MEAQ DE	0.01	-0.12	<u>0.63</u>	0.03
I am willing to suffer for the things that matter to me	MEAQ DE	0.03	0.05	<u>0.60</u>	0.05
Fear or anxiety won't stop me from doing something important	MEAQ DE	0.14	0.08	<u>0.52</u>	-0.06
When I am hurting, I still do what needs to be done	MEAQ DE	0.06	-0.07	<u>0.66</u>	-0.03
I don't let pain and discomfort stop me from getting what I want	MEAQ DE	0.02	0.07	<u>0.73</u>	-0.04

Table A27. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I am willing to put up with sadness to get what I want	MEAQ DE	0.02	-0.17	<u>0.43</u>	0.14
I continue working toward my goals even if I have doubts	MEAQ DE	0.20	0.07	<u>0.54</u>	-0.07
I don't let gloomy thoughts stop me from doing what I want	MEAQ DE	0.26	-0.05	<u>0.50</u>	-0.04
When working on something important, I won't quit even if things get difficult	MEAQ DE	0.12	0.03	<u>0.69</u>	0.01
I am aware of what thoughts are passing through my mind.	PHLMS Aw	-0.01	0.35	0.10	0.29
When talking with other people, I am aware of their facial and body expressions.	PHLMS Aw	0.00	0.24	0.09	0.41
When I shower, I am aware of how the water is running over my body.	PHLMS Aw	-0.06	-0.06	0.01	<u>0.73</u>
When I am startled, I notice what is going on inside my body.	PHLMS Aw	-0.10	-0.13	0.03	<u>0.64</u>
When I walk outside, I am aware of smells or how the air feels against my face.	PHLMS Aw	-0.12	0.01	0.25	<u>0.61</u>
When someone asks how I am feeling, I can identify my emotions easily.	PHLMS Aw	0.02	0.36	0.22	0.25
I am aware of thoughts I'm having when my mood changes.	PHLMS Aw	-0.09	0.05	0.30	0.35
I notice changes inside my body, like my heart beating faster or my muscles getting tense.	PHLMS Aw	-0.19	-0.20	0.16	<u>0.66</u>
Whenever my emotions change, I am conscious of them immediately.	PHLMS Aw	-0.07	0.13	0.22	<u>0.41</u>
When talking with other people, I am aware of the emotions I am experiencing.	PHLMS Aw	-0.01	0.04	0.33	0.44

Note. **Underlined** loadings indicate that the item is used to calculate the subfactor subscore.

Table A28. Student Time 1 Subfactors of ACT Factor 2 (Awareness), Using Promax Rotation

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I am better able to accept myself as I am.	EQ	0.56	0.09	0.13	0.17
I can slow my thinking at times of stress.	EQ	<u>0.63</u>	-0.02	-0.11	0.07
I notice that I don't take difficulties so personally.	EQ	<u>0.63</u>	-0.04	-0.10	0.11
I can separate myself from my thoughts and feelings.	EQ	<u>0.62</u>	0.00	-0.11	0.09
I can take time to respond to difficulties.	EQ	<u>0.39</u>	0.02	0.10	-0.06
I can treat myself kindly.	EQ	<u>0.47</u>	0.14	0.18	0.25
I can observe unpleasant feelings without being drawn into them.	EQ	<u>0.73</u>	0.05	-0.05	0.13
I have the sense that I am fully aware of what is going on around me and inside me.	EQ	0.48	0.13	0.00	-0.12
I can actually see that I am not my thoughts.	EQ	<u>0.49</u>	0.01	-0.03	-0.01
I am consciously aware of a sense of my body as a whole.	EQ	0.51	0.01	-0.02	-0.25
I view things from a wider perspective.	EQ	0.48	-0.01	0.11	-0.05
I'm good at finding words to describe my feelings.	FFMQ Des	0.05	<u>0.65</u>	-0.05	-0.14
I can easily put my beliefs, opinions, and expectations into words.	FFMQ Des	0.05	<u>0.54</u>	0.15	-0.12
Even when I'm feeling terribly upset, I can find a way to put it into words.	FFMQ Des	0.10	0.30	0.07	-0.06
My natural tendency is to put my experiences into words.	FFMQ Des	0.03	0.38	-0.01	-0.26

Table A28. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I can usually describe how I feel at the moment in considerable detail.	FFMQ Des	0.09	<u>0.49</u>	-0.04	-0.29
It's hard for me to find the words to describe what I'm thinking.	FFMQ Des	-0.06	<u>0.82</u>	-0.04	0.16
I have trouble thinking of the right words to express how I feel about things	FFMQ Des	-0.01	<u>0.78</u>	-0.04	0.17
When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	FFMQ Des	0.04	<u>0.52</u>	0.07	0.21
I perceive my feelings and emotions without having to react to them.	FFMQ Nonr	0.18	-0.01	0.05	-0.21
I watch my feelings without getting lost in them.	FFMQ Nonr	<u>0.38</u>	0.06	0.08	-0.02
When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.	FFMQ Nonr	0.23	-0.09	0.05	-0.31
In difficult situations, I can pause without immediately reacting.	FFMQ Nonr	0.37	-0.09	0.18	-0.04
When I have distressing thoughts or images, I feel calm soon after.	FFMQ Nonr	<u>0.41</u>	-0.11	-0.03	-0.14
When I have distressing thoughts or images I am able just to notice them without reacting	FFMQ Nonr	<u>0.43</u>	-0.06	-0.06	-0.17
When I have distressing thoughts or images, I just notice them and let them go.	FFMQ Nonr	<u>0.48</u>	-0.14	-0.02	-0.08

Table A28. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
When I'm walking, I deliberately notice the sensations of my body moving.	FFMQ Obs	0.01	-0.13	-0.15	<u>-0.64</u>
When I take a shower or bath, I stay alert to the sensations of water on my body.	FFMQ Obs	0.05	-0.05	-0.15	<u>-0.60</u>
I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	FFMQ Obs	0.01	-0.10	0.01	<u>-0.52</u>
I pay attention to sensations, such as the wind in my hair or sun on my face.	FFMQ Obs	-0.01	-0.05	0.08	<u>-0.60</u>
I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	FFMQ Obs	-0.08	-0.08	0.13	<u>-0.48</u>
I notice the smells and aromas of things.	FFMQ Obs	0.00	0.05	0.20	<u>-0.45</u>
I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	FFMQ Obs	-0.02	-0.07	0.05	<u>-0.53</u>
I pay attention to how my emotions affect my thoughts and behavior.	FFMQ Obs	-0.06	0.07	0.16	<u>-0.42</u>
People should face their fears	MEAQ DE	0.16	-0.05	0.36	-0.03
Even when I feel uncomfortable, I don't give up working toward things I value	MEAQ DE	0.02	-0.01	<u>0.63</u>	-0.01
I am willing to put up with pain and discomfort to get what I want	MEAQ DE	-0.02	-0.15	<u>0.46</u>	-0.22
I am willing to suffer for the things that matter to me	MEAQ DE	-0.09	-0.04	<u>0.56</u>	-0.12
Fear or anxiety won't stop me from doing something important	MEAQ DE	0.05	0.01	<u>0.60</u>	0.11
When I am hurting, I still do what needs to be done	MEAQ DE	-0.06	0.04	<u>0.68</u>	0.06
I don't let pain and discomfort stop me from getting what I want	MEAQ DE	-0.02	-0.11	<u>0.74</u>	0.02

Table A28. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I am willing to put up with sadness to get what I want	MEAQ DE	-0.01	-0.21	<u>0.39</u>	-0.11
I continue working toward my goals even if I have doubts	MEAQ DE	-0.07	0.06	<u>0.71</u>	0.07
I don't let gloomy thoughts stop me from doing what I want	MEAQ DE	0.17	0.06	<u>0.52</u>	0.15
When working on something important, I won't quit even if things get difficult	MEAQ DE	0.01	0.02	<u>0.69</u>	0.09
I am aware of what thoughts are passing through my mind.	PHLMS Aw	0.04	0.22	0.17	-0.18
When talking with other people, I am aware of their facial and body expressions.	PHLMS Aw	-0.02	0.06	0.31	-0.28
When I shower, I am aware of how the water is running over my body.	PHLMS Aw	0.02	-0.05	-0.17	<u>-0.64</u>
When I am startled, I notice what is going on inside my body.	PHLMS Aw	-0.01	-0.07	-0.16	<u>-0.63</u>
When I walk outside, I am aware of smells or how the air feels against my face.	PHLMS Aw	-0.12	0.10	0.01	<u>-0.64</u>
When someone asks how I am feeling, I can identify my emotions easily.	PHLMS Aw	0.09	0.59	-0.08	-0.20
I am aware of thoughts I'm having when my mood changes.	PHLMS Aw	-0.09	0.10	0.03	-0.55
I notice changes inside my body, like my heart beating faster or my muscles getting tense.	PHLMS Aw	-0.12	0.02	-0.03	<u>-0.60</u>
Whenever my emotions change, I am conscious of them immediately.	PHLMS Aw	0.03	0.16	-0.03	<u>-0.48</u>
When talking with other people, I am aware of the emotions I am experiencing.	PHLMS Aw	-0.07	0.19	0.08	-0.48

Note. **Underlined** loadings indicate that the item is used to calculate the subfactor subscore.



Table A29. Student Time 2 Subfactors of ACT Factor 2 (Awareness), Using Promax Rotation

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I am better able to accept myself as I am.	EQ	0.36	0.23	0.15	0.18
I can slow my thinking at times of stress.	EQ	<u>0.62</u>	-0.03	0.02	0.16
I notice that I don't take difficulties so personally.	EQ	<u>0.58</u>	-0.04	-0.07	0.13
I can separate myself from my thoughts and feelings.	EQ	<u>0.59</u>	-0.01	-0.01	0.13
I can take time to respond to difficulties.	EQ	<u>0.43</u>	0.13	0.18	-0.04
I can treat myself kindly.	EQ	<u>0.46</u>	0.26	0.02	0.17
I can observe unpleasant feelings without being drawn into them.	EQ	<u>0.70</u>	0.04	-0.01	0.11
I have the sense that I am fully aware of what is going on around me and inside me.	EQ	0.34	0.15	-0.01	-0.32
I can actually see that I am not my thoughts.	EQ	<u>0.55</u>	0.10	-0.13	-0.09
I am consciously aware of a sense of my body as a whole.	EQ	0.28	0.12	-0.07	-0.43
I view things from a wider perspective.	EQ	0.39	0.04	0.05	-0.13
I'm good at finding words to describe my feelings.	FFMQ Des	0.03	<u>0.55</u>	0.06	-0.26
I can easily put my beliefs, opinions, and expectations into words.	FFMQ Des	0.11	<u>0.49</u>	0.18	-0.20
Even when I'm feeling terribly upset, I can find a way to put it into words.	FFMQ Des	0.19	0.48	0.07	-0.23
My natural tendency is to put my experiences into words.	FFMQ Des	0.11	0.40	-0.08	-0.30

Table A29. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I can usually describe how I feel at the moment in considerable detail.	FFMQ Des	0.04	<u>0.56</u>	-0.01	-0.39
It's hard for me to find the words to describe what I'm thinking.	FFMQ Des	-0.02	<u>0.79</u>	-0.07	0.25
I have trouble thinking of the right words to express how I feel about things	FFMQ Des	-0.08	<u>0.86</u>	-0.04	0.17
When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	FFMQ Des	-0.08	<u>0.75</u>	0.00	0.10
I perceive my feelings and emotions without having to react to them.	FFMQ Nonr	0.40	-0.10	0.18	-0.15
I watch my feelings without getting lost in them.	FFMQ Nonr	<u>0.57</u>	0.01	0.07	-0.05
When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.	FFMQ Nonr	0.41	-0.06	0.01	-0.21
In difficult situations, I can pause without immediately reacting.	FFMQ Nonr	0.54	-0.13	0.13	-0.07
When I have distressing thoughts or images, I feel calm soon after.	FFMQ Nonr	<u>0.54</u>	-0.23	-0.08	-0.14
When I have distressing thoughts or images I am able just to notice them without reacting	FFMQ Nonr	<u>0.56</u>	-0.16	0.08	-0.04
When I have distressing thoughts or images, I just notice them and let them go.	FFMQ Nonr	<u>0.53</u>	-0.06	-0.07	-0.04

Table A29. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
When I'm walking, I deliberately notice the sensations of my body moving.	FFMQ Obs	-0.03	-0.04	-0.28	<u>-0.75</u>
When I take a shower or bath, I stay alert to the sensations of water on my body.	FFMQ Obs	0.17	-0.10	-0.19	<u>-0.69</u>
I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	FFMQ Obs	-0.05	-0.21	-0.05	<u>-0.59</u>
I pay attention to sensations, such as the wind in my hair or sun on my face.	FFMQ Obs	0.08	-0.08	-0.07	<u>-0.71</u>
I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	FFMQ Obs	0.02	0.03	-0.01	<u>-0.63</u>
I notice the smells and aromas of things.	FFMQ Obs	0.12	0.08	0.16	<u>-0.51</u>
I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	FFMQ Obs	0.09	-0.02	-0.02	<u>-0.61</u>
I pay attention to how my emotions affect my thoughts and behavior.	FFMQ Obs	-0.05	0.03	0.09	<u>-0.61</u>
People should face their fears	MEAQ DE	0.09	0.02	0.50	-0.03
Even when I feel uncomfortable, I don't give up working toward things I value	MEAQ DE	-0.03	0.08	<u>0.62</u>	-0.01
I am willing to put up with pain and discomfort to get what I want	MEAQ DE	0.10	-0.25	<u>0.67</u>	-0.01
I am willing to suffer for the things that matter to me	MEAQ DE	-0.05	-0.02	<u>0.68</u>	-0.09
Fear or anxiety won't stop me from doing something important	MEAQ DE	0.04	0.01	<u>0.66</u>	0.11
When I am hurting, I still do what needs to be done	MEAQ DE	0.01	0.00	<u>0.74</u>	0.04
I don't let pain and discomfort stop me from getting what I want	MEAQ DE	0.06	-0.01	<u>0.75</u>	0.06

Table A29. Continued

Item	Scale	Perspective taking	Expressive awareness	Committed Action	Physical awareness
I am willing to put up with sadness to get what I want	MEAQ DE	-0.02	-0.24	<u>0.59</u>	-0.13
I continue working toward my goals even if I have doubts	MEAQ DE	-0.01	0.05	<u>0.75</u>	0.04
I don't let gloomy thoughts stop me from doing what I want	MEAQ DE	0.01	0.11	<u>0.70</u>	0.13
When working on something important, I won't quit even if things get difficult	MEAQ DE	0.03	0.06	<u>0.69</u>	0.09
I am aware of what thoughts are passing through my mind.	PHLMS Aw	0.06	0.17	0.15	-0.32
When talking with other people, I am aware of their facial and body expressions.	PHLMS Aw	-0.10	0.12	0.26	-0.47
When I shower, I am aware of how the water is running over my body.	PHLMS Aw	0.09	-0.09	-0.17	<u>-0.70</u>
When I am startled, I notice what is going on inside my body.	PHLMS Aw	-0.07	0.02	-0.10	<u>-0.69</u>
When I walk outside, I am aware of smells or how the air feels against my face.	PHLMS Aw	-0.08	0.01	0.11	<u>-0.73</u>
When someone asks how I am feeling, I can identify my emotions easily.	PHLMS Aw	0.04	0.46	0.14	-0.25
I am aware of thoughts I'm having when my mood changes.	PHLMS Aw	-0.07	0.02	0.19	-0.59
I notice changes inside my body, like my heart beating faster or my muscles getting tense.	PHLMS Aw	-0.20	-0.17	0.11	<u>-0.68</u>
Whenever my emotions change, I am conscious of them immediately.	PHLMS Aw	-0.02	0.03	0.15	<u>-0.52</u>
When talking with other people, I am aware of the emotions I am experiencing.	PHLMS Aw	-0.06	0.14	0.18	-0.54

Note. **Underlined** loadings indicate that the item is used to calculate the subfactor subscore.

Table A30. Item-Level Parallel Analyses for ACT Factor 3 (Avoidance)

Factor number	Mechanical Turk		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	12.94	1.77	1.86
2	3.29	1.69	1.75
3	2.01	1.62	1.67
4	1.84	1.56	1.61
5	1.33	1.51	1.55
6	1.02	1.46	1.50
7	1.00	1.42	1.46
8	0.97	1.38	1.41
9	0.93	1.34	1.37
10	0.90	1.30	1.33
11	0.85	1.27	1.30
12	0.83	1.23	1.26
13	0.78	1.20	1.23
14	0.73	1.17	1.19
15	0.69	1.13	1.16

Table A30. Continued

Factor number	Student Time 1		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	11.63	1.60	1.67
2	3.39	1.53	1.59
3	2.51	1.48	1.53
4	1.91	1.44	1.48
5	1.39	1.40	1.44
6	1.18	1.37	1.40
7	1.15	1.33	1.36
8	1.01	1.30	1.33
9	0.95	1.27	1.30
10	0.90	1.24	1.27
11	0.84	1.22	1.24
12	0.80	1.19	1.21
13	0.78	1.16	1.19
14	0.74	1.14	1.16
15	0.69	1.11	1.13

Table A30. Continued

Factor number	Student Time 2		
	Raw Eigenvalue	Mean Random Eigenvalue	95% Upper Bound Random Eigenvalue
1	13.76	1.73	1.82
2	3.34	1.65	1.71
3	2.33	1.58	1.64
4	1.88	1.53	1.57
5	1.15	1.48	1.52
6	1.10	1.44	1.48
7	1.01	1.40	1.44
8	0.97	1.36	1.39
9	0.85	1.32	1.36
10	0.81	1.29	1.33
11	0.76	1.25	1.28
12	0.75	1.22	1.25
13	0.72	1.19	1.22
14	0.72	1.16	1.19
15	0.66	1.13	1.16

*Note.* 500 simulations using a significance level of 95%. Non-normal random datasets used (based on raw data). Principal components analysis used.

Table A31. Correlations Between Subfactor Loadings for 3rd Scale-Level EFA Factor

<b><u>1 factor solution</u></b>			<b><u>2 factor solution</u></b>			<b><u>3 factor solution</u></b>		
<i><u>Avoidance</u></i>			<i><u>Mental Avoidance</u></i>			<i><u>Distraction</u></i>		
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
0.38	0.51	0.90	0.92	0.82	0.92	0.94	0.88	0.91
			<i><u>Physical Avoidance</u></i>			<i><u>Physical Avoidance</u></i>		
			MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2
			0.93	0.79	0.90	0.94	0.91	0.95
						<i><u>Mental Avoidance</u></i>		
						MT-T1	MT-T2	T1-T2
						0.89	0.93	0.91
<b><u>4 factor solution</u></b>			<b><u>5 factor solution</u></b>					
<i><u>Physical Avoidance</u></i>			<i><u>Physical Avoidance</u></i>					
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2			
0.86	0.87	0.94	0.89	0.90	0.94			
<i><u>Pain Aversion</u></i>			<i><u>Pain Aversion</u></i>					
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2			
0.87	0.93	0.83	0.85	0.83	0.89			
<i><u>Distraction</u></i>			<i><u>Distraction</u></i>					
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2			
0.94	0.87	0.88	0.90	0.78	0.91			
<i><u>Mental Avoidance</u></i>			<i><u>Mental Avoidance</u></i>					
MT-T1	MT-T2	T1-T2	MT-T1	MT-T2	T1-T2			
0.92	0.92	0.97	0.69	0.62	0.81			
			<i><u>???</u></i>					
			MT-T1	MT-T2	T1-T2			
			-0.92	0.91	-0.96			



Table A32. Mechanical Turk Subfactors of ACT Factor 3 (Avoidance), Using Promax Rotation

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
I won't do something if I think it will make me uncomfortable	MEAQ BA	0.21	0.10	0.37	-0.10
I avoid activities if there is even a small possibility of getting hurt	MEAQ BA	<u>0.57</u>	0.17	-0.13	-0.06
I rarely do something if there is a chance that it will upset me	MEAQ BA	<u>0.44</u>	0.09	0.09	0.06
I work hard to avoid situations that might bring up unpleasant thoughts and feelings in me	MEAQ BA	0.29	0.05	0.31	0.13
I prefer to stick to what I am comfortable with, rather than try new activities	MEAQ BA	<u>0.79</u>	-0.06	-0.11	0.01
If I have any doubts about doing something, I just won't do it	MEAQ BA	<u>0.55</u>	-0.05	0.06	0.04
If I am starting to feel trapped, I leave the situation immediately	MEAQ BA	<u>0.66</u>	-0.21	0.13	0.09
I go out of my way to avoid uncomfortable situations	MEAQ BA	<u>0.58</u>	0.10	0.05	0.02
If I am in a slightly uncomfortable situation, I try to leave right away	MEAQ BA	<u>0.75</u>	0.04	0.03	-0.05
I avoid situations if there is a chance that I'll feel nervous	MEAQ BA	<u>0.65</u>	0.11	-0.04	0.15
I'm quick to leave any situation that makes me feel uneasy	MEAQ BA	<u>0.75</u>	-0.02	-0.02	-0.03
When something upsetting comes up, I try very hard to stop thinking about it	MEAQ D/S	0.06	0.04	0.55	0.08
When negative thoughts come up, I try to fill my head with something else	MEAQ D/S	0.02	0.00	<u>0.73</u>	-0.14
I usually try to distract myself when I feel something painful	MEAQ D/S	0.07	-0.18	<u>0.74</u>	-0.17
When upsetting memories come up, I try to focus on other things	MEAQ D/S	-0.08	0.04	<u>0.80</u>	-0.08
I work hard to keep out upsetting feelings	MEAQ D/S	0.31	0.13	0.28	0.10

Table A32. Continued

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
When unpleasant memories come to me, I try to put them out of my mind	MEAQ D/S	-0.01	-0.01	<u>0.79</u>	-0.07
When a negative thought comes up, I immediately try to think of something else	MEAQ D/S	0.07	0.02	<u>0.72</u>	-0.07
If I could magically remove all of my painful memories, I would	MEAQ DA	-0.03	0.38	0.28	-0.05
Happiness means never feeling any pain or disappointment	MEAQ DA	0.08	<u>0.72</u>	-0.25	-0.03
When I am hurting, I would do anything to feel better	MEAQ DA	0.32	0.12	0.21	0.04
Happiness involves getting rid of negative thoughts	MEAQ DA	-0.13	0.57	0.27	-0.12
One of my big goals is to be free from painful emotions	MEAQ DA	0.17	<u>0.44</u>	0.20	0.08
I'd do anything to feel less stressed	MEAQ DA	0.23	0.19	0.16	0.17
In this day and age people should not have to suffer	MEAQ DA	0.05	0.35	0.13	-0.01
My life would be great if I never felt anxious	MEAQ DA	0.10	0.19	0.20	0.14
I would give up a lot not to feel bad	MEAQ DA	0.43	0.17	0.12	0.04
Pain always leads to suffering	MEAQ DA	0.35	0.40	-0.09	0.02
I wish I could get rid of all of my negative emotions	MEAQ DA	-0.15	0.55	0.12	0.26
The key to a good life is never feeling any pain	MEAQ DA	0.07	<u>0.81</u>	-0.21	0.00
I hope to live without any sadness and disappointment	MEAQ DA	0.05	<u>0.64</u>	0.05	0.00

Table A32. Continued

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
I try to distract myself when I feel unpleasant emotions.	PHLMS Ac	-0.13	-0.08	0.54	0.35
There are aspects of myself I don't want to think about.	PHLMS Ac	0.21	-0.07	-0.23	<u>0.73</u>
I try to stay busy to keep thoughts or feelings from coming to mind.	PHLMS Ac	0.00	-0.05	0.28	<u>0.44</u>
I wish I could control my emotions more easily.	PHLMS Ac	0.12	0.16	-0.01	<u>0.54</u>
I tell myself that I shouldn't have certain thoughts.	PHLMS Ac	0.00	0.09	-0.14	<u>0.64</u>
There are things I try not to think about.	PHLMS Ac	0.00	-0.02	0.01	<u>0.72</u>
I tell myself that I shouldn't feel sad.	PHLMS Ac	-0.05	0.07	0.14	<u>0.47</u>
If there is something I don't want to think about, I'll try many things to get it out of my mind.	PHLMS Ac	-0.12	-0.10	0.49	0.39
I try to put my problems out of mind.	PHLMS Ac	0.05	-0.08	0.51	0.23
When I have a bad memory, I try to distract myself to make it go away.	PHLMS Ac	-0.02	-0.06	0.55	0.26

*Note.* **Underlined** loadings indicate that the item is used to calculate the subfactor subscore.

Table A33. Student Time 1 Subfactors of ACT Factor 3 (Avoidance), Using Promax Rotation

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
I won't do something if I think it will make me uncomfortable	MEAQ BA	0.29	0.04	0.25	-0.30
I avoid activities if there is even a small possibility of getting hurt	MEAQ BA	<u>0.57</u>	0.11	-0.07	-0.04
I rarely do something if there is a chance that it will upset me	MEAQ BA	<u>0.59</u>	0.06	0.16	-0.09
I work hard to avoid situations that might bring up unpleasant thoughts and feelings in me	MEAQ BA	0.18	0.23	0.36	0.02
I prefer to stick to what I am comfortable with, rather than try new activities	MEAQ BA	<u>0.63</u>	-0.13	-0.09	0.09
If I have any doubts about doing something, I just won't do it	MEAQ BA	<u>0.60</u>	-0.10	-0.04	0.05
If I am starting to feel trapped, I leave the situation immediately	MEAQ BA	<u>0.34</u>	0.08	0.19	0.09
I go out of my way to avoid uncomfortable situations	MEAQ BA	<u>0.52</u>	0.13	0.03	0.11
If I am in a slightly uncomfortable situation, I try to leave right away	MEAQ BA	<u>0.57</u>	0.13	0.11	-0.04
I avoid situations if there is a chance that I'll feel nervous	MEAQ BA	<u>0.62</u>	0.09	-0.08	0.11
I'm quick to leave any situation that makes me feel uneasy	MEAQ BA	<u>0.68</u>	0.05	0.03	-0.03
When something upsetting comes up, I try very hard to stop thinking about it	MEAQ D/S	0.00	0.10	0.64	-0.02
When negative thoughts come up, I try to fill my head with something else	MEAQ D/S	0.03	-0.10	<u>0.80</u>	-0.04
I usually try to distract myself when I feel something painful	MEAQ D/S	0.00	0.03	<u>0.66</u>	0.00
When upsetting memories come up, I try to focus on other things	MEAQ D/S	-0.08	0.00	<u>0.85</u>	-0.03
I work hard to keep out upsetting feelings	MEAQ D/S	-0.01	0.33	0.25	0.21

Table A33. Continued

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
When unpleasant memories come to me, I try to put them out of my mind	MEAQ D/S	0.07	-0.01	<u>0.76</u>	0.00
When a negative thought comes up, I immediately try to think of something else	MEAQ D/S	0.04	0.17	<u>0.64</u>	-0.01
If I could magically remove all of my painful memories, I would	MEAQ DA	0.03	0.45	0.13	0.07
Happiness means never feeling any pain or disappointment	MEAQ DA	0.16	<u>0.48</u>	-0.06	-0.06
When I am hurting, I would do anything to feel better	MEAQ DA	-0.10	0.36	0.29	0.02
Happiness involves getting rid of negative thoughts	MEAQ DA	-0.14	0.57	0.22	-0.10
One of my big goals is to be free from painful emotions	MEAQ DA	0.04	<u>0.57</u>	-0.01	0.16
I'd do anything to feel less stressed	MEAQ DA	-0.05	0.37	0.14	0.21
In this day and age people should not have to suffer	MEAQ DA	0.09	0.30	0.23	-0.22
My life would be great if I never felt anxious	MEAQ DA	-0.03	0.38	0.06	0.18
I would give up a lot not to feel bad	MEAQ DA	0.13	0.46	-0.03	0.21
Pain always leads to suffering	MEAQ DA	0.22	0.49	-0.22	0.11
I wish I could get rid of all of my negative emotions	MEAQ DA	-0.05	0.66	0.07	0.13
The key to a good life is never feeling any pain	MEAQ DA	0.13	<u>0.62</u>	-0.17	-0.03
I hope to live without any sadness and disappointment	MEAQ DA	0.06	<u>0.68</u>	-0.06	-0.10

Table A33. Continued

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
I try to distract myself when I feel unpleasant emotions.	PHLMS Ac	0.02	-0.09	0.41	0.37
There are aspects of myself I don't want to think about.	PHLMS Ac	0.01	0.14	-0.15	<u>0.65</u>
I try to stay busy to keep thoughts or feelings from coming to mind.	PHLMS Ac	0.10	-0.08	0.18	<u>0.59</u>
I wish I could control my emotions more easily.	PHLMS Ac	0.04	0.18	-0.21	<u>0.71</u>
I tell myself that I shouldn't have certain thoughts.	PHLMS Ac	0.06	0.05	-0.13	<u>0.75</u>
There are things I try not to think about.	PHLMS Ac	-0.04	0.04	0.11	<u>0.68</u>
I tell myself that I shouldn't feel sad.	PHLMS Ac	-0.15	0.17	0.11	<u>0.53</u>
If there is something I don't want to think about, I'll try many things to get it out of my mind.	PHLMS Ac	0.07	-0.15	0.34	0.50
I try to put my problems out of mind.	PHLMS Ac	-0.02	-0.08	0.40	0.38
When I have a bad memory, I try to distract myself to make it go away.	PHLMS Ac	0.02	-0.07	0.40	0.43

Note. **Underlined** loadings indicate that the item is used to calculate the subfactor subscore.

Table A34. Student Time 2 Subfactors of ACT Factor 3 (Avoidance), Using Promax Rotation

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
I won't do something if I think it will make me uncomfortable	MEAQ BA	0.39	0.02	0.18	-0.17
I avoid activities if there is even a small possibility of getting hurt	MEAQ BA	<u>0.53</u>	0.27	-0.14	0.00
I rarely do something if there is a chance that it will upset me	MEAQ BA	<u>0.59</u>	0.11	0.15	-0.17
I work hard to avoid situations that might bring up unpleasant thoughts and feelings in me	MEAQ BA	0.23	0.07	0.47	0.03
I prefer to stick to what I am comfortable with, rather than try new activities	MEAQ BA	<u>0.65</u>	-0.09	-0.03	0.03
If I have any doubts about doing something, I just won't do it	MEAQ BA	<u>0.56</u>	0.15	-0.10	0.03
If I am starting to feel trapped, I leave the situation immediately	MEAQ BA	<u>0.64</u>	-0.16	0.22	0.00
I go out of my way to avoid uncomfortable situations	MEAQ BA	<u>0.54</u>	0.05	0.09	0.17
If I am in a slightly uncomfortable situation, I try to leave right away	MEAQ BA	<u>0.72</u>	0.03	0.05	-0.02
I avoid situations if there is a chance that I'll feel nervous	MEAQ BA	<u>0.61</u>	0.13	-0.09	0.14
I'm quick to leave any situation that makes me feel uneasy	MEAQ BA	<u>0.71</u>	0.03	0.04	-0.03
When something upsetting comes up, I try very hard to stop thinking about it	MEAQ D/S	0.00	0.05	0.72	0.03
When negative thoughts come up, I try to fill my head with something else	MEAQ D/S	-0.06	-0.05	<u>0.81</u>	-0.02
I usually try to distract myself when I feel something painful	MEAQ D/S	0.13	-0.19	<u>0.73</u>	0.00
When upsetting memories come up, I try to focus on other things	MEAQ D/S	-0.04	-0.05	<u>0.81</u>	-0.05
I work hard to keep out upsetting feelings	MEAQ D/S	0.08	0.16	0.46	0.16

Table A34. Continued

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
When unpleasant memories come to me, I try to put them out of my mind	MEAQ D/S	0.12	-0.13	<u>0.74</u>	0.03
When a negative thought comes up, I immediately try to think of something else	MEAQ D/S	0.10	0.01	<u>0.69</u>	0.06
If I could magically remove all of my painful memories, I would	MEAQ DA	-0.10	0.36	0.51	-0.08
Happiness means never feeling any pain or disappointment	MEAQ DA	0.00	<u>0.83</u>	-0.09	-0.09
When I am hurting, I would do anything to feel better	MEAQ DA	-0.08	0.12	0.56	-0.04
Happiness involves getting rid of negative thoughts	MEAQ DA	-0.05	0.42	0.32	-0.03
One of my big goals is to be free from painful emotions	MEAQ DA	0.07	<u>0.48</u>	0.16	0.16
I'd do anything to feel less stressed	MEAQ DA	-0.03	0.13	0.45	0.08
In this day and age people should not have to suffer	MEAQ DA	0.14	0.34	0.07	-0.09
My life would be great if I never felt anxious	MEAQ DA	0.06	0.20	0.24	0.20
I would give up a lot not to feel bad	MEAQ DA	0.10	0.39	0.13	0.20
Pain always leads to suffering	MEAQ DA	0.27	0.35	-0.12	0.16
I wish I could get rid of all of my negative emotions	MEAQ DA	-0.04	0.32	0.41	0.20
The key to a good life is never feeling any pain	MEAQ DA	0.14	<u>0.82</u>	-0.21	-0.01
I hope to live without any sadness and disappointment	MEAQ DA	0.04	<u>0.54</u>	0.18	-0.02



Table A34. Continued

Item	Scale	Physical avoidance	Pain aversion	Distraction	Mental avoidance
I try to distract myself when I feel unpleasant emotions.	PHLMS Ac	0.00	-0.12	0.41	0.41
There are aspects of myself I don't want to think about.	PHLMS Ac	-0.05	0.11	-0.05	<u>0.74</u>
I try to stay busy to keep thoughts or feelings from coming to mind.	PHLMS Ac	-0.11	0.05	0.05	<u>0.76</u>
I wish I could control my emotions more easily.	PHLMS Ac	-0.01	0.03	-0.04	<u>0.67</u>
I tell myself that I shouldn't have certain thoughts.	PHLMS Ac	0.01	0.14	-0.17	<u>0.78</u>
There are things I try not to think about.	PHLMS Ac	0.01	-0.06	0.01	<u>0.82</u>
I tell myself that I shouldn't feel sad.	PHLMS Ac	0.02	0.02	-0.02	<u>0.65</u>
If there is something I don't want to think about, I'll try many things to get it out of my mind.	PHLMS Ac	0.08	-0.11	0.27	0.52
I try to put my problems out of mind.	PHLMS Ac	0.05	-0.08	0.23	0.50
When I have a bad memory, I try to distract myself to make it go away.	PHLMS Ac	0.14	-0.28	0.27	0.58

*Note.* **Underlined** loadings indicate that the item is used to calculate the subfactor subscore.

Table A35. Correlations Among Subfactor Sum Scores for Mechanical Turk Sample

	1	2	3	4	5	6	7	8	9	10	11
1. Inflexibility	--										
2. Internalizing Belief	0.73	--									
3. Detachment	-0.51	-0.47	--								
4. Perspective Taking	-0.20	-0.16	0.27	--							
5. Expressive Awareness	-0.34	-0.32	0.42	0.18	--						
6. Committed Action	-0.13	-0.20	0.31	0.52	0.26	--					
7. Physical Awareness	0.22	0.11	0.25	0.27	0.22	0.37	--				
8. Physical Avoidance	0.43	0.25	-0.16	-0.08	-0.21	-0.02	0.12	--			
9. Pain Aversion	0.30	0.19	-0.02	-0.08	-0.07	-0.09	0.08	0.59	--		
10. Distraction	0.07	-0.07	0.16	0.34	0.01	0.45	0.29	0.40	0.31	--	
11. Mental Avoidance	0.65	0.43	-0.25	-0.08	-0.26	0.01	0.28	0.50	0.42	0.37	--

Table A36. Correlations Among Subfactor Sum Scores for the Student Sample

	1	2	3	4	5	6	7	8	9	10	11
1. T1 Inflexibility	--										
2. T1 Internalizing Belief	0.66	--									
3. T1 Detachment	-0.45	-0.34	--								
4. T1 Perspective Taking	-0.39	-0.25	0.16	--							
5. T1 Expressive Awareness	-0.33	-0.28	0.35	0.30	--						
6. T1 Committed Action	-0.06	-0.15	0.16	0.32	0.27	--					
7. T1 Physical Awareness	0.27	0.16	-0.10	0.17	0.13	0.27	--				
8. T1 Physical Avoidance	0.33	0.27	-0.25	-0.19	-0.28	-0.28	0.03	--			
9. T1 Pain Aversion	0.34	0.28	-0.18	-0.15	-0.20	-0.18	0.08	0.51	--		
10. T1 Distraction	0.24	0.07	-0.20	-0.07	-0.11	0.17	0.08	0.37	0.31	--	
11. T1 Mental Avoidance	0.71	0.48	-0.40	-0.36	-0.31	-0.05	0.27	0.34	0.38	0.41	--
12. T2 Inflexibility	<b><u>0.83</u></b>	0.58	-0.47	-0.32	-0.33	-0.07	0.22	0.30	0.33	0.25	0.61
13. T2 Internalizing Belief	0.54	<b><u>0.70</u></b>	-0.36	-0.23	-0.35	-0.21	0.16	0.22	0.23	0.03	0.39
14. T2 Detachment	-0.45	-0.32	<b><u>0.72</u></b>	0.21	0.38	0.20	-0.04	-0.23	-0.17	-0.11	-0.31
15. T2 Perspective Taking	-0.28	-0.25	0.13	<b><u>0.66</u></b>	0.26	0.31	0.21	-0.21	-0.18	-0.01	-0.30
16. T2 Expressive Awareness	-0.24	-0.27	0.29	0.26	<b><u>0.70</u></b>	0.33	0.15	-0.23	-0.14	0.00	-0.20
17. T2 Committed Action	-0.03	-0.13	0.10	0.15	0.25	<b><u>0.60</u></b>	0.23	-0.19	-0.19	0.11	-0.03
18. T2 Physical Awareness	0.25	0.17	-0.14	0.19	0.15	0.25	<b><u>0.75</u></b>	0.00	0.05	0.10	0.21
19. T2 Physical Avoidance	0.32	0.23	-0.26	-0.18	-0.29	-0.24	0.06	<b><u>0.63</u></b>	0.34	0.29	0.33
20. T2 Pain Aversion	0.23	0.25	-0.15	-0.09	-0.19	-0.23	0.05	0.42	<b><u>0.64</u></b>	0.22	0.27
21. T2 Distraction	0.34	0.17	-0.18	-0.14	-0.13	0.11	0.13	0.36	0.29	<b><u>0.63</u></b>	0.37
22. T2 Mental Avoidance	0.70	0.49	-0.35	-0.25	-0.30	0.02	0.25	0.35	0.35	0.41	<b><u>0.73</u></b>

Table A36. Continued

	12	13	14	15	16	17	18	19	20	21	22
12. T2 Inflexibility	--										
13. T2 Internalizing Belief	<b>0.62</b>	--									
14. T2 Detachment	-0.48	-0.35	--								
15. T2 Perspective Taking	-0.29	-0.29	0.19	--							
16. T2 Expressive Awareness	-0.30	-0.34	0.39	0.32	--						
17. T2 Committed Action	-0.05	-0.22	0.23	0.36	0.38	--					
18. T2 Physical Awareness	0.26	0.15	-0.06	0.31	0.22	0.28	--				
19. T2 Physical Avoidance	0.43	0.28	-0.27	-0.15	-0.27	-0.14	0.14	--			
20. T2 Pain Aversion	0.29	0.25	-0.15	-0.14	-0.17	-0.20	0.06	0.56	--		
21. T2 Distraction	0.42	0.12	-0.16	-0.04	-0.05	0.27	0.19	0.50	0.35	--	
22. T2 Mental Avoidance	<b>0.73</b>	0.43	-0.35	-0.23	-0.23	-0.04	0.28	0.40	0.34	0.47	--

Note. Test-retest reliabilities are **bolded**.

Table A37. Factor Analysis of Lower-Order Factor Sum Scores Using Promax Rotation

	Mechanical Turk			Student Time 1			Student Time 2		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Inflexibility	0.97	0.09	0.07	1.00	0.13	-0.02	1.00	0.11	0.00
Internalizing Belief	0.77	-0.03	-0.06	0.74	-0.05	-0.12	0.67	-0.16	-0.07
Detachment	-0.50	0.32	0.06	-0.41	0.07	-0.12	-0.46	0.20	-0.04
Perspective taking	-0.08	0.60	-0.07	-0.36	0.32	0.03	-0.25	0.40	-0.03
Expressive Awareness	-0.25	0.29	-0.13	-0.24	0.30	-0.11	-0.19	0.48	-0.14
Committed Action	0.01	0.79	-0.06	0.05	0.83	0.08	0.02	0.79	0.02
Physical Awareness	0.33	0.62	-0.02	0.36	0.44	0.02	0.31	0.48	0.02
Physical Avoidance	0.06	-0.06	0.79	0.01	-0.25	0.58	-0.01	-0.08	0.80
Pain Aversion	-0.06	-0.12	0.74	0.09	-0.13	0.50	-0.10	-0.17	0.69
Distraction	-0.11	0.49	0.54	-0.10	0.29	0.82	0.12	0.38	0.66
Mental Avoidance	0.50	0.16	0.42	0.63	0.14	0.31	0.65	0.13	0.22

Table A38. Mechanical Turk Correlations Between Subfactor Sum Scores and Other Study Variables

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
ASI Total	<b><u>0.62</u></b>	<b><u>0.52</u></b>	-0.34	-0.04	-0.25	-0.15	0.16	<b><u>0.40</u></b>	0.29	0.14	<b><u>0.43</u></b>
ASI Physical	<b><u>0.57</u></b>	<b><u>0.47</u></b>	-0.33	-0.05	-0.24	-0.15	0.16	0.34	0.19	0.12	0.37
ASI Mental	<b><u>0.63</u></b>	<b><u>0.57</u></b>	-0.40	-0.07	-0.28	-0.17	0.09	0.37	0.31	0.07	<b><u>0.40</u></b>
ASI Social	0.34	0.23	-0.04	0.06	-0.05	0.01	0.20	0.33	0.27	0.23	0.36
ATQ Frequency	<b><u>0.73</u></b>	<b><u>0.89</u></b>	<b><u>-0.51</u></b>	-0.21	-0.34	-0.23	0.09	0.22	0.15	-0.10	<b><u>0.44</u></b>
COPE Active Coping	-0.11	-0.13	0.26	<b><u>0.57</u></b>	0.25	<b><u>0.53</u></b>	0.31	0.05	0.00	0.39	0.05
COPE Emotion Focused Coping	0.32	0.28	-0.22	0.09	-0.08	0.01	0.15	0.22	0.12	0.21	0.34
COPE Avoidant Coping	<b><u>0.53</u></b>	<b><u>0.56</u></b>	<b><u>-0.48</u></b>	0.08	-0.37	-0.21	0.06	0.36	0.15	0.03	<b><u>0.41</u></b>
DIS Tolerance	0.06	0.07	0.01	0.23	0.02	0.24	0.25	-0.11	-0.17	0.06	0.04
DIS Avoidance	0.09	0.08	0.14	0.18	0.13	0.01	0.17	0.26	0.27	0.17	0.13
DTS Tolerance	-0.24	-0.17	0.23	0.32	0.22	0.29	0.09	-0.35	-0.33	-0.07	-0.25
DTS Appraisal	<b><u>-0.52</u></b>	-0.43	<b><u>0.44</u></b>	0.37	0.35	0.31	0.00	-0.38	-0.29	0.03	<b><u>-0.40</u></b>
DTS Absorbtion	<b><u>-0.44</u></b>	-0.33	0.35	0.38	0.24	0.23	0.00	<b><u>-0.42</u></b>	-0.27	-0.03	-0.37
DTS Regulation	-0.21	-0.13	0.08	0.12	0.08	-0.02	-0.10	-0.34	-0.33	-0.30	-0.33
Externalizing	<b><u>0.50</u></b>	<b><u>0.50</u></b>	<b><u>-0.47</u></b>	-0.03	-0.32	-0.13	0.01	0.21	0.08	-0.02	0.26
MEAQ Procrastination	<b><u>0.52</u></b>	0.39	<b><u>-0.41</u></b>	-0.18	<b><u>-0.40</u></b>	-0.29	-0.04	<b><u>0.53</u></b>	0.29	0.15	<b><u>0.43</u></b>
MEAQ Denial/Repression	<b><u>0.47</u></b>	<b><u>0.44</u></b>	<b><u>-0.49</u></b>	0.08	<b><u>-0.48</u></b>	-0.10	-0.09	<b><u>0.41</u></b>	0.31	0.10	<b><u>0.40</u></b>
K10	<b><u>0.71</u></b>	<b><u>0.74</u></b>	<b><u>-0.56</u></b>	-0.23	-0.35	-0.22	0.10	0.32	0.18	-0.07	<b><u>0.49</u></b>

Table A38. Continued

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
IPIP E	-0.26	-0.13	0.16	0.27	0.26	0.04	0.07	-0.25	0.00	0.04	-0.16
IPIP A	-0.09	-0.09	0.36	0.15	0.38	0.21	0.39	-0.06	0.00	0.23	0.05
IPIP C	-0.37	<b><u>-0.40</u></b>	<b><u>0.52</u></b>	0.20	0.37	0.36	0.20	-0.12	0.01	0.11	-0.17
IPIP N	<b><u>0.57</u></b>	<b><u>0.48</u></b>	<b><u>-0.45</u></b>	<b><u>-0.51</u></b>	-0.33	-0.37	0.00	0.29	0.17	-0.11	<b><u>0.43</u></b>
IPIP I	-0.12	-0.18	0.30	0.07	0.39	0.22	0.33	-0.17	-0.04	0.04	-0.17
WBSI	<b><u>0.70</u></b>	<b><u>0.46</u></b>	-0.34	-0.17	-0.32	0.02	0.21	0.53	0.38	0.37	<b><u>0.74</u></b>
WHODAS											
understand/commun	<b><u>0.49</u></b>	<b><u>0.55</u></b>	<b><u>-0.53</u></b>	-0.09	-0.38	-0.26	-0.03	0.28	0.20	-0.04	0.32
WHODAS getting along	<b><u>0.48</u></b>	<b><u>0.51</u></b>	<b><u>-0.43</u></b>	-0.12	-0.37	-0.24	-0.02	0.29	0.19	-0.07	0.34
WHODAS life activities	0.39	<b><u>0.42</u></b>	<b><u>-0.42</u></b>	-0.12	-0.34	-0.27	-0.09	0.26	0.15	-0.05	0.27
WHODAS work/school	<b><u>0.40</u></b>	<b><u>0.46</u></b>	-0.39	-0.10	-0.29	-0.26	-0.05	0.31	0.20	-0.07	0.30
VLQ Importance	-0.11	-0.16	0.22	0.20	0.14	0.15	0.21	0.03	0.20	0.30	0.06
VLQ Consistency	-0.14	-0.14	0.19	0.25	0.19	0.12	0.16	0.05	0.13	0.15	-0.06
VRIN	0.19	0.22	-0.26	-0.04	-0.23	-0.23	-0.10	0.11	0.02	0.01	0.11

Note. Correlations  $\geq 0.40$  are **highlighted**.

Table A39. Student Time 1 Correlations Between Subfactor Sum Scores and Other Study Variables

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
ASI Total	<b><u>0.59</u></b>	<b><u>0.56</u></b>	-0.37	-0.16	-0.18	-0.03	0.20	0.33	0.33	0.21	<b><u>0.40</u></b>
ASI Physical	<b><u>0.48</u></b>	<b><u>0.45</u></b>	-0.29	-0.10	-0.12	-0.02	0.18	0.32	0.29	0.22	0.32
ASI Mental	<b><u>0.60</u></b>	<b><u>0.61</u></b>	-0.38	-0.19	-0.24	-0.12	0.16	0.25	0.32	0.08	<b><u>0.41</u></b>
ASI Social	<b><u>0.40</u></b>	0.31	-0.26	-0.06	-0.08	0.11	0.19	0.16	0.12	0.14	0.26
ATQ Frequency	<b><u>0.68</u></b>	<b><u>0.87</u></b>	-0.37	-0.29	-0.33	-0.20	0.16	0.27	0.27	0.07	<b><u>0.49</u></b>
COPE Active Coping	-0.04	-0.13	0.10	0.33	0.29	0.39	0.21	-0.17	-0.13	0.12	-0.06
COPE Emotion Focused Coping	0.21	0.10	-0.05	-0.09	0.16	0.09	0.12	0.08	0.06	0.19	0.21
COPE Avoidant Coping	<b><u>0.45</u></b>	<b><u>0.46</u></b>	-0.33	-0.13	-0.28	-0.25	0.09	0.29	0.26	0.12	0.36
DIS Tolerance	0.04	0.05	-0.05	0.22	0.03	0.24	0.22	-0.20	-0.09	-0.11	0.01
DIS Avoidance	0.19	0.10	-0.17	-0.03	0.02	-0.13	0.11	0.22	0.17	0.16	0.13
DTS Tolerance	<b><u>-0.49</u></b>	-0.34	0.32	0.38	0.23	0.21	-0.10	-0.33	-0.38	-0.19	<b><u>-0.45</u></b>
DTS Appraisal	<b><u>-0.65</u></b>	<b><u>-0.48</u></b>	<b><u>0.41</u></b>	<b><u>0.46</u></b>	0.32	0.27	-0.13	-0.37	<b><u>-0.44</u></b>	-0.19	<b><u>-0.59</u></b>
DTS Absorbtion	<b><u>-0.57</u></b>	<b><u>-0.45</u></b>	<b><u>0.41</u></b>	<b><u>0.46</u></b>	0.27	0.21	-0.13	-0.32	-0.37	-0.19	<b><u>-0.51</u></b>
DTS Regulation	<b><u>-0.40</u></b>	-0.26	0.33	0.16	0.13	0.07	-0.13	-0.31	<b><u>-0.42</u></b>	-0.37	<b><u>-0.44</u></b>
Externalizing	0.37	<b><u>0.43</u></b>	<b><u>-0.40</u></b>	-0.21	-0.16	-0.17	0.10	0.20	0.11	0.09	0.31
MEAQ Procrastination	0.31	0.29	<b><u>-0.41</u></b>	-0.17	-0.31	-0.26	0.09	0.53	0.24	0.19	0.31
MEAQ Denial/Repression	0.35	0.32	<b><u>-0.44</u></b>	-0.11	<b><u>-0.59</u></b>	-0.30	-0.07	<b><u>0.44</u></b>	0.38	0.22	<b><u>0.40</u></b>
K10	<b><u>0.63</u></b>	<b><u>0.65</u></b>	<b><u>-0.50</u></b>	-0.32	-0.29	-0.20	0.17	0.27	0.30	0.12	<b><u>0.55</u></b>



Table A39. Continued

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
IPIP E	-0.13	-0.18	0.04	0.13	0.20	0.07	0.08	-0.26	0.02	0.08	-0.08
IPIP A	-0.03	-0.11	0.08	0.06	0.28	0.27	0.20	-0.13	-0.20	0.07	-0.03
IPIP C	-0.15	-0.25	0.35	0.10	0.23	0.29	0.04	-0.22	-0.16	0.00	-0.18
IPIP N	<b>0.54</b>	0.36	-0.24	<b>-0.45</b>	-0.22	-0.13	0.13	0.23	0.26	0.14	<b>0.50</b>
IPIP I	0.05	0.04	0.03	0.10	0.20	0.23	0.25	-0.23	-0.20	-0.13	-0.02
WBSI	<b>0.68</b>	<b>0.43</b>	<b>-0.52</b>	-0.34	-0.28	0.02	0.27	0.28	0.25	0.38	<b>0.72</b>
WHODAS											
understand/commun	0.38	0.38	<b>-0.47</b>	-0.18	-0.36	-0.29	0.01	0.28	0.18	0.08	0.34
WHODAS getting along	0.38	0.39	-0.31	-0.18	-0.29	-0.21	0.02	0.20	0.09	-0.01	0.29
WHODAS life activities	0.28	0.36	-0.36	-0.10	-0.25	-0.24	-0.02	0.21	0.13	0.00	0.23
WHODAS work/school	0.39	<b>0.44</b>	<b>-0.42</b>	-0.15	-0.26	-0.20	0.08	0.19	0.16	0.01	0.33
VLQ Importance	-0.09	-0.13	0.15	0.11	0.15	0.25	0.08	-0.12	0.04	0.17	-0.02
VLQ Consistency	-0.21	-0.20	0.23	0.27	0.21	0.19	0.04	-0.08	-0.04	0.09	-0.17
VRIN	<b>0.40</b>	<b>0.43</b>	-0.28	-0.12	-0.24	-0.16	0.17	0.24	0.24	0.09	0.33

Note. Correlations  $\geq 0.40$  are **highlighted**.

Table A40. Student Time 2 Correlations Between Subfactor Sum Scores and Other Study Variables

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
ASI Total	<b><u>0.63</u></b>	<b><u>0.48</u></b>	<b><u>-0.40</u></b>	-0.21	-0.29	-0.15	0.14	<b><u>0.43</u></b>	0.35	0.30	<b><u>0.46</u></b>
ASI Physical	<b><u>0.54</u></b>	<b><u>0.42</u></b>	-0.34	-0.19	-0.25	-0.14	0.12	<b><u>0.41</u></b>	0.30	0.27	0.38
ASI Mental	<b><u>0.58</u></b>	<b><u>0.47</u></b>	-0.38	-0.22	-0.32	-0.30	0.07	0.38	<b><u>0.41</u></b>	0.16	<b><u>0.44</u></b>
ASI Social	<b><u>0.50</u></b>	0.35	-0.31	-0.06	-0.12	0.10	0.23	0.25	0.16	0.29	0.36
ATQ Frequency	<b><u>0.71</u></b>	<b><u>0.87</u></b>	<b><u>-0.41</u></b>	-0.31	-0.39	-0.26	0.15	0.35	0.29	0.18	<b><u>0.51</u></b>
COPE Active Coping	-0.13	-0.25	0.22	<b><u>0.41</u></b>	0.35	<b><u>0.41</u></b>	0.22	-0.21	-0.21	0.05	-0.18
COPE Emotion Focused Coping	0.15	-0.03	0.03	-0.09	0.25	0.16	0.12	0.05	0.07	0.20	0.12
COPE Avoidant Coping	<b><u>0.43</u></b>	<b><u>0.45</u></b>	-0.39	-0.20	-0.31	-0.30	-0.03	0.31	0.34	0.18	0.29
DIS Tolerance	-0.05	-0.05	0.02	0.18	0.05	0.18	0.17	-0.23	-0.25	-0.09	-0.08
DIS Avoidance	0.23	0.05	-0.16	0.02	-0.04	-0.09	0.20	0.22	0.23	0.19	0.23
DTS Tolerance	<b><u>-0.50</u></b>	<b><u>-0.50</u></b>	0.34	0.36	0.30	0.31	-0.10	-0.31	-0.37	-0.17	<b><u>-0.41</u></b>
DTS Appraisal	<b><u>-0.61</u></b>	<b><u>-0.53</u></b>	<b><u>0.42</u></b>	<b><u>0.43</u></b>	0.36	0.37	-0.06	-0.38	-0.38	-0.20	<b><u>-0.51</u></b>
DTS Absorbtion	<b><u>-0.62</u></b>	<b><u>-0.55</u></b>	<b><u>0.40</u></b>	<b><u>0.42</u></b>	0.27	0.27	-0.15	-0.34	-0.32	-0.21	<b><u>-0.50</u></b>
DTS Regulation	<b><u>-0.43</u></b>	-0.35	0.35	0.23	0.20	0.19	-0.14	-0.33	-0.35	-0.30	-0.38
Externalizing	<b><u>0.40</u></b>	<b><u>0.46</u></b>	-0.39	-0.14	-0.23	-0.12	0.12	0.22	0.12	0.09	0.25
MEAQ Procrastination	<b><u>0.47</u></b>	0.39	<b><u>-0.46</u></b>	-0.20	-0.38	-0.16	0.11	<b><u>0.58</u></b>	0.36	<b><u>0.40</u></b>	<b><u>0.42</u></b>
MEAQ Denial/Repression	<b><u>0.42</u></b>	<b><u>0.43</u></b>	<b><u>-0.46</u></b>	-0.19	<b><u>-0.57</u></b>	-0.31	-0.12	<b><u>0.51</u></b>	<b><u>0.45</u></b>	0.24	<b><u>0.40</u></b>
K10	<b><u>0.64</u></b>	<b><u>0.68</u></b>	<b><u>-0.49</u></b>	-0.27	<b><u>-0.44</u></b>	-0.29	0.10	0.36	0.32	0.14	<b><u>0.51</u></b>

Table A40. Continued

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
IPIP E	-0.19	-0.29	0.09	0.19	0.32	0.14	0.12	-0.28	-0.02	-0.04	-0.13
IPIP A	-0.05	-0.23	0.17	0.03	0.27	0.29	0.16	-0.19	-0.18	0.10	0.01
IPIP C	-0.30	<b>-0.40</b>	0.38	0.18	0.33	0.26	0.05	-0.22	-0.22	-0.03	-0.23
IPIP N	<b>0.47</b>	0.36	-0.27	<b>-0.45</b>	-0.24	-0.16	0.03	0.24	0.22	0.14	<b>0.47</b>
IPIP I	-0.03	-0.05	0.10	0.07	0.29	0.26	0.20	-0.18	-0.26	0.01	0.03
WBSI	<b>0.70</b>	<b>0.40</b>	<b>-0.45</b>	-0.27	-0.26	0.08	0.19	<b>0.44</b>	0.26	0.53	<b>0.73</b>
WHODAS understand/commun	<b>0.47</b>	<b>0.52</b>	<b>-0.42</b>	-0.27	-0.39	-0.32	-0.04	0.36	0.28	0.10	0.36
WHODAS getting along	<b>0.45</b>	<b>0.53</b>	-0.32	-0.23	-0.37	-0.26	-0.04	0.31	0.17	0.04	0.32
WHODAS life activities	<b>0.46</b>	<b>0.55</b>	<b>-0.41</b>	-0.27	-0.30	-0.28	0.00	0.30	0.22	0.06	0.34
WHODAS work/school	<b>0.43</b>	<b>0.52</b>	-0.34	-0.23	-0.26	-0.19	0.12	0.23	0.21	0.10	0.34
VLQ Importance	-0.14	-0.29	0.27	0.10	0.21	0.15	0.05	0.00	0.07	0.16	-0.04
VLQ Consistency	-0.22	-0.27	0.33	0.07	0.27	0.12	0.02	-0.07	0.02	0.06	-0.15
VRIN	0.38	<b>0.45</b>	-0.32	-0.16	-0.22	-0.25	0.13	0.21	0.15	0.08	0.33

Note. Correlations  $\geq 0.40$  are **highlighted**.

Table A41. Fit Indices for Hierarchical and Correlated ACT Models

	AIC	BIC	SRMR	RMSEA
MT Simple Hierarchical Model	96492.475	97999.144	0.102	0.049
MT Multi-Path Hierarchical Model	96322.091	97836.447	0.095	0.049
MT Correlated Model	96157.183	97821.438	0.075	0.048
T1 Simple Hierarchical Model	147001.926	148642.112	0.077	0.046
T1 Multi-Path Hierarchical Model	146894.844	148543.399	0.078	0.046
T1 Correlated Model	146643.204	148454.940	0.067	0.045
T2 Simple Hierarchical Model	100348.917	101852.163	0.102	0.053
T2 Multi-Path Hierarchical Model	100227.465	101738.381	0.101	0.053
T2 Correlated Model	100037.749	101698.222	0.078	0.052

Table A42. Student Correlations Between ACT Subfactors and Psychopathology Measures Across Timepoints

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
T1 K10-T1 Factor	0.63	0.65	-0.50	-0.32	-0.30	-0.20	0.16	0.27	0.30	0.12	0.55
T2 K10-T1 Factor	0.56	0.63	-0.44	-0.25	-0.40	-0.23	0.08	0.29	0.28	0.06	0.47
T1 K10-T2 Factor	0.58	0.58	-0.48	-0.30	-0.30	-0.18	0.10	0.26	0.25	0.12	0.46
T1 ESI-T1 Factor	0.37	0.43	-0.40	-0.21	-0.16	-0.17	0.10	0.20	0.11	0.09	0.31
T2 ESI-T1 Factor	0.37	0.38	-0.42	-0.18	-0.21	-0.18	0.13	0.20	0.13	0.07	0.30
T1 ESI-T2 Factor	0.32	0.37	-0.35	-0.15	-0.19	-0.13	0.06	0.18	0.13	0.12	0.26

*Note.* N = 485 for T1. N = 340 for T2.

Table A43. Mechanical Turk Partial Correlations Between ACT Subfactors and External Measures Controlling for Subscales of the ASI, DIS, DTS, and COPE

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
K10	0.40	0.51	-0.19	-0.09	-0.03	0.08	0.13	0.08	0.08	0.00	0.26
ESI	0.14	0.20	-0.18	0.10	-0.08	0.11	-0.03	0.00	-0.02	0.03	0.00
IPIP Extraversion	-0.28	-0.10	0.07	0.15	0.19	-0.14	0.01	-0.27	0.00	-0.10	-0.17
IPIP Agreeableness	0.02	0.03	0.31	0.01	0.29	0.04	0.34	-0.03	0.04	0.12	0.08
IPIP Conscientiousness	-0.09	-0.13	0.31	0.06	0.15	0.19	0.18	0.08	0.12	0.02	0.02
IPIP Neuroticism	0.39	0.29	-0.18	-0.34	-0.09	-0.13	0.08	0.13	0.04	-0.03	0.29
IPIP Openness	0.15	0.04	0.11	-0.08	0.29	0.04	0.33	-0.08	0.05	-0.04	-0.07
WHODAS II Communication	0.03	0.15	-0.20	-0.02	-0.11	-0.07	-0.08	0.04	0.06	-0.02	0.00
WHODAS II Getting Along	0.10	0.17	-0.09	-0.04	-0.11	-0.04	-0.05	0.08	0.10	-0.05	0.09
WHODAS II Life Activities	0.05	0.13	-0.15	-0.03	-0.13	-0.11	-0.12	0.07	0.04	-0.02	0.04
WHODAS II Work and School	0.05	0.13	-0.10	-0.04	-0.06	-0.08	-0.07	0.13	0.10	-0.06	0.07

Note. Ns range from 271 to 304.

Table A44. Student Time 1 Partial Correlations Between ACT Subfactors and External Measures Controlling for Subscales of the ASI, DIS, DTS, and COPE

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
K10	0.29	0.38	-0.27	-0.06	-0.05	-0.01	0.09	0.00	0.02	0.04	0.27
ESI	0.07	0.21	-0.22	-0.04	0.03	-0.02	0.05	0.00	-0.12	0.00	0.06
IPIP Extraversion	-0.14	-0.15	0.01	0.11	0.15	0.01	0.06	-0.25	0.07	0.04	-0.09
IPIP Agreeableness	0.07	0.03	-0.01	-0.01	0.15	0.13	0.17	-0.08	-0.17	0.03	0.02
IPIP Conscientiousness	0.03	-0.10	0.29	-0.04	0.09	0.12	0.04	-0.09	-0.04	0.00	-0.06
IPIP Neuroticism	0.30	0.07	-0.02	-0.20	-0.06	0.06	0.12	0.01	0.05	0.07	0.27
IPIP Openness	0.14	0.10	-0.02	0.03	0.15	0.16	0.24	-0.16	-0.14	-0.09	0.05
WHODAS II Communication	0.10	0.12	-0.31	-0.01	-0.22	-0.16	-0.04	0.07	-0.05	0.00	0.12
WHODAS II Getting Along	0.18	0.18	-0.16	-0.08	-0.16	-0.11	-0.04	0.05	-0.10	-0.06	0.12
WHODAS II Life Activities	0.04	0.14	-0.24	0.05	-0.11	-0.12	-0.07	0.05	-0.04	-0.06	0.02
WHODAS II Work and School	0.14	0.24	-0.27	-0.04	-0.16	-0.14	-0.01	0.03	-0.01	-0.06	0.13

Note. Ns range from 452 to 475.

Table A45. Student Time 2 Partial Correlations Between ACT Subfactors and External Measures Controlling for Subscales of the ASI, DIS, DTS, and COPE

	Inflex	Int Belief	Detach	Persp. taking	Express Aware.	Commit Action	Phys. Aware.	Phys. Avoid.	Pain Avers.	Distract	Mental Avoid.
K10	0.31	0.44	-0.23	0.06	-0.24	-0.03	0.09	0.06	0.01	-0.02	0.19
ESI	0.12	0.23	-0.18	0.09	-0.03	0.08	0.11	0.00	-0.13	-0.05	-0.02
IPIP Extraversion	-0.06	-0.18	-0.06	0.09	0.20	0.03	0.11	-0.22	0.06	-0.02	-0.02
IPIP Agreeableness	0.12	-0.07	0.00	-0.16	0.03	0.05	0.08	-0.06	-0.04	0.10	0.16
IPIP Conscientiousness	-0.01	-0.16	0.17	-0.09	0.11	0.00	0.04	0.01	-0.01	0.06	0.01
IPIP Neuroticism	0.21	0.13	-0.10	-0.22	-0.14	0.02	0.01	0.01	-0.01	0.00	0.25
IPIP Openness	0.11	0.11	0.00	-0.06	0.20	0.14	0.15	-0.08	-0.18	0.05	0.15
WHODAS II Communication	0.13	0.23	-0.15	-0.04	-0.13	-0.03	-0.05	0.09	-0.05	-0.02	0.07
WHODAS II Getting Along	0.17	0.31	-0.07	-0.01	-0.14	-0.01	-0.04	0.10	-0.12	-0.06	0.08
WHODAS II Life Activities	0.14	0.31	-0.18	-0.02	-0.04	-0.03	0.00	0.01	-0.10	-0.09	0.05
WHODAS II Work and School	0.18	0.33	-0.12	-0.07	-0.06	0.03	0.13	0.00	-0.05	-0.02	0.11

Note. Ns range from 317 to 334.



Table A46. Mechanical Turk  $R^2$  Values for Measures of Psychopathology, Personality, and Functioning

	ASI, COPE, DIS, DTS	11 ACT subfactors	All
K10	0.547	0.656	0.698
ESI	0.340	0.353	0.407
IPIP Extraversion	0.133	0.222	0.309
IPIP Agreeableness	0.208	0.313	0.391
IPIP Conscientiousness	0.273	0.354	0.389
IPIP Neuroticism	0.407	0.545	0.574
IPIP Openness	0.141	0.292	0.343
WHODAS II Communication	0.501	0.441	0.544
WHODAS II Getting Along	0.383	0.367	0.425
WHODAS II Life Activities	0.287	0.302	0.339
WHODAS II Work and School	0.357	0.351	0.407

Table A47. Student Time 1  $R^2$  Values for Measures of Psychopathology, Personality, and Functioning

	ASI, COPE, DIS, DTS	11 ACT subfactors	All
K10	0.454	0.570	0.588
ESI	0.252	0.286	0.339
IPIP Extraversion	0.066	0.171	0.212
IPIP Agreeableness	0.164	0.174	0.239
IPIP Conscientiousness	0.171	0.221	0.276
IPIP Neuroticism	0.388	0.382	0.472
IPIP Openness	0.104	0.173	0.223
WHODAS II Communication	0.273	0.343	0.384
WHODAS II Getting Along	0.196	0.247	0.285
WHODAS II Life Activities	0.193	0.239	0.278
WHODAS II Work and School	0.197	0.300	0.330

Table A48. Student Time 2  $R^2$  Values for Measures of Psychopathology, Personality, and Functioning

	ASI, COPE, DIS, DTS	11 ACT subfactors	All
K10	0.456	0.595	0.623
ESI	0.252	0.285	0.340
IPIP Extraversion	0.133	0.230	0.274
IPIP Agreeableness	0.261	0.207	0.332
IPIP Conscientiousness	0.283	0.261	0.342
IPIP Neuroticism	0.363	0.361	0.460
IPIP Openness	0.107	0.188	0.234
WHODAS II Communication	0.410	0.407	0.469
WHODAS II Getting Along	0.316	0.385	0.425
WHODAS II Life Activities	0.351	0.400	0.445
WHODAS II Work and School	0.252	0.326	0.359

APPENDIX B  
FIGURES

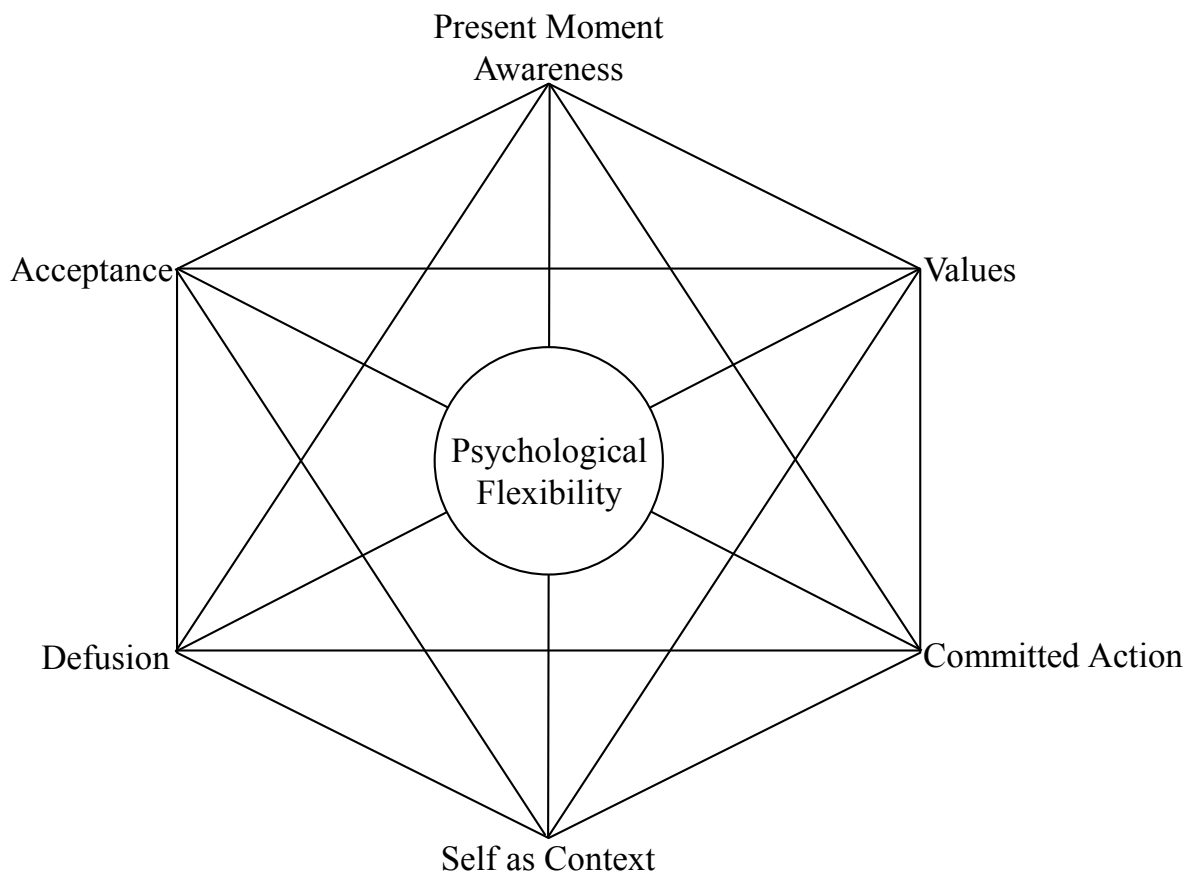


Figure B1. The ACT Hexaflex

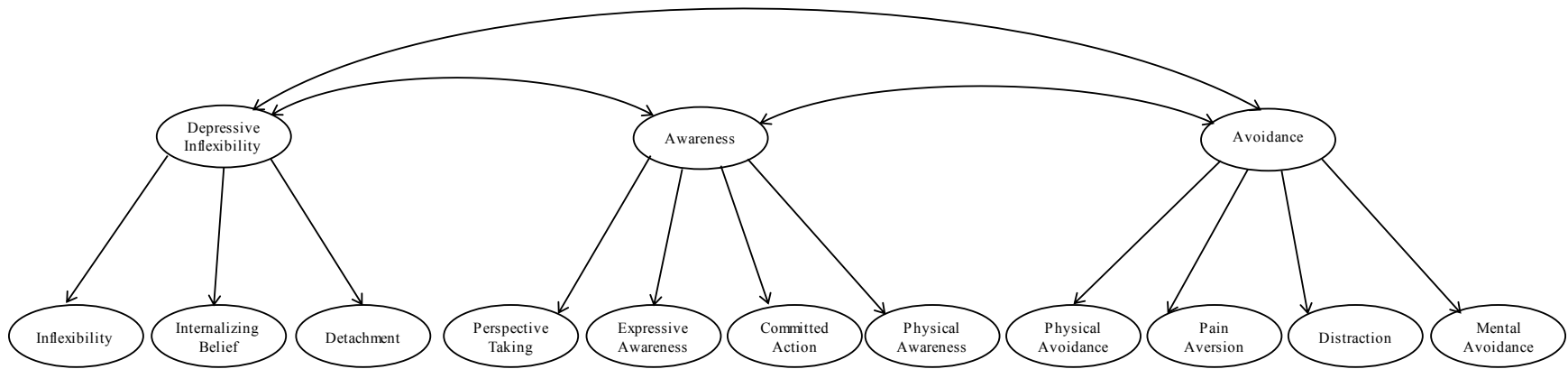


Figure B2. Simple Hierarchical ACT Model

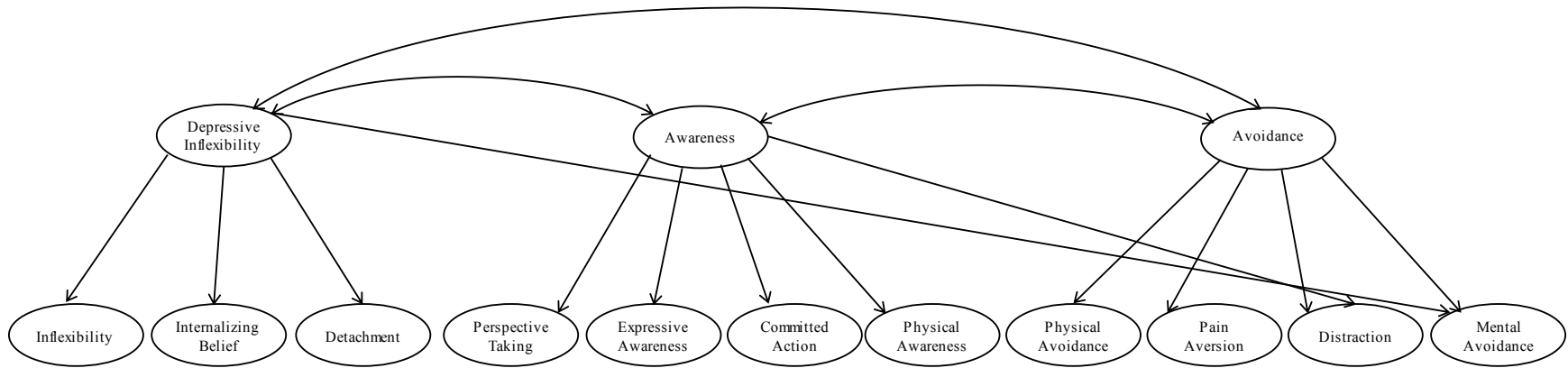


Figure B3. Hierarchical ACT Model with Cross Loadings

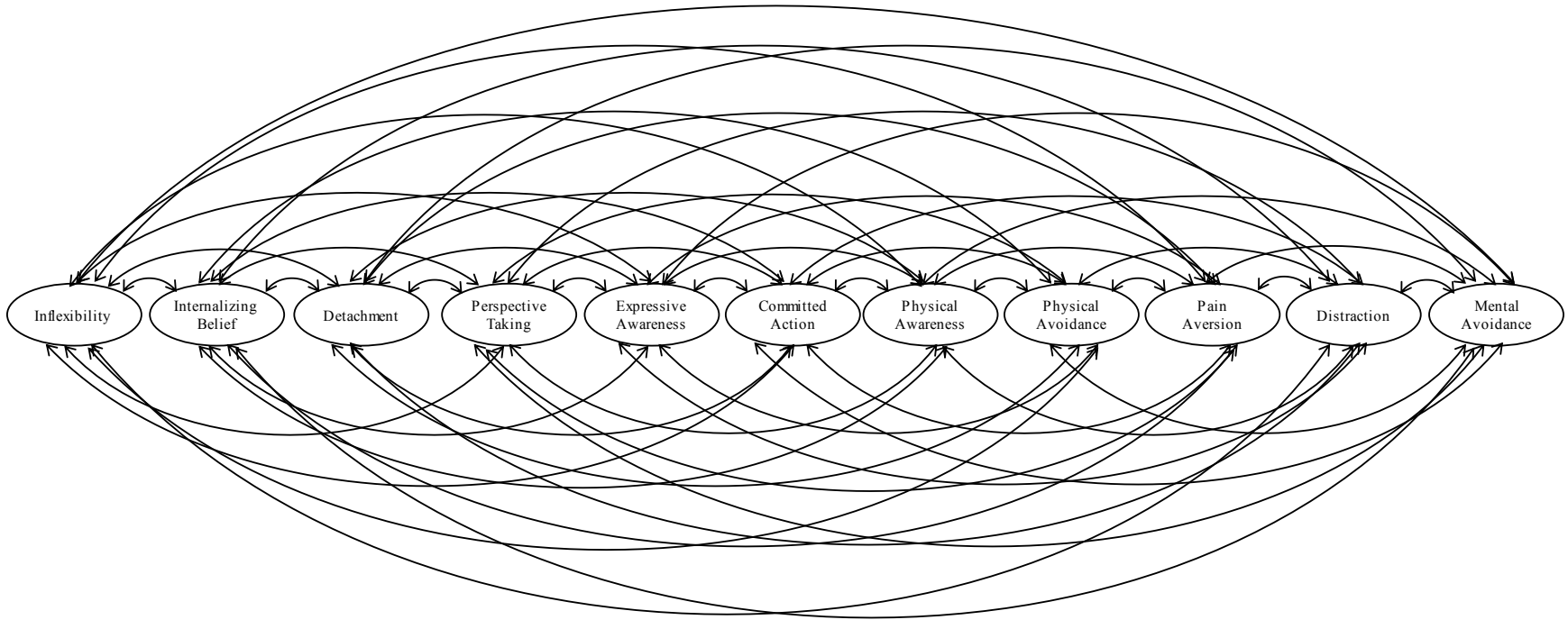


Figure B4. Correlated ACT Model



APPENDIX C  
STUDY MEASURES

## Acceptance and Action Questionnaire-II (AAQ-II)

Below you will find a list of statements. Please rate how true each statement is for you.

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

- 1) My painful experiences and memories make it difficult for me to live a life that I would value.
- 2) I'm afraid of my feelings.
- 3) I worry about not being able to control my worries and feelings.
- 4) My painful memories prevent me from having a fulfilling life.
- 5) Emotions cause problems in my life.
- 6) It seems like most people are handling their lives better than I am.
- 7) Worries get in the way of my success.

## Anxiety Sensitivity Index (ASI)

Use the scale below to determine the one phrase that best represents the extent to which you agree with each item. If any of the items concern something that is not part of your experience (e.g., "It scares me when I feel shaky" for someone who has never trembled or had the "shakes"), answer on the basis of how you think you might feel if you had such an experience. Otherwise, answer all items on the basis of your own experience.

0, very little | 1, a little | 2, some | 3, much | 4, very much

- 1) It is important to me not to appear nervous
- 2) When I cannot keep my mind on a task, I worry that I might be going crazy.
- 3) It scares me when I feel "shaky" (trembling).
- 4) It scares me when I feel faint.
- 5) It is important for me to stay in control of my emotions.
- 6) It scares me when my heart beats rapidly.
- 7) It embarrasses me when my stomach growls.
- 8) It scares me when I am nauseous.
- 9) When I notice my heart is beating rapidly, I worry that I might have a heart attack.
- 10) It scares me when I become short of breath.
- 11) When my stomach is upset, I worry that I might be seriously ill.
- 12) It scares me when I am unable to keep my mind on a task.
- 13) Other people notice when I feel shaky.
- 14) Unusual body sensations scare me.
- 15) When I am nervous, I worry that I might be mentally ill.
- 16) It scares me when I am nervous.

ASI Continued

ASI Physical items:

3, 4, 6, 8, 9, 10, 11, 14

ASI Mental items:

2, 12, 15, 16

ASI Social items:

1, 5, 13

## Automatic Thoughts Questionnaire (ATQ)

Instructions: Listed below are a variety of thoughts that pop into people's heads. Please read each thought and indicate how frequently, if at all, the thought occurred to you OVER THE LAST WEEK. After rating each thought's frequency, please indicate how strongly, if at all, you tend to believe that thought, when it occurs.

Please rate how frequently you experienced this thought over the last week.

1, not at all | 2, sometimes | 3, moderately often | 4, often | 5, all the time

Please indicate how strongly, if at all, you tend to believe that thought, when it occurs.

1, not at all | 2, somewhat | 3, moderately | 4, very much | 5, totally

- 1) I feel like I'm up against the world.
- 2) I'm no good.
- 3) Why can't I ever succeed?
- 4) No one understands me.
- 5) I've let people down.
- 6) I don't think I can go on.
- 7) I wish I were a better person.
- 8) I'm so weak.
- 9) My life's not going the way I want it to.
- 10) I'm so disappointed in myself.
- 11) Nothing feels good anymore.
- 12) I can't stand this anymore.
- 13) I can't get started.
- 14) What's wrong with me?

## ATQ Continued

- 15) I wish I were somewhere else.
- 16) I can't get things together.
- 17) I hate myself.
- 18) I'm worthless.
- 19) Wish I could just disappear.
- 20) What's the matter with me?
- 21) I'm a loser.
- 22) My life is a mess.
- 23) I'm a failure.
- 24) I'll never make it.
- 25) I feel so hopeless.
- 26) Something has to change.
- 27) There must be something wrong with me.
- 28) My future is bleak.
- 29) It's just not worth it.
- 30) I can't finish anything.

## Cognitive Fusion Questionnaire (CFQ)

Below you will find a list of statements. Please rate how true each statement is for you.

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

- 1) My thoughts cause me distress or emotional pain
- 2) I get so caught up in my thoughts that I am unable to do the things that I most want to do
- 3) Even when I am having distressing thoughts, I know that they may become less important eventually
- 4) I over-analyze situations to the point where it's unhelpful to me
- 5) I struggle with my thoughts
- 6) Even when I'm having upsetting thoughts, I can see that those thoughts may not be literally true
- 7) I get upset with myself for having certain thoughts
- 8) I need to control the thoughts that come into my head
- 9) I find it easy to view my thoughts from a different perspective
- 10) I tend to get very entangled in my thoughts
- 11) I tend to react very strongly to my thoughts
- 12) It's possible for me to have negative thoughts about myself and still know that I am an OK person
- 13) It's such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful

## COPE

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try and deal with stress. This questionnaire asks you to indicate what you generally do and feel, when YOU experience stressful events. Obviously different events bring out somewhat different responses, but think about what you USUALLY do when you are under a lot of stress. Please indicate the response that most reflects how you deal with stressful events.

1, I usually don't do this at all | 2, I usually do this a little bit | 3, I usually do this a medium amount | 4, I usually do this a lot

- 1) I take additional action to try to get rid of the problem
- 2) I concentrate my efforts on doing something about it
- 3) I do what has to be done, one step at a time
- 4) I take direct action to get around the problem
- 5) I try to come up with a strategy about what to do
- 6) I make a plan of action
- 7) I think hard about what steps to take
- 8) I think about how I might best handle the problem
- 9) I put aside other activities in order to concentrate on this
- 10) I focus on dealing with this problem, and if necessary let other things slide a little
- 11) I keep myself from getting distracted by other thoughts or activities
- 12) I try hard to prevent other things from interfering with my efforts at dealing with this
- 13) I force myself to wait for the right time to do something
- 14) I hold off doing anything about it until the situation permits
- 15) I make sure not to make matters worse by acting too soon



## COPE Continued

- 16) I restrain myself from doing anything too quickly
- 17) I ask people who have had similar experiences what they did
- 18) I try to get advice from someone about what to do
- 19) I talk to someone more about the situation
- 20) I talk to someone who could do something concrete about the problem
- 21) I talk to someone about how I feel
- 22) I try to get emotional support from friend or relatives
- 23) I discuss my feelings with someone
- 24) I get sympathy and understanding from someone
- 25) I look for something good in what is happening
- 26) I try to see it in a different light to make it seem more positive
- 27) I learn something from the experience
- 28) I try to grow as a person as a result of the experience
- 29) I learn to live with it
- 30) I accept that this has happened and that it can't be changed
- 31) I get used to the idea that it happened
- 32) I accept the reality of the fact that it happened
- 33) I seek God's help
- 34) I put my trust in God
- 35) I try to find comfort in my religion
- 36) I pray more than usual
- 37) I get upset and let my emotions out
- 38) I let my feelings out
- 39) I feel a lot of emotional distress and I find myself expressing those feelings a lot
- 40) I get upset, and am really aware of it
- 41) I refuse to believe that it has happened

### COPE Continued

- 42) I pretend that it hasn't really happened
- 43) I act as though it hasn't even happened
- 44) I say to myself, this isn't real
- 45) I give up the attempt to get what I want
- 46) I just give up trying to reach my goal
- 47) I admit to myself that I can't deal with it and quit trying
- 48) I reduce the amount of effort I'm putting into solving the problem
- 49) I turn to work or other substitute activities to take my mind off things
- 50) I go to movies or watch TV, to think about it less
- 51) I daydream about things other than this
- 52) I sleep more than usual
- 53) I drink alcohol or take drugs in order to think about it less

### COPE Active Coping:

1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 15, 16, 25, 26, 27, 28, 31, 32

### COPE Emotion Focused Coping

18, 22, 23, 24, 37, 38, 39, 40

### COPE Avoidant Coping

14, 29, 41, 43, 44, 45, 46, 48, 51, 52

## Discomfort Intolerance Scale (DIS)

Instructions: Below are statements about how some people feel and behave. For each statement below, indicate the number which best describes the degree to which the statement applies to you.

0 Not at All Like Me

1

2

3 Moderately Like Me

4

5

6 Extremely Like Me

1) I can tolerate a great deal of physical discomfort.

2) I have a high pain threshold

3) I take extreme measures to avoid feeling physically uncomfortable

4) When I begin to feel physically uncomfortable, I quickly take steps to relieve the discomfort

5) I am more sensitive to feeling physical discomfort compared to most people

DIS Discomfort Tolerance:

1, 2

DIS Discomfort Avoidance:

3, 4, 5

### Distress Tolerance Scale (DTS)

Directions: Think of times that you feel distressed or upset. Select the response that best describes your beliefs about feeling distressed or upset.

1, strongly agree | 2, mildly agree | 3, agree and disagree equally | 4, mildly disagree | 5, strongly disagree

- 1) Feeling distressed or upset is unbearable to me.
- 2) When I feel distressed or upset, all I can think about is how bad I feel.
- 3) I can't handle feeling distressed or upset.
- 4) My feelings of distress are so intense that they completely take over.
- 5) There's nothing worse than feeling distressed or upset.
- 6) I can tolerate being distressed or upset as well as most people.
- 7) My feelings of distress or being upset are not acceptable.
- 8) I'll do anything to avoid feeling distressed or upset.
- 9) Other people seem to be able to tolerate feeling distressed or upset better than I can.
- 10) Being distressed or upset is always a major ordeal for me.
- 11) I am ashamed of myself when I feel distressed or upset.
- 12) My feelings of distress or being upset scare me.
- 13) I'll do anything to stop feeling distressed or upset.
- 14) When I feel distressed or upset, I must do something about it immediately.
- 15) When I feel distressed or upset, I cannot help but concentrate on how bad the distress actually feels.

DTS Continued

DTS Tolerance items:

1, 3, 5

DTS Appraisal items:

6R, 7, 9, 10, 11, 12

DTS Absorption items:

2, 4, 15

DTS Regulation items:

8, 13, 14

## Experiences Questionnaire (EQ)

Instructions: We are interested in your recent experiences. Below is a list of things that people sometimes experience. Please indicate how much you currently have experiences similar to those described.

1, Never | 2, Rarely | 3, Sometimes | 4, Often | 5, All the time

- 1) I think about what will happen in the future
- 2) I remind myself that thoughts aren't facts
- 3) I am better able to accept myself as I am
- 4) I notice all sorts of little things and details in the world around me.
- 5) I am kinder to myself when things go wrong
- 6) I can slow my thinking at times of stress
- 7) I wonder what kind of person I really am
- 8) I am not so easily carried away by my thoughts and feelings
- 9) I notice that I don't take difficulties so personally
- 10) I can separate myself from my thoughts and feelings
- 11) I analyze why things turn out the way they do
- 12) I can take time to respond to difficulties
- 13) I think over and over again about what others have said to me
- 14) I can treat myself kindly
- 15) I can observe unpleasant feelings without being drawn into them
- 16) I have the sense that I am fully aware of what is going on around me and inside me
- 17) I can actually see that I am not my thoughts
- 18) I am consciously aware of a sense of my body as a whole
- 19) I think about the ways in which I am different from other people
- 20) I view things from a wider perspective

EQ continued

EQ decentering items:

3, 6, 9, 10, 12, 14, 15, 16, 17, 18, 20

## Externalizing Symptoms Inventory (ESI)

For each question, please select the response that best applies to you.

1, False | 2, Mostly False | 3, Mostly True | 4, True

- 1) I have had problems at work because I was irresponsible.
- 2) I have stolen something out of a vehicle.
- 3) I get in trouble for not considering the consequences of my actions.
- 4) I have missed work without bothering to call in.
- 5) People often abuse my trust.
- 6) Others have told me they are concerned about my lack of self-control.
- 7) I often get bored quickly and lose interest.
- 8) I have taken items from a store without paying for them.
- 9) I have robbed someone.
- 10) I've gotten in trouble because I missed too much school.
- 11) I have taken money from someone's purse or wallet without asking.
- 12) I keep appointments I make.
- 13) I have lost a friend because of irresponsible things I've done.
- 14) I have good control over myself.
- 15) I have a hard time waiting patiently for things I want.
- 16) My impulsive decisions have caused problems with loved ones.
- 17) I jump into things without thinking.
- 18) I've often missed things I promised to attend.
- 19) I have conned people to get money from them.
- 20) I often act on immediate needs.



### Five Factor Mindfulness Questionnaire (FFMQ)

Please rate each of the following statements using the scale provided. Indicate the response that best describes your own opinion of what is generally true for you.

1, never or very rarely true | 2, rarely true | 3, sometimes true | 4, often true | 5, 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.

## FFMQ Continued

- 19) When I have distressing thoughts or images, I step back and am aware of the
- 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.

## FFMQ Continued

## FFMQ Observe items:

1, 6, 11, 15, 20, 26, 31, 36

## FFMQ Describe items:

2, 7, 12R, 16R, 22R, 27, 32, 37

## FFMQ Act with Awareness items:

5R, 8R, 13R, 18R, 23R, 28R, 34R, 38R

## FFMQ Nonjudge items:

3R, 10R, 14R, 17R, 25R, 30R, 35R, 39R

## FFMQ Nonreact items:

4, 9, 19, 21, 24, 29, 33

## Multidimensional Experiential Avoidance Questionnaire (MEAQ)

Please indicate the extent to which you agree with each of the following statements.

1, strongly disagree | 2, moderately disagree | 3, slightly disagree | 4, slightly agree | 5, moderately agree | 6, strongly agree

- 1) I won't do something if I think it will make me uncomfortable
- 2) If I could magically remove all of my painful memories, I would
- 3) When something upsetting comes up, I try very hard to stop thinking about it
- 4) I sometimes have difficulty identifying how I feel
- 5) I tend to put off unpleasant things that need to get done
- 6) People should face their fears
- 7) Happiness means never feeling any pain or disappointment
- 8) I avoid activities if there is even a small possibility of getting hurt
- 9) When negative thoughts come up, I try to fill my head with something else
- 10) At times, people have told me I'm in denial
- 11) I sometimes procrastinate to avoid facing challenges
- 12) Even when I feel uncomfortable, I don't give up working toward things I value
- 13) When I am hurting, I would do anything to feel better
- 14) I rarely do something if there is a chance that it will upset me
- 15) I usually try to distract myself when I feel something painful
- 16) I am able to "turn off" my emotions when I don't want to feel
- 17) When I have something important to do I find myself doing a lot of other things instead
- 18) I am willing to put up with pain and discomfort to get what I want
- 19) Happiness involves getting rid of negative thoughts
- 20) I work hard to avoid situations that might bring up unpleasant thoughts and feelings in me

## MEAQ Continued

- 21) I don't realize I'm anxious until other people tell me
- 22) When upsetting memories come up, I try to focus on other things
- 23) I am in touch with my emotions
- 24) I am willing to suffer for the things that matter to me
- 25) One of my big goals is to be free from painful emotions
- 26) I prefer to stick to what I am comfortable with, rather than try new activities
- 27) I work hard to keep out upsetting feelings
- 28) People have said that I don't own up to my problems
- 29) Fear or anxiety won't stop me from doing something important
- 30) I try to deal with problems right away
- 31) I'd do anything to feel less stressed
- 32) If I have any doubts about doing something, I just won't do it
- 33) When unpleasant memories come to me, I try to put them out of my mind
- 34) In this day and age people should not have to suffer
- 35) Others have told me that I suppress my feelings
- 36) I try to put off unpleasant tasks for as long as possible
- 37) When I am hurting, I still do what needs to be done
- 38) My life would be great if I never felt anxious
- 39) If I am starting to feel trapped, I leave the situation immediately
- 40) When a negative thought comes up, I immediately try to think of something else
- 41) It's hard for me to know what I'm feeling
- 42) I won't do something until I absolutely have to
- 43) I don't let pain and discomfort stop me from getting what I want
- 44) I would give up a lot not to feel bad
- 45) I go out of my way to avoid uncomfortable situations
- 46) I can numb my feelings when they are too intense

## MEAQ Continued

- 47) Why do today what you can put off until tomorrow
- 48) I am willing to put up with sadness to get what I want
- 49) Some people have told me that I "hide my head in the sand"
- 50) Pain always leads to suffering
- 51) If I am in a slightly uncomfortable situation, I try to leave right away
- 52) It takes me awhile to realize when I'm feeling bad
- 53) I continue working toward my goals even if I have doubts
- 54) I wish I could get rid of all of my negative emotions
- 55) I avoid situations if there is a chance that I'll feel nervous
- 56) I feel disconnected from my emotions
- 57) I don't let gloomy thoughts stop me from doing what I want
- 58) The key to a good life is never feeling any pain
- 59) I'm quick to leave any situation that makes me feel uneasy
- 60) People have told me that I'm not aware of my problems
- 61) I hope to live without any sadness and disappointment
- 62) When working on something important, I won't quit even if things get difficult

MEAQ Continued

MEAQ Behavioral Avoidance items:

1, 8, 14, 20, 26, 32, 39, 45, 51, 55, 59

MEAQ Distress Aversion items:

2, 7, 13, 19, 25, 31, 34, 38, 44, 50, 54, 58, 61

MEAQ Procrastination item:

5, 11, 17, 30R, 36, 42, 47

MEAQ Distraction & Suppression items:

3, 9, 15, 22, 27, 33, 40

MEAQ Repression & Denial items:

4, 10, 16, 21, 23R, 28, 35, 41, 46, 49, 52, 56, 60

MEAQ Distress Endurance items:

6, 12, 18, 24, 29, 37, 43, 48, 53, 57, 62

### Kessler Psychological Distress Scale (K10)

These questions concern how you have been feeling over the past 30 days. Indicate the response to each question that best represents how you have been.

1, None of the time | 2, A little of the time | 3, Some of the time | 4, Most of the time | 5, All of the time

- 1) During the last 30 days, about how often did you feel tired out for no good reason?
- 2) During the last 30 days, about how often did you feel nervous?
- 3) During the last 30 days, about how often did you feel so nervous that nothing could calm you down?
- 4) During the last 30 days, about how often did you feel hopeless?
- 5) During the last 30 days, about how often did you feel restless or fidgety?
- 6) During the last 30 days, about how often did you feel so restless you could not sit still?
- 7) During the last 30 days, about how often did you feel depressed?
- 8) During the last 30 days, about how often did you feel that everything was an effort?
- 9) During the last 30 days, about how often did you feel so sad that nothing could cheer you up?
- 10) During the last 30 days, about how often did you feel worthless?



## Mindful Attention Awareness Scale (MAAS)

Below is a collection of statements about your everyday experience. Using the scale provided, 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.

1, Almost always | 2, Very frequently | 3, Somewhat frequently | 4, Somewhat infrequently | 5, Very infrequently | 6, Almost never

- 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.

## MAAS Continued

14) I find myself doing things without paying attention.

15) I snack without being aware that I'm eating.

## International Personality Item Pool (IPIP)

Instructions: On the following pages, there are phrases describing people's behaviors. Please use the provided rating scale to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age.

1, Very Inaccurate | 2, Moderately Inaccurate | 3, Neither Inaccurate nor Accurate | 4, Moderately Accurate | 5, Very Accurate

- 1) Am the life of the party
- 2) Sympathize with others' feelings
- 3) Get chores done right away
- 4) Have frequent mood swings
- 5) Have a vivid imagination
- 6) Don't talk a lot
- 7) Am not interested in other people's problems
- 8) Often forget to put things back in their proper place
- 9) Am relaxed most of the time
- 10) Am not interested in abstract ideas
- 11) Talk to a lot of different people at parties
- 12) Feel others' emotions
- 13) Like order
- 14) Get upset easily
- 15) Have difficulty understanding abstract ideas
- 16) Keep in the background

IPIP Continued

17) Am not really interested in others

18) Make a mess of things

19) Seldom feel blue

20) Do not have a good imagination

IPIP Extraversion items:

1, 6R, 11, 16R

IPIP Agreeableness items:

2, 7R, 12, 17R

IPIP Conscientiousness items:

3, 8R, 13, 18R

IPIP Neuroticism items:

4, 9R, 14, 19R

IPIP Openness/Imagination items:

5, 10R, 15R, 20R

### Philadelphia Mindfulness Scale (PHLMS)

Please indicate how often you experienced each of the following statements within the past week.

1, Never | 2, Rarely | 3, Sometimes | 4, Often | 5, Very Often

- 1) I am aware of what thoughts are passing through my mind.
- 2) I try to distract myself when I feel unpleasant emotions.
- 3) When talking with other people, I am aware of their facial and body expressions.
- 4) There are aspects of myself I don't want to think about.
- 5) When I shower, I am aware of how the water is running over my body.
- 6) I try to stay busy to keep thoughts or feelings from coming to mind.
- 7) When I am startled, I notice what is going on inside my body.
- 8) I wish I could control my emotions more easily.
- 9) When I walk outside, I am aware of smells or how the air feels against my face.
- 10) I tell myself that I shouldn't have certain thoughts.
- 11) When someone asks how I am feeling, I can identify my emotions easily.
- 12) There are things I try not to think about.
- 13) I am aware of thoughts I'm having when my mood changes.
- 14) I tell myself that I shouldn't feel sad.
- 15) I notice changes inside my body, like my heart beating faster or my muscles getting tense.
- 16) If there is something I don't want to think about, I'll try many things to get it out of my mind.
- 17) Whenever my emotions change, I am conscious of them immediately.
- 18) I try to put my problems out of mind.
- 19) When talking with other people, I am aware of the emotions I am experiencing.
- 20) When I have a bad memory, I try to distract myself to make it go away.

PHLMS Continued

PHLMS Awareness items:

1, 3, 5, 7, 9, 11, 13, 15, 17, 19

PHLMS Acceptance items:

2, 4, 6, 8, 10, 12, 14, 16, 18, 20

## White Bear Suppression Inventory (WBSI)

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

1, Strongly disagree | 2, Disagree | 3, Neutral or don't know | 4, Agree | 5, Strongly Agree

- 1) There are things 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 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.

## World Health Organization Disability Assessment (WHODAS)

This questionnaire asks about difficulties due to health conditions. Health conditions include diseases or illnesses, other health problems that may be short or long lasting, injuries, mental or emotional problems, and problems with alcohol or drugs. Think back over the last 30 days and answer these questions thinking about how much difficulty you had doing the following activities. In the last 30 days, how much difficulty did you have in:

1, None | 2, Mild | 3, Moderate | 4, Severe | 5, Extreme / Cannot Do

- 1) Concentrating on doing something for ten minutes?
- 2) Remembering to do important things?
- 3) Analyzing and finding solutions to problems in day to day life?
- 4) Learning a new task, for example, learning how to get to a new place?
- 5) Generally understanding what people say?
- 6) Starting and maintaining a conversation?
- 7) Dealing with people you do not know?
- 8) Maintaining a friendship?
- 9) Getting along with people who are close to you?
- 10) Making new friends?
- 11) Sexual activities?
- 12) Taking care of your household responsibilities?
- 13) Doing most important household tasks well?
- 14) Getting all the household work done that you needed to do?
- 15) Getting your household work done as quickly as needed?
- 16) Your day to day work/school?
- 17) Doing your most important work/school tasks well?
- 18) Getting all the work done that you need to do?
- 19) Getting your work done as quickly as needed?



## WHODAS Continued

### WHODAS Communication items:

1, 2, 3, 4, 5, 6

### WHODAS Getting Along with Others items:

7, 8, 9, 10, 11

### WHODAS Life Activities items:

12, 13, 14, 15

### WHODAS Work/School items:

16, 17, 18, 19

## Valued Living Questionnaire (VLQ)

Below are domains of life that are valued by some people. We are concerned with your subjective experience of your quality of life in each of these domains. One aspect of quality of life involves the importance one puts on the different domains of living. Rate the importance of each domain (by indicating a number) on a scale of 1-10. 1 means that domain is not at all important and 10 means that domain is very important. Not everyone will value all of these domains, or value all domains the same. Rate each domain according to your own personal sense of importance on a scale of 1-10.

1 not at all important

10 extremely important

- 1) Family relations (other than marriage or parenting)
- 2) Marriage/couples/intimate relations
- 3) Parenting
- 4) Friendships/social relations
- 5) Employment
- 6) Education/training
- 7) Recreation
- 8) Spirituality
- 9) Citizenship/Community Life
- 10) Physical well-being

## VLQ Continued

In this section, we would like you to give a rating of how consistent your actions are with each value. Everyone does better in some domains than others. We are NOT asking about your ideal in each domain. We want to know how you think you have been doing during the past week. Rate each item (by indicating a number) on a scale of 1-10. 1 means that your actions have been fully inconsistent with your value and 10 means that your actions have been fully consistent with your value during the past week on a scale of 1-10.

1 not at all consistent

10 extremely consistent

1) Family relations (other than marriage or parenting)

2) Marriage/couples/intimate relations

3) Parenting

4) Friendships/social relations

5) Employment

6) Education/training

7) Recreation

8) Spirituality

9) Citizenship/Community Life

10) Physical well-being