

Under review

Measuring Experiential Avoidance:

A Preliminary Test of a Working Model

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Abstract

The present study describes the development of a short, general measure of experiential avoidance, based on a specific theoretical approach to this process. A theoretically driven iterative exploratory analysis using structural equation modeling on data from a clinical sample yielded a single factor comprising nine items. A fully confirmatory factor analysis upheld this same 9-item factor in an independent clinical sample. Eight additional studies were then conducted on the operational characteristics of the Acceptance and Action Questionnaire (AAQ). All totaled, over 2,400 participants were studied. As expected, higher levels of experiential avoidance were associated with higher levels of general psychopathology, depression, anxiety, a variety of specific fears, and trauma, and a lower quality of life. The AAQ related to more specific measures of avoidant coping and to self-deceptive positivity, but the relations to psychopathology could not be fully accounted for by these alternative measures. The data provide some initial support for the model of experiential avoidance that is incorporated into Acceptance and Commitment Therapy, and provides researchers with a preliminary measure for use in population-based studies on experiential avoidance.

Measuring Experiential Avoidance:

A Preliminary Test of a Working Model

Experiential avoidance is the phenomenon that occurs when a person is unwilling to remain in contact with particular private experiences (e.g., bodily sensations, emotions, thoughts, memories, images, behavioral pre-dispositions) and takes steps to alter the form or frequency of these experiences or the contexts that occasion them, even when these forms of avoidance cause behavioral harm (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Historically, concern for experiential avoidance has been most evident in less empirical clinical traditions, such as the psychoanalytic interest in undermining repression (Freud, 1920/1966); the existential interest in reducing defenses against death awareness (Yalom, 1980, e.g., p.47); the attempt by client centered therapists to increase awareness of feelings and attitudes (Rogers, 1961, e.g., p. 115); or the concern of Gestalt therapists to complete “unfinished business” by the full experiencing of past experiences (Perls, Hefferline, & Goodman, 1951), among many others.

More recently, a variety of behavior therapy approaches have begun exploring the role of experiential avoidance, and have developed methods of weakening it (see Hayes, Jacobson, Follette, & Dougher, 1994 for a book length review of acceptance methods). These include Dialectical Behavior Therapy (Linehan, 1993), Mindfulness-based Cognitive Therapy (Segal, Williams, & Teasdale, 2001), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), Integrative Couples Therapy (Jacobson & Christensen, 1996), among several others (e.g., Borkovec & Roemer, 1994; McCullough, 2000; Marlatt, 2002; Martell, Addis, & Jacobson, 2001; Roemer & Orsillo, 2002). While the area is new empirically, the initial results of these procedures are positive (e.g., Bach & Hayes, 2002; Bond & Bunce, 2000; Jacobson et al.,

2000; Linehan et al., 1999; Teasdale et al., 2000).

Experiential avoidance has been implicated in a wide range of clinical problems and disorders, from substance abuse to suicide. For example, substance use tends to be evoked by psychological stressors primarily among those who use emotional avoidance coping strategies and who expect that substance use will lessen negative affect (Cooper, Russell, Skinner, Frone, & Mudar, 1992). Ruminative worry tends to occur because it functions to avoid greater arousal and distress (Borkovec & Roemer, 1995; Wells & Papageorgio, 1995), even though it does not help worriers actually deal with the instrumental situation (Borkovec, Hazlett-Stevens, & Diaz, 1999). Agoraphobics who are higher in the use of avoidant coping strategies tend to develop more additional anxiety disorders over time than do less emotionally avoidant patients, even though no such outcome difference existed before the first panic episode (Craske, Miller, Rotunda, & Barlow, 1990). More than half of actual or attempted suicides involve an attempt to flee from aversive events (Loo, 1986), especially states of mind such as guilt and anxiety (Baumeister, 1990).

Experiential avoidance per se is a process, not a theory. One account of experiential avoidance is provided by ACT and its underlying theory of language and cognition, Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001). According to this account, the bidirectionality of human language greatly expands the range of situations that are aversive because symbolic behavior permits cognitive contact with aversive experiences in almost any setting. Since aversive states cannot be avoided purely by avoiding external situations, humans begin to target negatively evaluated private events per se as the focus of avoidance. If “anxiety” is a “bad” emotion, for example, then anxiety is likely to be avoided or suppressed. Thus, the

more a person takes thoughts literally, and applies comparative relations to events (including private experiences), the more one is likely to be emotionally avoidant. This view relates several specific actions into a broader functional relation: excessive cognitive entanglement, particularly with negative self-referential evaluations and excessively negative evaluations of private experiences, leads to thought and emotional suppression and other unproductive attempts to regulate private experiences. As a result, there is an inability to take needed action in the face of private events. Unfortunately, the immediate effects of experiential avoidance are often seemingly positive. For example, the immediate effect of cognitive distraction or other forms of thought suppression is a reduction in the avoided event – it is only over time that the avoided thought increases in frequency (Gold & Wegner, 1995). This pattern of a short term reduction leading to a long term increase, can easily establish a self-amplifying loop that might be fairly resistant to change.

Experiential avoidance can be harmful because private events are often unresponsive or are even paradoxically increased by deliberate control efforts, because many forms of experiential avoidance are life distorting, sometimes difficult emotions are experientially important, and healthy behavioral changes often initially produce psychological discomfort (Hayes et al., 1996). Thus, excessive experiential avoidance is likely to be associated with higher levels of psychopathology across the board and a lower quality of life.

There are two purposes of the present study. First, given the importance of experiential avoidance to some of the new behavior therapies, a research instrument is needed to begin to explore this concept, particularly in population based studies. When assessing experiential avoidance in specific clinical situations, researchers have successfully focused on the particular

focus and forms of this avoidance by asking about the avoidance of the specific thoughts and feelings involved in the particular clinical problem. For example, McCracken (1998) has developed a measure of the avoidance of pain, for use with chronic pain patients; Gifford (2002) has developed a measure of the avoidance of thoughts and feelings associated with smoking cessation; and so on. For specific clinical syndromes and process measures of therapy outcomes with specific problems, such approaches seem appropriate. Similarly, researchers have developed viable measures of specific aspects of the experiential avoidance concept, such as thought suppression (e.g., the White Bear Suppression Inventory or “WBSI,” Wegner & Zanakos, 1994), or dissociation (e.g., the Dissociative Experiences Scale or “DES,” Bernstein & Putnam, 1986). Working out dimensional or second order measures of all of these aspects would be facilitated by a workable core measure. For population-based studies of experiential avoidance and its impact, however, a more general approach might be useful.

The second purpose of the present study is conceptual. If the theoretical approach to experiential avoidance just described is correct (Hayes et al., 1996; Hayes et al., 1999; Hayes et al., 2001) then it should be possible to develop a broad self-report measure of experiential avoidance that clusters items focused on various aspects of the experiential avoidance concept. These might include a high need for emotional and cognitive control, avoidance of negative private events, inability to take needed action in the face of private events, and forms of cognitive entanglement, such as excessively negative evaluations of private experiences or negative self-references. Furthermore, if the theory underlying ACT and similar approaches is correct, such a measure should correlate with a broad range of measures of psychopathology, life satisfaction, and behavioral health, and should add something above and beyond more specific

dimensions that are part of experiential avoidance, such as thought suppression.

Method

General Analytic Strategy and Rationale

The general strategy employed in this series of studies was to generate a pool of items that seemed to flow from the theory of experiential avoidance (Hayes et al., 1996; Hayes et al., 2001) that underlies Acceptance and Commitment Therapy (Hayes et al., 1999). A 32-item version of what we termed the “Acceptance and Action Questionnaire” (AAQ; see Table 1) was subjected to broad testing. AAQ items were designed to assess a high need for emotional and cognitive control, avoidance of negative private events, inability to take needed action in the face of private events, and forms of cognitive entanglement, such as excessively negative evaluations of private experiences or negative self-references. Half of the items were designed to be endorsed positively in association with the overall scale and half negatively.

An initial exploratory factor analysis using structural equation modeling was conducted on a large clinical sample to simplify the scale and to see if items would cluster into a single factor that went across the components hypothesized to relate to the experiential avoidance concept. A confirmatory factor analysis was then conducted on a second, entirely independent clinical sample. Following development of the AAQ, its relationship to a variety of general and specific scales measuring response bias, related concepts, a variety of forms of psychopathology, or quality of life was assessed. These studies were conducted by a large number of behavior therapy research teams, each for their own specific theoretical or applied reasons (parenthetically, this also explains the large number of authors of the present paper). Generally, the AAQ per se was not the focus of these projects. Rather, researchers were exploring the

relationship between experiential avoidance and other concepts or outcomes of interest. The present paper draws together these disparate studies to see if the data suggest that the AAQ might be useful as a research instrument and worth further development. Due to the diverse array of datasets, however, descriptions of the methods and populations will necessarily be brief.

The specific measures used, their focus, alpha value, and literature citation can be found in Table 2. This table also shows which sample completed which specific measures.

Participants

Study 1. The initial clinical sample used to construct the AAQ consisted of 460 clients (mean age: 26; 63% female; 85% Caucasian) who sought counseling services at a university counseling center. Participants sought counseling for a wide range of (often multiple) concerns, including anxiety, fear, worries, or nervousness (52% of all clients served), finances (40%), relationship issues with primary partner (38%), breakup or loss of a relationship (36%), and uncertainty about the future (35%). These participants completed the 32-item AAQ and the Brief Symptom Inventory (BSI).

Study 2. The second clinical sample used to cross validate the initial item solution consisted of 419 clients (mean age 38.5; 65.4% female) who received psychotherapy from Group Health Cooperative of Puget Sound, a large Health Maintenance Organization in the northwest. These data were collected as part of a program evaluation project involving out-patients seen at one of 6 mental health out-patient clinics. The larger project was designed to examine the clinical effectiveness of ACT, when applied by a group of therapists trained in the ACT model, as compared to a group of therapists that were not trained in the model (Strosahl, Hayes, Bergan & Romano, 1998). Patients completed the AAQ as part of their standard initial intake assessment

by the practicing clinician. The most common DSM-IV Axis I diagnoses were Adjustment (16.4%), Affective (12%), and Anxiety (7.4%) Disorders. Many clients (8%) received only an Axis II diagnosis (i.e., Personality Disorders). 55% of all clients received a V-code diagnosis, the most common being Partner Relational (22%), Phase of Life (8.5%), Parent-Child (7.5%), and Relational (7.0%) Problems.

Studies 3, 4, 6, 7, and 10: Undergraduate samples. University undergraduate students were sampled in five of the validation studies, with general characteristics as follows: Study 3 ($N = 202$; mean age 20.5; 69.0% female; 70.9% Caucasian; Toarmino, Pistorello, & Hayes, 1997); Study 4 ($N = 304$; mean age 19; 82% Caucasian; All female; Polusny, 1998); Study 6 ($N = 257$; mean age 20; 82% Caucasian; All female; Batten, Follette, & Aban, 2001); Study 7 ($N = 205$; mean age 22.5; 60.5% female; Stewart, Zvolensky, & Eifert, 2002); and Study 10 ($N = 381$; 179 females, mean age = 18.9 yrs, 64.9% Caucasian; Karekla et al., 2000). Those studies that limited samples to females focused exclusively on sexual abuse or other issues of particular relevance to women, as can be seen in Table 2. In all these samples, participants received course credit for participation.

Study 5. Agoraphobics in treatment solicited through a self-help group were sampled in this study ($N = 41$; mean age 38.0; 70.7% female; 100.0% Caucasian; Dykstra & Follette, 1998).

Study 8. This sample consisted of women diagnosed with Borderline Personality Disorder who were in treatment at a partial hospitalization unit ($N = 51$; mean age 37; 80% Caucasian; Pistorello, 1998).

Study 9. This sample consisted of United Kingdom central government civil servants ($N = 97$; mean age group 21-36; 37% female; 100% Caucasian) who participated in an intervention

designed to improve health- and work-related variables, such as stress, absenteeism, turnover, job satisfaction, and performance (Bond & Bunce, 2000).

Total sample. In total, 2,415 participants completed the AAQ, along with various other measures. Of these, 1,068 were selected because they were receiving psychological services, while most of the rest were selected as part of University subject pools.

Results and Discussion

Initial Scale Development

Iterative exploratory factor analysis of the 32 item AAQ was performed through structural equation modeling applied to the data from the Study 1 sample (460 clients in a counseling center) using the Linear Structural Relations Program (LISREL) Version 8.03 (Joreskog & Sorbom, 1993a). All 32 items were subjected to the initial analysis, but individual items were removed over successive iterations if a better fit could be obtained. Parameter estimates were made under a maximum likelihood method and a congeneric model was specified. Maximum likelihood estimates have been found to be quite robust to violations of normality (Chou & Bentler, 1995). A congeneric model is obtained by constraining the items to load on no more than one factor and by not permitting correlated measurement errors.

Structural equation modeling (SEM) has several advantages over traditional exploratory factor analysis. Rather than capitalizing on chance variations in the original correlation matrix, SEM allows tests of factor structures specified in advance on the basis of theory or previous data analysis (Anderson, 1987; Bentler, 1985). Further, SEM employs less biased polychoric correlation coefficients (Joreskog & Sorbom, 1993b) than the Pearson product-moment correlation coefficients traditionally used – an approach that is more appropriate with Likert-type

ordinal scales due to normality and homogeneity concerns. SEM also does not make the restrictive assumption that variables are measured without error (Benda & Whiteside, 1995), and assumes that latent variables are measured by multiple manifest variables.

The underlying theory (Hayes et al., 1999) suggests that there excessive cognitive entanglement (especially excessive evaluative content) leads to thought and emotional suppression and an inability to take needed action in the face of private events. The theory suggests that it may be possible to combine a wide-variety of types of items focused on acceptance, evaluation, emotional control, cognitive entanglement, and emotion-focused inaction into a single-factor solution, though it also seems likely that these various specific features may exist as distinguishable second order factors. An iterative exploratory model generating approach was used to attempt to find such solution. At each iteration the best overall fit was pursued, and where single-factor solutions worked as well as multiple-factor solutions, the single-factor solution was pursued. A one-factor model containing nine items was obtained (see Table 3) with the first sample, that was then cross validated with the second.

Parenthetically, a 16-item version was initially developed (item numbers 3, 4, 8, 9, 10, 11, 12, 16, 17, 19, 24, 25, 28, 29, 31 and 32 from Table 1; items 3, 10, 11, 12, 16, 19, 29, and 32 are reverse scored), but given the population-focused purpose of this test a shorter version was sought. A 7-item version (item numbers 3, 8, 16, 19, 24, 28, and 31 from Table 1; items 3, 16, and 19 are reverse scored) was developed but its alpha level was below desirable levels ($=.61$) and was abandoned when we were able to construct the 9-item version. The three versions perform in a fashion that is highly similar or even virtually identical to the 9-item version reported here, however (9-item as compared to the 7-item version using the Study 1 sample: $r =$

.96, $p = .000$; 16-item as compared to the 9-item version using the Study 1 sample: $r = .89$, $p = .000$; 16-item as compared to the 7-item version using the Study 1 sample: $r = .91$, $p = .000$). Because of the extremely high correlation and because all items in the 7-item version are in the 9-item version, the present study also included validation data from studies using the 7-item version. Data from the 16-item version were not reported here because it does not contain some items that are in the 9-item version. As research tools, however, the considerable overlap may justify use of the variants for specific empirical purposes. For example, the longer version may be more sensitive in some situations since the larger number of items may allow smaller changes throughout therapy to be detected.

Given the lack of consensus on the best single measure of fit, multiple measures are reported here, as was suggested by Bollen (1990). The four key indices of overall model fit that are most commonly recommended were all obtained (see Table 4): the chi-square (27 df) = 35.19, $p = .13$) was non-significant (Cole, 1987); the goodness-of-fit index (GFI = .99) was greater than .9 (Cole, 1987); the adjusted goodness-of-fit index (AGFI = .98) was above .8 (Cole, 1987); and the root mean square residual (RMR = .047) was less than .10 (Anderson & Gerbing, 1984; Cuttance, 1987; Marsh, Balla, & McDonald, 1988). These indices indicate a very good fit for the model.

The range of loadings for the 9 items was .32 - .73 (see Figure 1). Standardized residuals (standard normal deviations) were examined and indicated that the reproduced correlations using the parameter estimates for the model approximated the observed correlations. While there was one significantly large residual, the high values of the four goodness-of-fit statistics indicate that the proposed model satisfactorily accounts for the observed covariance. The internal consistency

(i.e., Cronbach alpha) of the 9-item AAQ was .70, which is considered adequate for a scale in development (Nunnally, 1978) and which is often difficult to obtain in a scale with so few items.

The diversity of the items themselves (see Table 3) makes these results interesting. The nine items touch on various aspects of experiential avoidance as specified in the theory. Some items are focused on the ability to take action in the context of inhibitory thoughts (item 1) or feelings (item 3). Others focused on the presence of worry, anxiety, or negative evaluations associated with private events (items 4, 5) and resulting attempts to control or eliminate them (items 4 and 9). The ability to distance oneself from the literal content of negative evaluations (item 6), and the use of worry or day-dreaming as a method of behavioral regulation (item 2) also loaded in an expected way on the measure. Finally, negative comparisons as to how others handle their lives was assessed by a final item (item 8). All of these features are expected, given the underlying model, but the items are clearly not focused on a single common-sense concept.

This 9-item solution was then subjected to full confirmatory factor analysis (Joreskog & Sorbom, 1996) using a second clinical sample (407 clients in an HMO clinic). The 9-item single-factor solution from the first study provided a good fit [chi square (27 d. f.) = 47.61, $p = .0085$; GFI = .98; AGFI = .97; RMR = .054]. (see Table 4) The range of loadings for items was .26 - .64 (see Figure 2).

While the chi square statistic was statistically significant, this is commonly obtained in models containing many variables and many degrees of freedom, even when there is a reasonably good fit to the data (Marsh & Hocevar, 1985; Bentler & Bonett, 1980; Satorra & Saris, 1985). Joreskog and Sorbom (1996) have suggested that the chi-square statistic be adjusted in these instances by dividing the result by its degrees of freedom. In the present, the chi-square

to degrees of freedom ratio was 1.8. A ratio of less than 2 is considered indicative of an excellent model fit (Bollen, 1989; Carmines & McIver, 1981). Overall, the model was confirmed.

Does the AAQ Measure Anything Unique?

Before discussing the relationship between the broad concept of experiential avoidance as assessed by the AAQ and various measures of psychopathology or more specific forms of experiential avoidance, it seems worth examining whether there is reason to believe that the AAQ measures anything unique. If not, further refinement may not be warranted. Two areas were examined: social desirability and related or component processes such as thought suppression.

Social desirability. It is generally agreed that it is important to investigate whether social desirability is associated with a new measure. The most commonly used measure of social desirability is the Marlowe-Crowne Social Desirability Scale (MCSD), which measures the purposeful presentation of the self to an audience, or impression management (Paulhus, 1984; 1986). The AAQ was not correlated with the MCSD (Studies 3 and 5, see Table 6) or MCSD-S (Study 8).

Less commonly, new measures are correlated with the Edwards Social Desirability Scale (ESDS). The ESDS measures self-deceptive positivity (an honest but overly positive self-presentation). This is a response trait that correlates highly with many standard measures of psychopathology, including anxiety, depression, self-esteem, achievement motivation, dominance, well-being, and perceived control (see Paulhus, 1991 for a fuller discussion of this issue).

Self-deceptive positivity is generally the first factor in almost any measure of

psychopathology, and as expected, the relationship of the AAQ and the ESDS was significant in two studies (3, 5, see Table 6). In order to determine if the AAQ measured something beyond self-deceptive positivity, partial correlations were examined between the AAQ and the outcome measures available where ESDS data were available, removing the impact of the ESDS. These are shown in Table 7. Eleven measures were examined (e.g., the Beck Depression Inventory; the SCL-90). In all but two cases, the AAQ still was associated with these other measures indicating that the AAQ is not simply another measure of self-deceptive positivity.

Related measures. Like many concepts drawn from the behavioral tradition, experiential avoidance is not meant to be treated as an underlying trait. Rather, experiential avoidance is conceptualized as a functional response category that relates several more specific phenomena into a theoretically coherent perspective. As an applied matter, if measurement of the concept is identical to these more specific behaviors, either the measure or the concept must be revised.

Several of the specific studies in the present series were designed to examine the relationship between the AAQ and these related concepts: the White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994), the Thought Control Questionnaire (TCQ; Wells & Davies, 1994), the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986), subscales from the Ways of Coping Questionnaire (WOC; Folkman & Lazarus, 1988), the Post-traumatic Stress Diagnostic Scale (PDS; Foa, 1995), and the Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979).

The AAQ correlated significantly with all of these measures (see Table 6), but not strongly (with one exception all correlations were below .4 and above .18). Theoretically, the differences can be accounted for by the focus of the AAQ on the aspect of experiential avoidance

that cuts across several specific strategies and response domains, while these other measures focus on particular domains, targets, or methods. For example, the TCQ measures only control of intrusive thoughts, whereas the AAQ measures avoidance and control of other private events, taking non-intrusive thoughts literally, emotional evaluations, and so on. Similarly, the IES, PDS, and DES measure avoidance in the context of rather severe, often traumatic, events while the AAQ measures a more broad-based psychological phenomenon.

The highest correlation between the AAQ and related concepts was with measure of thought suppression (the WBSI; Study 3, 8; $r = .44 - .50$; see Table 6). In order to determine if the AAQ measured something beyond the occurrence and suppression of unwanted thoughts, partial correlations were examined between the AAQ and a variety of measures of psychopathology we will describe in the next section. In all cases (see Table 7) removing the impact of the WBSI failed to remove the significant relationship between the AAQ and these measures of psychological health, indicating that the AAQ measures a process that goes beyond thought suppression alone, as the underlying theory suggests should be the case.

Relation to Behavioral and Physical Health Outcomes

If experiential avoidance as assessed by the AAQ is a key behavioral process, then the AAQ should correlate with measures of general psychopathology and important types of psychopathology. As is shown in Table 5, these expectations were generally confirmed. The AAQ correlated significantly and moderately to highly with measures of general psychopathology. (Unless otherwise noted, all correlations were significant at the .01 level or below, as per Table 5.) The AAQ correlated between .49 and .53 with the Global Severity Index of the SCL-90-R (Study 3, 4), and between .56 and .70 with the Brief Symptom Inventory (Study

1, 5, 6). The AAQ also correlated moderately (.32 - .41) with general mental health (GHQ-12 – Study 9), perceived physical health (PPH – Study 9), and work-related well-being and stress (AWW and JITS – Study 9) in a worksite based population under treatment for stress. Finally, the AAQ correlated moderately (-.40) with the total score from the Quality of Life Inventory (Study 10), which measures quality of life and general life satisfaction across 17 specific life domains (e.g., work, love, and health).

The AAQ also correlate with measures of anxiety and depression. The AAQ correlated moderately to highly (.36 to .72) with the Beck Depression Inventory (both the BDI and BDI-II – Study 2, 4, 5, 8, 9), and between .35 and .58 with the Beck Anxiety Inventory (Study 2, 3). The AAQ correlates with social phobia, agoraphobia, and blood/injury phobia (sub-scales of the FQ – Study 5; correlations of .44-.55), with the fear of intimacy (.33 – Study 3), and anxiety sensitivity (.52 – Study 7). Diagnosed agoraphobics had significantly higher mean scores on the AAQ than non-agoraphobics ($t(74) = 3.70, p = .000$; agoraphobics: $M = 41.61, SD = 7.09$; non-agoraphobics: $M = 34.91, SD = 8.69$; Study 5). All of these findings are consistent with the view that attempts to avoid or control private experience by inaction may often be pathogenic.

The AAQ also correlated moderately to highly with trauma symptoms and trauma beliefs (TSI and TSIBS – Study 6; correlations between .55 - .68), as might be expected. Women with a history of child sexual abuse (CSA) also had significantly higher mean scores on the AAQ than women without a CSA history ($t(256) = -2.46, p < .05$; CSA: $M = 25.75, SD = 6.19$; No CSA: $M = 23.64, SD = 6.10$; Study 6). The AAQ correlated significantly (correlations between .17 - .26) with the re-experiencing and arousal sub-scales of the PDS (Study 4), and the intrusion experiences sub-scale of the IES (Study 4), although the size of these correlations was rather

small. Given these mixed results, future research with clinical populations of survivors of abuse and trauma may be needed to more fully assess the relationship between experiential avoidance and measures of trauma history and symptoms.

Norms

AAQ mean scores in clinical populations (studies 1, 2, and 5) did not differ by ethnicity or age (please see Table 8). However, AAQ mean scores differed by gender, with females scoring slightly higher ($F = 21.3$; $p = .000$; females: $M = 37.3$; $SD = 7.9$; males: $M = 34.7$; $SD = 7.8$). AAQ mean scores in non-clinical populations (studies 3, 4, and 10) did not differ by gender or age (please see Table 8). However, AAQ mean scores differed by ethnicity, with non-Caucasians scoring slightly higher ($F = 9.3$; $p = .002$; Caucasians: $M = 32.9$; $SD = 6.9$; non-Caucasians: $M = 34.5$; $SD = 6.8$). In summary, females scored higher on the AAQ than their male counterparts among clinical populations and non-Caucasians scored higher on the AAQ than their Caucasian counterparts among non-clinical populations. These differences may make sense since less advantaged groups are undoubtedly exposed to more difficult emotional material, and avoidance seems to be a common coping strategy throughout the population.

AAQ scores of 42 and 38 represent the upper quartile of experiential avoidance in clinical (studies 1, 2, and 5) and non-clinical populations (studies 3, 4, and 10; please see Table 9). Further breakouts of these cut points are available by gender, ethnicity, and age (please see Table 9). These norms should be used with caution, however. Experiential avoidance represents a set of actions that are apparently associated with psychopathology, but nothing in these data would allow AAQ results to be used in a categorical clinical fashion (e.g., to diagnose patients). A child placed in a highly anxiety provoking family environment might learn to be emotionally avoidant,

but this method of coping is not necessarily pathological given the alternatives. The point is not to add further pathological labels, but to allow researchers to begin to investigate how experientially avoidant behavior functions and how better forms of adjustment might be established.

General Discussion

When examined across of pool of over 1,000 patients and about 1,400 non-patients the present instrument shows operational characteristics that provides some support for an ACT and RFT conception of experiential avoidance. This account suggests that several characteristics are likely to be related to a significant degree: cognitive entanglement, excessively negative evaluations of private experiences, negative self-references, inability to take needed action in the face of private events, and a high need for emotional and cognitive control. The AAQ suggests that a common core process may indeed cut through these diverse areas. In the present development studies, items such as “anxiety is bad” or the inversely scored “I’m not afraid of my feelings” (negative evaluations of private experiences) did indeed covary with items such as the inversely scored item “When I evaluate something negatively, I usually recognize that this is just a reaction, not an objective fact” (cognitive entanglement), or with the inversely score item “I rarely worry about getting my anxieties, worries, and feelings under control” (high need for emotional and cognitive control). Furthermore, as the theory suggests should occur, this process correlates with many forms of psychopathology, and does so beyond existing related processes or social desirability and self-presentation.

The present study also identifies a research tool for exploring experiential avoidance as a theoretical construct, particularly in large population-based studies. Severely caveats are worth

noting about the AAQ as a measure, however.

There has long been a debate among behavioral assessors about the appropriateness of psychometric criteria in evaluating behavioral assessment instruments (e.g., Hayes, Nelson, & Jarrett, 1987). The contextual behavioral nature of experiential avoidance and its multiple features do not fully fit psychometric assumptions (e.g., the idea that there is an underlying “true score” that should not vary much from time to time and that is estimated by highly internally consistent items sets). In an ACT / RFT conception of experiential avoidance, patients may become excessive entangled with their own thoughts, particularly negative self-referential thoughts and negative evaluations of private experiences. In some situations they may react to the pain this produces by unproductive attempts at emotional regulation such as thought suppression, emotional suppression, reason-giving, or inactivity. These tendencies are not underlying traits so much as situated actions, and they have many behavioral features, each of which might be separately assessed.

We have attempted to develop a simple, broad instrument that might help spur population-based research precisely so that the complexities of experiential avoidance might be explored, not because we believe that it be adequately summarized in a 9-item single-factor scale. We deliberately began with items that were general rather than specific to particular clinical domains or syndromes, and we deliberately sought out a very short single-factor solution through exploratory factor analysis. While the 9-item single-factor solution described in Studies 1 and 2 provided a good fit, other solutions almost certainly exist that would begin to parse the general concept of experiential avoidance into its components. It is not a goal of structural equation modeling to produce a single best solution, but rather to confirm if a given solution is

relatively adequate.

While the AAQ seems useful for its intended purpose, additional scale development seems clearly warranted. Some of the items seem too complex. The alpha level (though acceptable for a new scale, especially with so few items), seems likely to remain an issue because the underlying theory used to develop this measure itself suggests that the psychological processes being measured necessarily will include events that can participate in other, more specific processes. Additional attention to these processes might give rise to a more multidimensional approach that could ultimately offer additional utility as a research instrument. The AAQ is meant only as a place to begin that search.

This hope is not entirely hypothetical. A very early version of the AAQ has already been modified by Geiser (1992) for use as a measure of experiential avoidance specifically in the area of chronic pain. McCracken (1998) has recently shown that this instrument leads to a multi-factorial assessment of the dimensions of acceptance of chronic pain with very interesting measurement characteristics. McCracken found that specific dimensions of the acceptance of pain were associated with reports of lower pain intensity, less pain-related anxiety and avoidance, less depression, less physical and psychosocial disability, more daily uptime, and better work status. A relatively low correlation between acceptance and pain intensity showed that higher acceptance was not simply a function of having lower levels of pain. Regression analyses showed that acceptance of pain predicted better adjustment on all other measures of patient function, independent of perceived pain intensity. McCracken's data provide further evidence both that the area of acceptance is worth exploration and that that multi-factor, disorder specific forms of the AAQ may be successfully constructed. It could be that other specific

measures of experiential avoidance relevant to anxiety, depression, and other areas, could be developed.

The AAQ seems likely to be relatively insensitive when as used as a process measure to assess the impact of acceptance-based treatment programs such as ACT, even though it has already occasionally been used that way (e.g., Bond & Bunce, 2000 was able to assess some of the change processes in an ACT to stress management using the 16-item version). Acceptance-focused treatments target the acceptance of *particular* thoughts and feelings that are difficult for *particular* clients or classes of clients. More targeted measures that specify these private events and assess the degree to which clients of particular types are working to avoid them have been successful as process measures in specific areas (e.g., Gifford, 2002). Conversely, the AAQ produces a relatively truncated range of scores (due to the very small number of items) and focused on more global concerns that deal with experiential avoidance at a high level of abstraction as compared to the actual targets of acceptance-based treatment in concrete instances. Researchers needing process measures of experiential avoidance in actual clinical trials should not assume that the AAQ will be sensitive to their interventions. At the present stage of development a variety of measures, including those specifically focused on the domains treated, seem warranted.

The assessment of experiential avoidance is in its infancy, but the data so far suggest that it is a powerful theoretical concept that draws together several recent areas of research in experimental psychopathology and clinical intervention. It is a difficult construct to measure through self-report because of the very language entanglement issues that it addresses. Overt behavioral measures of in session experiential avoidance have already been developed, but their

use is arduous (Khorakiwala, Hayes, & Wilson, 1991). A variety of behavioral assessment tools may ultimately be needed to obtain practical and useful measures in this interesting assessment area. The AAQ provides a beginning that might help foster that exploration.

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Figure Captions

Figure 1. Factor loads in the original model.

Figure 2. Factor loadings in the confirmatory analysis.

Table 1

32 item pool tested for the Acceptance and Action Questionnaire

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

1-----	2-----	3-----	4-----	5-----	6-----	7-----	
Never True	Very rarely True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True	
1.	You can't really control what you think and feel.						_____
2.	My thoughts and feelings are not just reactions, they are "me."						_____
3.	I am able to take action on a problem even if I am uncertain what is the right thing to do.						_____
4.	A person who is really "together" should not struggle with things the way I do.						_____
5.	There is really nothing anyone can do to keep from having thoughts and feelings that they don't like. .						_____
6.	I often catch myself daydreaming about things I've done and what I would do differently next time. . .						_____
7.	A person's therapy can be considered successful even if he or she isn't happy or self-confident most of the time afterwards.						_____
8.	When I feel depressed or anxious, I am unable to take care of my responsibilities.						_____
9.	I try to suppress thoughts and feelings that I don't like by just not thinking about them.						_____
10.	There are not many activities that I stop doing when I am feeling depressed or anxious.						_____
11.	It's OK to feel depressed or anxious.						_____
12.	It's unnecessary for me to learn to control my feelings in order to handle my life well.						_____
13.	I avoid putting myself in situations where I am uncomfortable.						_____
14.	I am hopeful that things will change for me.						_____
15.	It is difficult to stick to a decision until I get my thoughts together.						_____
16.	I rarely worry about getting my anxieties, worries, and feelings under control.						_____
17.	In order for me to do something important, I have to have all my doubts worked out.						_____
18.	I spend a lot of time thinking about things I'll do once I feel better.						_____
19.	I'm not afraid of my feelings.						_____
20.	When I evaluate something negatively, I usually recognize that this is just a reaction, not an objective fact.						_____
21.	I don't eat or drink more than usual when I'm going through an emotionally upsetting time.						_____
22.	In order for me to be willing to do something, I have to feel good about it.						_____
23.	What I think and feel are not necessarily good indications of the way things really are in the world. . .						_____

Table 1 (continued)

32 item pool tested for the Acceptance and Action Questionnaire

- 24. When I compare myself to other people, it seems that most of them are handling their lives better than I do. _____
- 25. I try hard to avoid feeling depressed or anxious. _____
- 26. I believe that my opinions are usually true. _____
- 27. I usually don't avoid situations that might provoke unpleasant thoughts and feelings in me. _____
- 28. Anxiety is bad. _____
- 29. Despite doubts, I feel as though I can set a course in my life and then stick to it. _____
- 30. In order to take action, I have to be sure in my own mind that the course of action I'm taking is correct. _____
- 31. If I could magically remove all the painful experiences I've had in my life, I would do so. _____
- 32. I am in control of my life. _____

Ratings on items 1, 3, 5, 7, 10, 11, 12, 14, 16, 19, 20, 21, 23, 27, 29, and 32 are reversed for scoring purposes.

Table 3

The Acceptance and Action Questionnaire (AAQ)

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

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

- _____ 1. I am able to take action on a problem even if I am uncertain what is the right thing to do.
- _____ 2. I often catch myself daydreaming about things I've done and what I would do differently next time.
- _____ 3. When I feel depressed or anxious, I am unable to take care of my responsibilities.
- _____ 4. I rarely worry about getting my anxieties, worries, and feelings under control.
- _____ 5. I'm not afraid of my feelings.
- _____ 6. When I evaluate something negatively, I usually recognize that this is just a reaction, not an objective fact.
- _____ 7. When I compare myself to other people, it seems that most of them are handling their lives better than I do.
- _____ 8. Anxiety is bad.
- _____ 9. If I could magically remove all the painful experiences I've had in my life, I would do so.

Ratings on items 1, 4, 5, and 6 are reversed for scoring purposes.

Table 4

Goodness of Fit Statistics for the Acceptance and Action Questionnaire

	Original Validation Study (Study 1)	Cross Validation Study (Study 2)
Chi-square with 27 degrees of freedom	35.19 (p = 0.13)	47.61 (p = 0.0085)
Root mean square error of approximation (RMSEA)	0.025	0.041
Root mean square residual (RMR)	0.047	0.050
Goodness of fit index (GFI)	.99	.98
Adjusted goodness of fit index (AGFI)	.98	.97
Normed fit index (NFI)	.89	.83
Non-normed fit index (NNFI)	.96	.89
Comparative fit index (CFI)	.97	.92
Incremental fit index	.97	.92
Relative fit index (RFI)	.85	.77

Table 5

Relationship to psychopathology and quality of life measures

Measure	Study	Correlation with AAQ (<i>r</i>)	<i>p</i>
General Measures of Behavioral or Physical Health			
SCL-90-R GSI	4	.53	.000
	3	.49	.000
BSI GSI	5	.70	.000
	6	.57	.000
	1	.56	.000
Perceived Physical Health	9	.41	.000
Affective Well-being at Work	9	-.38	.000
Job Induced Tension Scale	9	.37	.000
General Health Questionnaire-12	9	.32	.001
Quality of Life Inventory (QOLI)	10	-.40	.000
Depression			
BDI	5	.72	.000
	9	.66	.000
	4	.51	.000
	2	.36	.000
BDI-II	8	.60	.000
Fear and Anxiety			
BAI	2	.58	.000
	3	.35	.000
Anxiety Sensitivity Index	7	.52	.000
FQ Social phobia	5	.55	.000
FQ Blood/injury phobia	5	.49	.001
FQ Agoraphobia	5	.44	.005
Fear of Intimacy Scale	3	.33	.000
Psychological trauma			
Traumatic Stress Inst. Belief Scale	6	.68	.000
Trauma Symptom Inventory	6	.55	.000
IES Intrusion experiences	4	.26	.000
PDS Re-experiencing	4	.18	.000
PDS Arousal	4	.17	.000
Sexual Experiences Survey:			
Extent of adolescent sexual victimization	4	.18	.002
Conflict Tactics Scale-2: Physical Assault Subscale	4	.18	.002

Table 6

Relationship to related constructs

Measure	Study	Correlation with AAQ			
		r > .40		r < .40	
		r	p	r	p
Thought suppression, control					
WBSI	8	.50	.001		
WBSI	3	.44	.000		
TCQ Punishment	3			.37	.000
TCQ Worry	3			.36	.000
Avoidance					
WOC Escape-avoidance	4			.38	.000
WOC Escape-avoidance	6			.35	.000
WOC Distancing	6			.21	.000
DES	4			.33	.000
IES Avoidant	4			.26	.000
IES Avoidant	6			.24	.000
PDS Avoidance	4			.26	.000
Social Desirability					
ESDS	5	-.60	.000		
ESDS	3	-.51	.000		
MCSD	3			-.07	NS
MCSD	5			-.20	NS
MCSD-S	8			-.05	NS

Table 7

Relationship to psychopathology when variance due to social desirability and thought suppression is removed

	Correlation with AAQ after partial correlation of:					
	ESDS		MCSD		WBSI	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Study 3 (<i>n</i> = 202)						
SCL-90-R GSI	.25	.000	--	--	.34	.000
Beck Anxiety Inventory (BAI)	.10	.155	--	--	.20	.006
White Bear Suppression Inv. (WBSI)	.21	.004	--	--	--	--
Thought Control Quest., Worry	.21	.004	--	--	.21	.003
TCQ, Punishment	.24	.001	--	--	.24	.001
Fear of Intimacy Scale (FIS)	.20	.004	--	--	.25	.000
Study 5 (<i>n</i> = 41)						
BSI GSI	.47	.003	.69	.000	--	--
Beck Depression Inventory (BDI)	.55	.000	.73	.000	--	--
FQ, Agoraphobia	.36	.026	.45	.004	--	--
FQ, Blood/injury phobia	.45	.005	.47	.003	--	--
FQ, Social phobia	.27	.103	.53	.000	--	--
Study 8 (<i>n</i> = 51))						
Beck Depression Inventory-II (BDI-II)	--	--	.60	.000	.53	--
White Bear Suppression Inv. (WBSI)	--	--	.50	.000	--	--

Table 8

AAQ (9-item) scores: Differences by gender and ethnicity

	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Study 1 (<i>n</i> = 460)				
Female (<i>n</i> = 276)	36.3	8.5		
Male (<i>n</i> = 161)	32.8	7.9	9.1	.000
Caucasian (<i>n</i> = 373)	34.9	8.4		
Non-Caucasian (<i>n</i> = 65)	35.6	8.9	1.4	.239
Study 2 (<i>n</i> = 419)				
Female (<i>n</i> = 251)	38.1	7.6		
Male (<i>n</i> = 111)	36.3	6.6	4.8	.029
Caucasian (<i>n</i> = N/A)	N/A	N/A		
Non-Caucasian (<i>n</i> = N/A)	N/A	N/A	N/A	N/A
Study 3 (<i>n</i> = 202)				
Female (<i>n</i> = 137)	33.8	6.6		
Male (<i>n</i> = 62)	32.7	6.4	1.1	.302
Caucasian (<i>n</i> = 141)	33.0	6.7		
Non-Caucasian (<i>n</i> = 57)	34.6	6.3	2.6	.107
Study 4 (<i>n</i> = 304)				
Female (<i>n</i> = 304)	32.2	7.0		
Male (<i>n</i> = 0)	--	--	N/A	N/A
Caucasian (<i>n</i> = 248)	32.2	7.0		
Non-Caucasian (<i>n</i> = 54)	32.3	7.2	.0	.914
Study 5 (<i>n</i> = 41)				
Female (<i>n</i> = 29)	40.6	7.4		
Male (<i>n</i> = 12)	44.0	6.0	2.0	.168
Caucasian (<i>n</i> = 41)	41.6	7.1		
Non-Caucasian (<i>n</i> = 0)	--	--	N/A	N/A
Study 10 (<i>n</i> = 381)				
Female (<i>n</i> = 179)	35.1	7.1		
Male (<i>n</i> = 202)	33.4	6.5	-2.4 ¹	.017
Caucasian (<i>n</i> = 247)	33.6	6.9		
Non-Caucasian (<i>n</i> = 134)	35.4	6.7	-2.4 ¹	.019

¹ t score

Table 2

List of measures and associated alphas, focus, and reference, by study

Measure	Study	Alpha	Focus of Measure	Reference
Affective Well-being at Work (AWW)	9	.92	frequency of affects toward work	Warr, 1990
Anxiety Sensitivity Index (ASI)	7	.88	fear of anxiety sensations	Peterson & Reiss, 1992
Beck Anxiety Inventory (BAI)	2, 3	.92	symptoms of anxiety	Beck, Epstein, Brown, & Steer, 1988
Beck Depression Inventory (BDI); BDI-II	2, 4, 5, 8	.87, .92	depressive thought and attitude	Beck, Rush, Shaw, & Emery, 1979; Beck, Steer, & Brown, 1996
Brief Symptom Inventory (BSI)	1, 5, 6, 9	.71 - .85	psychological symptoms	Derogatis & Melisaratos, 1983
Conflict Tactics Scales-2 (CTS-2); Physical Assault Subscale	4	.86	physical assault on a partner	Straus, et al., 1996; Straus, et al., 1995
Dissociative Experiences Scale (DES)	4, 8	.96	dissociative experiences	Bernstein & Putnam, 1986; Dubester, & Braun, 1995
Edwards' Social Desirability Scale (ESDS)	3, 5	.83 - .87 ¹	tendency to describe self in socially desirable manner	Edwards, 1957
Fear of Intimacy Scale (FIS)	3	.93	fear of intimacy	Descutner & Thelen, 1991
Fear Questionnaire (FQ)	5	.71 - .81	agoraphobia, social phobia, blood/injury phobia	Marks & Mathews, 1979; Oei, Moylan, & Evans, 1991
General Health Questionnaire-12 (GHQ-12)	9	.70	general mental health	Goldberg, 1978
Impact of Events Scale (IES)	4, 6	.79 - .82	intrusive and avoidant trauma symptoms	Foa, 1995

Job Induced Tension Scale (JITS)	9	.83	degree of strain from work	House & Rizzo, 1972
Marlowe-Crowne Social Desirability Scale (MCSD); MCSD-Short-form	3, 5, 8	.82 ¹ , .76 ¹	impression management	Crowne & Marlowe, 1960; Zook & Sipps, 1985
Occupational Stress Indicator (OSI): Perceived Physical Health (PPH)	9	.74	symptoms of ill health	Cooper, Sloan, & Williams, 1988
Post-traumatic stress Diagnostic Scale (PDS)	4	.78 - .84	severity of PTSD symptoms	Foa, 1995
Quality of Life Inventory (QOLI)	10	.77 - .89	quality of life	Frisch, 1992
Sexual Experiences Survey	4	.74	adolescent sexual victimization	Koss & Gidycz, 1985; Koss & Oros (1982)
Symptom Checklist-90 Revised (SCL-90-R)	3, 4	.97	psychological symptoms	Derogatis, 1994; Hafkenscheid, 1993
Thought Control Questionnaire (TCQ)	3, 8	.77	strategies to control unpleasant and unwanted thoughts	Wells & Davies, 1994
Trauma Symptom Inventory (TSI)	6	.74 - .90	traumatic symptoms	Briere, 1995
Traumatic Stress Inst. Beliefs Scale (TSIBS)	6	.98	traumatic symptoms	Pearlman, 1996
Ways of Coping Questionnaire (WOC)	4, 6	.56 - .85	coping strategies	Folkman & Lazarus, 1988
White Bear Suppression Inventory (WBSI)	3, 8	.89	tendency to suppress unwanted negative thoughts	Wegner & Zanakos, 1994

¹Kuder-Richardson Formula 20

Table 9

AAQ (9-item) scores: Differences in upper quartile scores by gender, race, and age

	<i>M</i>	<i>F</i>	<i>p</i>
Clinical studies (<i>n</i> = 241) ¹	42.0		
Gender			
Female (<i>n</i> = 151)	43.0		
Male (<i>n</i> = 77)	40.0	28.835	.000
Ethnicity			
Caucasian (<i>n</i> = 116)	41.2		
Non-Caucasian (<i>n</i> = 16)	39.8	2.086	.151
Age			
Under 21 (<i>n</i> = 35)	41.0		
21 – 30 (<i>n</i> = 85)	42.0		
31 – 40 (<i>n</i> = 55)	43.0		
41 – 50 (<i>n</i> = 43)	41.0		
51 and older (<i>n</i> = 21)	40.2	4.148	.003
Non-Clinical studies (<i>n</i> = 270) ²	38.0		
Gender			
Female (<i>n</i> = 175)	38.0		
Male (<i>n</i> = 70)	38.0	2.027	.156
Ethnicity			
Caucasian (<i>n</i> = 194)	37.0		
Non-Caucasian (<i>n</i> = 76)	39.0	8.090	.005
Age			
Under 21 (<i>n</i> = 212)	38.0		
21 and older (<i>n</i> = 29)	39.0	.786	.376

¹ Studies 1, 2, and 5² Studies 3, 4, and 10