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RUNNING HEAD: CONCERNS OVER AAQ-II AS A MEASURE OF EXPERIENTIAL AVOIDANCE

Title: The Acceptance and Action Questionnaire-II (AAQ-II) as a measure of experiential avoidance: Concerns over discriminant validity.

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Abstract

Psychological inflexibility and experiential avoidance are key constructs in the Acceptance and Commitment Therapy (ACT) model of behavior change. Wolgast (2014) questioned the construct validity of the Acceptance and Action Questionnaire-II (AAQ-II), the most used self-report instrument to assess the efficacy of ACT interventions. Wolgast suggested that the AAQ-II measured psychological distress rather than psychological inflexibility and experiential avoidance. The current study further examined the construct validity of the AAQ-II by conducting an online cross-sectional survey (n = 524), including separate measures of experiential avoidance and psychological distress. Confirmatory factor analyses indicated that items from the AAQ-II correlated more highly with measures of depression, anxiety, and stress than the Brief Experiential Avoidance Questionnaire (BEAQ). Implications include that, as broad measures of experiential avoidance, the AAQ-II and BEAQ may not measure the same construct. In terms of psychological distress, the BEAQ has greater discriminant validity than the AAQ-II, and perhaps an alternative instrument of psychological inflexibility might be needed to assess core outcomes in ACT intervention research.

Keywords: Experiential avoidance, psychological flexibility, psychological distress, AAQ-II, Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999; 2012) has gained increasing appeal over recent years to a broad spectrum of clinicians and mental health professionals. A central assumption of ACT is that much of psychopathology is underpinned by a process of experiential avoidance (e.g., Hayes, Levin, Plumb-Vilardarga, Villatte, & Pistorello, 2013; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Vilardarga, Estévez, Levin, & Hayes, 2012). Experiential avoidance is behavior that attempts to "alter the frequency or form of unwanted private events, including thoughts, memories, and bodily sensations, even when doing so causes personal harm" (Hayes, Pistorello, & Levin, 2012, p. 981). The present paper does not address the efficacy of ACT as a therapeutic model. Indeed, there is widespread evidence for the efficacy of ACT based interventions across a wide range of psychological disorders (e.g., A-Tjak et al., 2015; Powers, Zum Vörde Sive Vording, & Emmelkamp, 2009). What is at stake, however, is the need for clarity on the distinction between experiential avoidance as both a process and an outcome (Chawla & Ostafin, 2007; Zvolensky, Felder, Leen-Felder, & Yartz, 2005). A number of researchers (e.g., Francis, Dawson, & Golijani-Moghaddam, 2016; Gámez, Chimielewski, Kotiv, Ruggero, & Watson 2011; Gámez et al., 2014; Rochefort, Baldwin, & Chmielewski, 2018; Vaughan-Johnston, Quickert, & MacDonald, 2017; Wolgast, 2014) have raised concerns over the validity of the most commonly used self-report measure of experiential avoidance, the Acceptance and Action Questionnaire-II (AAQ-II, Bond et al., 2011), as an instrument to assess the efficacy of interventions aimed to reduce it. The aim of the current paper is to further examine these concerns with the discriminant validity of the AAQ-II.

The ACT model aims to decrease experiential avoidance with an overriding goal of increasing psychological flexibility in clients (Hayes, et al., 2012; McCracken & Guiterrez-Martinez, 2011; McCracken & Morley, 2015), while targeting rigid fused thoughts and problematic rule-following behavior that leads to the development and maintenance of

psychopathology. Psychological flexibility is referred to as the "ability to contact the present moment more fully as a conscious human being, and to change or persist in behavior when doing so serves valued ends" (Hayes, Luoma, Bond, Masuda, & Lillis, 2006, p. 6). As a construct it is conceptualised as a continuum, with psychological flexibility at one end and psychological inflexibility at the other. The ACT model of psychological flexibility comprises six component processes, referred to as the *hexaflex*, and includes *cognitive defusion*, *contact with the present moment*, *self-as-context*, *acceptance*, *values*, and *committed action* (Hayes et al., 2013). The overarching focus is on all six processes of the hexaflex (i.e., creating psychological flexibility), although it should be noted that a particular emphasis is placed on the relationship a person has with unwanted and difficult thoughts and emotions rather than the more conventional focus on the content of such private events (see Luoma, Drake, Kohlenberg, & Hayes, 2011). Psychological flexibility has been consistently demonstrated to be a moderator of psychological distress (e.g., Bardeen, Fergus, & Orcutt, 2013; Bardeen, Fergus, & Orcutt, 2014; Gloster, Meyer, & Lieb, 2017; Kashdan & Kane, 2011).

Experiential avoidance can become a harmful process if it is largely rule-governed behavior that does not take context into account and is applied rigidly and inflexibly so that a large degree of effort is made to control, or struggle with, private events (i.e., thoughts, feelings, emotions) (Kashdan, Barrios, Forsyth, & Steger, 2006). The cardinal function that experiential avoidance plays in psychological health has been explored in numerous studies (e.g., Fledderus, Bohlmeijer, & Pieterse, 2010; Gerhart, Baker, Hoerger, & Ronan, 2014; Gerhart, Heath, Fitzgerald, & Hoerger, 2013; Kashdan & Breen, 2007; Kashdan, Breen, Afram, & Terhar, 2010; Kashdan et al., 2013; Machell, Goodman, & Kashdan, 2015; Zettle et al., 2010). For example, in a cross-sectional daily self-report questionnaire study, Kashdan

et al. (2006) concluded that experiential avoidance completely mediated the effect of emotion regulation strategies (suppression and reappraisal) on measures of psychological wellbeing.

The original 16-item Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) was primarily developed as a tool to assess the construct of experiential avoidance. When Bond et al. (2011) published the revised 7-item AAQ-II the focus shifted somewhat to include an assessment of both psychological inflexibility and experiential avoidance, where the authors (as noted above) conceived of experiential avoidance as being synonymous with psychological inflexibility. A number of studies have supported the AAQ-II as a measure of psychological inflexibility (e.g., Fledderus, Voshaar, ten Klooster, & Bohlmeijer, 2012; Gloster et al., 2017; Pennato, Berrocal, Bernini, & Rivas, 2013). Furthermore, the AAQ-II has been used both as a measure of experiential avoidance that appears to explain additional variance above and beyond traditional coping strategies (e.g., self-distraction, positive reframing, denial; Karekla & Panayiotou, 2011), and as a measure of psychological inflexibility that accounts for variance beyond standardized measures of negative affect (Gloster, Klotsche, Chaker, Hummel, & Hoyer, 2011; Gloster et al., 2017). Although it was purportedly designed to assess all six components of the hexaflex model of psychological flexibility (Bond et al., 2011), it is still the most widely used instrument to test experiential avoidance (see Francis et al., 2016; Karademas et al., 2017; Lewis & Naugle, 2017; Sung, Park, & Choi, 2018; Vaughan-Johnston et al., 2017).

Of particular interest for the current study, Wolgast (2014) claimed that the AAQ-II measured psychological distress rather than experiential avoidance or psychological inflexibility. Wolgast elucidated an apparent difficulty with the AAQ-II of its capacity to discriminate psychological inflexibility/experiential avoidance as a somewhat stable trait on the one hand and as an outcome measure on the other. This is related to concerns over the face validity of the AAQ-II (e.g., Gámez et al., 2011; Francis et al., 2016; Vaughan-Johnston

et al., 2017). It seems to us that one such potential source of confounded measurement is if the items that are purported to measure experiential avoidance/psychological inflexibility also contain formulations related to adaptive or maladaptive outcomes in terms of psychological distress, well-being, or overall psychological functioning. Furthermore, for many of the items in the AAQ-II it is difficult to distinguish if a specific response is grounded in levels of psychological inflexibility/experiential avoidance or, for example, in levels of experienced aversive emotions, memories, and worries. In other words, it seems to be difficult to know if the client is reporting distress, worry, experiential avoidance, or has become somewhat socialised to the ACT model. This issue is of critical importance for as Vaughan-Johnston et al. (2017) have put it "…the conceptual uniqueness of EA [experiential avoidance] is its consideration of how people feel about their feelings (similar to 'thoughts about thoughts' in the literature on metacognition…and therefore should not be redundant with measures of feelings themselves" (p. 335). As Gámez et al. (2014) have noted, researchers and clinicians need to have confidence that the measurement tools reliably measure the construct they purport to assess.

Gámez et al. (2011) highlighted that the AAQ-II has poor discriminant validity for experiential avoidance as opposed to global negative emotionality (see also Lewis & Naugle, 2017). More simply put, the authors found that the AAQ-II struggled to discriminate distress (e.g., negative affect and neuroticism) from experiential avoidance. In an attempt to address the inherent psychometric problems in the AAQ-II measurement of experiential avoidance, Gámez et al. (2011) first developed the 62-item Multidimensional Experiential Avoidance Questionnaire (MEAQ), which comprises six subscales covering a broad gamut of the experiential avoidance construct: behavioral avoidance, distress aversion, procrastination, distraction/suppression, repression/denial, and distress endurance. Gámez et al.'s initial data indicated that the MEAQ reported lower correlation scores than the AAQ-II with low mood

and neuroticism, a finding supported by Vaughan-Johnston et al. (2017). For clinical utility and overall ease of use in clinical settings, Gámez and colleagues subsequently published a 15-item version, known as the Brief Experiential Avoidance Questionnaire (BEAQ; Gámez et al., 2014). Early indications suggest that the BEAQ sufficiently discriminates from measures of psychopathology (e.g., negative affect) and perhaps may be the more appropriate psychometric tool to assess experiential avoidance than the AAQ-II. One goal of the present study is to provide a key test of the construct validity of the AAQ-II by assessing the discriminant validity of both the AAQ-II and the BEAQ as measures of experiential avoidance. If both instruments measure experiential avoidance as a construct, they should be highly correlated in a confirmatory factor analysis and both should not correlate highly with psychological distress.

It should be acknowledged that Wolgast (2014) employed an empirical method to create his own measures of distress and acceptance within that study, and with an exploratory factor analysis proposed a three-factor structure with the AAQ-II (i.e., psychological inflexibility) and psychological distress loading on the same factor. While this strategy certainly has some merit, the measure of distress employed may be regarded as a methodological weakness as it was not a well-established clinical measurement tool with validated norms and known psychometric properties. However, Wolgast did test his measure with a sample of 30 ACT therapists to attempt to establish some validity for the tool. The current study, therefore, sought to provide a key test of Wolgast's (2014) findings by systematically improving upon Wolgast's research design and included a well validated measure of psychological distress, the Depression Anxiety and Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995; see also Henry & Crawford, 2005).

The main aim of the current study is to extend and improve upon Wolgast's (2014) work and provide a critical examination of the concerns with the validity of the AAQ-II as a

measure of experiential avoidance and psychological inflexibility, and the specific claim that it in fact is a more direct measure of psychological distress (i.e., the outcome rather than the process of experiential avoidance). Participants completed measures of psychological inflexibility and experiential avoidance (AAQ-II), experiential avoidance alone (BEAQ), and psychological distress (DASS-21) in an online cross-sectional survey design. It was predicted, on the basis of recent research (e.g., albeit with the MEAQ; Lewis & Naugle, 2017; Rochefort et al., 2018), that the BEAQ would evidence greater discriminant validity than the AAQ-II with regard to depression, anxiety, and stress, in a confirmatory factor analysis.

Method

Participants

Five hundred and fifty-seven internet users were sampled using an online survey distributed through emails to universities within the UK, social media platforms, and internet data collection websites designed for academic researchers (e.g., http:///www.findparticipants.com). The sample comprised of 354 females (64%) and 203 males (36%). The participants ranged between 18 and 73 years of age (M = 27; SD = 11). The sample consisted mostly of American (49.2%; all who resided in the US) and British (15.4%; all resident in the UK) participants. The majority of participants were of white racial identity (83%) and employed in a broad array of industries. For example, participants reported that they were employed mostly within the health and social care industry (21%), education (15%), computer industry (10%), office and administration support (8%), sales (7%), government (6%), and arts and entertainment media (4%). Aside from the gender ratio, the sample was more diverse in age, racial identity, and present employment industry than in Wolgast (2014). There were 524 participants included in the final data analysis (see Results

section for details). Before data collection began, the study gained approval by the University of XXX Institutional Research Ethics committee.

Measures

Acceptance and Action Questionnaire-II (AAQ-II)

The AAQ-II (Bond et al., 2011) is purported to be a 7-item measure of psychological inflexibility. Participants responded to items using a 7-point Likert scale from 1 (*not at all true*) to 7 (*completely true*), ($\alpha = .93$ in the present study). Test scores on the AAQ-II have demonstrated good internal consistency and test-retest reliability in community samples (Bond et al., 2011).

Brief Experiential Avoidance Questionnaire (BEAQ)

The BEAQ (Gámez et al., 2014) is a 15-item measure of experiential avoidance, and was developed with separate student, community and patient samples. Participants responded to items using a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*), ($\alpha = .87$ in the present study). Sample items include: "The key to a good life is never feeling any pain" and "I would give up a lot not to feel bad".

Depression Anxiety and Stress Scales (DASS-21)

To assess psychological distress, participants completed 21 items from the DASS-21 (Lovibond & Lovibond, 1995). The DASS-21 has been demonstrated to have sufficient construct validity in non-clinical samples (Henry & Crawford, 2005). Participants rated the frequency and severity of experiencing psychological distress in the last week. The items were rated on a 4-point Likert scale, where 0 represented "*did not apply to me at all*" and 3 represented "*applied to me very much or most of the time*", ($\alpha = .93$ in the present study).

Procedure

The three self-report measures were uploaded to the internet with the Qualtrics (Qualtrics, 2014) online survey system. Participants were emailed a link to the webpage and responded to demographic questions and clicked on a forced-choice Informed Consent confirmation question in order to proceed. A randomisation function on Qualtrics was chosen which selected the order of presentation of each of the three measures at random. Importantly, the order of items within each measure was not subject to randomisation in order to maintain the integrity of the psychometric properties of those measures. Participants completed all three measures in one logged-in session. A forced choice response format was employed and thus there was no missing data. To avoid potential careless responding (e.g., Meade & Craig, 2012), all participants were required to confirm that they were both: (a) in a room free of any distractions, and (b) would read each question carefully and answer truthfully. Any participant that selected 'no' to either option were directed to the end of the survey.

Analysis

Confirmatory factor analysis (CFA) was conducted on the items of the AAQ-II, the BEAQ, and the DASS-21, using Mplus, version 7 (Muthén & Muthén, 2015). According to the literature on the three instruments, five latent factors were estimated. Specifically, items of the AAQ-II were loaded on AAQ-II factor, items of the BEAQ were loaded on BEAQ factor, and items of the DASS-21 were loaded on their respective subscale's factor, namely depression, anxiety, and stress factors. Before conducting the models, multivariate normality of the data was assessed in two ways. First, Mahalanobis distance and its associated *p*-value were computed to identify multivariate outliers (CIT), dropping cases with $p < .001$. Second, a Mardia test was run on the remaining sample to test multivariate skew and kurtosis of the

model; a significant probability value associated to these tests indicates that data are still non-normally distributed and suggests the need to use a robust estimator, such asmaximum likelihood with mean and variance correction (MLMV).

In the CFA model, correlations among factors were freely estimated. Using the *model constraint* option in Mplus, differences between key pairs of correlation coefficients were computed to test their differences. Specifically, we tested whether correlations of the AAQ-II with each of the DASS-21 factors were larger/smaller than those between the BEAQ and the DASS-21 factors. Moreover, we compared the correlation between AAQ-II and BEAQ with each correlation of the AAQ-II with the DASS-21 factors. Before conducting the CFA, a null model in which all the variables were uncorrelated to each other was conducted to define the fit indices to be considered in the following analysis. Indeed, if the root mean square error of approximation (RMSEA) of a null model is smaller than .158, incremental measures of fit such as the comparative fit index (CFI) or the Tucker Lewis index (TLI) cannot mathematically reach acceptable values (i.e., values higher than .90), thus they are completely uninformative (Kenny, 2015). If so, goodness of fit should be evaluated using absolute fit indices, such as RMSEA and the standard root mean square residual (SRMS). Values of RMSEA lower than .08 and .05 represent mediocre and good fit, respectively (MacCallum, Browne, & Sugawara, 1996), whereas values of SRMR lower than .08 represent good fit (Hu & Bentler, 1999). Moreover, the closeness of model fit associated to the RMSEA (Cfit of RMSEA) was taken into account as a further fit index, considering non-significant probability values higher than .50 as evidence of good fit (Brown, 2015).

Results

Thirty-three participants were considered multivariate outliers due to their significant Mahalanobis distance, thus they were dropped, reducing the sample to 524 cases[1]. Despite the exclusion of outliers, multivariate skew (M = 161.75, SD = 1.97, $p < .001$) and kurtosis (M = 1928.05, SD = 4.75, $p < .001$) tests of model fit were both significant, confirming the multivariate non-normality of data and the need to use MLMV estimator. Supplementary Table 1 reports descriptive statistics of all the items included in the following CFA. The null model yielded a RMSEA of .116, thus only RMSEA, Cfit of RMSEA, and SRMR were taken into account in evaluating the fit of the following models. The fit of the CFA displayed in Figure 1 was good, with all the indices far beyond the recommended cut-offs [$\chi^2(850)$ = 1804.67, $p < .001$; RMSEA = .046; Cfit of RMSEA = .98; SRMR = .060]. Among the factors, the highest correlation detected was between anxiety and stress, r = .86, $p < .001$, 95% CI = [0.83, 0.90], whereas the lowest one was between BEAQ and stress, r = .54, $p <$ .001, 95% CI = [0.47, 0.61]. Table 1 reports the planned comparisons between correlations coefficients. The results indicated that the correlations between the AAQ-II and each of the DASS-21 factors (i.e., depression, anxiety, and stress) were significantly higher than those of the BEAQ with the DASS-21 factors. On the contrary, the correlation between the AAQ-II and the BEAQ did not differ from the correlations between the AAQ-II and each of the DASS-21 factors.

Discussion

The current data present a challenging picture of the construct validity of the AAQ-II. The CFAs indicate that there was an adequate level of convergent validity between the AAQ-II and the BEAQ, which suggests a certain level of construct overlap. Critically, the AAQ-II correlates more substantially with the Depression, Anxiety, and Stress scales of the DASS-21

[1] We conducted an additional CFA including the multivariate outliers. We detected no substantive differences between the analyses performed in this study.

than the BEAQ which provides some support for Wolgast's (2014) conclusions that the AAQ-II may primarily be a measure of psychological distress (i.e., the outcome rather than the process of psychological inflexibility; Chawla & Ostafin, 2007; Francis et al., 2016; Vaughan-Johnston et al., 2017). Importantly, the design of the present study reflects a somewhat clearer and more systematic demonstration of the construct validity of the AAQ-II as a measure of psychological distress than Wolgast (2014) as it employed standardized measures alone (i.e., BEAQ, DASS-21) with known psychometric properties, whereas Wolgast developed some measures of distress and acceptance within his own study.

The current study also replicates previous research that have found substantial correlations between the AAQ-II and psychological distress (e.g., Bond et al., 2011; Gámez et al., 2011; Rochefort et al., 2018; Vaughan-Johnston et al., 2017). It should be acknowledged that Gámez et al. (2011) and Rochefort et al. (2018) also noted a strong correlation between the AAQ-II and negative affect. Indeed, Rochefort et al. (2018) demonstrated that the AAQ-II functions more as a measure of negative affect, whereas the MEAQ (and also the BEAQ in subsequent analyses) functioned better as a measure of experiential avoidance. Our findings support those of Rochefort et al. (2017) in that the BEAQ appeared to have stronger construct validity compared to the AAQ-II in this study. This brings the face validity concerns with the AAQ-II to the fore, as it appears that the items are more confounded with traditional extant measures of depression, anxiety, or stress (or negative affect; Rochefort et al., 2018) than as a specfic measure of a higher order construct such as experiential avoidance. Further research is needed to explore the face validity concerns with the AAQ-II using an incremental validity technique with constructs that are suspected or known to be linked to the development of psychopathology (see Vaughan-Johnston et al., 2017's example of *attachment anxiety*) rather than studies that more typically

seek to merely reduce the correlations between the AAQ-II and measures of distress, or negative affect more generally.

It is possible that the small number of measures employed (3 instruments) could be seen as a limitation of the present study. Future research could consider including a wide variety of other measures of psychological distress from the general to specific (e.g., depression). It would be important in such research to keep the subject-to-item ratio (SIR) as high as possible as the temptation to use a large battery of self-report measures is strong. Indeed, a low SIR significantly reduces the possibility of correct factor solutions in factor analyses (e.g., SIR < 10:1; Costello & Osbourne, 2005). For the purposes of the current study, the SIR was deemed acceptable (i.e., SIR = 12:1). A further limitation of the present study might include a criticism of common method bias (e.g., Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). That is, all data was obtained from the same source and thus may be subject to problems such as the consistency motif and social desirability bias. It should be noted that the presentation order of each of the measures was randomized across participants to reduce response bias. Future research could also consider including a wider range of measures of psychological distress along with a clinical sample, and, perhaps employ additional analytical techniques such as confirmatory factor analyses or structural equation modelling methods.

Future research could consider an examination comparing the validity of the AAQ-II versus the BEAQ in predicting overt avoidance behavior in controlled laboratory settings using clinical analog preparations. The currrent findings suggest, at the least, that the AAQ-II might be somewhat more predictive of subjective distress relative to overt behavioral avoidance (e.g., avoidance of an aversive stimulus). However, it should be acknowledged that this is mere speculation as we were not able to test this specific prediction with the current design. Moreover, while this proposition has not been examined empirically in any published

study to date, the lack of utility of the State Trait Anxiety Inventory (Spielberger et al., 1983), against which the AAQ was originally validated, to clearly predict avoidance rates of conditioned aversive stimuli has been noted (Haddad, Pritchett, Lissek, & Lau, 2012; Torrents-Rodas et al., 2013), and the attempt to understand why has already begun in empirical studies on fear conditioning (e.g., Vervliet & Indeku, 2015). At present, therefore, even though the AAQ-II and BEAQ are correlated measures, it seems that the most prudent course of action could be to utilise the BEAQ as perhaps a more focused measure of experiential avoidance due to it's greater discriminant validity from psychological distress than the AAQ-II. However, while saying this, it should be acknowledged that it would be beneficial to incorporate the BEAQ in ACT-based intervention studies as part of a broader package of measures of psychological inflexibility and experiential avoidance such as the AAQ-II, the CompACT (Francis et al., 2016), the Avoidance and Fusion Questionnaire for Youth (Greco, Baer, & Lambert, 2008), and the MEAQ.

It might be the case, however, that the BEAQ does not assess experiential avoidance as the construct is conceptualised within ACT as it could be argued that the focus appears to be more on overt behavioral avoidance rather than avoidance of internal private thoughts and feelings. However, upon closer inspection, four of the 15 BEAQ items derive from the MEAQ Behavioral Avoidance scale, with three further items (two from Procrastination and one from Distress Endurance) from other subscales of the MEAQ that could be regarded as specifically focused on overt behavioral avoidance. Thus, this still leaves over half of the 15 BEAQ items with a particular focus on avoidance of internal experiences and attitudes. Nonetheless, it is difficult to find evidence for a clear emprically-based process account of why overt and covert avoidance behavior should not correlate or that one should have no influence over the other in the development and maintenance of psychopathological disorders.

The present study highlights an important point raised by Wolgast (2014) and Kashdan and Rottenberg (2010) about the difficulty in reconciling a reliance on measures of a trait-like construct (i.e., psychological inflexibility and experiential avoidance) with an underlying philosophy of *functional contextualism*, which proposes that both psychological inflexibility and experiential avoidance are dynamic contextually-controlled behaviors, or forms of *situated action* (Hayes et al., 2004). The problem with the lack of construct validity of the AAQ-II as a measure of experiential avoidance is somewhat at odds with the theory of language and cognition that underpins ACT (Hayes, 2004), known as relational frame theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001). More specifically, at the core of the functional contextual approach, from which RFT emerged, and which in turn provides the empirical basis for ACT, is a commitment to the prediction-and-influence over variables of interest (Guinther & Dougher, 2015). However, this is an ambitious goal given ACT's more recent dealings with psychometric constructs such as psychological flexibility. There is a pressing need for future research to be conducted with tightly controlled empirical RFT-consistent preparations that can demonstrate prediction-and-influence over the contextual control of core constructs of ACT, such as psychological flexibility, that could help inform the development of more useful self-report instruments that may take the contextual variability of behavior into account.

There could be an argument that the present study represents only a small incremental contribution on what is already *known* regarding the validity of the AAQ-II as a measure of experiential avoidance (e.g., Lewis & Naugle, 2017; Rochefort et al., 2018; Wolgast, 2014). However, we feel that there is emerging consensus, driven in large part by the Open Science Collaboration (OSC), that scientific *merit* does not necessarily equate to scientific *novelty*. Indeed, as stated by the OSC, "reproducibility is not well understood because the incentives for indicidual scientists prioritize novelty over replication" (OSC, 2015, p. 6). Furthermore,

as highlighted by the OSC, "the claim that 'we already know this' belies the uncertainty of scientific evidence…[and that] replication can increase certainty when findings are reproduced and promote innovation when they are not" (OSC, 2015, p. 7). Thus, we argue that the accumulation of similar findings and outcomes such as the current study and those of Rochefort et al. (2018) help us to clarify our scientific understanding of the reliability and validity of key measures of core constructs within the broader ACT model. Moreover, such accumulation of evidence could be an important driver to novel and innovative instrument development.

To conclude, the present study extends previous analyses of the construct validity of the AAQ-II (e.g., Lewis & Naugle, 2017; Rochefort et al., 2017) and found that the BEAQ as a measure of experiential avoidance appears to more sufficiently discriminate from general psychological distress than the AAQ-II. The AAQ-II appears to assess a construct somewhere between experiential avoidance and distress, thus losing a certain level of discriminant validity. While it could be argued that clinicians and researchers can be lead to re-focus on employing the AAQ-II as a measure of psychological inflexibility alone, such a re-branding is difficult in practice as the AAQ-II was first published as a measure of psychological inflexibility *and* experiential avoidance is ingrained in the literature (e.g., Karademas et al., 2017; Karekla & Panayioutou, 2011; Sung, et al., 2018). Indeed, such a move could lead to conceptual confusion and would be at odds with the largely ground-up and inductive approach adopted by ACT and RFT. Thus, while the AAQ-II likely has continued utility as a measure of psychological inflexibility (see Gloster et al., 2017), it seems that from a scientific point of view, the most reasonable and cautious course of action would be for clinicians to consider the BEAQ as a measure of experiential avoidance, alongside broader measures of the overaching construct of psychological inflexibility. Moreover, such a development might even lead to greater evidence of the increased efficacy of the ACT model interventions

compared to more tradtional cognitive-behavioral therapies than has been observed heretofore.

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Table 1

Planned comparisons between correlation coefficients.

Correlations pair		*Difference score*	95% *CI*	*p* value
AAQ-II – Depression	BEAQ – Depression	0.15	0.10, 0.20	< .001
AAQ-II – Anxiety	BEAQ – Anxiety	0.12	0.07, 0.8	< .001
AAQ-II – Stress	BEAQ – Stress	0.15	0.10, 0.20	< .001
AAQ-II – BEAQ	AAQ-II – Depression	-0.01	-0.06, 0.04	.67
AAQ-II – BEAQ	AAQ-II – Anxiety	0.02	-0.03, 0.07	.48
AAQ-II – BEAQ	AAQ-II – Stress	0.03	-0.02, 0.08	.27

Figure 1: Results of Confirmatory Factor Analysis