A Taxometric Analysis of Experiential Avoidance

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Experiential avoidance, a trait-like construct referring to the tendency to rigidly avoid or change unpleasant internal experiences stemming from an unwillingness to experience them, is believed to contribute to the development and maintenance of various forms of psychopathology. Despite significant research on this construct, it remains unclear whether experiential avoidance is dimensional or categorical at the latent level. The current study examined the latent structure of experiential avoidance using three taxometric analytic approaches (MAXimum Eigenvalue, Mean Above Minus Below A Curve, Latent-Mode Factor Analysis) applied to data from two independent samples and using three widely used measures of experiential avoidance. The first sample \( (n = 922) \) completed the Multidimensional Experiential Avoidance Questionnaire (Gámez, Chmielewski, Kotov, Ruggero, & Watson, 2011), while the second sample \( (n = 615) \) completed the Brief Experiential Avoidance Questionnaire (Gámez et al., 2014) and Acceptance and Action Questionnaire-II (Bond et al., 2011). Across both samples and all three measures, experiential avoidance exhibited a dimensional structure. The clinical and research implications of this finding for experiential avoidance are discussed.

Keywords: experiential avoidance; taxometrics; MEAQ; BEAQ; AAQ-II
Llera, 2011; Thompson & Waltz, 2010), depression (Spinthoven, Drost, de Rooij, van Hemert, & Penninx, 2014), alcohol and substance use disorders (Levin et al., 2012; Shorey et al., 2017), and borderline personality disorder (Jacob, Ower, & Buchholz, 2013). Taken together, EA can be conceptualized as a latent psychological factor that influences a range of avoidance behaviors in distressing contexts and across diverse psychological symptom profiles.

An important finding is that EA does not appear to be unidimensional. Though early measures of EA assessed it as a single factor, including the Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011), later factor analytic studies on measures of EA have found evidence for a multidimensional structure (Gámez et al., 2011). Specifically, the Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gámez et al., 2011) identified six factors of EA, including behavioral avoidance, distress aversion, procrastination, distraction/suppression, repression/denial, and distress endurance. As such, EA appears to be comprised of distinct forms of trait-like avoidance tendencies and does not necessarily operate in the same way among different people. Thus, two individuals expressing high levels of EA could express distinct dimensions of EA, which influence avoidance behaviors differently. Importantly, the MEAQ has withstood psychometric scrutiny, showing evidence that the overall scale and subscales are robust and diverge from constructs such as distress or negative affectivity (Rochefort, Baldwin, & Chmielewski, 2018). The MEAQ also comes in a shortened version, the Brief Experiential Avoidance Questionnaire (BEAQ; Gámez et al., 2014), which retains the same dimensions measured by the MEAQ though only a single overall score is derived. The AAQ (Hayes et al., 2004) and AAQ-II (Bond et al., 2011) reflected groundbreaking theoretical developments on EA (Hayes et al., 1996; Hayes et al., 2004) and remain widely used, though have not held up as well to psychometric scrutiny (Rochefort et al., 2018; Wolgast, 2014).

Despite accumulating data on the importance of EA in predicting critical outcomes, less is known about its latent structure. Early work on EA has proposed that it exists within a dysfunctional range of normal behavior, implying a more dimensional conceptualization (Hayes et al., 1996). That is, individuals may exhibit varying levels of EA, but only at a sufficiently high level does it influence negative outcomes. Consistent with this dimensional view, researchers have historically referred to EA in terms of a given self-report score that exists along a broader range of scores. For example, different individuals can express varying levels of EA, such as “high” or “low” EA (e.g., Kashdan et al., 2014). Importantly, when used in this way, “high” or “low” EA does not reflect qualitatively distinct types of EA, but rather a shared type of EA with different levels of severity. Thus, the set of experiences and behaviors between “high” and “low” EA individuals is similar, but the frequency or intensity of those experiences or behaviors differ. However, despite this common description of EA, there is insufficient psychometric evidence to indicate that EA operates along a single continuum of behavior. Indeed, it may be the case that EA functions categorically such that different scores on EA measures reflect qualitatively distinct categories. Viewed this way, those who are high versus low EA would then reflect qualitatively distinct groups characterized by divergent sets of behavior, rather than a shared set of behaviors that differ only in the frequency or intensity with which they are expressed. An example of this might be that low EA could reflect an adaptive coping style, while high EA might reflect more pathological avoidance observed in chronic and severe mental health disorders. Such categorical distinctions among varying levels of avoidance behaviors have been discussed within the literature on safety behaviors versus adaptive coping (e.g., Arnaudova, Kindt, Fanselow, & Beckers, 2017; Thwaites & Freeston, 2005), though no clear consensus exists. Elucidating the underlying dimensional or categorical structure of EA advances both our theoretical understanding of this construct and our approach to measuring it.

Central to determining the categorical or dimensional structure of a construct is the use of taxometric analyses, a set of statistical procedures that allows researchers to mathematically evaluate the latent structure of a given construct (Beauchaine, 2007; Meehl, 1995). Through use of taxometrics, constructs can be shown to have taxonic (i.e., dichotomous, categorical) or nontaxonic (i.e., continuous, dimensional) structures (Meehl & Golden, 1982). Taxometric analyses have been applied to various psychological diagnoses including anxiety disorders (Kollman, Brown, Liverant, & Hofmann, 2006), posttraumatic stress disorder (Bromank-Fulks et al., 2006), obsessive-compulsive disorder (Olatunji, Williams, Haslam, Abramowitz, & Tolin, 2008), major depression (Prisciandaro & Roberts, 2005; Solomon, Rusco, Seeley, & Lewinsohn, 2006), bipolar disorder (Ahmed, Green, Clark, Stahl, & McFarland, 2011; Prisciandaro & Roberts, 2011), and eating disorders (Olatunji et al., 2012). Beyond formal diagnoses, various studies have also examined the latent structure of mental health constructs.
that, like EA, predict the onset and exacerbation of mental health disorders. For example, past research has found evidence of dimensional structures for intolerance of uncertainty (Carleton et al., 2012), distress tolerance (Stevens, Kertz, Bjorgvinsson, & McHugh, 2018), worry (Olatunji, Broman-Fulks, Bergman, Green, & Zlomke, 2010), and fear of negative evaluation (Weeks, Norton, & Heimberg, 2009). While the majority of psychological diagnoses and mental health constructs tend to operate dimensionally (Haslam, Holland, & Kuppens, 2012), it remains important to identify categorical constructs in order to better understand the development and etiology of those constructs, and to better inform assessment and treatment (Beauchaine, 2007). Indeed, studies assessing the latent structure of important etiological constructs are sometimes mixed. For example, taxometric analyses of anxiety sensitivity have yielded both dimensional (Broman-Fulks et al., 2010) and categorical (Bernstein et al., 2007) results. Clarifying such inconsistencies or uncertainty regarding the latent structure of a given construct is important for both the measurement of that construct as well as our conceptualization regarding etiology and treatment.

An accurate understanding of a construct’s latent structure is important for several reasons (Meehl, 1992). For example, the aim of assessment instrument development and administration varies depending on a variable’s latent structure (Beauchaine, 2007; Ruscio & Ruscio, 2002; Walters & Ruscio, 2009). Whereas a categorical model of EA would imply that assessment instruments should be designed to sort individuals into their valid categorical class, a dimensional model suggests that measures should aim to assess and discriminate across the full spectrum of EA (Grove, 1991). Creating artificial dichotomizations along a dimensional construct would lead to an unnecessary loss of information and reduction in statistical power. Similarly, knowing the latent structure of EA would inform the appropriate use of language to communicate about the subject. For example, if EA is categorical, it would be appropriate to refer to individuals as “having” or “not having” EA, whereas a dimensional approach would suggest that reference to levels or ranges along the continuum of EA would be more relevant. Knowing the latent structure of EA also has the potential to inform research into the etiology and maintenance of EA. Whereas a categorical latent structure suggests a discrete etiology (e.g., a specific genetic source, environmental cause, particular gene-environment interaction), a dimensional structure would indicate a multiply determined (e.g., additive, graded) etiology.

Despite accumulating research delineating the function and importance of EA in various clinical outcomes, no known studies have investigated the latent structure of EA to determine whether it operates as a dimensional or categorical construct. To address this gap, the present research examined the latent structure of EA through use of taxometrics to determine whether it operates dimensionally or categorically. Two studies were conducted by applying three nonredundant taxometric procedures to data collected from two independent samples using three separate measures of EA (i.e., MEAQ, BEAQ, AAQ-II). Study 1 sought to establish the latent structure of EA using indicators representing the subcomponents of EA measured by the MEAQ (i.e., Behavioral Avoidance, Distress Aversion, Procrastination, Distraction/Suppression, Repression/Denial, and Distress Endurance), allowing for a more nuanced examination of the structure of EA across multiple dimensions. Study 2 applied taxometric analyses to indicators derived from the BEAQ and AAQ-II to determine whether findings from Study 1 would extend to the other commonly used measures of EA. As EA has been treated theoretically as a dimensional construct, operating along a continuum of normal human behavior, it was hypothesized that EA would evidence a dimensional structure as measured by the six components of the MEAQ, as well as single sum scores from the BEAQ and AAQ-II.

**Study 1: Taxometric Analysis of the MEAQ**

**Methods**

**Participants**

Participants consisted of 1,094 individuals who completed the survey through Prolific, a crowdsourcing platform similar to Amazon’s Mechanical Turk (MTurk) (Palan & Schitter, 2018). Previous research using these platforms has shown greater diversity when compared to university samples, and comparable reliability (Buhrmester, Kwang, & Gosling, 2011; Chandler & Shapiro, 2016). Participants were paid $2.85 for completing the study measures, which were part of a larger assessment battery that took an average of 33 minutes to complete.

To be eligible for the study, participants had to be at least 18 years of age, reside in the United States, report English as their native language, and complete the full survey in a valid manner. To complete the survey in a valid manner, participants could not provide irrelevant or off-topic answers, and had to respond correctly to validity items and finish the survey in a reasonable amount of time (i.e., between 8 minutes and 5 hours) based on pilot testing that established the minimum amount of...
time needed to respond to survey content. Based on these eligibility criteria, 172 were excluded due to not completing the full survey \((n = 110)\), completing the survey in an unrealistically fast amount of time implying a lack of content responsiveness \((n = 40)\), providing irrelevant or off-topic responses \((n = 16)\), failing to pass attention checks inquiring their location \((n = 3)\), not reporting English as their native language \((n = 2)\), or not residing in the United States \((n = 1)\). Upon excluding these participants, a final sample of 922 participants was used for subsequent analyses. Final sample participants were predominantly male \((52.7\%)\), White/Caucasian \((77.4\%)\), and reported an average age of 36.27 \((SD = 11.57)\). The ethnic diversity of the sample included 7.5% identifying as multiple races or ethnicities, 5.5% as Black/African American, 5.4% as Asian American, 2.6% as Hispanic or Latino/a, 0.4% as Native American, and 0.1% as Native Hawaiian/Pacific Islander, with 0.1% preferring not to provide ethnicity information.

Measures  
Multidimensional Experiential Avoidance Questionnaire (MEAQ). The MEAQ \((Gámez et al., 2011)\) is a 62-item, multidimensional measure of EA. Each item is rated on a Likert-type scale ranging from 1 \(\text{strongly agree}\) to 6 \(\text{strongly disagree}\). Based on its original validation and factor analysis, the MEAQ assesses EA across six domains: Behavioral Avoidance (e.g., “If I am in a slightly uncomfortable situation, I try to leave right away”), Distress Aversion (e.g., “I wish I could get rid of all of my negative emotions”), Procrastination (e.g., “I tend to put off unpleasant things that need to get done”), Distraction/Suppression (e.g., “I usually try to distract myself when I feel something painful”), Repression/Denial (e.g., “I don’t realize I’m anxious until other people tell me”), and Distress Endurance (e.g., “Even when I feel uncomfortable, I don’t give up working toward things I value”). A recent psychometric study provided strong and independent support for the MEAQ as a valid measure of EA \((Rochefort et al., 2018)\), showing promising construct validity in areas where other measures of EA have loaded more onto distress factors \((Wolgast, 2014)\). Within the current sample, each subscale from the MEAQ showed good to excellent internal consistency \((\alpha = 0.89 – 0.93)\).

To assess the anxiety and depression levels of the sample, two widely used measures, the Generalized Anxiety Disorder-7 \((GAD-7;\ Spitzer, Kroenke, Williams, & Löwe, 2006)\) and Patient Health Questionnaire-8 \((PHQ-8; Kroenke et al., 2009)\), were administered, and both exhibited high inter-
the research data. Each procedure was run using the standard settings in RunTaxometrics, which uses 50 windows in MAMBAC and MAXEIG with 90% overlap, and indicators are assigned to be used in all possible input-output pairings (MAMBAC) or triplets (MAXEIG), rather than creating summed input variables. Cases were assigned to putative taxon and complement classes using a base rate of 0.35, which was selected based on the relation between EA and psychopathology (e.g., Chawla & Ostafin, 2007; Hayes, Strosahl, & Wilson, 1999) and the relatively high rates of anxiety and depressive symptomology endorsed by the current sample (see below). In addition, parallel analyses of comparison categorical and dimensional data are performed. The resulting output allows judgments to be made regarding the classification of plots using the Comparison Curve Fit Index (CCFI), which compares the averaged curve generated by each of the three taxometric procedures with simulated taxonic and dimensional curves generated using data that match the general characteristics of the research data, including skew, and kurtosis (Ruscio, Ruscio, & Meron, 2007). CCFI scores range between zero and one, with scores greater than .55 being indicative of categorical structure, scores less than .45 being indicative of dimensional structure, and scores between .45 and .55 being considered ambiguous.

RESULTS

Descriptive statistics for the MEAQ are provided in Table 1. In terms of descriptive results from the MEAQ, no clear benchmarks exist allowing for classifications of EA severity based on MEAQ scores. However, based on its original validation, the current sample endorsed scores representing the midpoint between community adults and psychiatric patients with the exception of the Distraction/Suppression subscale, which was more consistent with psychiatric patient scores, and the Distress Endurance subscale, which was more consistent with community adult scores (Gámez et al., 2011). Inter correlations among all MEAQ subscales are shown in Table 2. In terms of distress, the sample endorsed moderate symptoms of generalized anxiety based on GAD-7 scores (G = 13.57, SD = 5.64) (Spitzer et al., 2006), and moderately severe symptoms of depression based on PHQ-8 scores (G = 15.35, SD = 6.12) (Kroenke et al., 2009).

Table 1

<table>
<thead>
<tr>
<th>Measures</th>
<th>Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAQ, Behavioral Avoidance</td>
<td>38.74 (11.68)</td>
<td>11 – 66</td>
</tr>
<tr>
<td>MEAQ, Distress Aversion</td>
<td>46.39 (13.94)</td>
<td>13 – 78</td>
</tr>
<tr>
<td>MEAQ, Procrastination</td>
<td>24.81 (8.10)</td>
<td>7 – 42</td>
</tr>
<tr>
<td>MEAQ, Distraction/Suppression</td>
<td>28.25 (7.25)</td>
<td>7 – 42</td>
</tr>
<tr>
<td>MEAQ, Repression/Denial</td>
<td>34.17 (12.24)</td>
<td>13 – 73</td>
</tr>
<tr>
<td>MEAQ, Distress Endurance</td>
<td>47.63 (9.48)</td>
<td>11 – 66</td>
</tr>
<tr>
<td>MEAQ, Total Score</td>
<td>201.73 (45.51)</td>
<td>74 – 362</td>
</tr>
</tbody>
</table>

Note. Means, standard deviations, and ranges for Multidimensional Experiential Avoidance Questionnaire (MEAQ) subscales and total score.

Table 2

<table>
<thead>
<tr>
<th>Pearson Correlation Coefficients for the Full Sample in Study 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1. Behavioral Avoidance</td>
</tr>
<tr>
<td>2. Distress Aversion</td>
</tr>
<tr>
<td>3. Distraction</td>
</tr>
<tr>
<td>4. Distraction/Suppression</td>
</tr>
<tr>
<td>5. Repression/Denial</td>
</tr>
<tr>
<td>6. Distress Endurance</td>
</tr>
</tbody>
</table>

Note. All results statistically significant at p < .001 except for the correlation between Distress Endurance and Distraction/Suppression (p > .05).

MEAQ Taxometric Analyses

Preliminary analyses were conducted using the CheckData function to examine whether the six indicators representing the six subscales of the MEAQ met the recommended suitability criteria outlined above. Results indicated that three of the MEAQ indicators, representing the Distress Endurance, Procrastination, and Distraction/Suppression subscales, failed to meet the minimum validity criteria (i.e., indicator validity < 1.25 SD) and were dropped from subsequent analyses. The remaining three indicators, representing the Behavioral Avoidance, Distress Aversion, and Repression/Denial subscales of the MEAQ, met all other suitability criteria, including demonstrating relatively low nuisance correlations (taxon M = .22, complement M = .29), and were therefore retained for the taxometric analysis.

When submitted to MAMBAC, MAXEIG, and L-Mode analyses, the three indicators generated a mean CCFI score of .31 (MAMBAC = .17, MAXEIG = .36, L-Mode = .41). As can be seen in Figure 1, the averaged curves generated by the research data were more consistent with those generated by simulated dimensional data than the simulated taxonic data. Thus, the results provide preliminary support indicating that EA, as measured by the MEAQ, is a dimensionally distributed phenomenon.

Please cite this article as: A. Kirk, J. J. Broman-Fulks and J. J. Arch, A Taxometric Analysis of Experiential Avoidance, Behavior Therapy, https://doi.org/10.1016/j.beth.2020.04.008
Study 2: Taxometric Analysis of the BEAQ and AAQ-II

In an effort to extend the findings of Study 1 using different measures of EA, data were also collected from a second, independent MTurk sample using two other commonly used measures of experiential avoidance, the BEAQ and AAQ-II.

**Methods**

**Participants**

Participants consisted of 615 individuals who were recruited from MTurk and provided demographic information and completed the BEAQ, AAQ-II, and GAD-7 (Note: Due to aiming for a briefer survey, the PHQ-8 was not administered in this study). Participants were paid $0.25 for completing all measures, which took approximately 5 minutes to complete. To participate, MTurk participants had to be at least 18 years of age, reside in the United States, report English as their native language, respond accurately to validity check items, and complete the full survey. After being informed of inclusion criteria, participants completed a demographic questionnaire, and any prospective
participant that indicated they did not meet any of the participation criteria (e.g., reported age < 18) were immediately informed that they were ineligible to participate in the study and thanked for their interest. Of the 691 prospective participants that began the survey, a total of 615 provided complete data and were included in all analyses. Participants were predominantly female (61.8%), White/Caucasian (83.6%), and had an average age of 38.91 (SD = 13.32). Other ethnicities represented included: Black/African American 5.9%, Hispanic or Latino/a 3.4%, Asian 2.9%, multiple ethnicities 2.9%, Native American 0.3% and Native Hawaiian/Pacific Islander 0.2%, with 0.8% preferring not to provide ethnicity information.

**Measures**

*Brief Experiential Avoidance Questionnaire (BEAQ).* The BEAQ is a shortened version of the MEAQ, consisting of 15 items. The BEAQ items reflect the same six dimensions of EA as the MEAQ. In contrast to the MEAQ, however, the BEAQ was

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**FIGURE 2** Taxometric Analyses of the BEAQ

Note. Average MAMBAC (top), MAXEIG (middle), and L-Mode (bottom) curves for the Seven Brief Experiential Avoidance Questionnaire (BEAQ) indicators imposed on simulated taxonic (left) and dimensional (right) comparison curves.
developed to be used solely as a single sum score across all subscales rather than using individual subscales on their own (Gámez et al., 2014). The BEAQ showed good internal consistency within the current sample ($\alpha = 0.86$).

**Acceptance and Action Questionnaire-II (AAQ-II).** The AAQ-II is a unidimensional, 7-item measure of psychological inflexibility. However, although not explicitly focusing on EA as the sole construct of interest, the creators of the AAQ-II designed it to be used as a measure of EA (Bond et al., 2011), and it is commonly used as one. Each item is rated on a Likert-type scale ranging from 1 (never true) to 7 (always true). Importantly, more recent analyses of the AAQ-II indicate that it may in fact be a stronger measure of negative emotionality than of EA (Rochefort et al., 2018; Wolgast, 2014). However, the AAQ-II remains widely used as a measure of EA, and thus was included in the current study to evaluate its latent structure. The AAQ-II showed strong internal consistency within the current sample ($\alpha = 0.95$).

Similar to Study 1, the GAD-7 was administered to assess anxiety levels in the current sample. Again, the GAD-7 demonstrated strong internal consistency ($\alpha = 0.93$).

**RESULTS**

The correlation between the BEAQ ($M = 44.73, SD = 12.89$) and AAQ-II ($M = 20.76, SD = 10.26$) was medium to large, $r = .59, p < .001$. Similar to the first sample, the sample from Study 2 reported moderate symptoms of generalized anxiety disorder based on scores from the GAD-7 ($M = 13.11, SD = 5.89$) (Spitzer et al., 2006).

**BEAQ Taxometric Analyses**

As research has suggested that the BEAQ is not suitable for creating subscales comparable to those available on the MEAQ (Gámez et al., 2014), the 15 individual items on the BEAQ served as prospective indicators for the present study. This was done in an effort to retain indicators that represent the full spectrum of EA in the absence of subscale scores.

Preliminary analyses of the suitability of the 15 BEAQ indicators revealed that eight of the indicators did not meet minimum validity criteria ($d < 1.25$) and were removed from further analysis. The remaining seven indicators (BEAQ item numbers: 2, 8, 11, 12, 13, 14, 15) demonstrated low nuisance correlations (taxon $M = .21$, complement $M = .25$), met all other suitability criteria, and were submitted to taxometric analysis using the same parameters described in Study 1. Of these seven indicators, four represented items from the Behavioral Avoidance subscale, two from the Distraction/Suppression subscale, and one from the Distress Aversion subscale. Results indicated that the three taxometric procedures generated a mean CCFI score of .32 (MAMBAC = .24, MAXEIG = .33, L-Mode = .39), and, as can be seen in Figure 2, the data plots were consistent with those produced by simulated dimensional data with comparable data characteristics. Thus, these findings were consistent with those of Study 1 and provide further support suggesting that EA is a dimensional construct.

**AAQ-II Taxometric Analyses**

Given the purported unifactorial nature of the AAQ-II, the 7 individual items comprising the AAQ-II were selected as prospective indicators. Preliminary analyses revealed that all seven items met minimum validity criteria ($M = 2.23$). Nuisance correlations between the indicators were somewhat higher than the generally recommended cutoffs (taxon $M = .39$, complement $M = .46$). However, given the favorability of the other data parameters and research suggesting that taxometric analyses tend to be robust under such circumstances (e.g., Ruscio et al., 2011), the seven indicators were submitted to the three taxometric procedures. Results indicated that the research data generated a mean CCFI score of .31 (MAMBAC = .27, MAXEIG = .35, L-Mode = .31). As depicted in Figure 3, the plots produced by the AAQ-II indicators were consistent with those generated by simulated dimensional data with comparable data characteristics. These findings indicate that the construct(s) measured by the AAQ-II appear to be dimensional, and if one accepts the AAQ-II as a measure of EA, then these results provide further evidence that EA is continuous, rather than categorical, at the latent level.

**General Discussion**

Over the past couple decades, considerable research has accumulated indicating that EA serves as a vulnerability factor for a variety of mental health concerns, ranging from mood and anxiety disorders to substance abuse (e.g., Cribb, Moulds, & Carter, 2006; Grat, Bornova, Delany-Brumsey, Nick, & Lejuez, 2007; Kashdan, Barrios, Forsyth, & Steger, 2006). Although it appears that researchers have generally operated on the assumption that EA is dimensional, rather than categorical, at the latent level, the present investigation represents the first attempt to empirically inform which approach is most appropriate given the nature of EA. Across three separate measures of EA, three taxometric analytic approaches, and two independent samples, results converged on EA functioning as a dimensional
latent factor. These findings provide initial empirical support for the dimensional conceptualization of EA.

Although this is the first study to examine the latent structure of EA through use of taxometric analyses, these results align with existing theoretical understanding of EA (Hayes et al., 1996). That is, EA appears to function in a manner such that individuals may vary in their level of EA, from low to high, but such descriptors do not denote separate categories of EA with clear demarcations between them. Rather, terms like “high EA” and “low EA” represent descriptions of ranges along a single dimension, with differences reflecting variations in intensity or frequency of avoidance tendencies rather than types. Importantly, viewing EA as a dimensional construct has implications relevant to research and clinical work. First, a dimensional view suggests caution in trying to draw meaningful, categorical classifications of EA. For example, attempts to dichotomize EA into nonclinical and clinical subgroups would be contraindicated and should be avoided. Instead, instruments assessing
EA should strive to reliably determine where a given individual stands within the broad spectrum of EA magnitude or intensity. Thus, rather than incorporating items on a measure of EA that aim to distinguish separate categorical groups, items should instead aim to discriminate lower or higher levels of EA across its spectrum (Walters & Ruscio, 2009). Statistical analysis of EA should similarly avoid dichotomization and instead make use of the full range of EA datapoints to avoid losing information or distorting the underlying construct. In addition, these results support using factor analytic data to determine which factors are central to a given construct as to better inform taxometric analyses, particularly when that construct has been viewed as unidimensional and multidimensional in structure in separate measures. Second, as previous work has pointed out, relative to categorical constructs, dimensional constructs tend to have many etiological factors (Haslam, 1997). This suggests that EA is likely to develop due to a complex, prolonged interaction of multiple environmental and/or genetic factors. Thus, future research investigating the etiology of EA should work to identify the different variables that collectively contribute to the development of EA at the individual level. Finally, the results from the current study support more recent calls for greater attention on clinically relevant, dimensional constructs that are largely transdiagnostic in nature, as EA has been traditionally viewed (Hayes et al., 1996). Importantly, these constructs offer the potential to better inform treatment approaches that seek to focus on processes of therapeutic change, and to address the underlying pathological mechanisms that create, maintain, or exacerbate mental health concerns (e.g., Hayes & Hofmann, 2017). Thus, future work can seek to understand the various ways in which EA manifests and functions across different diagnostic presentations in order to better target this shared etiological mechanism. By doing so, interventions may become more effective in both the prevention and treatment of all psychological disorders that are in part driven by higher levels of EA.

Based on the results from Study 2, results from both the BEAQ and AAQ-II converged with those of the MEAQ from Study 1. Because both the BEAQ and AAQ-II were used as single sum score measures per validation recommendations, individual items were used as indicators. Based on the BEAQ, and similar to Study 1, six of the seven indicators were derived from the Behavioral Avoidance and Distress Aversion subscale. Importantly, the results from the BEAQ and AAQ-II from Study 2 were consistent with the results from Study 1, offering further support for EA functioning as a dimensional behavioral construct. However, it is important to restate that the AAQ-II indicators exhibited higher cutoffs for nuisance correlations than is generally recommended. Because of this, results from the AAQ-II warrant more caution in their interpretation as compared to the MEAQ and BEAQ. That stated, given evidence suggesting limited overlap in what the AAQ and MEAQ/BEAQ actually measure (Rochez et al., 2018), the AAQ-II results do not detract from the clear findings of the MEAQ/BEAQ analyses suggesting that EA is dimensional.

These results further align with the majority of psychological constructs, which have been found to operate dimensionally upon taxometric analyses. Indeed, EA is conceptualized as a trait-like construct that can contribute to psychological disorder at sufficiently high levels. Other trait-like vulnerability factors, such as intolerance of uncertainty (Carleton et al., 2012) and disgust sensitivity (Olatunji & Broman-Fulks, 2007), both of which influence the development of various anxiety-related disorders, have similarly been found to operate dimensionally. These results place EA in a similar category as these other constructs, operating dimensionally and contributing to negative mental health outcomes at higher levels, though cautioning against the use of arbitrary cut-offs to introduce qualitative classifications.

The current study had several notable strengths. Consistent with the recommendations of Meehl (1995) and Ruscio et al. (2010), the present research employed a rigorous multiple hurdles consistency testing approach. Indicators derived from the three most commonly used measures of EA and across two independent samples were submitted to three mathematically distinct taxometric procedures. Only indicators that exceeded recommended validity cut-offs were used, and the indicators demonstrated low nuisance correlations. The fact that the collective results of these multiple analyses converged on a dimensional solution without exception enhances confidence in the findings. In addition, consistent with modern recommendations for taxometric research, the present study relied on an objective fit measure for interpreting the data plots that resulted from the taxometric analyses rather than subjective inspection (Ruscio et al., 2010). Collectively, these strengths enhance confidence in claims that the latent structure of EA is nontaxonic or dimensional at the latent level.

Although this research has several important strengths, conclusions should be drawn with consideration of the study limitations. First, because these samples came from online platforms, the clinical status of participants could not be confirmed as they
would be in face-to-face settings. This limitation could be overcome by advancing this work in diverse, face-to-face samples. Second, taxometric analyses are only effective when appropriate indicators are submitted to analysis. Although the present research relied on indicators derived from the most commonly used measures of EA, there appears to be concern expressed by many in the literature regarding the most appropriate assessment tools for measuring EA. For example, although EA has been most commonly assessed using the AAQ-II, and theoretical frameworks (e.g., ACT) have been considerably influenced by the results of this research, recent psychometric studies have indicated that the AAQ-II is, at best, a suboptimal measure of EA, and at worst, predominantly a measure of distress and neuroticism (Rochefort et al., 2018; Wolgast, 2014). The MEAQ and BEAQ have been developed to address these concerns, though the longitudinal predictive utility of these measures for psychopathological outcomes has not been thoroughly explored. Given these considerations, indicators derived from current measures of EA may be suboptimal, and it is possible that future research employing other indicators of EA (e.g., biometric measures, direct observation of avoidance behavior) could generate different outcomes. Replication of the present findings using novel measures of EA or a multimethod approach to assessing EA would help to enhance confidence in the dimensional conclusion.

CONCLUSION

This is the first known study to examine the latent structure of EA through taxometric analyses. Using three taxometric procedures applied to two large samples, the current study provided convergent evidence that EA operates dimensionally rather than categorically. Future work should extend this approach to diverse samples to elucidate the precise relationship between EA and negative mental health outcomes. Given the strong support for a dimensional conceptualization of EA, it will be important that researchers constructing theoretical models, assessment measures, and interventions targeting EA align their language, approach, and methodology to be consistent with the observed dimensional latent structure of EA.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

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RECEIVED: November 14, 2019
ACCEPTED: April 10, 2020
AVAILABLE ONLINE: xxxx

Please cite this article as: A. Kirk, J. J. Broman-Fulks and J. J. Arch, A Taxometric Analysis of Experiential Avoidance, *Behavior Therapy*, https://doi.org/10.1016/j.beth.2020.04.008