Accepted Manuscript

The construct validity of acceptance: A multitrait-multimethod investigation

Dylan M. Kollman, Timothy A. Brown, David H. Barlow

PII: S0005-7894(08)00087-7
Reference: BETH 152

To appear in: Behavior Therapy

Received date: 1 December 2007
Revised date: 11 June 2008
Accepted date: 17 June 2008


This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.
The Construct Validity of Acceptance: A Multitrait-Multimethod Investigation

Dylan M. Kollman, Timothy A. Brown, and David H. Barlow

Center for Anxiety and Related Disorders, Boston University

This research is based on the first author’s doctoral dissertation at Boston University, which was completed under the direction of Timothy A. Brown. Correspondence concerning this article should be addressed to Dylan Kollman, Harbor-UCLA Medical Center, 2 South, 1000 West Carson St., Torrance, CA 90509. E-mail: dylankollman@hotmail.com
Abstract

Despite increasing clinical and empirical attention, the construct validity of acceptance has not been extensively investigated. The present study utilized a multitrait-multimethod design and a correlated trait-correlated method minus one [CT-C(M-1)] confirmatory factor analytic model to assess acceptance’s convergent validity across methods and discriminant validity in comparison to cognitive reappraisal and perceived emotional control in a sample of 210 outpatients with anxiety and mood disorders. In addition, the study evaluated acceptance’s concurrent validity by investigating the extent to which it was associated with variables of clinical interest over and above the two rival constructs. Results of confirmatory factor analyses supported acceptance’s convergent and discriminant validity in comparison to the two neighboring constructs, and thereby provided partial support for its construct validity. However, contrary to prediction, acceptance was not significantly associated with concurrent validation measures. These results are discussed in the context of acceptance’s potential therapeutic utility and functional relationships with associated constructs.
The Construct Validity of Acceptance: A Multitrait-Multimethod Investigation

The construct of acceptance has increasingly become a focus of both clinical and empirical attention. Acceptance has been defined as a willingness to fully experience internal events, such as thoughts, feelings, memories, and physiological reactions (Hayes, Strosahl, & Wilson, 1999; Orsillo, Roemer, Block-Lerner, & Tull, 2004). Key in this definition is the notion that acceptance entails an active process of “allowing” one’s internal experiences to unfold without engaging in experiential avoidance, which has been described as “the phenomenon that occurs when a person is unwilling to remain in contact with particular private experiences…and takes steps to alter the form and frequency of these experiences” (Hayes, Strosahl, et al., 2004, p. 553). As an alternative to experiential avoidance, acceptance involves being “experientially open” to the reality of the present moment via relinquishing dysfunctional efforts to change or control one’s internal events (Hayes, Strosahl, & Wilson, 1999).

Acceptance has been a longstanding central theme in Eastern philosophic and spiritual thought (e.g., Gunaratana, 1991; Hanh, 1976) and a target of many forms of psychotherapy (e.g., Greenberg & Safren, 1987). Corroborating this psychotherapeutic interest in acceptance, there is mounting empirical evidence of its benefits and the problematic clinical implications of its antithesis, experiential avoidance (Orsillo, Roemer, & Barlow, 2003). Efforts to control emotional experiences have been found to result in negative paradoxical effects (Ascher, 1989) across various categories of internal events, including cognition (e.g., Wegner, Schneider, Carter, & White, 1987), affect (e.g., Campbell-Sills, Barlow, Brown, & Hofmann, 2006), and physical sensation (e.g., Cioffi & Holloway, 1993). Experiential avoidance is also increasingly considered etiologically central to the development and maintenance of psychopathology (Hayes, Wilson, Gifford, Follette, & Stosahl, 1996), and has been observed across a wide range of clinical syndromes (see Chawla & Ostafin, 2007, for a review).
There is not currently consensus regarding the extent to which acceptance should be conceptualized as an emotion regulation strategy (e.g., Blackledge & Hayes, 2001; Hofmann & Asmundson, 2007; Tull & Roemer, 2007), such that its benefits may be more closely tied to the facilitation of valued action (Hayes, Strosahl, & Wilson, 1999). There is, however, accumulating evidence (e.g., Campbell-Sills et al., 2006; Eifert & Heffner, 2003; Levitt, Brown, Orsillo, & Barlow, 2004) that acceptance functions like other emotion regulation strategies in its capacity to influence “emotional dynamics” (Thompson, 1990), or the duration, magnitude, latency, rise time, and expression of emotions across behavioral, physiological, and experiential response systems (Gross, 1998). Although acceptance appears to be unique in comparison to alternative emotion regulation strategies in that it entails the absence of explicit control efforts, this key attribute does not necessarily remove the construct from a regulatory framework because it remains an actionable response to the occurrence of internal events that significantly impacts emotional dynamics. From the perspective of emotion regulation, acceptance can be conceptualized as an emotional regulation strategy that combines aspects of “antecedent-focused” and “response-focused” emotion regulation, such that it entails both the appraisal of emotion acceptability and the allowing of emotional experience after its generation in the absence of control efforts.

Acceptance is a central component of both acceptance-based and mindfulness-based therapeutic interventions. Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) conceptualizes acceptance as an alternative to experiential avoidance, and targets its cultivation to improve psychopathology and behavioral inflexibility. Acceptance is similarly a key dimension of mindfulness, which has been defined as the self-regulation of attention to the present moment and the adoption of a curious, open, and accepting orientation to one’s internal experiences (Bishop et al., 2004). Collectively, both acceptance and mindfulness have been
incorporated into treatments for a broad range of problems (see Hayes, Luoma, Bond, Masuda, & Lillis, 2005 and Baer, 2003, for reviews).

Current Study and its Rationale

Despite growing support for the clinical utility of acceptance, no attempts to date have been made to determine its construct validity in relation to similar, established constructs. The question therefore remains as to whether acceptance represents a unique and valid construct that can be meaningfully distinguished from related constructs with more established relevancy in the prediction and treatment of psychopathology. The rationale for the current study was to explore the construct validity of acceptance by utilizing a multitrait-multimethod (MTMM; Campbell & Fiske, 1959) design to investigate its convergent validity across methods and discriminant validity in comparison to two related constructs: cognitive reappraisal and perceived emotional control.

Unidimensional operational definitions of the acceptance, cognitive reappraisal, and perceived emotional control constructs were established to facilitate the study’s MTMM design. Acceptance was defined as the active allowing of internal events (e.g., feelings, thoughts, memories, and physiological reactions) without taking “steps to alter the form and frequency of these experiences” (Hayes, Strosahl, et al., 2004, p. 553; Orsillo, Roemer, Block-Lerner, & Tull, 2004). This “ACT-centric” definition was informed by the notion that acceptance is the antithesis of experiential avoidance in that it entails an active process of permitting one’s internal experiences to occur in the absence of control efforts (e.g., Hayes, Strosahl, & Wilson, 1999), such that it is marked by unobstructed “contact [with] psychological experience – directly, fully, and without needless defense” (Hayes, Masuda, Bisset, Luoma, & Guerrero, 2004, p. 45). The definition was also aimed at capturing what patients in acceptance-based and mindfulness-based psychotherapies are being guided to do when they are taught to accept, and intended to
approximate the acceptance instructions of recent experimental paradigms (e.g., Campbell-Sills et al., 2006). It should be noted that the ACT-based definition of acceptance used in the present study is not analogous to dialectical behavior therapy’s notion of “radical acceptance” (DBT; e.g., Linehan, 1993), although the two concepts overlap considerably. Other similar or functionally related factors (e.g., present-focused attention, mindfulness, openness, non-judgmental awareness, willingness, valued action, etc.) were also purposely excluded to maintain the unidimensionality and precision of the construct.

Cognitive reappraisal has been defined as “a form of cognitive change that involves construing a potentially emotion-eliciting situation in a way that changes its emotional impact” (Gross & John, 2003, p. 349; Lazarus & Alfert, 1964). As an antecedent form of emotion regulation, cognitive reappraisal is hypothesized to be an effective means to down-regulate negative emotionality. Cognitive reappraisal was selected as a comparison to acceptance because both constructs have been theoretically identified as distinct, adaptive alternatives to suppression (e.g., Gross, 1998; Hayes, Strosahl, & Wilson, 1999), and found to result in superior psychological benefits when compared to suppression in experimental paradigms (e.g., Campbell-Sills et al., 2006; Gross & John, 2003). Given these functional parallels, the MTMM analyses sought to explore whether the act of accepting an emotional experience in meaningfully distinguishable from the act of changing one’s thinking to alter an internal event.

The second comparative construct in the present study draws heavily on the notion of “perceived control over emotional reactions” operationalized and measured by the Anxiety Control Questionnaire (ACQ; Rapee, Craske, Brown, & Barlow, 1996, p. 281), which has been hypothesized to be a beneficial trait as a mediator of psychological distress (e.g., Barlow, 1988; Rapee et al., 1996; Sanderson, Rapee, & Barlow, 1989). Perceived control is a multidimensional construct referring to one’s perception of his or her ability to utilize a repertoire of coping
Acceptance strategies to effectively manage life’s contingencies and demands. The dimension selected for the present study addresses perceived behavioral or indirect control over internal events, or the extent to which people believe they can continue to act in valued directions and meet life challenges regardless of their internal experiences. This construct has been hypothesized to be an important mechanism of action in exposure therapy, such that “what is learned during [exposures] is that events are not out of control…whether aversive consequences occur or not, or whether unwanted physiological arousal occurs or not, the individual is in control over his or her world” (Barlow, 1988, p. 314). In contrast to acceptance, perceived emotional control does not make explicit reference the regulation (or non-regulation; i.e., “active allowing”) of internal experiences and has stronger conceptual ties to cognitive factors (e.g., attributional style; Abramson, Seligman, & Teasdale, 1978). The two orthogonal factors were compared in the present study to assess whether accepting an internal event is substantively distinct from the belief that one can continue to meet life demands in its presence.

In addition to evaluating convergent and discriminant validity, the study assessed acceptance’s clinical relevance by investigating the extent to which it was associated with variables of clinical interest over and above the two rival constructs. That is, does acceptance uniquely contribute to the prediction of psychopathology in comparison to constructs with more established relevancy in the etiology, course, severity, and treatment of emotional disorders? The first concurrent validation hypothesis was informed by the prediction that the acceptance of negative affect should result in reduced utilization of mechanisms that facilitate its avoidance (e.g., worry, agoraphobic avoidance, interoceptive avoidance, etc.), the observation that acceptance is most experientially straightforward when an undesirable internal event is present (i.e., rather than a desirable one being absent), and compelling evidence that generalized anxiety disorder (GAD) and social phobia have dissimilar relationships to negative affect (Brown,
Acceptance

Chorpita, & Barlow, 1998). It was thus hypothesized that acceptance would differentially predict the key features of the two disorders (such that it would be more strongly associated with worry than social interaction anxiety) over and above cognitive reappraisal and perceived emotional control. It was also predicted that the utilization of acceptance as an emotion regulation strategy may result in a number of significant non-affective benefits overtime. In this context, it was hypothesized that acceptance would evidence stronger correlations with purpose in life and self-acceptance aspects of psychological well-being than the two rival constructs, and that all three constructs would be positively correlated with environmental mastery and personal growth.

Method

Participants

The sample consisted of 210 outpatients who presented for assessment and treatment at the Center for Anxiety and Related Disorders (CARD), Boston University. Women constituted the larger portion of the sample (64%); average age at the time of intake assessment was 34.5 (SD = 12.7, range = 17 to 67). The sample self-identified as predominately White (89%; Asian = 5.7%, Latino/Hispanic = 2.9%, African-American = 1.9%, Other = .5%).

All participants received a diagnosis of an anxiety or mood disorder at the time of their intake assessment. Diagnoses were established during the standardized CARD intake process with the Anxiety Disorders Interview Schedule for DSM-IV: Lifetime version (ADIS-IV-L; Di Nardo, Brown, & Barlow, 1994), a semi-structured interview designed to ascertain reliable diagnosis of DSM-IV anxiety, mood, somatoform, and substance use disorders, and to screen for the presence of other conditions (e.g., psychotic disorders). For a detailed description of the standardized CARD intake process including interviewers, training procedures, etc., see Brown, Di Nardo, Lehman, and Campbell (2001).

The rates of principal disorders in the sample at intake were as follows: social phobia (n =
Acceptance

51; 24.3%), panic disorder with and without agoraphobia (n = 43; 20.4%), GAD (n = 33; 15.7%), OCD excluding hoarding subtype (n = 25; 11.9%), major depression (n = 16; 7.6%), specific phobia (n = 16; 7.6%), anxiety disorder not otherwise specified (n = 9; 4.3%), hoarding subtype of OCD (n = 6; 2.9%), dysthymic disorder (n = 4; 1.9%), other mental disorder (e.g., somatoform disorders; n = 4; 1.9%), agoraphobia without a history of panic disorder (n = 1; .5%), bipolar disorder (n = 1; .5%), and PTSD (n = 1; .5%).

Exclusionary criteria included any of the following at the time of initial intake assessment: current substance abuse and dependence, active psychosis, and multiple (i.e., three or more) hospitalizations related to psychosis or suicidal or homicidal intent in the past five years. In addition, the minimum age for participation was 18.

Indicator Generation

The acceptance, cognitive reappraisal, perceived emotional control constructs were assessed across three different questionnaire-based methods to facilitate the MTMM investigation. These methods entailed: (1) semantic differential items in the form of questions in an agree/disagree response format, (2) Likert-style items in the form of statements in a “characteristic of me” response format, and (3) frequency-based phrases in a fill-in-the-blank response format. Each method consisted of items from across the three comparative constructs that were intended to be distinct in wording, but analogous in content. Additional temporal steps were taken to enhance the differences across these three methods (described below).

Indicators of the three comparative constructs were generated by first reviewing applicable items from associated questionnaires, including the Acceptance and Action Questionnaire (AAQ; Hayes, Strosahl et al. 2004), Anxiety Control Questionnaire (ACQ; Rapee et al., 1996), Emotion Regulation Questionnaire (ERQ; Gross & John, 2003), Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004), and Meta Evaluation Scale
(MES; Mayer & Stevens, 1994). An item pool was next developed with the aim of unidimensionally representing the target constructs within the specific parameters of the three chosen methods. Following an iterative item review process, four doctoral candidates and therapists at CARD subsequently assessed the face validity and clarity of the item pool. Acceptance items were additionally reviewed by an ACT subject matter expert to assess the extent to which they adequately represented the ACT conceptualization of the purported construct.

A small pilot study was conducted during the next stage of the item generation process to assess the psychometric feasibility of the item pool by recruiting 30 participants who presented to CARD for assessment, follow-up assessment, or treatment to complete the questionnaire items. Inclusion and exclusion criteria for this pilot were the same as those of the study at large, and the pilot participants were independent of the study sample. Results from the pilot study were optimistic in regard to the questionnaires’ ability to assess the convergent and discriminant validity of the three constructs; correlations among indicators of the same purported construct across methods were suggestive of convergent validity (range of $r_s = .72$ to $9.0$), while discriminant validity was indicated by the observation that the three presumably distinct constructs were weakly intercorrelated (range of $r_s = -.37$ to $.21$). Psychometric data from the pilot study did not call for dropping poorly performing items.

**Self-Report Questionnaires**

*M1 Questionnaire (M1Q).* The M1Q consisted of 18 study-specific items presented in the form of questions rated on a 5-point semantic differential scale ranging from “definitely yes” to “definitely no.” Items from the three traits were ordered at random. An example of an item on the M1Q is: Item 1: “Do you manage your emotions by changing the way you think?”

*M2 Questionnaire (M2Q).* The M2Q consisted of 18 study-specific items in the
form of statements rated on a 5-point “characteristic of me” Likert-style response format. Responses ranged from 1 (“not at all characteristic or true of me”) to 5 (“extremely characteristic or true of me”). Items across the three traits were randomly ordered. An example of an item on the M2Q is: Item 1: “I generally believe that my thoughts are acceptable.”

**Method 3 Questionnaire (M3Q).** The M3Q included 18 study-specific items in the form of frequency-based phrases rated with a fill-in-the-blank format. Participants were asked to write in a percentage between 0% and 100% using multiples of 10 to indicate how often each phrase applied to them. Items 1-12 were randomly ordered across the acceptance and cognitive reappraisal traits, and were prompted by the phase “How often do you…?” An example of one such M3Q item is: Item 1: “…believe your emotions are ok to have.” Items 13-18 assessed the perceived emotional control trait, and were prompted by the phase “How often can you…?” An example of one such item on the M3Q is: Item 13: “…perform effectively under stress.”

**Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990).** The PSWQ is a 16-item self-report scale that is widely used to measure the trait of worry. Items are rated on a 5-point Likert-style scale, ranging from 0 (“Not at all typical of me”) to 4 (“Very typical of me”). An example of an item on the PSWQ is: “My worries overwhelm me.” The convergent and discriminant validity, unidimensional structure, and reliability of the PSWQ have been demonstrated in clinical and nonclinical samples (Brown, Antony, & Barlow, 1992; Meyer et al., 1990).

**Social Interaction Anxiety Scales (SIAS; Mattick, Peters, & Clarke, 1989).** The SIAS is a 20-item measure of social interaction anxiety (i.e., distress when initiating and maintaining conversations with friends, strangers, potential mates, etc.). Items are rated using a 0 (“not at all characteristic or true of me”) to 4 (“extremely characteristic or true of me”) Likert-style scale. An example of an item on the SIAS is: “I have difficulty talking with other people.” The sound
psychometric properties of the SIAS have been supported by several studies (e.g., E.J. Brown et al., 1997; Mattick et al., 1989).

*Positive and Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988).* The PANAS is a 20-item self-report scale that includes 10 items measuring positive affect and 10 items measuring negative affect rated on a 5-point Likert-style scale, ranging from 0 (“very slightly or not at all”) to 4 (“extremely”). An example of an item on the PANAS is: “Scared.” The PANAS has evidenced reliability and validity in psychometric evaluation (Watson et al., 1988). The trait version of the PANAS was utilized in this study with the instructions, “Indicate to what extent you generally feel this way, that is, how you feel on the average.”

*Scales of Psychological Well-being: Selected subscales (SPWB; Ryff, 1989; Van Dierendonck, 2005).* The SPWB is a theoretically-derived, multidimensional measurement of psychological well-being. It consists of six scales that measure the dimensions of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Each of these scales consists of 16 items that are rated on a 6-point Likert-style scale from 1 (“strongly disagree”) to 6 (“strongly agree”). An example of an item on the SPWB is: “The demands of everyday life often get me down.” A recent reanalysis of the SPWB (Van Dierendonck, 2005) suggested that its overall psychometric quality is improved by reducing the length of the scales to six, seven, or eight items, depending upon the specific subscale. These short-versions of the SPWB’s “environmental mastery,” “personal growth,” “purpose in life,” and “self-acceptance” scales were used in the present study.

**Procedure**

*Recruitment.* In total, 660 individuals meeting inclusion and exclusion criteria were contacted to assess whether they would be interested in participating in the study. Due to the transitive nature of the Boston population, many of these potential participants could not be
reached because their contact information was no longer valid. Two hundred and eighty-two individuals agreed to participate in the study and were mailed a study packet.

Study completion. To further enhance distinctions across the three methods described above, participants were asked to complete each of the three study questionnaires (i.e., M1Q, M2Q, and M3Q) on different, sequential days and seal them in the envelopes provided. The sequence of this completion was counterbalanced to mitigate against temporal effects outside of the investigated methods. Concurrent validation questionnaires were attached to the packet of “Day 1 Questionnaires,” such that they were always be completed on the first day of study participation. As the result of the counterbalancing of the M1Q, M2Q, and M3Q measures, the administration of concurrent validation questionnaires was equivalently distributed across the three methods. 210 participants (75%) successfully returned their completed study packet and were paid $15 for their participation.

Results

Construct Validation

Correlated trait–correlated method minus one model. Hypotheses pertaining to the convergent and discriminant validity of acceptance were examined by analyzing the MTMM data from completed questionnaire batteries within a correlated trait-correlated method minus one [CT-C(M-1); Eid, 2000; Eid, Lischetzke, Nussbeck, & Trierweiler, 2003] model. This class of multi-indicator MTMM model circumvents several significant limitations and combines a number of strengths of other confirmatory factor analysis (CFA) models used in MTMM analyses (e.g., Brown, 2006). The parameterization of the CT-C(M-1) model is similar to that used in the correlated methods model (e.g., Marsh & Grayson, 1995) with the important exception that it specifies one less method factor than included in the MTMM study, such that this excluded method factor is used as the “comparison standard.” In effect, the true-score
variables of comparison standard indicators are used as regressors with the true-score variables of the alternative (i.e., “nonstandard) methods serving as dependent measures, such that method factors are represented by the percentage of the nonstandard method’s trait measurement that cannot be predicted by the comparison standard method. In addition to avoiding the underidentification and improper solution problems of alternative parameterizations, the CT-C(M-1) model facilitates the evaluation of trait-specific method effects, relationships among method factors, and correlations between method and trait factors (e.g., Brown, 2006).

The indicators of acceptance, cognitive reappraisal, and perceived emotional control from the three study questionnaires (i.e., M1Q, M2Q, and M3Q) were loaded onto the three respective constructs, with the measurement model specifying no double-loading indicators across constructs. To define method factors in this CT-C(M-1) model, Method 1 (i.e., semantic differential items in the form of questions in an agree/disagree response format) was chosen as the comparison standard, or the standard method. For each trait, the loading of the first indicator measured by the standard method was fixed to one to define latent trait factors. The model was overidentified with 276 df.

Missing data were very limited, such that only 58 out of 28,350 total responses were missing. The average number of missing responses across indicators was .42, and the highest number of missing responses on any one indicator was 5. Maximum likelihood (direct ML) was used to handle missing data (cf. Allison, 2003; Brown, 2006).

Mplus 4.1 (Muthén & Muthén, 1998) and a maximum likelihood minimization function were used to assess fit and estimate the parameters of the CT-C(M-1) model within the conventions of CFA. The maximum likelihood (ML) chi-square test, standardized root mean square residual (SRMR), root mean square error of approximation (RMSEA) and its 90% confidence interval (90% CI) and test of close fit (CFit), comparative fit index (CFI), and the
Tucker Lewis Index (TLI) were used as goodness-of-fit indices. Hu and Bentler’s (1999) guidelines were used to define acceptable fit by the following criteria: RMSEA (≤ .06, 90% CI ≤ .06, CFit ns), SRMR (≤ .08), CFI (≥ .95), and TLI (≥ .95).

Prior to formally assessing the CT-C(M-1) model, an exploratory factor analysis (EFA) was conducted to identify poorly behaved indicators of the three comparative constructs. Two items were also eliminated based on concern regarding the extent to which they adequately represented their intended construct. For example, the three analogous versions of the item, “Do you usually feel that your thoughts are ok to have?” were eliminated because they target appraisals of emotional acceptability more precisely than the active allowing of internal events. The size of the initial item pool was selected to accommodate this item elimination process, such that more items were originally included (i.e., six for each trait-by-method combination) than were methodologically required (i.e., three for each trait-by-method combination; Eid et al., 2003) to facilitate the elimination of any problematic indicators. As it was methodologically important to maintain an equivalent number of indicators across traits, an equal number of indicators (i.e., three per method) were eliminated from the initial acceptance, cognitive reappraisal, and perceived emotional control item pools. Thus, consistent with recommended CT-C(M-1) methodology (Eid et al., 2003), the item reduction process retained 27 indicators of the three comparative constructs: nine from each method, nine representing each construct (i.e., three sets of analogous items across the three methods), and three representing each trait-by-method combination (see Table 1). The retained items were considered highly representative of the purported constructs.

Using the 27 selected items as indicators of acceptance, cognitive reappraisal, and perceived emotional control, each of the overall goodness-of-fit indices described above suggested that the CT-C(M-1) model was a good fit for the data, $\chi^2(276) = 391.16, p < .0001,$
RMSEA = .045 (90% CI = .034 - .054; CFit = .81), SRMR = .04, CFI = .97, and TLI = .96. No localized points of strain were indicated by the inspection of modification indices for cross-loadings or error covariances. An alpha level of .05 was used for all statistical tests. All freely estimated unstandardized parameters were statistically significant ($p < .001$), and estimates of factor loadings showed that the indicators and their purported latent factors were strongly related (range of communalities = .39 - .91).

In addition to good model fit, convergent validity was established by the observation of large and statistically significant trait factor loadings across methods for the three respective constructs. As shown in Table 2, completely standardized loading parameters ranged from .48 to .86 (.48 to .79 for acceptance, .49 to .86 for cognitive reappraisal, and .74 to .86 for perceived emotional control). These trait factor loadings reflect strong relationships between the indicators and their purported latent constructs, and thus are supportive of convergent validity. Similarly, discriminant validity was evidenced by non-significant correlations between perceived emotional control and both acceptance and cognitive reappraisal ($r = .07$ and .14, respectively). While the correlation between acceptance and cognitive reappraisal was significant ($r = -.44$), its magnitude is below the traditional MTMM threshold for questioning discriminant validity (i.e., > .80 or .85; Brown, 2006; Kenny, 1979). Most correlations between the various method factors and between trait and method factors were non-significant, indicating that method effects did not generalize perfectly across traits.

**Concurrent Validation**

* Differential prediction of worry and social interaction anxiety. PSWQ and SIAS total scores were added to the CT-C(M-1) model as covariates to investigate concurrent validation hypotheses pertaining to the prediction of worry and social interaction anxiety. Measurement error was incorporated into the estimation of these single indicators by constraining their error
variances on the basis of known psychometric information about the two questionnaires, such
that scale reliability was estimated to be .91 for the PSWQ (Brown, Antony, & Barlow, 1992)
and .92 for the SIAS (Mattick & Clarke, 1998). The inclusion of worry and social interaction
anxiety indicators did not degrade model fit: $\chi^2(324) = 455.59, p < .0001$, RMSEA = .044 (90%
CI = .034 - .053; CFI = .86), SRMR = .05, CFI = .97, and TLI = .96. Results of these concurrent
validation analyses (see Table 3) were contrary to predictions because the relationships between
acceptance and both worry and social interaction anxiety were non-significant. In contrast, both
cognitive reappraisal and perceived emotional control evidenced significant negative
relationships with social interaction anxiety ($r_s = -.22$ and -.44, respectively), while only
perceived emotional control was significantly inversely correlated with worry ($r = -.40$).

*Prediction of well-being dimensions.* To test predictions pertaining to psychological well-
being, short-versions of the SPWB’s “environmental mastery,” “personal growth,” “purpose in
life,” and “self-acceptance” scales were added to the CT-C(M-1) model as covariates. Error
constraints were placed on these single indicators of the respective dimensions of well-being
based on known scale reliability estimates (Ryff, 1989; $\alpha$ = .86, .85, .88, and .91 for
environmental mastery, personal growth, purpose in life, and self-acceptance, respectively). The
inclusion of these single indicators did not degrade the model fit of the CT-C(M-1)
parameterization: $\chi^2(348) = 493.01, p < .0001$, RMSEA = .045 (90% CI = .035 - .053; CFI =
.84), SRMR = .04, CFI = .97, and TLI = .96. The results of this concurrent validation analysis, as
shown in Table 3, were contrary to predictions, such that correlations between acceptance and all
four well-being dimensions were non-significant ($r_s = -.11$, -.01, -.07, and -.09, respectively).
Both cognitive reappraisal and perceived emotional control, however, were significantly
correlated with all four well-being dimensions.
Acceptance

Discussion

The construct of acceptance is currently the subject of considerable clinical and empirical attention. Experiential avoidance, as the antithesis of acceptance, has been increasingly implicated in the development and maintenance of psychopathology, and new therapies that are assumed to be meaningful derivations of traditional cognitive-behavioral interventions explicitly foster the cultivation of acceptance to reduce symptoms and promote growth. Given this growing enthusiasm, it is necessary to explore whether acceptance represents a unique construct, or should more accurately be understood as sharing considerable overlap with other well-established constructs. That is, is the process of actively allowing the occurrence of emotional events really a distinct internal behavior, or is it redundant with two traditional targets of cognitive-behavioral therapy (CBT): changing cognitions and fostering the belief that one can continue to meet life demands in the presence of aversive internal experiences.

Overall, the results of the present study were consistent with the conclusion that acceptance is distinct from the two neighboring constructs of cognitive reappraisal and perceived emotional control, and thereby provided partial support for its construct validity. Evidence of construct validity suggests that acceptance may be a unique construct that is not redundant with more established targets of therapeutic interest. That is, the present evidence indicates that accepting an emotional experience is not the same as changing one’s thinking to alter the internal event or recognizing one’s ability to act in valued directions in its presence. In conjunction with existing evidence of acceptance’s capacity to promote clinical change, this finding supports the assumption that acceptance may be a non-superfluous target of clinical attention. The significant negative correlation between acceptance and cognitive reappraisal, moreover, suggests that the active allowing of internal experiences may be inversely related to the tendency to change one’s cognitions to modify the impact of an emotional event. This finding is consistent with the clinical
observation that encouraging a client to “evaluate your thoughts and change your thinking if it’s not completely correct” (Beck, 1995, p. 79) while concurrently adopting a stance of “undefended ‘exposure’ to thoughts…as they are directly experienced to be” (Hayes, 2004, p. 21) is often a challenging initiative within the context of a single intervention. If future research supports both this negative association and the psychological benefits of acceptance, special consideration may be warranted when acceptance and cognitive reappraisal techniques are simultaneously included in cognitive-behavioral interventions to avoid minimizing their respective clinical potencies.

Despite supporting the construct validity of acceptance by demonstrating its convergent and discriminant validity, the present study did not evidence acceptance’s clinical validity because it was found to be unassociated with the concurrent validation measures of worry, social interaction anxiety, and psychological well-being at levels of statistical significance. As construct validity is the overarching concept that subsumes other forms of validity, these findings raise more general questions about acceptance’s validity as a construct. However, per the review above, the literature provides strong evidence that acceptance indeed offers clinical value. Given such empirical support for acceptance’s clinical utility and present findings of its convergent and discriminant validity, the important question remains as to why acceptance was unrelated to concurrent validation measures in the current investigation.

One plausible explanation for the non-significant concurrent validation findings may be that acceptance, in-and-of-itself and in isolation of functionally related factors, may offer limited clinical value. That is, actively allowing internal events without engaging in other relevant processes and behaviors may do little to reduce psychopathology and improve psychological well-being. A highly delineated operational definition of acceptance was used in the present study because MTMM methodology requires that constructs are represented in a unidimensional manner. In practice, however, acceptance is rarely utilized or studied in isolation. Examining the
treatment components of acceptance-based and mindfulness-based interventions reveals two factors that are commonly fostered in conjunction with acceptance: “commitment” and present-focused attention. The clinical benefits of acceptance may be most specifically realized or enhanced when internal experiences are actively allowed in conjunction with these associated factors.

In the context of ACT, commitment refers to dedication to a life-course that is consistent with one’s genuine values. Parallel or associated constructs appear in many other interventions, including the concept of “willingness” in DBT (e.g., Linehan, 1993). Acceptance and commitment may contribute to mental health in a bi-directional manner, such that the active allowing of aversive internal experiences enables valued direction through situations and circumstances that evoke such events, which reciprocally results in symptom improvement (e.g., attenuation of negative affect) via corrective learning processes (e.g., habituation and extinction). It is possible, in this context, that the lack of observed relationship between acceptance and concurrent validation measures in the present study may be related to its intentional exclusion of commitment level, such that acceptance benefits may be moderated by the co-occurrence of commitment (or the two factors may contribute to clinical effects in an additive manner).

Mindfulness-based interventions similarly do not encourage acceptance utilization in isolation of related factors. Rather, mindfulness requires the pairing of acceptance with a close experiential companion: present-focused attention, or concentration. Present-focused attention has been defined as a process of “bringing awareness to current experience…by regulating the focus of attention” (Bishop et al., 2004, p. 232). This bi-dimensional, empirically derived conceptualization of mindfulness as the product of present-focus and acceptance is consistent with traditional accounts of its essence and practice (e.g., Gunaratana, 1991) and the key distinction between two major schools of meditation (i.e., samatha and vipassana), although there
is some debate as to whether the two constructs are “functionally redundant” (Brown & Ryan, 2003). In the context of the bi-dimensional conceptualization of mindfulness, empirical support for the efficacy of mindfulness-based interventions (e.g., Baer, 2003) suggests that both actively allowing internal events and anchoring one’s attention on present moment experience may be important and interrelated contributors to clinical change. It is possible that the clinical benefits of acceptance are closely tied to its functional relationship with present-focused attention, such that acceptance’s non-significant relationships with concurrent validation measures may be related to the methodologically-based exclusion of present-focus.

Alternatively, the lack of evidence for acceptance’s concurrent validity in the present study may be a product of the inability to assess important temporal or sequential considerations that could be critical to understanding its clinical utility. In this context, it may be most adaptive to first use other emotional regulation strategies entailing the non-disruptive modification of internal experiences (e.g., cognitive reappraisal), and then engage in acceptance if and when such initial regulatory efforts are ineffective. This notion is consistent with the position that the inflexibility of emotion regulation utilization may contribute more directly to negative implications than specific strategies themselves (i.e., Kashdan, Barrios, Forsyth, & Steger, 2006), the DBT emphasis on the co-occurrence of acceptance and change (e.g., Linehan, 1993), and findings of moderational relationships across internal processes (i.e., Lischetzke & Eid, 2003). These perspectives converge on the idea that adaptive emotion regulation selection, or the capacity to choose well-suited and non-disruptive emotion regulation strategies in the context of situational contingencies, may play an important role in psychological health.

The use of study-specific questionnaires as indicators of the target constructs, as opposed to established measures with validated psychometrics, may offer another explanation for the null findings in the context of clinical utility. While used to inform the indicator generation process,
items from such existing questionnaires could not be selected for the present study due to the methodological necessity of both adhering to within method specifications (e.g., scale type, response format) and creating consistent distinctions across methods (i.e., requiring the inclusion of distinctly worded items). Moreover, existing questionnaires tend to contain items that would not allow the constructs to be represented in the precise, unidimensional manner required for MTMM construct validation analyses (e.g., AAQ item: “anxiety is bad”). It is plausible, nonetheless, that the use of study-specific indicators may have contributed to the non-significant concurrent validation findings.

It is also possible that the non-significant relationships between acceptance and concurrent validation measures in the present study may reflect the construct’s genuine lack of clinical utility. That is, regardless of whether it is paired with applicable factors (i.e., commitment and present-focused attention) or skillfully implemented with respect to other emotion regulation strategies, acceptance may offer little relevancy in the etiology, course, severity, and treatment of psychological syndromes. This conclusion seems unlikely given empirical support for acceptance’s benefits in the context of experimental investigations and treatment outcome studies, and could certainly not be established from the results of any single study. Still, both the present inconclusive concurrent validation findings and strong evidence of the efficacy of predominately behavioral interventions (e.g., behavioral activation; Dimidjian et al., 2006) necessitate questioning acceptance’s incremental validity, and suggest that it is plausible that the construct offers limited clinical value. The extent of acceptance’s contribution to the treatment of psychopathology could be assessed via conducting dismantling studies that examine the implications of including versus omitting an acceptance emphasis within the context of more traditional CBT interventions (e.g., exposure therapy with and without an emphasis on the active allowing of the internal experiences that are evoked by exposure procedures).
Additionally, it is relevant to note that the rival constructs were significantly associated with the concurrent validation variables. This observation is particularly interesting in the case of perceived emotional control, which uniquely evidenced significant inverse relationships with both worry and social interaction anxiety. These findings support the notion that perceived emotional control (i.e., the belief that one can continue to meet life demands in the context of aversive internal contingencies) may offer clinical value, which is more generally consistent with the idea that a “sense of control” plays an integral role in psychological health (e.g., Barlow, 1988). An emphasis on adaptive control is an important theme in CBT, such that many CBT interventions either target adaptive behavioral control (e.g., exposure, valued action) or experiential control (e.g., relaxation training, cognitive restructuring), or foster the relinquishing of maladaptive control efforts (e.g., acceptance, radical acceptance, techniques that address perfectionism and hypervigilance, etc.). Multiple constructs that are presumed be relevant in the context of psychopathology (e.g., self-efficacy, learned helplessness, locus of control) similarly have strong theoretical ties to the concepts of control and control perception.

One important limitation of the present study was its reliance on self-report data across all three of its methods. While it is not unprecedented to use three types of questionnaires as methods in multimethod designs (e.g., Green, Goldman, & Salovey, 1993; Muis, Winne, & Jamieson-Noel, 2007), more diverse forms of assessment (e.g., self, peer, and friend report) are typically included. This raises the question of whether three questionnaires with varied features (e.g., scale type, response format) can genuinely be considered distinct methods, as well as the overarching concern of whether the exclusive use of self-report in the present study truly constitutes a MTMM design. The principal statistical and conceptual rationale for including multiple methods within MTMM designs is the generation of method effects. Supporting the appropriateness of using three self-report questionnaires as methods, there is strong evidence that
method effects can be generated from only minor variants in questionnaires (e.g., Brown, 2003; Marsh, 1996). These variants include those utilized in the present study, such as scale format, scale anchors, and temporal factors (e.g., Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Moreover, the present study’s findings illustrate the presence of significant method effects because correlations between method factors and between trait and method factors were significantly different than one. Comparing these method effects to those of MTMM studies with more varied methods further supports the notion that the use of three self-report questionnaires appropriately constitutes a MTMM design. For example, the range of correlations between method factors and between trait and method factors in the present study ($r = -.31$ to $.37$) overlaps considerably with the findings another MTMM study (Eid et al., 2003; $r = -.16$ to $.38$) using self, friend, and acquaintance reports as methods within a CT-C(M-1) model. A study examining trait, method, and error variance in 70 construct validation studies similarly found a range of average method correlations of $.32$ to $.60$ across disciplines (Cote & Buckley, 1987). Self-report was exclusively utilized in the present study because alternative methods for assessing the internal constructs of acceptance, cognitive reappraisal, and perceived emotional control could not be identified. However, behavioral indicators of other difficult-to-assess constructs such as self-efficacy (e.g., Bandura, 1994) and cognitive processing speed (e.g., Stroop, 1935) have been identified across psychological disciplines. In this tradition, it may be possible for future studies to use more heterogeneous methods for assessing acceptance by establishing behavioral indicators of its utilization.

Future empirical explorations of acceptance would also benefit from using a more diverse clinical sample than that of the present study. While the study’s sample was generally consistent with the composition of the clinic from which participants were recruited and suggests no selection bias in regard to participation or completion, the predominance of reasonably young
(i.e., average age = 35), White (i.e., 89%) participants limits its generalizability.

**Conclusion**

Acceptance is a difficult construct to operationalize, but one tends to recognize it experientially when it is utilized. As an active process of allowing internal events in the absence of control efforts, acceptance feels simultaneously like a sort of opening up and a letting go, such that previously obstructed emotional experiences are permitted to run their course through the relinquishing of draining, ineffective, and interfering attempts to control their dynamics. The present study partially supported the construct validity of acceptance by demonstrating its convergent and discriminant validity in relation to two neighboring, more well-established targets of therapeutic attention. This finding is significant because it suggests that existing empirical support for acceptance’s clinical utility should not be misattributed to its conceptual similarity with related constructs. However, the present study did not demonstrate evidence of acceptance’s clinical validity given that the construct was non-significantly associated with the concurrent validation measures of worry, social interaction anxiety, and psychological well-being. This finding may be a product of the methodological requirement of studying acceptance in isolation of commitment and present-focused attention, or the inability to assess important temporal and sequential aspects of acceptance utilization in relation to the use of alternative emotion regulation strategies. It may alternatively be evidence that acceptance, as it has been operationally defined in the present study, lacks of clinical utility as a construct. Future research corroborating existing evidence of acceptance’s usefulness across psychological syndromes and processes is therefore required to establish the construct’s capacity to promote meaningful clinical change. In conjunction with such empirical support, the current study’s findings of convergent and discriminant validity would reinforce growing enthusiasm for the notion that acceptance is an appropriate and important focus of therapeutic attention.
References


Acceptance

Social Psychology, 64, 274-282.


New wave or old hat? *Clinical Psychology Review*, 28, 1-16.


Acceptance control over anxiety-related events. *Behavior Therapy*, 27, 279-293.


Table 1

Summary of Analogous Items across Methods Included in CFAs

<table>
<thead>
<tr>
<th></th>
<th>M1Q</th>
<th>M2Q</th>
<th>M3Q</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACCEPTANCE ITEMS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q7A:</td>
<td>Do you accept (i.e., not</td>
<td>M2Q10A:</td>
<td>M3Q6A:</td>
</tr>
<tr>
<td></td>
<td>attempt to alter) the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>length/duration of your</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>negative feelings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q10A:</td>
<td>Do you allow negative</td>
<td>M2Q7A:</td>
<td>M3Q3A:</td>
</tr>
<tr>
<td></td>
<td>thoughts to occur without</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>trying to make them go</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>away?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q13A:</td>
<td>Do you accept (i.e., not</td>
<td>M2Q4A:</td>
<td>M3Q9A:</td>
</tr>
<tr>
<td></td>
<td>try to change) the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>intensity/strength of your</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>unpleasant feelings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COGNITIVE REAPPRAISAL ITEMS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q4C:</td>
<td>Do you change your thinking</td>
<td>M2Q3C:</td>
<td>M3Q2C:</td>
</tr>
<tr>
<td></td>
<td>to feel more positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>emotion (e.g., happiness)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q8C:</td>
<td>Do you modify how you</td>
<td>M2Q16C:</td>
<td>M3Q8C:</td>
</tr>
<tr>
<td></td>
<td>think to adjust how you</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>feel?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q11C:</td>
<td>Do you adjust your thinking</td>
<td>M2Q6C:</td>
<td>M3Q5C:</td>
</tr>
<tr>
<td></td>
<td>to feel less negative</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>emotion (e.g., anxiety)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PERCEIVED EMOTIONAL CONTROL ITEMS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q9P:</td>
<td>Are you able to “do what</td>
<td>M2Q11P:</td>
<td>M3Q15P:</td>
</tr>
<tr>
<td></td>
<td>you need to do” when you</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>have negative thoughts?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q2P:</td>
<td>Can you cope with</td>
<td>M2Q8P:</td>
<td>M3Q14P:</td>
</tr>
<tr>
<td></td>
<td>difficult situations when</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>feeling anxious?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q17P:</td>
<td>Can you successfully</td>
<td>M2Q15P:</td>
<td>M3Q18P:</td>
</tr>
<tr>
<td></td>
<td>perform work or school</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>responsibilities when</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>having unpleasant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>emotions?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. M1Q = Method 1 Questionnaire (i.e., semantic differential), M2Q = Method 2 Questionnaire (i.e., Likert), M3Q = Method 3 Questionnaire (i.e., fill-in-the-blank), CFAs = confirmatory factor analyses. Concluding letters on each item reflects the purported construct it represents (i.e., A = acceptance, C = cognitive reappraisal, P = perceived emotional control). Study questionnaires are available upon request.
Table 2

**Completely Standardized Loading Parameters of the CT-C(M-1) Model**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>A</th>
<th>C</th>
<th>P</th>
<th>M2QA</th>
<th>M3QA</th>
<th>M2QC</th>
<th>M3QC</th>
<th>M2QP</th>
<th>M3QP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acceptance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q7A</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q10A</td>
<td>.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q13A</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q4A</td>
<td>.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q7A</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q10A</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q3A</td>
<td>.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q6A</td>
<td>.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q9A</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cognitive Reappraisal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q4C</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q8C</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q11C</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q3C</td>
<td>.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q6C</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q16C</td>
<td>.63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q2C</td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q5C</td>
<td>.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q8C</td>
<td>.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Perceived Emotional Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q9P</td>
<td>.75</td>
<td></td>
<td>&gt;</td>
<td>&lt;</td>
<td>&gt;</td>
<td>&lt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q12P</td>
<td>.74</td>
<td></td>
<td>&gt;</td>
<td>&lt;</td>
<td>&gt;</td>
<td>&lt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1Q17P</td>
<td>.86</td>
<td></td>
<td>&gt;</td>
<td>&lt;</td>
<td>&gt;</td>
<td>&lt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q8P</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q11P</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2Q15P</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q14P</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q15P</td>
<td>.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3Q18P</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. M1Q = Method 1 Questionnaire (i.e., semantic differential), M2Q = Method 2 Questionnaire (i.e., Likert), M3Q = Method 3 Questionnaire (i.e., fill-in-the-blank), CT-C(M-1) = correlated trait-correlated method minus one. A = acceptance, C = cognitive reappraisal, P = perceived emotional control. Concluding letters on each item and method reflects the purported construct it represents (i.e., A = acceptance, C = cognitive reappraisal, P = perceived emotional control). Factor loadings fixed to zero by model definition are indicated by blank cells. A path diagram of the CT-C(M-1) model is available upon request.
Table 3

*Correlation Coefficients of the Trait and Concurrent Validation Factors in the CT-C(M-1) model*

<table>
<thead>
<tr>
<th>Trait and Rating</th>
<th>Worry</th>
<th>Social Interaction</th>
<th>Environ-mental Mastery</th>
<th>Personal Growth</th>
<th>Purpose in Life</th>
<th>Self-acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance</td>
<td>-.12</td>
<td>.01</td>
<td>-.11</td>
<td>-.01</td>
<td>-.07</td>
<td>-.09</td>
</tr>
<tr>
<td>Cognitive Reappraisal</td>
<td>-.15</td>
<td>-.22</td>
<td>.40</td>
<td>.35</td>
<td>.37</td>
<td>.41</td>
</tr>
<tr>
<td>Perceived Emot. Control</td>
<td>-.40</td>
<td>-.44</td>
<td>.56</td>
<td>.54</td>
<td>.44</td>
<td>.49</td>
</tr>
</tbody>
</table>

*Note.* CT-C(M-1) = correlated trait-correlated method minus one. Parameters with absolute $t$ values larger than 2 are shown in boldface.