J Psychopathol Behav Assess (2010) 32:255–263
DOI 10.1007/s10862-009-9142-4

The Affective Style Questionnaire: Development and Psychometric Properties

Stefan G. Hofmann · Todd B. Kashdan

Published online: 16 June 2009

Abstract Affective style is an individual difference variable that refers to tendencies for regulating emotions. The emotion research literature has consistently identified three general strategies to handle emotional reactions: some strategies are aimed at re-adjusting affect to adapt successfully to situational demands; other strategies are intended to conceal or suppress affect; and a third approach is to tolerate and accept emotions, including unwanted and aversive reactions. We conducted two studies to develop a self-report measure to assess these affective styles. In the first study (n=434), a list of 127 items related to this construct was administered. A factor analysis supported three factors: habitual attempts to conceal or suppress affect (*Concealing* subscale; 8 items), a general ability to manage, adjust, and work with emotions as needed (*Adjusting* subscale; 7 items), and an accepting and tolerant attitude toward emotions (*Tolerating* subscale; 5 items). The scale showed satisfactory internal consistency. Furthermore, the respective subscales showed different patterns of relations with existing instruments measuring similar constructs. Findings were cross-validated in an independent sample (n=495). The factor structure and results of psychometric analyses were replicated. The final 20-item Affective Style Questionnaire is a brief instrument to measure individual differences in emotion regulation.

Keywords Affect regulation · Self-regulation · Suppression · Cognitive reappraisal · Acceptance · Experiential avoidance · Distress tolerance

One of the most remarkable features of humans is the capacity to regulate and adjust their emotions depending on particular situational demands. It is likely that this capacity is evolutionarily adaptive (e.g., Davidson 2003; Ekman 2003; Izard 1992; Lazarus 1991) and closely connected to cognitive appraisal processes that distinguish humans from non-humans (e.g., Frijda 1986; Lazarus 1991; Scherer and Ellgring 2007). Emotion regulation refers to the process by which people influence which emotions they have, when they have them, and how they experience and express these emotions. Consistent with previous authors, we define *affective style* as inter-individual differences in the sensitivity to and regulation of emotions (Davidson 1998). Some affective styles effectively regulate the experience and expression of emotions in ways that increase progress toward valued aims, whereas other strategies have apparently unintended, counterproductive effects. For example, attempts to suppress emotions increase physiological arousal (Gross and Levenson 1997), and rumination over negative emotional events prolongs angry and depressed affective states (Nolen-Hoeksema and Morrow 1993; Rusting and Nolen-Hoeksema 1998). In contrast, an accepting stance toward arousing emotional experiences without unnecessary attempts to change or avoid them has

The contributions of the two authors were equal. Stefan G. Hofmann is a paid consultant of Organon (Schering-Plough) for work unrelated to this study. This study was partially supported by NIMH grants MH-078308 and MH-081116 awarded to Dr. Hofmann and MH-73937 to Dr. Kashdan.

S. G. Hofmann (✉)
Department of Psychology, Boston University,
648 Beacon Street, 6th Floor,
Boston, MA 02215-2002, USA
e-mail: shofmann@bu.edu

T. B. Kashdan
Department of Psychology, George Mason University,
Mail Stop 3F5,
Fairfax, VA 22030, USA
e-mail: tkashdan@gmu.edu

been linked to increased persistence in challenging situations and reductions in subjective distress (Hayes et al. 2006).

Emotion regulation strategies can be classified based on the time point at which people engage in these activities during the emotion generation process and based on the efficacy of these efforts (Gross and Levenson 1997). Antecedent-focused regulation occurs before the emotional response has been fully activated. This includes tactics such as attention deployment, situation modification, cognitive reframing of a situation, and any preparatory action (e.g., listening to particular energizing music before a work-out routine). Response-focused regulation reflects attempts to alter the experience or expression of ongoing emotions. This includes tactics such as suppression and acceptance-based attitudes.

Laboratory studies suggest that antecedent-focused strategies such as reappraisal are relatively effective for regulating emotions in the short-term, whereas suppression-based response-focused strategies are often unintentionally counterproductive (e.g., Gross and Levenson 1997). It has further been shown that people differ in their habitual use of antecedent- and response-focused emotion regulation strategies, and that these individual differences are meaningfully associated with emotional experiences and psychosocial functioning (Gross and John 2003). For instance, people who are more reliant on reappraisal as a regulatory strategy experience better social functioning and greater well-being, as assessed by self-reports, peer reports, and reactivity to laboratory stimuli. In contrast, people who are more reliant on suppression as a regulatory strategy experience worse social functioning and well-being (Gross and John 2003).

The roles of emotion regulation strategies have been discussed for a range of mental disorders, including substance abuse (Hayes et al. 1996), anxiety and mood disorders (Campbell-Sills and Barlow 2007; Mennin et al. 2002a, b), and borderline personality disorder (Linehan 1993). Furthermore, individual differences in emotion regulation strategies among non-clinical individuals have been shown to be associated with subjective well-being (Gross and John 2003) and biological correlates (Drabant et al. 2009). For example, it has been shown that greater use of reappraisal in everyday life was related to decreased amygdala activity and increased activity in prefrontal control regions in response to negative emotional stimuli (Drabant et al. 2009). Such individual differences in emotion regulation strategies might predict successful coping with emotional challenges as well as the onset of emotional disorders. Therefore, an important question pertaining to emotion regulation concerns the variation between people in their habitual tendency to use some regulatory strategies over others, especially if the preferred strategy has undesirable outcomes. A potential explanation for the persistence of ineffective emotion regulation is people's acceptance and tolerance of particular emotional experiences (Salovey et al. 1995). Some people respond to the onset of emotions by appraising them as intolerable and subsequently engage in avoidance, concealment, or other counterproductive response-focused interventions. Recently developed treatments for emotional disorders employ techniques that target such negative judgments of emotions and maladaptive emotional control efforts (e.g., Segal et al. 2002).

In sum, the emotion literature consistently identifies different affective styles for regulating emotions. The first style includes suppression and other response-focused strategies aimed at concealing and avoiding emotions after they arise. We refer to this affective style as *concealing* strategies. A second style characterizes people who are "more able to access and utilize emotional information in adaptive problem solving, and better able to modulate emotional experience and expression according to contextual demands" (Mennin et al. 2002a, b, p. 88). These individuals possess the tools to readjust or balance emotions as needed to successfully navigate the rewards and punishments of everyday life. We refer to this affective style as *adjusting*. Finally, a third style reflects comfort and non-defensiveness in response to arousing emotional experiences as they exist in the present moment. This includes a strong tolerance of distress. We refer to this affective style as *tolerating* strategies.

To our knowledge no instrument exists that measures these three broad affective styles. The most relevant instruments are the 10-item *Emotion Regulation Questionnaire* (ERQ; Gross and John 2003) measuring individual differences in expressive suppression and cognitive reappraisal; the 10-item *Acceptance and Action Questionnaire-II* (Bond et al. submitted; Hayes et al. 2004) measuring individual differences in the willingness to accept and work with private thoughts and feelings in the pursuit of valued goals (an aggregation of multiple facets); and the 36-item *Difficulties in Emotion Regulation Scale* (DERS: Gratz and Roemer 2004) measuring various ways that people habitually find themselves unable to successfully regulate difficult, aversive emotional experiences. Although useful, the existing instruments are limited by the relatively restricted scope of possible affect regulation strategies and the constraints of a particular theoretical orientation. The goal of the present research was to develop a brief but psychometrically sound scale to measure the general affective styles of concealing, adjusting, and tolerating. A reliable, valid scale of these affective styles can be useful for researchers interested in studying people that successfully use their emotions to navigate the shoals of everyday life and people with psychological disruptions characterized by emotional difficulties. This particular instrument can

also serve the aims of practitioners interested in assessing baseline self-regulation and monitoring interventions addressing psychological, physical, and social well-being.

Study 1

Participants

A total of 457 undergraduate students of Boston University (BU), 18 years of age or older, participated in this study. Due to missing data, the following analyses are based on 434 participants. The mean age of participants was 19.15 (*SD*=2.61). The majority of the sample was female (67%) and Caucasian (68.1%). Remaining participants self-identified as being Asian or Asian–American (18.40%), Hispanic, Latino, or Mexican–American (3.7%), and African American (2.6%). Students most commonly majored in biology (*n*=39), psychology (*n*=36), anatomy/human physiology (*n*=26), business (*n*=24), education (*n*=23), communications (*n*=15), advertising (*n*=12), biochemistry and molecular biology (*n*=11), journalism (*n*=11) management (*n*=11), marketing (*n*=10), and public relations (*n*=10). Most of the students were undecided (*n*=63) and in 35 cases the major was unknown. The remaining students majored in one of 37 other subjects. Participants were on average 19.15 years old (*SD*=1.61). Students attending this college typically come from middle to upper middle class socioeconomic backgrounds. The study was reviewed and approved by the Institutional Review Board of Boston University.

Instruments

In addition to the 127 author-generated emotion items, several validated self-report measures were administered.

Brief COPE (Carver 1997) The Brief COPE, an abbreviated version of the COPE (Carver et al. 1989), is a 28-item inventory consisting of 14 subscales. The instrument assesses individual differences in the use of effective and non-effective coping strategies. Each subscale has two items (α=.50 to .90). Examples of coping scales include Denial, Active Coping and Behavioral Disengagement.

Toronto Alexithymia Scale (TAS-20; Bagby et al. 1994) The TAS-20 is a 20-item scale to measure alexithymia, a construct reflecting difficulty identifying, describing, and being aware of emotions. The scale has become a widely used measure of this construct. Parker et al. (2003) reported internal consistency estimates (Cronbach's α) of the three TAS factors to be above .70. The homogeneity of the three scales was further supported by the mean inter-item correlations ranging between .20 and .40. Finally, the factorial validity was demonstrated by a confirmatory factor analysis that supported the three-factor model.

Difficulties in Emotion Regulation Scale (DERS: Gratz and Roemer 2004) The DERS contains 36 items to assess six dimensions of self-regulatory difficulties: nonacceptance of emotional responses (accept), difficulties engaging in goal-directed behavior (when upset; goals), impulse control difficulties (when upset; impulse), lack of emotional awareness (aware), limited access to effective emotion regulation strategies (strategies), and lack of emotional clarity (clarity). Gratz and Roemer (2004) reported high internal consistency of the total DERS (α=.93), adequate internal consistency of all subscales (α's >.8), and also adequate 4–8 weeks test-retest reliability of the total scale (*r*=.88). The 4–8 weeks test-retest reliability of the subscales ranged from *r*=.69 (nonacceptance subscale) to *r*=.80 (clarity subscale). The authors further reported evidence for convergent and predictive validity.

Berkeley Expressivity Questionnaire (BEQ; Gross and John 1995) The Berkeley Expressivity Questionnaire consists of 16 items to assess three facets of emotional expressivity: negative expressivity, positive expressivity, and impulse strength. Gross and John (1995) reported that the Cronbach's α coefficients of the three subscales ranged between 0.71 and 0.76, and the 2-months test-retest reliability ranged between 0.71 and 0.82. Finally, the 3-factor solution was replicated in a separate sample.

Emotion Regulation Questionnaire (ERQ; Gross and John 2003) This scale consists of 10 items and assesses individual differences in two emotion regulation strategies: expressive suppression and cognitive reappraisal. The scale shows good psychometric properties (Gross and John 2003). Gross and John (2003) reported Cronbach's alpha coefficients, ranging between .79 (for the Reappraisal subscale) and .73 (for the Suppression subscale). The 3-months test–retest reliability was .69 for both scales. Factor analyses supported the 2-factor, orthogonal factor structure of the measure.

Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., submitted) The AAQ-II is a 10-item measure, a refinement of the original scale (Hayes et al. 2004), to assess individual differences in acceptance and experiential avoidance. The psychometric characteristics are adequate. In 7 datasets, the AAQ-II has been shown to possess a unitary factor and adequate internal consistency (α=.81 to .89) (Bond et al. submitted; McCracken and Zhao-O-Brien in press). Researchers found large positive relations with measures of general health (e.g., *r*=−.67 with Symptom

Checklist-10R) and large negative relations with measures of suppression tendencies (e.g., $r=-.58$ with White Bear Suppression Inventory) and emotional disturbances (e.g., $r=-.59$ with Beck Anxiety Inventory and $r=-.75$ with Beck Depression Inventory-II) (Bond et al. submitted) as well as construct specificity above and beyond measures of pain chronicity and mindful awareness in predicting pain-related distress and disability in adult patients at a pain clinic (McCracken and Zhao-O-Brien in press).

Procedure

Participants completed a web-based survey (PsychData) that included demographic questions, a pool of emotion regulation items for the development of our new scale, and several published self-report instruments. The study was reviewed and approved by the Institutional Review Boards of Boston University and George Mason University. Informed consent was obtained with an initial opening screen providing all of the details about the study and potential costs and benefits for participation prior to any survey questions. Potential participants were required to indicate that they had read the consent form prior to continuation. As part of psychology course requirements, students are asked to participate in research studies to gain direct experience as subjects in research experiments. Typically, students must accumulate 3 h worth of research credits as part of the course requirements for an introductory psychology class. If students participate in these experiments, investigators are obligated to provide them with credit for these research efforts. In sum, the study was fully compliant with the ethical guidelines of the institutional review boards and the ethical guidelines of psychology as a profession.

The two authors generated 127 items assessing different ways of dealing with emotions. Many items derived were based on the work by Gross and John (2003), who distinguish antecedent- and response-focused strategies, and the acceptance and mindfulness-based literature (e.g., Hayes et al. 2006). The complete item pool can be obtained from the authors.

Results

Factor Structure

The principal component analysis of the entire item pool resulted in 30 factors with Eigenvalues greater than one accounting for 67.48% of the total variance. A close inspection of the factor structure suggested that items loading on the first three factors describe three distinct affective styles, *concealing, adjusting, or tolerating* affect. The remaining factors could not be easily interpreted. In the next step, we selected items loading highly on these factors and eliminated items with poor item validity.

Psychometric Data

The first factor (*Concealing*), consisting of 8 items, accounted for 22.18% of the variance. The second factor, consisting of 7 items and accounting for 15.81% of the variance, was interpreted as the *Adjusting* subscale. The third factor, the *Tolerating* subscale, consisting of 5 items, accounted for 10.09% of the variance. These three factors were the only ones with Eigenvalues above 1. The scree plot further confirmed the 3-factor solution.

The correlation matrix was subjected to a varimax rotation. The resulting 3-factor structure is presented in Table 1 (Study 1 column). *Concealing* showed a mean of 23.94 ($SD=6.94$, median = 24, mode = 24, range: 8–40); *Adjusting* showed a mean of 20.36 ($SD=5.05$, median = 20, range: 7–34), and *Tolerating* showed a mean of 15.23 ($SD=3.42$, median = 15, range: 6–25).

Internal consistency was acceptable for the *Concealing* ($\alpha=.84$), *Adjusting* ($\alpha=.80$), and *Tolerating* ($\alpha=.66$) subscales. The item-total correlation coefficients were *r's* >.59 for *Concealing*, *r's* >.61 for *Adjusting*, and *r's* >.57 for *Tolerating* subscales (*p's* < .0001). The *Concealing* and *Adjusting* subscales showed a correlation of $r=.17$, the *Adjusting* and *Tolerating* subscales correlated at $r=.13$, and the *Concealing* and *Tolerating* subscales showed a correlation of $r=-.08$.

Construct Validity

Table 2 (Study 1 column) shows the correlations between the three subscales of the ASQ and related instruments. As expected, large correlations were observed between the ASQ-*Adjusting* subscale and the AAQ-II ($r=.47$) and the Reappraisal subscale of the ERQ ($r=.54$), and between the ASQ-*Concealing* subscale and the ERQ suppression subscale ($r=.60$) and BEQ-Negative Expressivity ($r=-.68$). Interestingly, we also found a moderate negative correlation between the ASQ-*Tolerating* subscale and the ERQ suppression subscale ($r=-.34$), suggesting that suppressing one's emotions requires concealment and low distress tolerance. Also, the ASQ-*Concealing* and *Adjusting* subscales were differentially linked to difficulties describing and identifying feelings, and only the ASQ-*Tolerating* subscale was linked to being emotionally aware ($r=-.34$ with externally oriented subscale of TAS-20).

As for the DERS subscales, the highest correlations were observed between the *Adjusting* subscale and the DERS strategies subscale (limited access to effective emotion

Table 1 Factor structure from Study 1 (Boston University; *N*=434) and Study 2 (George Mason University; *N*=495)

Items	Study 1			Study 2		
	Concealing	Adjusting	Tolerating	Concealing	Adjusting	Tolerating
People usually can't tell how I am feeling inside.	**.65**	−.02	−.23	**.64**	−.02	−.06
I often suppress my emotional reactions to things.	**.64**	−.03	−.03	**.66**	−.07	−.12
I am good at hiding my feelings.	**.81**	.06	−.03	**.78**	.05	−.02
People usually can't tell when I am upset.	**.72**	.19	−.09	**.77**	.10	−.04
People usually can't tell when I am sad.	**.73**	.20	−.09	**.76**	.10	−.02
I can act in a way that people don't see me being upset.	**.72**	.19	.06	**.73**	.24	.03
I could easily fake emotions.	**.60**	.05	.14	**.58**	−.13	.09
I can hide my anger well if I have to.	**.56**	.33	.18	**.58**	.36	.04
I have my emotions well under control.	.21	**.63**	−.10	.00	**.62**	.04
I can avoid getting upset by taking a different perspective on things.	.17	**.63**	.05	.10	**.65**	.06
I am able to let go of my feelings.	.13	**.66**	−.03	.05	**.60**	−.10
I can calm down very quickly.	.14	**.71**	.05	.22	**.72**	.04
I can get out of a bad mood very quickly.	.07	**.68**	.15	.01	**.69**	.07
I know exactly what to do to get myself into a better mood.	−.05	**.70**	.12	.00	**.63**	.11
I can get into a better mood quite easily.	−.00	**.80**	.08	−.05	**.77**	.03
I can tolerate having strong emotions.	.05	.20	**.66**	.00	.06	**.72**
It's ok if people see me being upset.	−.25	.06	**.61**	−.27	.10	**.61**
It's ok to feel negative emotions at times.	.04	−.07	**.67**	.03	−.07	**.63**
I can tolerate being upset.	.15	.27	**.63**	.13	.22	**.53**
There is nothing wrong with feeling very emotional.	−.05	−.10	**.70**	−.05	.04	**.74**

The Table shows the factor scores (varimax rotation) of the items of the Affective Style Questionnaire items. High-loading items are printed in bold

regulation strategies; r=−.54), goals subscale (difficulties engaging in goal-directed behavior; r=−.40), and the impulse subscale (impulse control difficulties; r=−.44). Moderate correlations were also observed between the *Tolerating* subscale and the DERS accept subscale (nonacceptance of emotional response; r=−.31) and the aware subscale (lack of emotional awareness; r=−.46). The three ASQ subscales showed consistently low correlations with the Brief COPE Subscales, supporting their discriminant validity (all r's < .24, except for the correlation between the Brief COPE planning subscale and the ASQ adjusting subscale, r=−.32).

Discussion of Study 1

With the goal of developing a short and psychometrically sound measure of affective style, our results were promising. We found evidence for 3 meaningful and interpretable factors leading to *Concealing*, *Adjusting*, and *Tolerating* affect subscales. Each of these subscales showed high item validity and internal consistency. Inter-correlations among the ASQ subscales with other measures of emotion regulation, psychological flexibility, and other personality traits provided evidence of convergent and discriminant validity. To further evaluate the structure and psychometric properties of our scale, we conducted a second study with an independent sample.

Study 2

Participants

A total of 528 undergraduate students of George Mason University (GMU) in Virginia participated in this study. Due to missing data, the following analyses are based on 495 participants.

Participants had a mean age of 22.02 (SD=5.23). The majority of the sample was female (78%) and Caucasian (54.5%). Remaining participants self-identified as being Asian or Asian–American (17.8%), Hispanic, Latino, or Mexican–American (7.4%), and African American (8.4%). Compared with the Study 1 sample, the GMU sample was significantly older, t (797.57) = −11.23, p<.0001, and there was a greater proportion of women, $\chi 2$ (1) = 15.20, p<.0001, and racial and ethnic diversity, $\chi 2$ (1) = 18.01, p<.0001.

Table 2 Correlations between affective style questionnaire and other instruments in Study 1 (Boston University) and Study 2 (George Mason University)

Questionnaires	Study 1			Study 2		
	Concealing	Adjusting	Tolerating	Concealing	Adjusting	Tolerating
ERQ						
Reappraisal	.13*	.54**	.09	.14*	.57**	.14**
Suppression	.60**	−.03	−.34**	.52**	−.05	−.32**
BEQ						
Negative Expressivity	−.68**	−.16*	.16*	−.70**	−.27**	.10*
Positive Expressivity	−.23**	.07	.28**	−.33**	.07	.28**
Impulse Strength	−.15*	−.39**	.19**	−.30**	−.38**	.21**
AAQ-II	−.05	.47**	.22**	−.03	.48**	.18**
Brief Cope						
Self-Distraction	.10*	.12*	.09	.17**	.19**	.07
Active Coping	−.11	.08	.29**	−.12	.05	.27**
Substance Use	.08	.10*	.22**	.01	.14*	.21**
Emotional Support	.17**	.16**	.08	.20**	.24**	.13**
Instrumental Support	.04	−.15**	−.06	.06	−.07	−.01
Behavioral Disengagement	−.04	.20**	.03	−.01	.14**	.10*
Venting	−.19	.01	.18**	−.10*	.03	.07
Positive framing	.04	−.04	.14**	.04	−.02	.07
Planning	−.02	−.32**	.04	−.07	−.32**	.11*
Humor	.08	.06	.02	.12**	.05	.14**
Acceptance	−.02	−.02	−.05	−.07	−.01	−.01
Religion	−.19**	−.10*	.05	−.14**	−.14**	.06
Self-Blame	.05	−.24**	−.09	.01	−.20**	−.20**
TAS-20						
Difficulty Identifying Feelings	.18**	−.27**	−.16**	.11*	−.25**	−.12**
Difficulty Describing Feelings	.38**	−.18**	−.28**	.29**	−.17**	−.25**
Externally Oriented	.13	−.02	−.34**	.16**	−.03	−.28**
DERS						
Total	.11*	−.48**	−.32**	.02	−.51**	−.23**
Clarity	.18**	−.30**	−.28**	.09*	−.30**	−.24**
Aware	.15**	−.08	−.46**	.20**	−.13	−.39**
Impulse	−.04	−.44**	−.13**	−.09*	−.44**	−.08
Accept	.10*	−.27**	−.31**	.12**	−.27**	−.15**
Goals	−.06	−.40**	−.20	−.08	−.43**	−.08
Strategies	.06	−.54**	−.19**	−.04	−.54**	−.08**

The Table shows product moment correlations between the ASQ subscales and other questionnaires. *AAQ-II* Acceptance and Action Questionnaire, *BEQ* Berkeley Expressivity Questionnaire, *ERQ* Emotion Regulation Questionnaire, *DERS* Difficulties in Emotion Regulation Scale, *TAS-20* Toronto Alexithymia Scale

*$p<.05$; **$p<.001$

Students most commonly majored in psychology ($n=195$), nursing ($n=44$), biology ($n=23$), business ($n=21$), accounting ($n=19$), communication ($n=19$), administration of justice ($n=19$), English ($n=16$), and finance ($n=19$). Seventeen students were undecided and in 33 cases the major was unknown. The remaining students majored in one of 44 other subjects. As in Study 1, students attending this college typically come from middle to upper middle class socioeconomic backgrounds. The study was reviewed and approved by the Institutional Review Board of George Mason University.

Instruments and Procedure

The instruments and procedure were identical to Study 1.

Results

Factor Structure

The principal component analysis with the 20-item ASQ resulted again in 3 factors with Eigenvalues greater than one accounting for 49.6% of the total variance. As shown in Table 1 (Study 2 column), the factor structure of Study 1 was replicated perfectly. The *Concealing*, *Adjusting*, and *Tolerating* factors accounted for 19.70%, 18.34, and 11.54% of the variance, respectively. The scree plot confirmed the 3-factor solution.

Psychometric Data

Concealing showed a mean of 22.60 (*SD*=6.31, median = 22, mode = 21, range: 8–40); *Adjusting* showed a mean of 20.96 (*SD*=5.15, median = 21, range: 7–35), and *Tolerating* showed a mean of 15.47 (*SD*=3.43, median = 15, range: 6–25).

Internal consistency was acceptable for *Concealing*, α=.84, *Adjusting*, α=.82, and *Tolerating*, α=.68, subscales. The item-total correlation coefficients were high for *Concealing*, *r*'s >.61, *Adjusting, r*'s >.66, and *Tolerating, r*'s >.64, subscales (*p*'s < .0001). The *Concealing* and *Adjusting* subscales showed a correlation of *r*=.30, the *Adjusting* and *Tolerating* subscales correlated at *r*=.17, and the *Concealing* and *Tolerating* subscales showed a correlation of *r*=−.03.

Construct Validity

Table 2 (Study 2 column) shows the correlations between the ASQ subscales and other instruments, with patterns similar to Study 1. The strongest relations with the ASQ-*Concealing* subscale were the BEQ-Negative Expressivity (*r*=−.70), ERQ-Suppression (*r*=.52), and BEQ-Positive Expressivity (*r*=−.33) subscales. The strongest relations with the ASQ-*Adjusting* subscale were ERQ-Reappraisal (*r*=.57), DERS Strategies (*r*=−.54), and DERS Goals (*r*=−.43) subscales and the AAQ-II (*r*=.48); indicative of adaptive regulation and psychological flexibility. The strongest relations with the ASQ-*Tolerating* subscale were DERS Aware (*r*=−.39), ERQ-Suppression (*r*=−.32), BEQ-Positive Expressivity (*r*=.28), and TAS-20 Externally Oriented (*r*=−.28) subscales; indicative of effective use of acceptance and mindfulness strategies.

Discussion of Study 2

The goal of this study was to cross-validate the findings of Study 1 and further validate the ASQ in a sample of college students from a different university. Although there were differences between the two samples in terms of gender, racial, and ethnic diversity, the results were replicated. The factor analysis again revealed the identical 3-factor solution with the same items loading on subscales interpreted as *concealing*, *adjusting* or *tolerating* affect. Based on the pattern of correlations with other instruments measuring emotion regulation, coping, and personality, the results support the uniqueness of each ASQ subscale and their convergent and discriminant validity. It should be noted that Study 2 essentially replicated Study 1, and that both studies are limited by the sole reliance on an undergraduate student population. Neither sample is representative of the general population, because both samples comprise young adults and predominantly White females. This limitation should be taken into consideration when interpreting the findings.

General Discussion

Our objective was to develop a short, reliable, and valid measure of affective style. Based on a thorough review of the emotion and clinical literature, a large pool of items was generated. Using two large samples of college students at separate universities, we were able to create a 20-item scale consisting of 3 subscales: *Concealing*, *Adjusting*, and *Tolerating* affect. Given the brevity of the measure, the scale shows excellent psychometric properties. The subscales map onto existing measures of emotion regulation and also include additional facets of affective style.

An important limitation of the study is the sole reliance on undergraduate student samples. Therefore, it is not possible to make generalizations to other samples, such as adults with evidence of effective emotion regulation (e.g., military leaders, parents balancing work and family life) and clinical populations. We suggest that future studies validate the instrument in clinical populations with affective disorders, such as mood and anxiety disorders and personality disorders characterized by emotion regulation disturbances. Furthermore, it will be important to study changes in affective style during the course of treatment and to examine whether a particular affective style predicts treatment response. We hypothesize that concealing affect and a general inflexibility in adjusting one's affective style to the situational demands are particularly maladaptive strategies for coping with negative affect. Future studies will further need to examine the temporal stability of the measure. Finally, although we found evidence for the separability of each affective style, we did not evaluate whether the ASQ subscales differentially predict how people respond to aversive and rewarding events in the laboratory and naturalistic environments. It will be important to employ multi-method assessments and investigate the temporal course of how people regulate their emotions in

future research. Despite the limitations of our two initial studies, this measure may become a potentially useful tool in basic and clinical research.

Appendix

ASQ

Instructions We are interested in how you experience and manage your emotions. Obviously, different situations bring out somewhat different responses, but think about what you *usually* do. Please try to respond to each item *separately in your mind from each other item*. Do not indicate agreement with things that you think you should do or wish you do. Instead, choose your answers thoughtfully, and make your answers about what is true FOR YOU. Please answer *every* item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU—not what you think "most people" would say or do. Use the scale below to answer each item

1----------2----------3----------4----------5
not true of me at all a little bit moderately quite a bit extremely true of me

1.	People usually can't tell how I am feeling inside.	1—2—3—4—5
2.	I have my emotions well under control	1—2—3—4—5
3.	I can tolerate having strong emotions.	1—2—3—4—5
4.	I can avoid getting upset by taking a different perspective on things.	1—2—3—4—5
5.	I often suppress my emotional reactions to things.	1—2—3—4—5
6.	It's ok if people see me being upset.	1—2—3—4—5
7.	I can calm down very quickly	1—2—3—4—5
8.	I am able to let go of my feelings.	1—2—3—4—5
9.	I am good at hiding my feelings.	1—2—3—4—5
10.	People usually can't tell when I am upset.	1—2—3—4—5
11.	It's ok to feel negative emotions at times.	1—2—3—4—5
12.	I can get out of a bad mood very quickly.	1—2—3—4—5
13.	People usually can't tell when I am sad.	1—2—3—4—5
14.	I can tolerate being upset.	1—2—3—4—5
15.	I can act in a way that people don't see me being upset.	1—2—3—4—5
16.	I know exactly what to do to get myself into a better mood.	1—2—3—4—5
17.	There is nothing wrong with feeling very emotional.	1—2—3—4—5
18.	I could easily fake emotions.	1—2—3—4—5
19.	I can get into a better mood quite easily.	1—2—3—4—5
20.	I can hide my anger well if I have to.	1—2—3—4—5

All items are straight-forward scored. Higher scores reflect a preference for an affective style. Concealing is the sum of items 1, 5, 9, 10, 13, 15, 18, and 20. Adjusting is the sum of items 2, 4, 7, 8, 12, 16, and 19. Tolerating is the sum of items 3, 6, 11, 14, and 17

References

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The 20-item Toronto Alexithymia Scale-I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research, 38*, 23–32.

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Orcutt, H. K., Waltz, T., & Zettle, R. D. (submitted). Preliminary psychometric properties of the Acceptance and Action Questionnaire—II: A revised measure of psychological flexibility and acceptance.

Campbell-Sills, L., & Barlow, D. H. (2007). Incorporating emotion regulation into conceptualizations and treatments of anxiety and mood disorders. In J. Gross (Ed.), *Handbook of emotion regulation* (pp. 542–559). New York: Guilford.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: consider the Brief COPE. *International Journal of Behavioral Medicine, 4*, 92–100.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology, 56*, 267–283.

Davidson, R. J. (1998). Affective style and affective disorders: perspectives form affective neuroscience. *Cognition and Emotion, 12*, 307–320.

Davidson, R. J. (2003). Darwin and the neural bases of emotion and affective style. *Proceedings of the New York Academy of Sciences*, *1000*, 316–336.

Drabant, E. M., McRae, K., Manuck, S. B., Hariri, A. R., & Gross, J. J. (2009). Individual differences in typical reappraisal use predict amygdala and prefrontal responses. *Biological Psychiatry, 65*, 367–373.

Ekman, P. (2003). *Emotions revealed*. New York: Times Books.

Frijda, N. H. (1986). *The emotions*. Cambridge, England: Cambridge University Press.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*, 41–54.

Gross, J. J., & John, O. P. (1995). Facets of emotional expressivity: three self-report factors and their correlates. *Personality and Individual Differences, 19*, 558–568.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348–362.

Gross, J. J., & Levenson, R. W. (1997). Hiding feelings: the acute effects of inhibiting negative and positive emotion. *Journal of Abnormal Psychology, 106*, 95–103.

Hayes, S. C., Luoma, J., Bond, F., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: model, processes, and outcomes. *Behaviour Research and Therapy, 44*, 1–25.

Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., et al. (2004). Measuring experiential avoidance: a preliminary test of a working model. *The Psychological Record, 54*, 553–578.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: a functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*, 1152–1168.

Izard, C. E. (1992). Basic emotions, relations among emotions, and emotion-cognition relations. *Psychological Review, 99*, 561–565.

Lazarus, R. (1991). *Emotion and adaptation*. New York: Oxford University Press.

Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: The Guilford.

McCracken, L. M., & Zhao-O-Brien, J. (in press). General psychological acceptance and chronic pain: there is more to accept than pain itself. *European Journal of Pain.*

Mennin, D. S., Heimberg, R. G., Turk, C. L., & Fresco, D. M. (2002a). Applying an emotion regulation framework to integrative approaches to generalized anxiety disorder. *Clinical Psychology: Science and Practice, 9*, 85–90.

Mennin, D. S., Heimberg, R. G., Turk, C. L., & Fresco, D. M. (2002b). Commentary on Roemer and Orsillo: applying an emotion regulation framework to integrative approaches to generalized anxiety disorder. *Clinical Psychology: Science and Practice, 9*, 85–90.

Nolen-Hoeksema, S., & Morrow, J. (1993). Effects of rumination and distraction on naturally-occurring depressed mood. *Cognition and Emotion, 7*, 561–570.

Parker, J. D. A., Taylor, G. J., & Bagby, R. M. (2003). The twenty-item Toronto Alexithymia scale-III: reliability and factorial validity in a community population. *Journal of Psychosomatic Research, 55*, 269–275.

Rusting, C., & Nolen-Hoeksema, S. (1998). Regulating responses to anger: effects of rumination and distraction on angry mood. *Journal of Personality and Social Psychology, 74*, 790–803.

Salovey, P., Mayer, J. D., Goldman, S., Turvey, C., & Palfai, T. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. In J. W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 125–154). Washington, D.C.: American Psychological Association.

Scherer, K. R., & Ellgring, H. (2007). Multimodal expression of emotion: affect programs or componential appraisal patterns? *Emotion, 7*, 158–71.

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford.