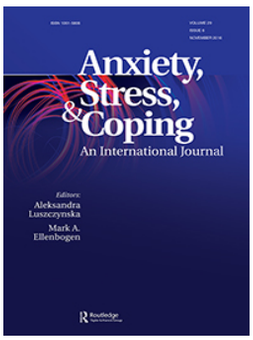

Routledge
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Anxiety, Stress, & Coping
An International Journal

ISSN: 1061-5806 (Print) 1477-2205 (Online) Journal homepage: http://www.tandfonline.com/loi/gasc20

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To cite this article: Lindsey M. Matt, David M. Fresco & Karin G. Coifman (2016) Trait anxiety and attenuated negative affect differentiation: a vulnerability factor to consider?, Anxiety, Stress, & Coping, 29:6, 685-698, DOI: 10.1080/10615806.2016.1163544

To link to this article: https://doi.org/10.1080/10615806.2016.1163544

ANXIETY, STRESS, & COPING, 2016
VOL. 29, NO. 6, 685–698
http://dx.doi.org/10.1080/10615806.2016.1163544

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Trait anxiety and attenuated negative affect differentiation: a vulnerability factor to consider?

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ABSTRACT

Background and Objectives: Describing emotional experiences using distinct terms, or affect differentiation, has been associated with emotion regulation and adaptive behavior under stress. There is little data, however, examining the association between differentiation and dispositional factors underlying psychopathology. The current study examines the association between differentiation and trait anxiety (TA) given prior evidence of cognitive biases in TA relevant to higher order processing of emotional experiences.

Design: We examined cross-sectionally, via lab-based repeated assessment, the association between differentiation of negative and positive experiences and TA.

Methods: Two hundred twenty-two adults completed an emotion reactivity task including repeated assessments of affect. We hypothesized that individuals higher in trait anxiety (HTA) would have greater difficulty differentiating their experiences.

Results: HTA individuals exhibited lower levels of negative affect (NA) differentiation even when controlling for depression. Although negative emotion intensity was consistently associated with lower differentiation, this did not account for the influence of HTA on differentiation.

Conclusions: These data suggest that HTA individuals have greater difficulty differentiating negative emotions, regardless of negative emotion intensity and depression. As HTA is common to many emotional disorders; this evidence suggests that poor differentiation may also be an important transdiagnostic consideration in models of risk and of affective disease.

ARTICLE HISTORY
Received 28 October 2014
Revised 29 January 2016
Accepted 8 February 2016

KEYWORDS
Affect; emotion; differentiation; trait anxiety; regulation; risk

Introduction

Affective reports index emotions *once they are attended to*, such as with language (Lindquist, MacCormack, & Shablack, 2015). Indeed, the ability to identify and label emotional experiences with a high degree of specificity is a phenomenon increasingly linked to better psychological adjustment (Kashdan, Barrett, & McKnight, 2015) as well as adaptive emotion-related regulatory and behavioral responses (Cole, Armstrong, & Pemberton, 2010; Schwarz & Clore, 1983; Tugade, Fredrickson, & Barrett, 2004). Although the use of the term affect is sometime synonymous with emotion, the distinction between the two is important though hotly debated. For example, some argue that emotions are constructed entirely from affective conceptualizations (Barrett, 2006). However, others challenge these assertions by defining emotions as discrete, highly complex, loosely coordinated, responses across multiple response channels (e.g. behavioral, autonomic; Bonanno & Keltner, 2004; Ekman, 1992). In this framework, emotions are not always experienced or attended to, and therefore *affect* is both a part of and

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distinct from the broader system (Ekman & Cordaro, 2011). Here, we use the term affect to refer specifically to the experiential component of emotion, (Buck, 1993; MacLean, 1990) and in particular, to the way in which individuals describe their emotional experiences with language, reflecting their understanding or conceptualization of their experience (Lindquist et al., 2015). Some individuals use general terms such as "pleasant" and "unpleasant" to describe the full range of their emotional experiences.[1] However, others employ greater specificity; for example, pleasant experiences are characterized as feelings of joy versus happiness versus affection while unpleasant experiences are reported as feelings of anger versus sadness versus guilt (Barrett, 1998; Barrett, Gross, Christensen, & Benvenuto, 2001).

Affect differentiation, or the ability to make fine-grained and nuanced distinctions between emotional states of the same valence, otherwise known as emotion differentiation or emotion granularity (Barrett, 2004; Kashdan et al., 2015), has been consistently linked to considerable benefits, particularly during times of stress. For example, during high levels of emotional intensity, affect differentiation supports emotion regulation strategies such as distraction and self-soothing (Barrett et al., 2001) and has been shown to mediate the negative relationship between emotional liability and mindfulness (Hill & Updegraff, 2012). Additionally, there is growing evidence linking affect differentiation to adaptive behavioral responses. For example, Kashdan, Ferssizidis, Collins, and Muraven (2010) found that individuals with more intense negative emotional experiences consumed less alcohol if they were better able to describe their emotions with specificity, relying less on global descriptions. Pond et al. (2012) found that high emotion differentiators reported less aggressive tendencies, less frequent provocation in daily life, and less aggression in response to being provoked. Further support comes from the work of Tugade et al. (2004) who found that *both* negative and positive affective differentiation were associated with less self-reported automatic responses, less mental self-distraction during stress, and more engagement in coping. Moreover, differentiation of negative affect (NA) during the course of chronic illness was predictive of greater treatment adherence (Coifman, Ross, Kleinert, & Giardina, 2014). Finally, although there is a relative paucity of research examining positive affect differentiation, Selby et al. (2014) recently examined positive affect differentiation in anorexic patients and found that poor positive differentiation predicted greater compensatory and weight-loss behaviors.

To date, there are several mechanisms that may explain how affect differentiation, and more specifically the ability to label emotional experiences discretely, can be beneficial. The first suggests that the act of attending to one's emotions provides information on how to proceed in a given situation. Schwarz and Clore's (1983) original *affect-as-information* model suggests that it is broad affective states that guide judgment, while Schwarz's (2011) more recent *feelings-as-information* theory posits that attending to one's *specific* feelings/emotions is what provides information on how to appropriately cope with and best respond to emotional experiences (see also Schwarz, 1990; Schwarz & Clore, 1987). Additional support for the guiding role of specific emotions in motivation and judgment comes from work by DeSteno, Petty, Wegener, and Rucker (2000), who showed that individuals induced to experience a specific negative emotion (e.g. either anger or sadness) showed specific biases in which they predicted greater likelihood of events occurring that were congruent with their induced emotion, and from Lerner and Keltner (2000) who demonstrated that anger and fear have distinct effects on judgments of future events.

Alternatively, others suggest that affect reporting may impact emotion processing at a more implicit level. Hariri, Bookheimer, and Mazziotta (2000) found that the act of labeling angry and frightened expressions was associated with diminished regional cerebral flow in the amygdala, a brain area known to be associated with emotional reactivity, and increased regional cerebral blood flow to the prefrontal cortex, an area implicated in emotion regulation. More convincing is recent work demonstrating that the act of simply describing one's emotional experiences in real-time is as effective in regulating broader emotional responses (including arousal) as the use of established and more deliberate regulatory strategies (e.g. reappraisal) when exposed to a salient threat (e.g. spider phobics interacting with spiders: Kircanski, Lieberman, & Craske, 2012). Together these data speak to the considerable regulatory benefits of precise emotion labeling and real-time naturalistic descriptions of emotion responses, both key components of affect differentiation.

Given the considerable advantages potentially underlying affect differentiation, it follows that deficits in differentiation would be associated with problematic outcomes. Indeed, prior research suggests that depressed individuals report less differentiated NA as compared to control participants (Demiralp et al., 2012; Erbas, Ceulemans, Pe, Koval, & Kuppens, 2014). Moreover, in patients with Borderline Personality Disorder, differentiation interacted significantly with rumination to predict the frequency of non-suicidal self-injury (Zaki, Coifman, Rafaeli, Berenson, & Downey, 2013). High ruminators who were more proficient at NA differentiation reported significantly lower frequency of self-injurious acts and urges relative to less-proficient differentiators. As such, affect differentiation may be a form of adaptive elaboration of emotional experience that could be protective, as compared to problematic elaboration, such as rumination or worry (Mennin & Fresco, 2013). However, although considerable evidence attests to the adaptive benefits of affect differentiation, our understanding of what influences the capacity to differentiate is still strikingly limited. Indeed, given that poor affect differentiation has been demonstrated in a variety of disorders, how differentiation relates to broader dispositional characteristics underlying psychopathology is of particular interest.

In this investigation, we focused on dispositional or trait anxiety (TA), operationally defined as the relatively stable proneness that predicts heightened responses to and lower thresholds for detecting threat (Spielberger, 1972). TA is particularly relevant in that it is regarded as a key risk factor for anxiety and depressive disorders, and also shares considerable overlapping features with general negative affectivity and/or neuroticism (Bados, Gómez-Benito, & Balaguer, 2010). Individuals who are particularly anxiety-prone and often characterized as high trait anxious (HTA), have a tendency to respond with fearful responses more frequently and with relatively poor discrimination of what constitutes a true threatening context (Lissek, 2012). This is due to well-established cognitive biases that suggest that HTA individuals exhibit heightened threat-sensitivity and vigilance for threat, as well as considerably greater difficulty disengaging their attention once a threat is detected (Wilson & MacLeod, 2003). These individuals may perceive even ambiguous stimuli as threatening and respond to both real and imagined threat automatically, leaving few resources available for *effective* conscious and/or deliberate cognitive analysis. Indeed, anxiety narrows cognitive resources resulting in an emphasis on automatic encoding at the expense of higher order processing (Mathews & Mackintosh, 1998). Prior research has clearly demonstrated that the encoding and elaboration of emotions occurs after multiple automatic processing steps, and relies on secondary or higher order processing (Cardinal, Parkinson, Hall, & Everitt, 2002). As such, the considerable information-processing biases characteristic of HTA likely limit resources available for *adaptive* higher order elaboration of experience, such as in affect differentiation.

HTA is also consistently associated with higher intensity negative emotional responses (Watson & Clark, 1984). As described above, this may be due to greater threat-sensitivity and other related biases, but more importantly, there is compelling evidence suggesting that affect differentiation may be directly influenced by emotion intensity. While research suggests that differentiation may have the most utility when individuals experience intense emotions (Kashdan et al., 2010; Pond et al., 2012), accomplishing differentiation in the face of high-intensity emotion may be challenging for some. Indeed, multiple groups with severe psychopathology have documented deficits in differentiation (e.g. Borderline: Suvak et al., 2011; Wilson & MacLeod, 2013; Anorexia: Selby et al., 2014; Major Depression: Demiralp et al., 2012). Moreover, decades of research have demonstrated that high-intensity negative emotions (e.g. fear) demand considerably greater cognitive resources to negotiate (cf. Mineka & Öhman, 2002). As such, given elevated emotional reactivity and already limited cognitive resources, it seems likely that differentiation of emotional experiences may be particularly challenging for HTA individuals.

Finally, there is prior work suggesting that high anxious individuals may store threat information in nonverbal form (Brewin, 2001), thus avoiding perceptual encoding of threat by not semantically elaborating on their feelings. A lack of semantic elaboration of feelings has also been referred to as alexithymia, or the inability to identify one's feelings and separate them from bodily sensations (Bagby & Taylor, 1997). Numerous studies report that anxious individuals report high trait levels of alexithymia

(e.g. Marchesi, Brusamonti, & Maggini, 2000). However, although conceptually related to alexithymia, affect differentiation more specifically represents how an individual segregates and distinguishes emotional experiences *in the moment* and therefore has proven to have considerably greater predictive utility (e.g. Zaki et al., 2013).

The current study

The primary aim of the current study is to investigate the association between TA and differentiation of negative and positive affect. Although recent work suggests that affect differentiation is significantly related to psychological functioning, little work to date has explored how differentiation may be influenced by dispositional tendencies, particularly those associated with highly relevant cognitive processing biases, such as TA.

We hypothesized that high trait anxiety (HTA) would be inversely associated with NA differentiation. Individuals with HTA have been previously demonstrated to have limited ability to conceptualize emotional experience via trait measures (e.g. alexithymia) and have characteristic information-processing biases, in particular heightened threat-sensitivity that limit resources available for adaptive higher order processing of negative emotional experience. However, HTA has also been consistently associated with greater negative emotional reactivity or intensity of emotional responses. Given prior evidence suggesting that higher intensity responses may demand greater cognitive resources as well as evidence suggesting an interaction between differentiation and negative emotional intensity, we carefully integrated the role of intensity of emotional responses into our analysis. Specifically, we predicted that generally greater negative intensity emotion would be associated with poorer differentiation. However, we anticipated this association would likely be influenced by levels of TA (e.g. intensity may only matter for low TA individuals). As such, we also examined the interaction of TA and negative emotion intensity when predicting affect differentiation.

Finally, while not our primary research question, we considered the previously established link between NA differentiation and symptoms of depression (Demiralp et al., 2012; Erbas et al., 2014). Given the overlap between TA and features of depression, we were interested to see if TA would predict additional variance in NA differentiation beyond that accounted for by depressive symptoms. Further, a meta-analysis of the depression literature suggests that depression is, in fact, associated with negative attentional biases (Peckham, McHugh, & Otto, 2010), which may impact the ability to engage in the higher order processing needed for differentiation. However, only 6 of the 22 studies assessed TA, and thus it is difficult to determine the role it may have played in driving these findings. In addition, depression symptoms serve as an important control variable given their strong influence on self-reported negative emotion. Thus, depression symptoms served as way to control for potential high negative reporting biases/ceiling effects, and to further isolate the specific influence of TA on affect differentiation.

When considering positive affective experiences and differentiation, we were uncertain how the intensity of positive affect would relate to TA and did not make any a priori hypotheses. Prior evidence for the relevance of positive affect differentiation is limited at best and negative emotional content most often elicits cognitive processing biases in trait anxious individuals (Mathews & MacLeod, 2005). However, given recent evidence suggesting the importance of positive affect differentiation in some clinical samples (e.g. Selby et al., 2014) we examined both negative and positive affect differentiation in this investigation.

Method

Participants

Prior to data collection, research was approved by the university Institutional Review Board. Following approval, 225 individuals (149 women, 76 men, $M_{age} = 21.2$ years, age range: 18–56 years) from a large

public university in the Midwest and the surrounding area participated in this study. Participants were recruited from the university subject pool and via flyers placed around the community, and were then invited to the lab and asked to provide informed written consent. All participants were given a detailed explanation of this research and given the opportunity to ask any questions. Then, they were asked to sign the consent if they agreed to participate in the study. The racial and ethnic composition of the sample was 80% Caucasian, 11.6% African American, 1.8% Asian American, 6.7% Other, and 6.4% Hispanic or Latino. Participants were included if they were over the age of 18, fluent in English, and possessed normal or corrected-to-normal hearing and color vision. Two participants failed to provide information regarding their undergraduate status, and one participant failed to complete the emotion reactivity task. These individuals were not included in final analyses. No significant differences emerged between these individuals and the remaining sample. Participants were given the option to receive partial course credit or compensation of $10 per hour of participation. Of the total sample, 21 participants (9.5%) received monetary compensation. Participants were pooled from two co-occurring studies ($N = 78$ and $N = 144$) with identical procedures and recruitment. Independent samples t-tests revealed group differences in age, $t(220) = 1.98$, $p = .05$ and undergraduate status, $t(220) = 4.98$, $p = .00$. As such, these variables were controlled for in all analyses. Further, work by Carstensen (2006) and others has shown that conceptualization of emotional experience changes significantly with age, and thus is an important variable to consider when studying emotion responses.

Materials

Trait anxiety

The State-Trait Anxiety Inventory Form Y (STAI, $M = 37.05$, $SD = 9.35$, $\alpha = .91$) is a well-validated self-report measure of both current and dispositional anxiety (Spielberger, Gorsuch, & Lushene, 1970, $\alpha = .89$). The STAI is made up of 40 items (20 for assessing state anxiety, 20 for assessing TA) that can each be responded to on a four-point frequency scale ranging from "Almost Never" to "Almost Always". The current study used only the Trait Anxiety subscale, in order to assess how participants "generally" feel.

Current depression

Participants completed the Center for Epidemiologic Studies Depression Scale (CES-D, $M = 11.07$, $SD = 7.39$, $\alpha = .85$) (Radloff, 1977, $\alpha = .80$). The CES-D is a widely used measure of current depressive symptomatology in the general population. The CES-D is made up of 20 items, scored on a 0–3 scale of frequency, with a 0 indicating "Rarely or None of the Time (Less than 1 Day)" and 3 indicating "Most or All of the Time (5–7 Days)".

Affect ratings

Participants rated how they were currently feeling using 11 emotion words (Fear, Relief, Sadness, Enjoyment, Distress, Guilt, Happiness, Anger, Amusement, Disgust, and Affection) using a Likert-type scale (0 = "None" to 7 = "Strongly"). Ratings were made a total of six times, once before the start of an emotion reactivity task and then again five times throughout (for average ratings see Table 1). The words used were drawn from contemporary models of affect (Rafaeli, Rogers, & Revelle, 2007; Russell, 1980) and have been used previously (Coifman, Berenson, Rafaeli, & Downey, 2012;

Table 1. Average negative and positive affect ratings of videos presented during the emotion modulation task ($N = 222$).

Video	Negative affect		Positive affect	
	M	SD	*M*	SD
Video 2: Road to Guantanamo	3.46	1.52	1.52	0.80
Video 3: Alive	1.23	0.38	2.97	1.38
Video 4: The Champ	2.33	0.92	1.45	0.62
Video 5: Between Two Ferns	1.16	0.41	4.32	1.28

Coifman & Bonanno, 2010; Coifman, Bonanno, & Rafaeli, 2007). Six words made up the NA terms: fear, sadness, disgust, distress, guilt, and anger ($\alpha = .87$). Five words made up the positive affect terms: relief, enjoyment, happiness, amusement, and affection ($\alpha = .82$).

Procedure

Upon arrival at the lab each participant completed demographic information and measures of TA and current depression, followed by an emotion reactivity task during which they were asked to rate their affective experience at several time points. All measures and tasks were administered by rigorously trained undergraduate and graduate research assistants.

Emotion reactivity task

Following administration of the questionnaires participants completed an emotion reactivity task in which they were asked to engage emotionally with a series of well-validated video clips (Gilman et al., 2016). Film clips are an established type of ecologically valid and dynamic stimuli that have been shown to both reliably elicit emotional reactions while also limiting potential demand characteristics (Rottenberg, Kasch, Gross, & Gotlib, 2002; Rottenberg, Ray, & Gross, 2007). Six five-minute video clips were presented in a set order with a two-minute interval between each, reserved for participants to complete affect ratings. Participants began by watching a neutral baseline video (Big Cat Diaries, BBC Earth) followed by a four video sequence that alternated activation and valence, that is, high activation, negative valence (The Road to Guantanamo; Revolution, 2006); low activation, positive valence (Alive; Paramount Pictures, 1993); low activation, negative valence (The Champ; Metro Goldwyn Mayer, 1979); and high activation, positive valence (Between Two Ferns; www.comedyordie.com, 2010). This sequence was designed in order to maximize the potential to detect emotional shifts within the constraints of a brief task. By alternating stimuli in a controlled manner, we were able to ensure that all participants moved between negatively and positively valenced content, providing a greater opportunity for variability in affective reporting, similar to what might be seen outside the laboratory. Film stimuli were displayed on a 23-inch computer monitor at a viewing distance of 2 feet. The task was programmed in *E-prime 2.0*. A manipulation check of this sequence was conducted using repeated measures ANOVA (video X affect) revealing that the pattern of responses was as predicted (e.g. increases and decreases in negative and positive affect consistent with the pattern of videos and evident in an affect X video X valence interaction: $F(3, 217) = 19.24$, $p = .001$). Following the four video sequence, participants watched 3 minutes of humorous video to restore positive mood.

Results

Missing data

Missing values occurred at one moment each within the self-reported affect data of four individuals. These values were imputed by averaging the participant's remaining same-valenced (e.g. positive or negative) affect words for that specific time point.

Affect differentiation

Consistent with prior research (Zaki et al., 2013) affect differentiation was derived by calculating within-person average-inter-item correlations (AICs) between all possible pairs of negative ($M = -0.13$, $SD = 0.56$; $N = 24$ total ratings per participant) or positive ($M = 0.08$, $SD = 0.47$; $N = 20$ total ratings per participant) emotion items rated following each of the four videos in the aforementioned sequence. Means were consistent with other research using similar limited rating methods (Coifman et al., 2014). Pre and post-video ratings from the baseline and mood recovery videos were not utilized

in deriving differentiation scores. All item pairs were then averaged to create one differentiation score for each participant, which reflects the degree to which a given individual's affect terms overlap. High levels of overlap indicate that affect terms are consistently related to one another, while low levels of overlap suggest that experiences are perceived of as more discrete and ratings have greater independence. The AICs were then normalized using Fisher *r*-to-*z* transformations and reversed in order to aid in interpretation, with large values corresponding to high affect differentiation and small values to low affect differentiation (Kashdan et al., 2010).

Emotion intensity

Emotion intensity ratings were calculated by averaging participant ratings of the aforementioned negative or positive affect words across the four video sequence (Negative: $M = 2.05$, $SD = 0.62$, Positive: $M = 2.46$, $SD = 0.65$).

Preliminary analysis

Initially, correlation coefficients were calculated between all study variables (see Table 2). In line with prior research, TA correlated positively with depression symptoms (Bieling, Antony, & Swinson, 1998). Consistent with our hypothesis, TA also correlated negatively with NA differentiation. No significant relationship emerged between depression symptoms and NA differentiation. Additionally, negative and positive affect differentiation correlated positively with one another ($r(216) = .19$, $p = .001$). Lastly, negative emotion intensity correlated negatively with both negative and positive affect differentiation

Primary analyses

Our main hypothesis was that individuals with higher levels of TA (who are likely to engage in more automatic versus higher order processing) would exhibit less NA differentiation. To evaluate this, we performed hierarchical set wise ordinary least squares (OLS) regression analyses to examine separately associations with NA differentiation and then with positive affect differentiation. The model specified was theoretically motivated. First, in Step 1 we entered variables known to influence affective reporting and relevant to the combined sample: age, gender, and undergraduate status. Next, in Step 2, we examined the influence of depression symptoms and TA. Next, in Step 3, we entered emotion intensity (represented by mean level of negative or positive affect). Finally, to examine the interaction of negative emotion intensity with TA or depression per our secondary hypothesis, we entered two interaction terms, the products of mean NA and TA as well as mean NA and depression symptoms (or alternatively mean PA and TA, etc.). All variables were centered on the sample mean (Aiken, West, & Reno, 1991).

Table 2. Zero-order correlations between self-reported trait anxiety and depression symptoms, negative and positive affect differentiation, and emotion intensity (mean negative and positive affect) ($N = 222$).

Measure	1	2	3	4	5	6
1. Negative affect differentiation	–					
2. Positive affect differentiation	.19**	–				
3. Trait anxiety (STAI)	−.18**	.02	–			
4. Depression symptoms (CESD)	−.09	−.00	.75***	–		
5. Mean negative affect	−.68***	−.15*	.12	.04	–	
6. Mean positive affect	−.23**	−.11	−.12	−.07	.41***	–

*$p < .05$.
**$p < .01$.
***$p < .001$.

Consistent with our primary hypothesis, the results of Step 2 indicated that HTA predicted lower levels of NA differentiation after controlling for symptoms of depression, age, gender, and undergraduate status ($\beta = -.02$, $p = .02$). In addition, even after controlling for both symptoms of depression and negative emotion intensity in Step 3, the relationship between TA and NA differentiation remained marginally significant ($\beta = -.01$, $p = .07$) (however, an independent OLS regression controlling for negative emotion intensity alone and excluding depressions symptoms was significant ($\beta = -0.01$, $p = .04$)).[2] Contrary to prior work, no significant relationship was found between depression and NA differentiation. See Table 3 for a summary of these analyses.

Next, we evaluated the results of Step 4, and examined the interactions of negative emotion intensity and TA or negative emotion intensity and depression. We found that the interaction between TA and negative emotion intensity significantly predicted NA differentiation ($\beta = .20$, $p = .004$). The interaction was then probed by graphing the predicted values at one standard deviation above and below to mean for TA (Figure 1) and conducting follow-up tests of simple slopes. As predicted by our secondary hypothesis, for participants with high-intensity NA, level of TA did *not* influence the ability to differentiate ($\beta = .00$, $p = .63$). However, for participants with low intensity NA, TA significantly influenced levels of differentiation, such that low TA was associated with higher NA differentiation and HTA was associated with significantly lower NA differentiation ($\beta = -.02$, $p = .001$).

We also explored the interaction between depression symptoms and negative emotion intensity which significantly predicted NA differentiation ($\beta = -.23$, $p = .001$). Again we probed the interaction by graphing the predicted values at one standard deviation above and below to mean for depression

Table 3. OLS regression examining the relationship between negative affect differentiation, trait anxiety and depression, including associated interactions between trait anxiety or depression and emotional intensity (mean NA) ($N = 222$).

Negative affect differentiation						
Variable	*B*	SE *B*	*β*	sr^2	R^2	ΔR^2
Step 1					0.03	0.03
Age	0.01	0.01	0.09	0.01		
Gender	−0.14	0.09	−0.11	0.01		
Undergraduate status	−0.08	0.04	−0.17*	0.02		
$F(3, 218) = 2.21$ $p = .09$						
Step 2					0.06	0.03**
Age	0.01	0.01	0.06	0.00		
Gender	−0.10	0.09	−0.08	0.01		
Undergraduate status	−0.08	0.04	−0.16*	0.02		
Depression	0.10	0.01	0.11	0.01		
Trait anxiety	−0.02	0.01	−0.25*	0.03		
$F(5, 216) = 3.60$, $p = .03$						
Step 3					0.49	0.42***
Age	0.00	0.01	0.02	0.00		
Gender	0.05	0.07	0.04	0.00		
Undergraduate status	−0.04	0.03	−0.08	0.01		
Depression	0.00	0.01	0.04	0.00		
Trait anxiety	−0.01	0.01	−0.14†	0.02		
Mean negative affect	−0.68	0.05	−0.67***	0.45		
$F(6, 215) = 176.76$, $p < .001$						
Step 4					0.51	0.03**
Age	0.00	0.01	0.01	0.00		
Gender	0.01	0.07	0.01	0.00		
Undergraduate status	−0.04	0.03	−0.08	0.01		
Depression	0.00	0.01	0.02	0.00		
Trait anxiety	−0.01	0.01	−0.13	0.01		
Mean negative affect	−0.69	0.05	−0.68***	0.47		
Depression × NA	−0.03	0.01	−0.23*	0.05		
Trait anxiety × NA	0.02	0.01	0.20**	0.04		
$F(8, 213) = 5.73$, $p = .004$						

*$p < .05$.
**$p < .01$.
***$p < .001$.
†$p = .069$.

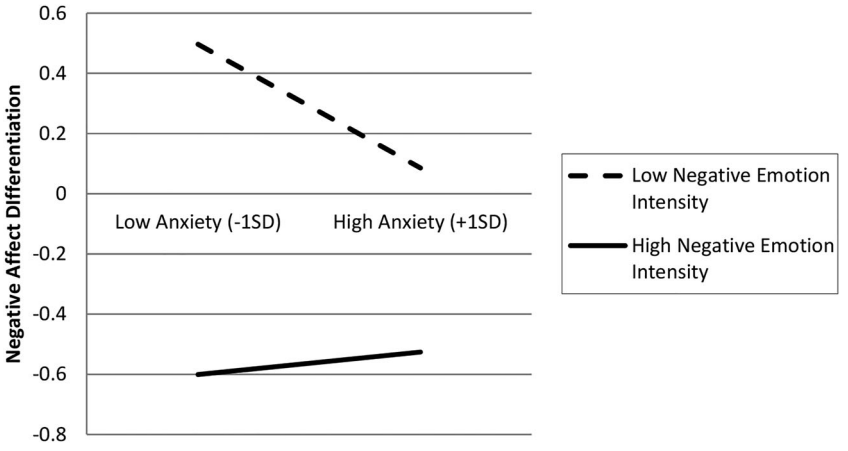

Figure 1. The interaction of trait anxiety and negative emotion intensity predicting negative affect differentiation.

symptoms (Figure 2) and conducting follow-up tests of simple slopes. We did not make a priori predictions; as such the findings should be interpreted cautiously. Unlike the findings relating to TA, in participants with high-intensity NA, low depression was associated with higher NA differentiation and high depression was associated with lower NA differentiation ($\beta = .02$, $p = .01$). Paradoxically, however, for those with low intensity NA, the relationship was in the opposite direction ($\beta = -.02$, $p = .04$).

The same OLS regression analyses were conducted to examine whether TA predicted positive affect differentiation and examining the interaction of positive affect intensity with TA or depression. However, there were no significant relationships in this analysis. Neither TA ($\beta = .00$, $p = .64$) nor symptoms of depression ($\beta = -.00$, $p = .65$) predicted positive affect differentiation in Step 2. Moreover, the interaction between TA and positive emotion intensity did not significantly predict positive affect differentiation ($\beta = .01$, $p = .34$), nor did the interaction between symptoms of depression and positive emotion intensity, ($\beta = -.01$, $p = .51$).

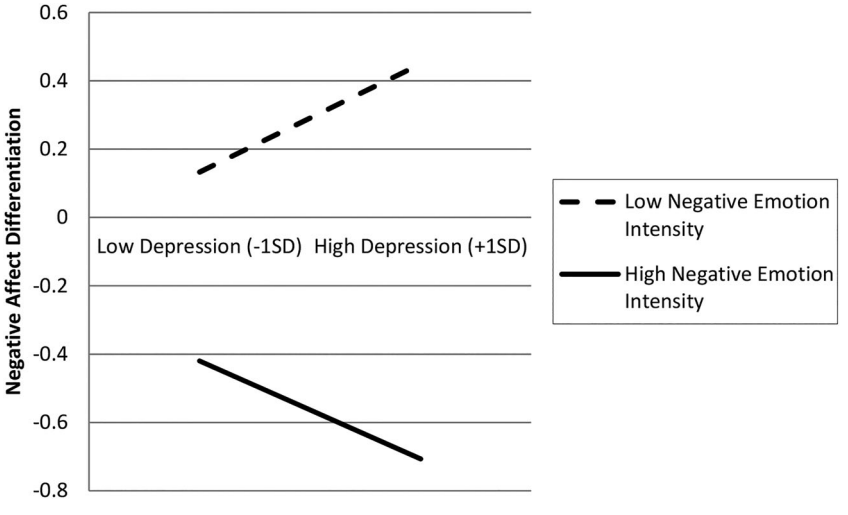

Figure 2. The interaction of depression symptoms and negative emotion intensity predicting negative affect differentiation.

Discussion

In this study, we examined the association between TA and the differentiation of negative and positive affect. To our knowledge, this is the first study to examine the construct of differentiation as it relates to broader dispositional anxiety. The current findings demonstrate that higher TA predicts lower levels of NA differentiation at both high and low intensity NA. These results expand on theoretical work that has suggested that those who are trait anxious fail to semantically elaborate their feelings (Brewin, 2001), and empirical work that indicates these individuals have higher self-reported alexithymia (Marchesi et al., 2000). Moreover, although we did not find a similar pattern of results for positive affect, these data directly contribute to a deeper understanding of processes that may underlie NA differentiation.

In particular, our findings suggest that the ability to differentiate negative emotional experiences may be related in part to dispositional tendencies, rather than to specific symptoms or disorders. Indeed, our findings held even when controlling for depression symptoms and emotional intensity. Those with HTA and its associated cognitive biases and accompanying reduction in cognitive resources, may struggle to attend to negative emotional experiences, and in particular, may have difficulty reporting those experiences precisely. As such, HTA individuals are less likely to reap the potential benefits of differentiation, in particular those associated with emotion regulation and adaptive behavioral responses (Kashdan et al., 2015). Indeed, the association between HTA and poor NA differentiation seems particularly important to consider as a vulnerability factor contributing to risk for psychopathology.

Also important, was our consideration of the negative emotion intensity. As we predicted, high negative emotion intensity was associated with lower differentiation of emotional experience. This finding is consistent with a broad literature suggesting that high negative emotion intensity may demand greater cognitive resources to negotiate. However, notably, even when emotion intensity was low, HTA individuals had lower differentiation scores. Indeed, individuals with HTA had poor differentiation, irrespective of the intensity of negative emotion.

Our findings are of particular interest when considering recent research on the potential mechanisms that underlie the benefits of differentiation. First, we can point to the evidence and theory suggesting that more fine-tuned attention and report of emotional experience may allow individuals to apply conceptual knowledge about the feelings, situations, and behaviors that accompany specific emotions to make meaning of their affective state in a given context (Lindquist & Barrett, 2008). More importantly, however, work by Hariri et al. (2000) (Kircanski et al., 2012; Lieberman et al., 2007) suggest that precise emotion descriptors may serve an implicit regulatory function through down regulation of the amygdala by the prefrontal cortex, leading to a reduction in physiological arousal. Additional work by Kross and Ayduk (2011) hypothesizes that the reduction in arousal that occurs with labeling may allow for the "space" to more efficiently process events during an emotional experience. Taking a self-distanced perspective is thought to allow for a broader focus and for reconstrual of experiences, which may facilitate distress reduction. It follows that those who are trait anxious, and therefore less effective at affect differentiation and labeling, may lack the "space" and resources to process their emotional experiences effectively.

We also found that neither TA nor depression symptoms predicted positive affect differentiation. Although inconsistent with some recent evidence (e.g. Selby et al., 2014), our results are in line with dominant theories of positive emotion, which suggests that there may be less functional benefit associated with differentiation of positive emotional experiences (Ekman, 1992; Fredrickson, 2004). Interestingly, unlike in other recent work (Demiralp et al., 2012; Erbas et al., 2014), no significant relationship emerged between higher levels of depression symptoms and lower NA differentiation. These findings are likely due in part to our use of a single self-report measure to index depression, as well as our use of a college sample whose range of depression scores was restricted in comparison to other studies where this relationship has been found (Erbas et al., 2014). Another explanation, however, may lie in the shared negative emotion intensity component of both depression and TA

(Bados et al., 2010). While emotion intensity was explored by Demiralp et al. (2012) and found not to account for the relationship between depression and differentiation, no other work to date has replicated this finding. Thus, more research is needed to examine negative emotion intensity as a factor that may underlie or intensify relationships between trait tendencies, psychopathology, and differentiation.

Our study has several notable limitations. First, we must acknowledge the ongoing challenge in the field to come to a consensus definition for terms related to emotions. The current manuscript utilizes the term affect differentiation, though many others refer to the same ability as emotion differentiation or emotional granularity. We intended to distinguish affect from emotion in the current study, as our differentiation measure (repeated self-report) was not intended to assess broader emotional responses (e.g. facial behavior), but rather emotional experiences attended to with language. Additionally, it should also be noted that we assessed differentiation in the context of an in-lab video task, rather than the more commonly used experience-sampling technique. Recent work by Kashdan et al. (2015), however, suggests that differentiation is a skill, and while it should be measured behaviorally, this may be done effectively with a variety of techniques. While methodology similar to our own, including emotional images (Suvak et al., 2011), social situations (Boden, Thompson, Dizén, Berenbaum, & Baker, 2013), and films (Barrett, 2004) has been used previously; additional work is still needed to understand how reliably differentiation can be measured across these and other methodologies. Further, our emotion reactivity task utilized a set order of videos for each participant. Doing so was intended to maximize potential detection of emotional shifts by having all participants move from negatively and positively valenced stimuli twice-over, however, counterbalancing videos would been more methodologically rigorous. It is possible that the set order of videos created particular carryover effects that limit the generalizability of our results. Another limitation of the current study includes our assessment of TA using the STAI, which has been suggested by some to include items that measure depression and general NA rather than "pure" anxiety (Bieling et al., 1998). A final limitation was the use of a college sample. Although our range of scores for TA was highly consistent with other research (Bados et al., 2010); the range of depression symptoms was limited. Accordingly, we argue for caution in interpretation of our depression findings.

In sum, these data contribute to the overall understanding of affect differentiation and may have important clinical implications. First, our results suggest that the ability to differentiate negative affective experiences may be related to the broad dispositional construct of TA rather than limited to specific disorders alone. While it is likely that a number of factors contribute to one's ability to successfully differentiate, TA may be an important piece of the puzzle in better understanding differences in this ability. Second, while emotion labeling is a feature of many treatment modalities such as cognitive behavioral therapy and dialectical behavioral therapy, our results suggest that deficits in emotion language and affect differentiation be considered independent of treatment modality and disorder. This approach is in line with recent dimensional perspectives on psychopathology that seek to identify factors that cut across established diagnostic categories (Cuthbert, 2014). Finally, our results suggest that TA may play a role in the previously demonstrated relationships between differentiation and specific psychiatric disorders (e.g. depression, borderline personality). An important next step in our work is to explore this idea in clinical samples, via direct replication of these methods as well as using experience sampling.

Notes

1. Note that although there are many models of affective structure, most, if not all, include an underlying dimension relating to valence (e.g. unpleasant to pleasant). As such, here we are focused on the associations among discrete terms within a given valence. This is largely consistent with conventions in the more recent differentiation/granularity literature (e.g. Barrett et al., 2001; Kashdan et al., 2015), although there are other approaches (e.g. associations along the dimension of arousal).
2. Relationship remained significant after controlling for within-person variance as well ($\beta = -.24$, $p = .02$).

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This research was supported in part by a grant (to Coifman) from the Farris Family Foundation, Kent State University.

References

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Bados, A., Gómez-Benito, J., & Balaguer, G. (2010). The state-trait anxiety inventory, trait version: Does it really measure anxiety? *Journal of Personality Assessment*, *92*, 560–567. doi:10.1080/00223891.2010.513295

Bagby, R., & Taylor, G. (1997). Affect dysregulation and alexithymia. In G. Taylor, R. Bagby, & J. Parker (Eds.), *Disorders of affect regulation: Alexithymia in medical and psychiatric illness* (pp. 26–45). Cambridge: Cambridge University Press.

Barrett, L. F. (1998). Discrete emotions or dimensions? The role of valence focus and arousal focus. *Cognition and Emotion*, *12*, 579–599. doi:10.1080/026999398379574

Barrett, L. F. (2004). Feelings or words? Understanding the content in self-report ratings of experienced emotion. *Journal of Personality and Social Psychology*, *87*, 266–281. doi:10.1037/0022-3514.87.2.266

Barrett, L. F. (2006). Are emotions natural kinds? *Perspectives on Psychological Science*, *1*, 28–58. doi:10.1111/j.1745-6916.2006.00003.x

Barrett, L. F., Gross, J., Christensen, T. C., & Benvenuto, M. (2001). Knowing what you're feeling and knowing what to do about it: Mapping the relation between emotion differentiation and emotion regulation. *Cognition and Emotion*, *15*, 713–724. doi:10.1080/02699930143000239

Bieling, P. J., Antony, M. M., & Swinson, R. P. (1998). The state-trait anxiety inventory, trait version: Structure and content re-examined. *Behaviour Research and Therapy*, *36*, 777–788. doi:10.1016/S0005-7967(98)00023-0

Boden, M. T., Thompson, R. J., Dizén, M., Berenbaum, H., & Baker, J. P. (2013). Are emotional clarity and emotion differentiation related? *Cognition and Emotion*, *27*, 961–978. doi:10.1080/02699931.2012.751899

Bonanno, G. A., & Keltner, D. (2004). The coherence of emotion systems: Comparing "on-line" measures of appraisal and facial expressions, and self-report. *Cognition and Emotion*, *18*, 431–444. doi:10.1080/02699930341000149

Brewin, C. R. (2001). A cognitive neuroscience account of posttraumatic stress disorder and its treatment. *Behaviour Research and Therapy*, *39*, 373–393. doi:10.1016/S0005-7967(00)00087-5

Buck, R. (1993). What is this thing called subjective experience? Reflections on the neuropsychology of qualia. *Neuropsychology*, *7*, 490–499. doi:10.1037/0894-4105.7.4.490

Cardinal, R. N., Parkinson, J. A., Hall, J., & Everitt, B. J. (2002). Emotion and motivation: The role of the amygdala, ventral striatum, and prefrontal cortex. *Neuroscience & Biobehavioral Reviews*, *26*, 321–352. doi:10.1016/S0149-7634(02)00007-6

Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, *312*, 1913–1915. doi:10.1126/science.1127488

Coifman, K. G., Berenson, K. R., Rafaeli, E., & Downey, G. (2012). From negative to positive and back again: Polarized affective and relational experience in borderline personality disorder. *Journal of Abnormal Psychology*, *121*, 668–679. doi:10.1037/a0028502

Coifman, K. G., & Bonanno, G. A. (2010). When distress does not become depression: Emotion context sensitivity and adjustment to bereavement. *Journal of Abnormal Psychology*, *119*, 479–490. doi:10.1037/a0020113

Coifman, K. G., Bonanno, G. A., & Rafaeli, E. (2007). Affect dynamics, bereavement and resilience to loss. *Journal of Happiness Studies*, *8*, 371–392. doi:10.1007/s10902-006-9014-5

Coifman, K. G., Ross, G. S., Kleinert, D., & Giardina, P. (2014). Negative affect differentiation and adherence during treatment for thalassemia. *International Journal of Behavioral Medicine*, *21*, 160–168. doi:10.1007/s12529-012-9277-7

Cole, P. M., Armstrong, L. M., & Pemberton, C. K. (2010). The role of language in the development of emotion regulation. In D. Susan, & M. A. Bell (Eds.), *Child development at the intersection of emotion and cognition* (59–77). Washington, DC: American Psychological Association.

Cuthbert, B. N. (2014). The RDoC framework: Facilitating transition from ICD/DSM to dimensional approaches that integrate neuroscience and psychopathology. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)*, *13*, 28–35. doi:10.1002/wps.20087

Demiralp, E., Thompson, R. J., Mata, J., Jaeggi, S. M., Buschkuehl, M., Barrett, L. F., … Jonides, J. (2012). Feeling blue or turquoise? Emotional differentiation in major depressive disorder. *Psychological Science*, *23*, 1410–1416. doi:10.1177/0956797612444903

DeSteno, D., Petty, R. E., Wegener, D. T., & Rucker, D. D. (2000). Beyond valence in the perception of likelihood: The role of emotion specificity. *Journal of Personality and Social Psychology*, *78*, 397–416. doi:10.1037/0022-3514.78.3.397

Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion*, *6*, 169–200. doi:10.1080/02699939208411068
Ekman, P., & Cordaro, D. (2011). What is meant by calling emotions basic. *Emotion Review*, *3*, 364–370. doi:10.1177/1754073911410740
Erbas, Y., Ceulemans, E., Lee Pe, M., Koval, P., & Kuppens, P. (2014). Negative emotion differentiation: Its personality and well-being correlates and a comparison of different assessment methods. *Cognition and Emotion*, *28*, 1196–1213. doi:10.1080/02699931.2013.875890
Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *359*, 1367–1377. doi:10.1098/rstb.2004.1512
Gilman, L. T., Shaheen, R., Nylocks, M. K., Halachoff, D., Chapman, J., Flynn, J. J., Matt, L. M., & Coifman, K. G. (2016). *A film set for the elicitation of emotion in research; A comprehensive catalog derived from four decades of investigation*. Manuscript submitted for publication.
Hariri, A. R., Bookheimer, S. Y., & Mazziotta, J. C. (2000). Modulating emotional responses: Effects of a neocortical network on the limbic system. *Neuroreport*, *11*, 43–48. doi:10.1097/00001756-200001170-00009
Hill, C. L. M., & Updegraff, J. A. (2012). Mindfulness and its relationship to emotional regulation. *Emotion*, *12*, 81–90. doi:10.1037/a0026355
Kashdan, T. B., Barrett, L. F., & McKnight, P. E. (2015). Unpacking emotion differentiation: Transforming unpleasant experience by perceiving distinctions in negativity. *Current Directions in Psychological Science*, *24*, 10–16. doi:10.1177/0963721414550708
Kashdan, T. B., Ferssizidis, P., Collins, R. L., & Muraven, M. (2010). Emotion differentiation as resilience against excessive alcohol use: An ecological momentary assessment in underage social drinkers. *Psychological Science*, *21*, 1341–1347. doi:10.1177/0956797610379863
Kircanski, K., Lieberman, M. D., & Craske, M. G. (2012). Feelings into words: Contributions of language to exposure therapy. *Psychological Science*, *23*, 1086–1091. doi:10.1177/0956797612443830
Kross, E., & Ayduk, O. (2011). Making meaning out of negative experiences by self-distancing. *Current Directions in Psychological Science*, *20*, 187–191. doi:10.1177/0963721411408883
Lerner, J. S., & Keltner, D. (2000). Beyond valence: Toward a model of emotion-specific influences on judgment and choice. *Cognition and Emotion*, *14*, 473–493. doi:10.1080/026999300402763
Lieberman, M. D., Eisenberger, N. I., Crockett, M. J., Tom, S. M., Pfeifer, J. H., & Way, B. M. (2007). Putting feelings into words: Affect labeling disrupts amygdala activity in response to affective stimuli. *Psychological Science*, *18*, 421–428. doi:10.1111/j.1467-9280.2007.01916.x
Lindquist, K. A., & Barrett, L. F. (2008). Constructing emotion: The experience of fear as a Conceptual Act. *Psychological Science*, *19*, 898–903. doi:10.1111/j.1467-9280.2008.02174.x
Lindquist, K. A., MacCormack, J. K., & Shablack, H. (2015). The role of language in emotion: Predictions from psychological constructionism. *Frontiers in Psychology*, *6*, 444. doi:10.3389/fpsyg.2015.00444
Lissek, S. (2012). Toward an account of clinical anxiety predicated on basic, neurally mapped mechanisms of Pavlovian fear-learning: The case for conditioned overgeneralization. *Depression and Anxiety*, *29*, 257–263. doi:10.1002/da.21922
MacLean, P. D. (1990). *The triune brain in evolution: Role in paleocerebral functions*. New York, NY: Plenum Press.
Marchesi, C., Brusamonti, E., & Maggini, C. (2000). Are alexithymia, depression, and anxiety distinct constructs in affective disorders? *Journal of Psychosomatic Research*, *49*, 43–49. doi:10.1016/S0022-3999(00)00084-2
Mathews, A., & Mackintosh, B. (1998). A cognitive model of selective processing in anxiety. *Cognitive Therapy and Research*, *22*, 539–560. doi:10.1023/A:1018738019346
Mathews, A., & MacLeod, C. (2005). Cognitive vulnerability to emotional disorders. *Annual Review of Clinical Psychology*, *1*, 167–195. doi:10.1146/annurev.clinpsy.1.102803.143916
Mennin, D. S., & Fresco, D. M. (2013). What, me worry and ruminate about DSM-5 and RDoC? The importance of targeting negative self-referential processing. *Clinical Psychology: Science and Practice*, *20*, 258–267. doi:10.1111/cpsp.12038
Mineka, S., & Öhman, A. (2002). Phobias and preparedness: The selective, automatic, and encapsulated nature of fear. *Biological Psychiatry*, *52*, 927–937. doi:10.1016/S0006-3223(02)01669-4
Peckham, A. D., McHugh, R. K., & Otto, M. W. (2010). A meta-analysis of the magnitude of biased attention in depression. *Depression and Anxiety*, *27*, 1135–1142. doi:10.1002/da.20755
Pond Jr., R. S., Kashdan, T. B., DeWall, C. N., Savostyanova, A., Lambert, N. M., & Fincham, F. D. (2012). Emotion differentiation moderates aggressive tendencies in angry people: A daily diary analysis. *Emotion*, *12*, 326–337. doi:10.1037/a0025762
Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385–401. doi:10.1177/014662167700100306
Rafaeli, E., Rogers, G. M., & Revelle, W. (2007). Affective synchrony: Individual differences in mixed emotions. *Personality and Social Psychology Bulletin*, *33*, 915–932. doi:10.1177/0146167207301009
Rottenberg, J., Kasch, K. L., Gross, J. J., & Gotlib, I. H. (2002). Sadness and amusement reactivity differentially predict concurrent and prospective functioning in major depressive disorder. *Emotion*, *2*, 135–146. doi:10.1037/1528-3542.2.2.135
Rottenberg, J., Ray, R. D., & Gross, J. J. (2007). Emotion elicitation using films. In J. A. Coan, & J. J. B. Allen (Eds.), *The handbook of emotion elicitation and assessment* (pp. 9–28). London: Oxford University Press.

Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*, 1161–1178. doi:10.1037/h0077714

Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E. T. Higgins, & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 527–561). New York, NY: Guilford Press.

Schwarz, N. (2011). Feelings-as-information theory. In P. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 289–308). Thousand Oaks, CA: Sage.

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, *45*, 513–523. doi:10.1037/0022-3514.45.3.513

Schwarz, N., & Clore, G. L. (1987). How do I feel about it? The informative function of affective states. In K. Fiedler, & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 44–62). Toronto: Hogrefe.

Selby, E. A., Wonderlich, S. A., Crosby, R. D., Engel, S. G., Panza, E., Mitchell, J. E., … Le Grange, D. (2014). Nothing tastes as good as thin feels: Low positive emotion differentiation and weight-loss activities in anorexia nervosa. *Clinical Psychological Science*, *2*, 514–531. doi:10.1177/2167702613512794

Spielberger, C. (1972). *Anxiety: Current trends in research*. London: Academic Press.

Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). *Manual for the state-trait anxiety inventory*. Palo Alto, CA: Consulting Psychologists Press.

Suvak, M. K., Litz, B. T., Sloan, D. M., Zanarini, M. C., Barrett, L. F., & Hofmann, S. G. (2011). Emotional granularity and borderline personality disorder. *Journal of Abnormal Psychology*, *120*, 414–426. doi:10.1037/a0021808

Tugade, M. M., Fredrickson, B. L., & Barrett, L. F. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality*, *72*, 1161–1190. doi:10.1111/j.1467-6494.2004.00294.x

Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, *96*, 465–490. doi:10.1037/0033-2909.96.3.465

Wilson, E., & MacLeod, C. (2003). Contrasting two accounts of anxiety-linked attentional bias: Selective attention to varying levels of stimulus threat intensity. *Journal of Abnormal Psychology*, *112*, 212–218. doi:10.1037/0021-843X.112.2.212

Zaki, L. F., Coifman, K. G., Rafaeli, E., Berenson, K. R., & Downey, G. (2013). Emotion differentiation as a protective factor against nonsuicidal self-injury in borderline personality disorder. *Behavior Therapy*, *44*, 529–540. doi:10.1016/j.beth.2013.04.008