CHAPTER 14

Vive la Différence

The Ability to Differentiate Positive Emotional Experience and Well-Being

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Bob and Jane are sending their oldest child, Sam, off to college. Years of hard work and planning are behind them, and Sam has been accepted into a prestigious university, even earning a full scholarship. They buy bedding and a dorm fridge, negotiate and ultimately agree to let Sam take the TV from her room, and now the big day has finally arrived. They have unloaded everything into the small dorm room, met Sam's new roommate, and helped Sam unpack and get everything set up. They say an emotional good-bye to Sam, and head back to their car.

As they are leaving the dorm, a campus newspaper reporter asks if he can briefly interview them for an article on move-in day. "How's everyone feeling?" the reporter asks. Jane replies, teary-eyed, "Well, I'm very excited for Sam. She has a lot of wonderful opportunities here, and she's eager about starting this new aspect of her life. We're also very proud of her. She worked very hard, and it's nice to see that her efforts were rewarded, not only getting in here, but winning a scholarship as well. Of course, we are going to miss her. It's going to be like a hole in the family, and I'm probably going to be texting her constantly. I know she'll be fine, though. She's got great social skills and she's a really interesting person with a diverse background, so I know she'll make friends quickly. And we left a copy of her favorite movie, *Bambi*, to remind her of home when she feels sad. I am dreading the car ride home, though—it's going to be so quiet!" The reporter then turns to Bob, who's also teary-eyed, but Bob's response is somewhat different. "I'm okay, I guess," he says, and continues to move toward his car.

As this example illustrates, people differ widely in the degree to which they tend to, and perhaps are able to, subjectively differentiate their personal emotional experience. For some people, like Jane, their ability to differentiate is very high, and they report numerous distinct emotional states, even in response to the same event. Others, like Bob, do not go much beyond a general sense that things are "fine" or "not good." The issue we explore in this chapter is whether these individual differences are psychologically meaningful, and whether subjective emotional differentiation, particularly the ability to differentiate among positive emo-

tions, is linked to individual differences in well-being. We review theoretical reasons for expecting that the ability to differentiate one's emotional experience will be associated with well-being. Then we briefly review related empirical literatures suggesting that such a link may actually exist. Next we review existing evidence that more directly examines whether the differentiation of subjective emotional experience is related to health and well-being. Noting that much of this work has focused on the ability to differentiate either emotional experience in general or negative emotional experience, we consider the possibility that the ability to differentiate among distinct positive emotions may be uniquely related to well-being. We describe our initial efforts to develop a self-report measure of the tendency to differentiate one's positive emotional experience, and present preliminary evidence that the individual differences captured by this measure are related to well-being. Finally, we discuss prospects for future research in this area.

Why Might the Ability to Differentiate Emotional Experience Matter?

Theoretically, there is good reason to expect that the ability to differentiate one's emotional experiences would be positively associated with well-being. Among contemporary and recent emotion theorists (e.g., Ekman, 1984; Frijda, 1986; Izard, 1977; Lazarus, 1991; Plutchik, 1980) there is considerable consensus that emotions are largely adaptive responses to the perceived environmental demands confronting an individual, with emotion serving, in part, as a signal system that contributes to self-regulation (e.g., Frijda & Swagerman, 1987; Simon, 1967). Different emotions are thought to be elicited by circumstances having different types of adaptational relevance. The emotional response acts as a compelling signal to call the person's attention to his or her circumstances, while the distinctive feeling state conveys considerable information about the nature of those circumstances. The motivational urges and physiological activities associated with the emotion motivate and physically prepare the person to respond. As an example, in fear, the compelling subjective feeling alerts the person that he or she is in a potentially dangerous situation, and the associated motivational urges and physiological changes push the person toward heightened vigilance, while preparing him or her potentially to flee.

If, in fact, one key function of emotion is to serve as an important self-regulatory signal system, then it stands to reason that, all else being equal, individuals who are better able to identify and interpret the signals provided by emotions (high differentiators) should be adaptationally advantaged relative to individuals who are less able to identify and interpret these signals (low differentiators). The literatures on alexithymia and emotional intelligence both lend support, albeit somewhat indirectly, for this proposition.

Alexithymia

Working from a deficit model, the literature on alexithymia suggests that individuals who are characterized, in part, by very low ability to differentiate their emotional states experience a wide array of difficulties. The very name of the condition—*a* (without) *lexi* (words) *thymia* (feelings): without words for feelings—alludes to a core symptom displayed by individuals with this condition, namely, extreme trouble in describing their emotional states (e.g., Sifneos, 1973). More broadly, alexithymia is described as a syndrome in which individuals are characterized as having difficulty identifying and distinguishing among feelings and bodily sensations, difficulty describing emotions, reduced levels of daydreaming and imaginative thought, and a propensity for nonpsychological, externally oriented thinking (e.g., Bagby, Parker, & Taylor, 1994). As one might expect, these deficits interfere with one's ability to regulate emotions, and individuals diagnosed with alexithymia often dwell on, misinterpret, and amplify the physiological sensations that accompany emotional arousal (Taylor, Bagby, & Parker, 1997).

As a result, individuals with alexithymia demonstrate an array of physical, emotional, and social problems. These include elevated levels of depression (Taylor & Bagby, 2004), as well as overrepresentation in populations seeking treatment for conditions with

potential psychosomatic components, such as chronic pain (e.g., Lumley, 2004). In addition, individuals with alexithymia often experience a host of interpersonal problems: They demonstrate poor attachment to others, social avoidance, and difficulty handling interpersonal conflict and emotionally tense situations (e.g., Vanheule, Vandenbergen, Verhaeghe & Desmet, 2010). Finally, alexithymia may place individuals at risk for an early death. In a study of middle-aged men, Kauhanen, Kaplan, Cohen, Julkunen, and Salonen (1996) found that even after controlling for a wide variety of potentially confounding factors (e.g., health behaviors, physiological risk factors, socioeconomic and marital status, depressive symptoms, and perceived health), individuals with the highest levels of alexithymic symptoms had a significantly higher risk of all-cause death, and especially death from accident, injury, or violence, than individuals with low levels of alexithymic symptoms.

The deficits and negative outcomes exhibited by individuals with alexithymia certainly suggest that inability to differentiate one's emotional experience is costly. However, the syndromal nature of alexithymia makes this evidence somewhat indirect, as it is difficult to isolate the contributions to poor functioning of the person's low emotion-differentiation abilities from those of their nonimaginative and externally oriented cognitive styles.

Emotional Intelligence

Conversely, working from a skills perspective, "emotional intelligence," which represents the ability to perceive, understand, use, and manage or regulate emotions (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2002), has been associated with heightened well-being. For instance, scores on the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT; Mayer & Salovey, 1997) are positively related to several aspects of psychological well-being (Ryff, 1989), including mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (Brackett & Mayer, 2003). These findings are supported by a comprehensive meta-analysis of the existing literature on emotional intelligence that documented clear and consistent associations between emotional intelligence and indicators of mental, psychosomatic, and physical health (Martins, Ramalho, & Morin, 2010). Recent research also indicates that emotional intelligence acts as a buffer against state-level stress in both laboratory and real-world settings (Görgens-Ekermans & Brand, 2012; Mikolajczak, Petrides, Coumans, & Luminet, 2009). Together, the accumulation of data indicates that having the ability to understand, perceive, and manage emotions effectively is related to important benefits in the domains of psychological well-being and health.

These results are highly suggestive because clarity about the emotion(s) one is experiencing at any given time is often described as a core feature of emotional intelligence (e.g., Mayer, Salovey & Caruso, 2004). Thus, emotional intelligence includes, in part, the ability to differentiate one's emotional experience. It is difficult to navigate one's social world if one does not know which emotion one is experiencing, and there are several indications that clarity about one's feelings is directly associated with well-being (e.g., Fernández-Berrocal, Alcaide, Extremera, & Pizarro, 2006; Shulman & Hemenover, 2006). However, the emotional intelligence construct is inherently multidimensional and includes other abilities that also contribute to well-being, including the ability to manage negative emotions and accurately perceive emotions in others (Mayer & Salovey, 1997). The multidimensional nature of emotional intelligence makes this literature somewhat inconclusive regarding the specific contribution of emotion differentiation to well-being, and more direct evidence is needed.

Evidence Relating the Ability to Differentiate Emotions and Well-Being

Beyond the literatures on alexithymia and emotional intelligence, emerging evidence suggests more specifically that people who are better at differentiating their emotional states, in fact, regulate their emotions better and tend to experience higher levels of well-being. For instance, Barrett, Gross, Christensen, and Benvenuto (2001) used experience sampling methods to examine the relations between emotion differentiation

and emotion regulation. In a daily diary, participants rated their emotional reactions in terms of nine emotions—five negative and four positive—in response to the most intense emotional event of the day on each of 14 days. In addition, they completed a questionnaire regarding their use of a range of regulation strategies to manage both their positive and negative emotions over a 2-week period. The investigators computed separate indices of differentiation for each participant's positive and negative emotions by intercorrelating the negative emotions on the one hand, and the positive emotions on the other, over the 14 rating occasions. They found that increased differentiation among the negative emotions (lower average intercorrelations across occasions) was associated with use of a broader range of regulation strategies for negative emotions, especially as the intensity of the negative emotions increased. Corresponding relations were not observed for differentiation of positive emotions in predicting the use of regulation strategies for managing positive emotions. The authors hypothesized that this was because positive emotions require less regulation than negative ones. The relationship between differentiation of positive emotions and use of strategies to regulate negative emotions was not tested, and efficacy of the various regulation strategies in managing negative emotions was not assessed.

Focusing only on the differentiation of negative emotional experience, Kashdan, Ferssizidis, Collins, and Muraven (2010) provided more direct evidence that individuals who differentiate their negative emotions may manage those emotions more effectively. To measure differentiation, they computed an average intraclass correlation among several negative emotions reported via experience sampling methods for each participant (Shrout & Fliess, 1979; Tugade, Fredrickson, & Barrett, 2004). Using this index, they found that underage social drinkers who reported more differentiated negative emotional experiences consumed less alcohol in response to intense negative emotions than did those who reported less differentiated negative emotional experiences.

Using a self-report measure of emotional complexity, which the authors define as comprising both emotional differentiation as we are considering it in this chapter and the degree to which the person experiences a broad range of emotions in daily life, Kang and Shaver (2004) found that their Emotional Differentiation subscale was positively related to several different measures of interpersonal adjustment. Their measure focuses on emotional differentiation in general and does not assess the degree to which individuals differentiate positive versus negative emotional experience.

These findings lend more direct support to the notion that ability to differentiate one's emotional experiences per se contributes to both effective self-regulation and positive outcomes. Research by Carstensen and colleagues (e.g., 2011; Carstensen, Pasupathi, Mayr, & Nesselroade, 2000) indicates that the relationship between general emotion differentiation/complexity and health and well-being hold up across the lifespan.

However, the implication of ability to differentiate *positive* emotional experience for self-regulation, health, and well-being outcomes has not been examined in most studies. Barrett and colleagues (2001) did examine positive emotion differentiation but did not investigate whether it was associated with regulation of negative emotions (which they considered more adaptationally important than regulation of positive emotions), and Kashdan and colleagues (2010) only examined differentiation of negative emotions. Kang and Shaver (2004) measured emotion differentiation across both positive and negative emotions using a single scale, and the studies by Carstensen and colleagues (2000, 2011) also examined a combined index of differentiation of positive and negative emotions. Thus, although evidence is mounting that the ability to differentiate one's emotional experiences in general, or negative emotional experiences in particular, is relevant to well-being, the potential contribution of the ability to regulate positive emotions has largely been neglected. Below, we consider whether this neglect is justified, or whether it is likely that the specific ability to regulate positive emotions is related to well-being.

Why Ability to Differentiate Positive Emotions Should Matter

Given that the ability to differentiate both negative emotional experience and emotional experience in general has been asso-

ciated with well-being, there are a number of reasons to expect that the ability to differentiate positive emotional experience should also be associated with well-being, possibly in ways that extend beyond the links between ability to differentiate negative emotions and well-being.

First, empirical research increasingly suggests that humans are equipped to experience a range of positive emotions, serving a variety of adaptive functions (see Smith, Tong, & Ellsworth, Chapter 1, this volume). This research supports a prerequisite condition for any unique effects of ability to differentiate positive emotional experience: If there is little "real" differentiation of positive emotions to begin with, then the ability to recognize and appreciate differentiation among positive emotions is unlikely to be important. Although traditional theories often have proposed that positive emotional experience consists of happiness or joy, possibly interest and/or surprise, and little else (e.g., Ekman, 1984; Izard, 1977; Tomkins, 1962), evidence is mounting that a diverse range of positive emotions, including (but not limited to) happiness, pride, gratitude, challenge/determination, hope, interest, awe, tranquility, love, and compassion, may each serve distinctive adaptational functions (e.g., Griskevicius, Shiota, & Nowlis, 2010; Keltner & Haidt, 2003; Smith, 1991). For instance, whereas both happiness and pride are proposed, in part, to reinforce success, gratitude and compassion are both thought to motivate prosocial behavior, albeit in different ways, and hope and challenge are thought to motivate perseverance and sustained commitment in the face of difficulty (e.g., Smith et al., Chapter 1, this volume).

It is further notable that in line with proposals made by Watson and Tellegen (1985) and Cacioppo, Larsen, Smith, and Bernston (2004), the motivational functions served by positive emotions are often different in kind from those served by negative emotions. This is true both of the specific motivational functions served by particular positive emotions, and the broader motivational functions served by positive emotions more generally. First, whereas negative emotions tend to serve self-protective functions, such as avoiding harm when one is fearful, or disengaging from hopeless situations and soliciting help when one is sad; positive emotions tend to serve more appetitive functions, such as motivating perseverance when one is challenged, and rewarding success when one feels pride, as noted earlier. That positive emotions have motivational functions that are fundamentally different in kind than those of negative emotions increases the likelihood that the ability to differentiate positive emotions contributes to well-being in ways distinct from the contribution of the ability to differentiate negative ones.

Second, as described in the broaden-and-build theory of positive emotion (Fredrickson, 1998, 2001), positive emotions often play important roles in the management and control of negative emotions. For example, research shows that positive emotion can play an important role in "undoing" the effects of negative emotion once the conditions eliciting the negative emotion have passed and the effects of the negative emotions are no longer needed or desirable (Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000). Negative emotions involve a narrowing of thought–action repertoires, accompanied by physiological changes to prepare the body to contend with the emotion-eliciting circumstances. According to the broaden-and-build theory, once the threatening situation has passed, positive emotions broaden the thought–action repertoire, and this should "undo" the physiological changes associated with the negative emotion. Thus, positive emotions have the unique ability to speed recovery from negative emotional arousal (Fredrickson & Levenson, 1998) and attenuate the cognitive vigilance associated with negative emotions. This is especially important because significant physical costs associated with sustained negative emotion (e.g., wear-and-tear on the body, compromised immune system functioning) can be associated with subsequent vulnerability to stress and illness (McEwen, 1998). In addition, if the narrowed scope of attention associated with negative emotion lingers, it can inhibit subsequent learning and creativity.

Both of the previous lines of consideration point to the conclusion that positive emotions play roles in coping, adaptation, and adjustment, just as negative emotions do, although the roles served by positive emotions seem both different from and complementary to those served by negative emotions. Indeed, the work on the broaden-and-build theory suggests that positive emo-

tions contribute in important ways to the regulation of negative emotions (Tugade, 2011; Tugade & Fredrickson, 2004, 2007). Adding further support to this perspective, strategies that increase positive emotion in the midst of distress (e.g., positive reappraisal) are associated with emotion regulation and psychological well-being (Folkman, 1997; Folkman & Moskowitz, 2000; Shiota, 2006; Shiota & Levenson, 2012; Tugade & Fredrickson, 2004). Thus, just as the ability to differentiate negative experience is related to well-being, so too is the ability to differentiate positive experience. At present, very little research directly examines this hypothesis; however, the evidence that does exist is highly suggestive.

First, in an experience-sampling study, Tugade, Fredrickson, and Barrett (2004) found that their measure of positive emotional differentiation was related to participants' characteristic coping styles. Participants reported their momentary emotional experience at randomly chosen periods, 10 times per day, for a total of 28 days. Positive emotion differentiation was determined for each participant by computing an average intraclass correlation (Shrout & Fleiss, 1979) among positive emotion terms: amusement, happiness, interest, joy, and pride. Participants also completed measures of coping and cognitive styles. Those who differentiated positive emotions more were found to be more engaged in the coping process, and cognitively were less likely to use heuristics to guide their coping behaviors, and were instead more likely to think through their behavioral options before acting.

In a similar vein, Ahrens and McIntosh (2009) found that, in responding to hypothetical scenarios, participants who report more highly intercorrelated levels of gratitude, pride, happiness, and relief, thus differentiating emotions less, score both higher in fear of emotions and lower in one aspect of mindfulness, acceptance without judgment. These relations have numerous health implications. Fear of emotion and lower mindfulness are in turn associated with a variety of mental health problems, including posttraumatic stress disorder (PTSD; Lang et al., 2012; Price, Monson, Callahan, & Rodriguez, 2006), generalized anxiety disorder (Roemer et al., 2009; Turk, Heimberg, Luterek, Mennin, & Fresco, 2005), and borderline personality disorder (Sauer & Baer, 2012; Yen, Zlotnick, & Costello, 2002). The Ahrens and McIntosh (2009) finding suggests that lack of differentiation among positive emotions may also be associated with such disorders. Thus, although preliminary, the available data and theory suggest that examining the adaptational implications of individual differences in the differentiation of positive emotional experience is well worth pursuing.

The DOPES: A New Measure of Ability to Differentiate Positive Emotional Experience

An important gap in this area of research is a valid and reliable measure of individual differences in the tendency to distinguish among different positive emotional experiences. With the exception of the Differentiation subscale of the measure developed by Kang and Shaver (2004), which comprises general statements regarding individuals' general tendency to distinguish among different feelings they experience (e.g., "I am aware of the subtle differences between feelings I have"), previous measures of emotion differentiation have relied on experience-sampling methods (e.g., Barrett et al., 2001; Tugade et al., 2004). This approach offers an important advantage in that the measures are based on participants' actual emotional experiences as they unfold over time, revealing unique patterns of emotional experience within each individual. However, this approach also has considerable limitations. First, because the experiences sampled are those that arise spontaneously in respondents' lives, the set of experiences can vary greatly from individual to individual, rendering the scores difficult to compare across individuals. There would be considerable utility in differentiation scores derived from a common set of experiences. Second, the experience-sampling methodology is expensive and difficult to implement. Thus, this methodology greatly limits the range of studies in which a measure of positive emotion differentiation might be employed.

To address these issues, we have begun work on the development and validation of a measure of the degree to which individuals differentiate among several positive emo-

tions in their own emotional experiences. We call this individual-difference measure the Differentiation of Positive Emotion Scale (DOPES).

Overview of the Measure

In designing this measure, we chose to assess respondents' emotions across multiple situations (e.g., Tugade et al., 2004), as opposed to asking them general questions about their emotional response styles (e.g., Kang & Shaver, 2004). We believed that the former approach would more clearly capture respondents' actual emotional reactions rather than their beliefs about emotions, and would therefore provide a more valid measure. At the same time, we wanted respondents to describe their responses to a common set of experiences, to maximize the comparability of the resulting scores from individual to individual. To combine these aims, the DOPES asks individuals to indicate their imagined emotional reactions to a common set of emotion-eliciting events, each of which is designed to elicit the experience of a different positive emotion.

Specifically, respondents are asked to imagine themselves in eight different vignettes designed to elicit happiness, pride, gratitude, interest, hope, challenge/determination, awe or contentment. For example, the vignette designed to elicit interest involves settling in to listen to a lecture one has looked forward to for a long time, whereas the vignette for pride involves being recognized for taking the lead on a group project that is extremely well received (a preliminary version of the DOPES, used in Study 1, included vignettes specific to student life; the vignettes in the current DOPES version, used in Studies 2 and 3, are included in Appendix 14.1). For each vignette, respondents are asked to rate their imagined emotional responses in terms of each of the eight targeted emotions. The degree of emotion differentiation for each respondent is quantified by intercorrelating the ratings for each emotion scale across the eight vignettes, then computing the mean intercorrelation. To normalize the distribution of the resulting scores, this average correlation is subjected to an *r*-to-*z* transformation. Higher mean intercorrelations reflect *lower* levels of differentiation because they indicate that the emotion ratings covary strongly across the vignettes. Therefore, to provide an index in which increasing scores reflect greater emotion differentiation, the sign of the scores is reversed by subtracting the *z*-transformed mean intercorrelations from a constant. We have used "2" as the constant because this typically produces differentiation indexes in which resulting scores have a positive sign.

Study 1: Multisite Undergraduate Study

As part of a larger study examining several aspects of differentiation of positive emotional experience, participants completed a battery of individual-difference measures that included the following:

- A preliminary version of the DOPES.
- The Appraisal Styles Inventory (ASI; Smith & Kirby, 2013), which assesses appraisal styles across situations for the appraisal components described by Smith and Lazarus (1990), including Motivational Relevance, Motivational Congruence, Self-Accountability, Other-Accountability, Problem-Focused Coping Potential, Emotion-Focused Coping Potential, and Future Expectancy; it includes subscales to assess these appraisal styles in general, and separately across negative and positive situations.
- A modified version of the COPE (Carver, Scheier, & Weintraub, 1989), which includes subscales assessing a wide variety of coping strategies, including Self-Isolation, Denial, Active Coping, and Acceptance.
- The Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), a commonly used as a measure of emotional intelligence, which includes subscales to assess Mood Repair, Clarity of Emotion, and Attention to Emotion.
- The Short Form–36 Health Survey which measures functional health and well-being (SF-36, Version 2; Ware, Kosinski, & Dewey, 2000), and includes subscales assessing Social Functioning, Mental Health, Bodily Pain, Interference with Physical Activities, and General Health.

This initial survey was conducted on student samples at two different universities, with a total $N = 281$ (60% female). The average age was 18.64 years ($SD = 0.88$), with a range of 17–22 years.

In this sample the mean between-emotion correlations from which DOPES scores are derived ranged from –.11 to +.90, with a mean of +.15. Cronbach's alpha, based on the 28 intercorrelations among emotions that are averaged into the final score, was .87.

As an initial step toward validating this new measure, correlations between DOPES scores and the subscales of the ASI, COPE, TMMS, and SF-36 were examined. Given the existing work on emotion differentiation, reviewed earlier, we anticipated that higher levels of emotion differentiation would be associated with higher levels of adaptive appraisal and coping styles, emotional intelligence, health, and well-being. Several small, but statistically significant, correlations emerged from this analysis, and all were consistent with these predictions, although as noted below, a number of predicted correlations did not approach statistical significance.

Appraisal Style

The DOPES was positively correlated with appraisals of motivational congruence in positive situations ($r = .14$, $p < .05$), which is the tendency to perceive positive situations as having positive aspects, or things that the individual wants. It was also negatively correlated with perceived incongruence in negative situations ($r = –.29$, $p < .001$), which is the tendency to perceive negative situations as having things that the individual does not want. Thus, across both positive and negative situations, individuals showing high levels of positive emotion differentiation were prone to see their circumstances as more in line with their goals than were others. The DOPES was not significantly related to other dimensions of appraisal style.

COPE

The DOPES was negatively correlated with Self-Isolation ($r = –.17$, $p < .01$) and marginally negatively correlated with Denial ($r = –.10$, $p = .10$), two forms of coping that tend to be associated with poor outcomes when used habitually. DOPES scores were not significantly correlated with Active Coping ($r = –.02$, nonsignificant [*ns*]) or Acceptance ($r = –.04$, *ns*).

TMMS

The DOPES was marginally positively correlated with the Mood Repair and Clarity subscales of the TMMS (both r's = .11, $p = .06$), but not the Attention subscale ($r = –.03$, *ns*). Of the three, the correlation with Clarity is of particular interest because clarity regarding one's emotional state and the tendency to differentiate among one's emotional responses are thought to be closely related.

SF-36

The DOPES was significantly related to the Social Functioning subscale ($r = .13$, $p < .05$), and marginally positively correlated with the Mental Health subscale ($r = .12$, $p = .06$) of the SF-36. In addition, it was negatively correlated with the SF-36 subscales assessing Bodily Pain ($r = –.17$, $p < .01$) and the degree to which one's health interferes with one's physical activities ($r = –.14$, $p < .05$). The DOPES was not reliably associated with the General Health subscale of the SF-36 ($r = .04$, *ns*). The correlations with Mental Health and Social Functioning provide some direct evidence that differentiation of positive experience, as assessed by the DOPES, is associated with psychological well-being. The findings regarding health outcomes echo those frequently observed for alexithymia (e.g., Lumley, 2004), in which relative inability to describe one's emotions is more strongly associated with conditions having a psychosomatic or behavioral component, such as pain or limitation to functioning, than with direct indicators of physical health.

Although small, these initial correlations are quite promising. They suggest that the DOPES taps into the differentiation of positive emotion as intended, and that such differentiation is related to well-being and health, as theoretically predicted. Subsequent studies have further refined the DOPES and examined its reliability and validity.

Study 2: Community Sample

A follow-up study used a slightly revised version of the DOPES, designed to make the vignettes less student-focused and more

applicable to a general population, in order to expand examination of the reliability and validity of the DOPES into a community sample. In this study, participants were recruited via an e-mail inviting them to participate in an online survey. E-mails were sent to several community groups (e.g., churches, temples, social groups) in the greater Poughkeepsie, New York area; postings were listed on Craigslist (community/volunteers section) in several metropolitan areas in the Northeast (Hudson Valley, New York City, northern New Jersey, and Washington, D.C.); and postings were also listed on *backpage.com* in major metropolitan areas across the eastern United States (New York City, Nashville, Washington, D.C., New Jersey, Baltimore, Philadelphia, Birmingham, Atlanta, Boston, Virginia Beach, and Delaware). This study included 127 respondents (60% female), with an average age of 31.7 years (SD = 11.6), and a range in age from 17 to 65. Ninety-seven percent of the sample had at least some college education, and 42% had a bachelor's degree or higher. The reliability of the DOPES in this sample (Cronbach's alpha based on the 28 intercorrelations between specific positive emotions) was .93.

As with the initial study, this study examined the DOPES in relation to the COPE and the TMMS. Instead of the SF-36, the Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982) was used to assess health. Participants also reported on positive and negative affect (Positive and Negative Affect Schedule [PANAS]; Watson & Clark, 1994); satisfaction with life (Diener, Emmons, Larsen, & Griffin, 1985), and resilience (Block & Kremen, 1996). The ASI was not assessed.

COPE

As in Study 1, the DOPES was negatively correlated with Denial (r = –.34, p < .001). Due to a survey error, self-isolation was not examined in this study. However, unlike the initial study, correlations of the DOPES with Active Coping (r = .20, p < .05) and Acceptance (r = .19, p < .05) both reached significance. These correlations all suggest that greater tendency to differentiate among one's positive experiences is associated with a tendency toward healthy, adaptive coping.

TMMS

Unlike the first study, in this study the DOPES was not reliably associated with any of the three subscales of the TMMS (Attention: r = .15, p = .11; Mood Repair: r = –.001, *ns*; Clarity: r = .11, *ns*).

Other Outcomes

The PILL was not significantly associated with the DOPES (r = .05, *ns*; compare with the General Health dimension of the SF-36 in the previous study). DOPES scores also were not significantly correlated with Positive Affect, Negative Affect, Satisfaction with Life, or Resilience.

Study 3: Experience Sampling Study

Finally, a student sample was used to compare individual differences in positive emotion differentiation, as measured by the DOPES, with a measure of positive differentiation obtained through experience sampling methods, similar to those used by Barrett and colleagues (2001) and Tugade and colleagues (2004). In this study, participants (N = 152, 42 males, 110 females; mean age = 19.21 years, SD = 1.56, with an age range of 17–29 years) reported to the laboratory, where they individually completed a set of measures, including the revised DOPES used in Study 2, Center for Epidemiologic Studies—Depression scale (CES-D) measure of depressive symptomatology (Radloff, 1977), NEO Personality Inventory—Neuroticism scale (Costa & McCrae, 1985), and Affective Control Scale (Williams, Chambless, & Ahrens, 1997). Participants were then given a Palm Pilot which, for the next 7 days, alerted participants four times a day. At each of these times, they answered a variety of questions, including momentary reporting on a subset of DOPES emotions (happiness, gratitude, contentment, and pride). Of the 152 participants, 135 completed at least half of the Palm Pilot surveys and were therefore included in the analyses involving momentary assessments.

Cronbach's alpha reliability of the DOPES in this study was .89. The DOPES was significantly negatively correlated with CES-D scores (r = –.17, p < .05) and with both Fear

of Depression ($r = -.25$, $p < .01$) and Fear of Anxiety ($r = -.17$, $p < .05$) subscales of the Affect Control Scale, as well as the overall Fear of Emotion score ($r = -.21$, $p = .01$). The DOPES was also negatively correlated with the Neuroticism subscale of the NEO ($r = -.18$, $p < .05$). Most importantly, the DOPES was significantly correlated with the experience-sampling-based measure of positive emotion differentiation ($r = .19$, $p < .05$).

These data indicate that differentiation in positive emotional responses to the hypothetical situations in the DOPES predicts differentiation of emotional responses to actual events—thereby providing initial evidence of the DOPES's validity. Furthermore, the results of this study provide additional evidence that positive emotional differentiation, as captured by the DOPES, is associated with well-being, as reflected in negative correlations with both depressive symptoms and neuroticism, as well as indicators of fear of negative emotion.

Preliminary Conclusions and Future Directions

The results of these three studies must be viewed as preliminary, but they are nonetheless promising. In addition to providing some initial evidence for the DOPES's validity, they also indicate that differentiation of positive emotional experience is associated with psychological well-being and highly worthy of further study. The correlations observed between the DOPES and criterion measures were small and did not always replicate across samples, but the thrust of the observed correlations was clear: In every case in which a statistically significant correlation was observed, it supported the hypothesis that greater tendency to differentiate one's positive emotional experiences is associated with higher psychological well-being, and processes believed to promote well-being (e.g., appraisal and coping styles; social functioning).

Given these initial results, it is important to continue efforts to develop and validate the DOPES as a measure of positive emotional differentiation, and we are pursuing such efforts. For instance, we are currently investigating the degree to which our initial vignettes were successful at normatively and selectively inducing their intended emotions. We suspect that some of the current vignettes are not as selective in the emotions they normatively elicit as we intended, and that by revising these vignettes to improve their selectivity, we will produce a more valid, psychometrically stronger measure of positive emotional differentiation. We intend to use this improved measure in a series of validation studies in which, across samples, we include a common battery of measures related to emotional intelligence, alexithymia, and appraisal and coping styles, among others. In this way we can more systematically assess the strength and stability of the relations of the DOPES to other constructs and establish both its predictive and discriminant validity.

Another key item on our research agenda is to compare positive emotion differentiation, as assessed by the DOPES, with negative emotion differentiation, as assessed by a (to be developed) corresponding measure of negative emotion differentiation. As noted earlier, there is mounting evidence that negative emotion differentiation is associated with well-being. To this body of evidence we have now added evidence that positive emotion differentiation is also associated with well-being. A key question to pursue is whether these two relations reflect a simple, unidimensional relation between emotion differentiation and adjustment (as Kang & Shaver, 2004, might argue), or whether positive and negative emotion differentiation contribute to well-being in distinct and at least partially nonredundant ways. We suspect the latter, but this remains to be seen.

Conclusions

In this chapter we have made the case that the ability to differentiate one's emotional experiences—to identify and describe the emotions one is experiencing with clarity and specificity—is a skill highly relevant to psychological well-being. In reviewing the existing literature, we have discussed evidence that both alexithymia and emotional intelligence, broader-level individual differences that include the ability (or lack thereof) to differentiate emotional experiences, are clearly related to well-being. In addition, we have documented more direct

evidence indicating that ability to differentiate negative emotions, or emotional states in general, is related to adjustment.

To these findings we have added initial evidence that the ability to differentiate positive emotional experience is also related to psychological well-being, and we have introduced a promising new measure of the tendency to differentiate positive experiences. Future research should build on this start and further examine the relations between positive emotional differentiation and adjustment. As this work progresses, one important issue to address, which thus far is absent from the literature on emotional differentiation, is the set of mechanisms by which the ability to differentiate one's emotional experiences (both positive and negative) contributes to positive well-being. By exploring such mechanisms, it is likely that we will find ways to improve these abilities in individuals who currently lack them and, by so doing, potentially help them improve the quality of their lives.

APPENDIX 14.1. Differentiation of Positive Emotions Scale (DOPES)

Instructions

For the next set of questions, you will see brief descriptions of hypothetical situations. Each situation is followed by a series of questions. For each situation, try to imagine yourself in the situation as vividly as you can. If such a situation happened to you, how do you think you would be feeling while you were in this situation? When you are imagining yourself in the situation as vividly as you can, please answer the questions that follow each description to rate your feelings. When you have answered all the questions for one situation, you should go on to the next situation, until you have imagined yourself in all eight situations. There are no right or wrong answers. Please try to answer every question as best you can, and make it true for you.

Vignettes

Awe

You are walking up a hill through thick woods. It was raining earlier, but the rain stopped a short time ago, and the sun is now shining. All of a sudden, you come to a clearing near the top of the hill and enter a beautiful meadow filled with wildflowers and butterflies. A clear stream is running through the meadow, and there is a rainbow in the sky. Off in the distance you can see the snow-capped peaks of a nearby mountain range.

Challenge/Determination

You have been spending a fair bit of time trying to solve a difficult problem that is part of an important project on which you have been working. So far you have been unable to solve the problem, but you believe that a solution is possible and you know that if you keep at it, you will be able to solve the problem and make the project a success.

Contentment

After working very hard for several weeks, you are finally able to take some time off. Right now you are relaxing on the beach. There is a nice breeze, you have a drink, and you are relishing the knowledge that there's nothing at all you need to be doing right now.

Gratitude

You are walking around in a strange city and suddenly realize that you are lost. As you are standing at a street corner, intensely studying your map to try to figure out where you are, someone comes up to you and asks you in a friendly way where you are trying to go. After you answer, this person says that he or she is headed that way and suggests that you go together. Within a few minutes this person has taken you to your destination, having pointed out some interesting sights along the way.

Happiness

You're at a party on Saturday night in honor of your friend's wedding anniversary. You're with a group of close friends and family members, and the atmosphere is festive. You generally like special occasions like this when everyone comes together to have fun. Everyone, including you, is laughing and dancing, and having a great time.

Hope

Things in your life have been somewhat difficult lately, but you are optimistic about what lies ahead. You know that there are new opportunities available to help things get better, and they seem promising. You trust that things will be better soon. You are looking forward to good things to come and a bright future ahead. You are thinking about the positive change that can happen.

Interest

A public figure that you admire has come to town, and you have the opportunity to hear this person speak. You are out for the evening to attend the talk. It is on a topic you have wanted to know more about for a long time. You have settled into your chair. The speaker, who has just been introduced, is beginning the presentation.

Pride

You have been working very hard on a group project. The rest of your group members have been contributing, but you have gone the extra distance for the project. You know that the project wouldn't be nearly as good had you not worked so hard. Your group has just presented the project and it is extremely well received. As your group is receiving praise for an excellent job, a member of your group speaks up and indicates that the group owes its success to you, that you really pulled the project together. The other members of the group start spontaneously applauding you and your efforts.

Scale

Please indicate on the following scale the extent to which you would feel the following if you were in this situation:

1-----2-----3-----4-----5-----6-----7-----8-----9
not at all *moderately* *extremely much*

Ratings are then obtained, using the previous scale, for each of the following items: interested/curious; proud; hopeful; happy; grateful; awed; challenged/determined/motivated; content/satisfied.

Administration

Instructions are presented individually on the first page (or screen) of the questionnaire. Each vignette is then presented on a separate page/screen followed by all eight emotion ratings for each vignette. Although listed here alphabetically, vignettes are presented in random order when used in studies.

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