CHAPTER 13

Positive Emotions and Emotional Intelligence

MICHELE M. TUGADE
BARBARA L. FREDRICKSON

Positive emotions are a part of everyday life. Sometimes certain positive emotions are experienced more intensely than others; at other times, it may not be appropriate or even adaptively useful to feel positive emotions at all. What accounts for knowing when positive emotions are appropriate, when they are not, and how best to utilize them in one's life? Are there such things as "wise" knowledge and use of positive emotions? We think so. The answer may lie in the construct of *emotional intelligence.* According to the framework of emotional intelligence, one must be competent at understanding one's emotions; be able to process emotional information accurately and efficiently; and have the insight to skillfully use one's emotions to solve problems, make plans, and achieve in one's life (Salovey & Mayer, 1989–1990). Positive emotions are related to each of these aspects in important ways.

What role do positive emotions play in emotional intelligence? In this chapter, we first discuss the adaptive significance of positive emotions and then explore the possibility that there are individual differences in the ability to "intelligently" use positive emotions as a means of guiding and understanding one's behavior and experience. Next we examine whether such individual differences may be rooted in underlying skills that can be learned and thereby contribute to people's efforts to improve their own mental and physical health. Then we review studies that indicate that the use of positive emotions can lead to enhanced

well-being over time. Finally, we consider whether current theories of emotional intelligence should be modified to incorporate the role of positive emotions in the theory more explicitly.

THE ADAPTIVE SIGNIFICANCE OF POSITIVE EMOTIONS

Traditional approaches to the study of emotions have tended to overlook and even ignore positive emotions. With greater attention given to the study of negative emotions, many emotion theorists often simply squeezed positive emotions under the umbrella of general emotion models (Fredrickson, 1998). Sensing that traditional approaches to emotion did not do justice to positive emotions, Fredrickson developed an alternative model for positive emotions that better captures their unique effects. Fredrickson calls this the *broaden-and-build theory* of positive emotions, because positive emotions appear to *broaden* people's momentary thought–action repertoires and *build* their enduring personal resources (Fredrickson, 1998, 2001).

Fredrickson contrasts this new model with traditional models of emotion based on specific action tendencies. Specific action tendencies, according to Fredrickson, work well to describe the form and function of negative emotions and should be retained for models of this subset of emotions. Specific action tendencies narrow a person's momentary thought–action repertoire by calling to mind an urge to act in a particular way (e.g., escape in fear, attack in anger, expel in disgust). In a life-threatening situation, a narrowed thought–action repertoire promotes quick and decisive action that carries direct and immediate benefit. Specific action tendencies called forth by negative emotions represent the sort of actions that worked best to save our ancestors' lives and limbs in similar situations.

Yet positive emotions seldom occur in life-threatening situations. As such, a psychological process that narrows a person's momentary thought–action repertoire to promote quick and decisive action may not be needed. Instead, Fredrickson has argued that positive emotions have a complementary effect: They *broaden* people's momentary thought–action repertoires, widening the array of the thoughts and actions that come to mind: to play and create when experiencing joy, to explore when experiencing interest, to savor and integrate when experiencing contentment, and to combine play, exploration, and savoring when experiencing love (Fredrickson, 1998).

Support for the hypothesis that experiences of positive emotions broaden a person's momentary thought–action repertoire can be

drawn from studies that have examined the cognitive and behavioral effects of positive states. Work by Isen and colleagues is particularly valuable in demonstrating that positive emotions produce patterns of thought that are notably unusual (Isen, Johnson, Mertz, & Robinson, 1985), flexible and inclusive (Isen & Daubman, 1984), creative (Isen, Daubman, & Nowicki, 1987), and receptive (Estrada, Isen, & Young, 1997). Testing the effects of positive states on behavior, Isen and colleagues have shown that positive emotions produce more creative (Isen et al., 1987) and variable (Kahn & Isen, 1993) actions.

In further support of the broadening hypothesis, Fredrickson and Branigan (2001) found that positive emotions do indeed broaden an individual's thought–action repertoire. In their study, participants were experimentally induced to experience joy, contentment, fear, anger, or neutrality, after which they listed all the things they would like to do right then (a measure of breadth in participants' thought–action repertoires). Those experiencing joy and contentment listed significantly more things, relative to those experiencing fear and anger and relative to those experiencing neutrality. Moreover, those in the two negative emotion conditions also named significantly fewer things than those in the neutral control condition (Fredrickson & Branigan, 2001). So, distinct positive emotions expand the array of thoughts and actions that come to mind, whereas distinct negative emotions taper this same array.

Taken together, these studies indicate that positive emotions appear to "enlarge" the cognitive context (Isen, 1987), an effect linked to increases in brain dopamine levels (Ashby, Isen, & Turken, 1999). Fredrickson (1998, 2001) has argued that the broadened mind-sets that accompany positive emotions, in turn, carry indirect and long-term adaptive benefits, because broadening *builds* enduring personal resources. These resources include physical resources (e.g., improved health, longevity), social resources (e.g., friendships, social support networks), intellectual resources (e.g., expert knowledge, intellectual complexity), and psychological resources (e.g., resilience, optimism, creativity). Importantly, the personal resources accrued during states of positive emotions are durable. They outlast the transient emotional states that led to their acquisition. In consequence, then, the often incidental effect of experiencing a positive emotion is an increase in one's personal resources. These resources can be drawn on in subsequent moments and in different emotional states. So, through experiences of positive emotions, people *transform* themselves, becoming more creative, knowledgeable, resilient, socially integrated, and healthy individuals.

This "building" effect of positive emotions is particularly useful in contexts of chronic stress, where such resources can often become de-

pleted. Research on positive emotions in the context of coping and negative emotion regulation is beginning to gain attention. Like work on emotions theory, traditional research on coping theory has largely been focused on the management of negative emotions without taking into account the coping processes associated with positive emotions. The broaden-and-build theory provides a conceptual framework for understanding the coping process by illuminating how positive emotions can help restore and build on depleted personal resources.

Folkman, Moskowitz, and their colleagues have been among the first to provide empirical support for the prediction that positive emotions are important facilitators of adaptive coping and adjustment to acute and chronic stress (Billings, Folkman, Acree, & Moskowitz, 2000; Folkman, 1997; Moskowitz, Folkman, Colette, & Vittinghoff, 1996; for a review see Folkman & Moskowitz, 2000). Their longitudinal research focuses on the psychological responses associated with caregiving and bereavement among partners of men with AIDS. Participants in their study were found to have significantly elevated levels of depressed mood throughout caregiving, which persisted through bereavement—findings expected in this research. Surprisingly, however, with the exception of the time immediately before and after their partners' deaths, caregivers also reported experiences of positive mood at the same frequency of their negative mood (Folkman, 1997). This finding at first seems counterintuitive: Why would someone facing the enormous stresses of caregiving and bereavement experience any positive emotions at all? The seemingly counterintuitive logic behind these findings, in fact, provides a lens through which to understand the adaptive role of positive emotions in the coping process. The occurrence of positive emotions amid adversity may provide the necessary psychological rest to help buffer against stress, replenish, and restore further coping abilities (Lazarus, Kanner, & Folkman, 1980).

Folkman and Moskowitz (2000) highlight three kinds of coping related to the occurrence and maintenance of positive affect: (1) positive reappraisal (finding a "silver lining"), (2) problem-focused coping (efforts directed at solving or managing the distressing problem), and (3) infusing ordinary events with positive meaning (e.g., appreciating a compliment). An important finding in the study on AIDS-related caregiving was that these coping mechanisms were consistently associated with increases in positive emotion (distinct from decreases in distress; Moskowitz, Folkman, Collette, Vittinghoff, 1996). Moreover, coping that resulted in increased positive emotions was associated with lower levels of physical symptoms during times of stress, whereas coping that resulted in increased negative emotions was linked to higher levels of physical symptoms among the caregivers (Billings, Folkman, Acree, &

Moskowitz, 2000). In related work by others, similar coping strategies have been shown to predict increases in psychological well-being and health (e.g., Affleck & Tennen, 1996; Davis, Nolen-Hoeksema, & Larson, 1998; for a review, see also Park & Folkman, 1997).

Research conducted by Folkman, Moskowitz, and colleagues, then, provides a useful complement to Fredrickson's (1998, 2001) broaden-and-build theory. Recall that the broaden-and-build theory posits that under stressful conditions, negative emotions *narrow* one's momentary thought–action repertoire, which results in cardiovascular reactivity that prepares the body for specific action. In contrast, positive emotions *broaden* one's thought–action repertoire, "undoing" this bodily preparation for specific action. By consequence of broadening one's thoughts and actions, the theory posits, positive emotions *build* that individual's personal resources (Fredrickson, 1998, 2001). This perspective on positive emotions helps explain why those who experience positive emotions in the midst of stress are able to benefit from their broadened mind-sets and successfully regulate their negative emotional experiences, which in turn produces beneficial consequences for their psychological and physiological well-being.

This *undoing effect* of positive emotions reflects one type of emotion regulation, one of the four components of emotional intelligence theory. Fredrickson and colleagues have tested the undoing effect by experimentally inducing a high-arousal negative emotion in all participants (Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000). In one study (Fredrickson et al., 2000), participants prepared a speech under time pressure, each believing that the speech would be videotaped and evaluated by peers. This task induced the subjective experience of anxiety, along with increases in heart rate, peripheral vasoconstriction, and systolic and diastolic blood pressure. Into this context of anxiety-related sympathetic arousal, we randomly assigned participants to view one of four films (joy, contentment, neutrality, sadness).

The undoing hypothesis predicts that those who experience positive emotions on the heels of a high-activation negative emotion will show the fastest cardiovascular recovery. We tested this by measuring the time elapsed from the start of the randomly assigned film until the cardiovascular reactions induced by the negative emotion returned to baseline levels. In three independent samples, participants in the two positive emotion conditions (joy and contentment) exhibited faster cardiovascular recovery than those in the neutral control condition, and faster than those in the sadness condition, who exhibited the most protracted recovery (Fredrickson & Levenson, 1998; Fredrickson et al., 2000). These findings indicate that positive emotions have the unique

ability to physiologically down-regulate lingering negative emotional arousal. Although the precise cognitive and physiological mechanisms of the undoing effect remain unknown, the broaden-and-build theory suggests that broadening at the cognitive level may mediate undoing at the cardiovascular level. Phenomenologically, positive emotions may help people place the events in their lives in a broader context, lessening the resonance of any particular negative event.

Evidence for the undoing effect of positive emotions suggests that people may enhance their psychological well-being, and perhaps also their physical health, by cultivating experiences of positive emotions at opportune moments to cope with negative emotions (Fredrickson, 2000a). This idea can be supported by experiments showing that positive affect facilitates attention to negative self-relevant information (Trope & Neter, 1994; Trope & Pomerantz, 1998; Reed & Aspinwall, 1998; for a review, see Aspinwall, 1998). Extrapolating from these findings, Aspinwall (2001) describes how positive affect and positive beliefs serve as resources for people coping with adversity (see also Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). For instance, Aspinwall argues that in the face of stress, optimists and people experiencing positive affect expect positive outcomes and therefore aim to achieve them. As such, they are more likely to use active coping (e.g., problem solving) and are less likely to use avoidance coping (e.g., disregarding the problem). Active coping efforts in turn provide people with the necessary feedback to discover which strategies are effective, helping them to conserve current resources and build new ones toward efficient coping (Aspinwall, 2001). Taken together, these studies suggest that positive emotions may indeed have adaptive benefits in the coping process. Further research in this area is needed to explore the characteristics of individuals who contribute to their ability to generate and sustain positive emotions in stressful contexts.

INTELLIGENT USE OF POSITIVE EMOTIONS

The emotional intelligence framework suggests that there may be individual differences in people's abilities to cognitively represent their emotions and exert effective control over their emotional lives, allowing some to more effectively manage their emotions during stressful situations (Feldman Barrett & Gross, 2001; Salovey, Hsee, & Mayer, 1993). At one end of the spectrum there are individuals who are consistently hampered by their inability to cope with stress, never quite able to recover from negative life events. At the other end are individuals who quickly and efficiently rebound from stressful experiences, being able

to move on despite adverse circumstances. Thus, individuals may differ in how they perceive, express, understand, and manage emotional phenomena. In other words, *emotional intelligence* may be a key factor differentiating those individuals who are able to successfully cope with stressful encounters from those who face setbacks from similar experiences (Salovey, Bedell, Detweiler, & Mayer, 1999).

Given the evidence showing that positive emotions indeed produce beneficial outcomes in the coping process (e.g., Folkman & Moskowitz, 2000; Fredrickson, 2000a), it is possible that certain individuals have a greater tendency to draw on positive emotions in times of stress, intuitively understanding and using positive emotions to their advantage. Psychologically resilient people—who are described as "emotionally intelligent" (Salovey et al., 1999)—appear to be likely candidates for this type of intuition.

RESILIENT INDIVIDUALS REFLECT EMOTIONAL INTELLIGENCE

Psychological resilience is characterized by the ability to bounce back from negative emotional experiences and by flexible adaptation to changing situational demands (Block & Kremen, 1996; Lazarus, 1993). Those with low resilience are said to have a difficult time coping with negative experiences and are unable to recover from them (e.g., Klohnen, 1996; Rutter, 1987). In contrast, those with high resilience are said to be able to "ride out the storm," handle anxiety, and tolerate frustration even when faced with episodes of distressing emotional experience (Carver, 1998; Saarni, 1999).

Individual differences in psychological resilience predict differential outcomes in emotion regulation. For instance, relative to those less resilient, highly resilient individuals restore self-esteem after failure (Wolin & Wolin, 1993), show more creative problem solving when handling stressful situations (Demos, 1989; Cohler, 1987; Murphy & Moriarty, 1976), and elicit more positive responses from social support networks to help buffer against negative emotional experiences (Demos, 1989; Werner & Smith, 1992). Moreover, highly resilient individuals demonstrate greater personal insight by having the ability to judge their own strengths and limitations during difficult times (Wolin & Wolin, 1993). Thus, it appears that resilient individuals may effectively recognize their own feelings and those of others and utilize their emotion knowledge to effectively manage their emotional experiences (Kumpfer, 1999; Masten, Best, & Garmezy, 1990). That is, resilient individuals appear to have emotional intelligence.

Researchers have utilized both observer evaluations and self-reports to investigate individual differences in psychological resilience. There has been convergence in the data, indicating that resilient individuals have optimistic, zestful, and energetic approaches to life, are curious and open to new experiences, and are characterized by high positive emotionality (Block & Kremen, 1996; Klohnen, 1996). Thus, based on these findings, it seems clear that positive emotionality is an important element of psychological resilience.

Thus, for resilient people, understanding the benefits of positive emotions may be key to effective emotion regulation. Support for this prediction can be demonstrated in their knowledge and use of positive emotions to cope. Recent research indicates that individual differences in resilience predict the ability to harness the beneficial effects of positive emotions to one's advantage when coping with negative emotional experiences. For instance, researchers describe resilient individuals as happy and energetic people who frequently use humor as a coping strategy (e.g., Werner & Smith, 1992; Wolin & Wolin, 1993), which has been shown to help people cope effectively with stressful circumstances (e.g., Martin & Lefcourt, 1983; Nezu, Nezu, & Blisset, 1988). Likewise, Masten et al. (1990) have found that resilient children under high stress exhibit higher scores on humor generation than those less resilient facing equally high levels of stress. These findings demonstrate that coping by means of humor, a strategy associated with positive emotions, allows resilient people to reduce stress and restore perspective, as well as remain engaging to others, thereby maintaining positive social support networks (Kumpfer, 1999). Beyond humor, resilient individuals have been shown to use other coping strategies that elicit positive emotions to regulate negative emotional situations. For instance, during heightened levels of stress they use strategies such as relaxation (allowing time to interpret and assess problems), exploration (to consider behavioral alternatives), and hopeful, optimistic thinking (having faith in their ability to overcome adversity) as means of regulating negative emotional experiences (Werner & Smith, 1992). Taken together, these findings indicate that positive emotions may have advantages in the coping process by creating broadened mind-sets useful for coping and, consequently, building personal resources that may be valuable in future coping efforts.

Our own work has demonstrated that psychologically resilient individuals are physiologically resilient as well, and that positive emotions are useful in achieving this outcome. Theoretical descriptions of psychological resilience indicate that resilient individuals are able to "bounce back" from stressful experiences quickly and efficiently (Carver, 1998; Lazarus, 1993). This theoretical definition suggests that, as

compared with their less resilient counterparts, resilient individuals would exhibit faster cardiovascular recovery from negative emotional arousal. In addition, together with our work on the undoing hypothesis (Fredrickson & Levenson, 1998; Fredrickson et al., 2000), the broaden-and-build theory suggests that this ability to "bounce back" to cardiovascular baseline may be fueled by experiences of positive emotion.

To test these hypotheses, we used the same time-pressured speech preparation task (described earlier) to induce a high-activation negative emotion in volunteer participants. We measured psychological resilience using Block and Kremen's (1996) self-report scale. Interestingly, resilience did *not* predict the levels of anxiety participants reported experiencing during the speech task, or the magnitude of their cardiovascular reactions to the stressful task, both of which were considerable. Resilience did, however, predict participants' reports of positive emotions. Before the speech task was even introduced, the more resilient individuals reported higher levels of preexisting positive affect on an initial mood measure. And when later asked how they felt during the time-pressured speech preparation phase, the more resilient individuals reported that, along with their high anxiety, they also experienced higher levels of happiness and interest.

As predicted by the theoretical definition of psychological resilience, the more resilient participants exhibited significantly faster returns to baseline levels of cardiovascular activation following the speech task. Moreover, as predicted by the broaden-and-build theory, this difference in time to achieve cardiovascular recovery was mediated by differences in self-reported positive emotions (Tugade & Fredrickson, 2002). Thus, our resilient participants appeared to have recruited positive emotions (intentionally or unintentionally) to physiologically regulate their negative emotional arousal.

These findings were used to extend current theories of psychological resilience through exploration of the construct's physiological qualities. In our study, a parallel between psychological and physiological resilience emerged: Those who rated themselves as having high abilities to effectively rebound from stressful encounters also demonstrated this quality physiologically, by quickly returning to baseline levels of physiological responding after negative emotional arousal. Furthermore, it appears that the experience of positive emotions aids resilient individuals in achieving accelerated cardiovascular recovery from negative emotional arousal. Thus, resilient individuals may have an intuitive understanding of the benefits that positive emotions confer. That is, they—wittingly or unwittingly—may use positive emotions "intelligently" to regulate negative emotional experiences.

It is important to note that despite these individual differences in

the *frequency* of intelligently using positive emotions to cope with stress, the capacity for momentary experiences of positive emotions is something that all humans share (Fredrickson, 2000b). This capacity, according to the broaden-and-build theory (Fredrickson, 1998, 2001), is an evolved psychological adaptation. Thus, all people (not just resilient people) share the capacity to experience the beneficial repercussions associated with positive emotions. Resilient people simply use this capacity more often. Even so, many questions remain: Do resilient individuals intentionally recruit positive emotions to cope? If so, how do they do it? Can these strategies be taught to less resilient individuals? These questions lay the groundwork for subsequent studies.

Research has shown that in order to understand how an individual will cope in response to a situation, it is important to know how that individual interprets the situation (e.g., Lazarus & Folkman, 1984). Thus, examining cognitive appraisals can enrich our understanding of how positive emotions and positive appraisals influence the coping process. Cognitive appraisals may also help explain individual differences in resilience. For instance, differences may arise in appraisals of the controllability of an event, the extent to which an event violates one's goals, and the extent to which an event is appraised as threatening versus challenging. Moreover, research has shown that positive appraisal styles (i.e., the tendency to interpret events in a positive light) have strong implications for emotion regulation, showing that they aid in efficient emotion regulation in both the short term (e.g., taking a college examination,) and the long term (e.g., dealing with breast cancer or a death of a friend; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus & Folkman, 1984; Park & Folkman, 1997).

Two types of appraisals that have received attention in the stress and coping literature as having different psychological and physiological consequences are those involving *threat* versus *challenge* (Lazarus & Folkman, 1984; Tomaka, Blascovich, Kibler, & Ernst, 1997). With threat appraisals, people's perception of danger exceeds the perception of their abilities or resources to cope with the stressor. In contrast, with challenge appraisals, people's perception of danger does not exceed the perception of resources or abilities to cope. Presumably, threatened individuals perceive the potential for loss—with little, if anything, to be gained—in the situation. Challenged individuals, in contrast, perceive the possibility of gain (i.e., positive incentives or avoidance of harm) as well as loss in the situation (Lazarus & Folkman, 1984).

In our initial study that tested the physiological consequences of positive emotions and psychological resilience (described earlier), self-reports revealed that the more resilient individuals appraised a stressful speech task as less threatening, as compared with those less re-

silient. Perhaps in consequence, resilient participants experienced higher levels of positive emotion during the stressful task. Experiences of positive emotions in turn produced faster cardiovascular recovery after the task.

Can individuals with low psychological resilience learn how to use positive emotions during stress to cope effectively in stressful situations? To explore this question, we conducted a follow-up study in which cognitive appraisals were manipulated by randomly assigning participants to hear different instruction sets that emphasized ideals related to challenge or threat. We predicted that, as compared with those with greater resilience, those with less resilience would benefit most from the use of challenge appraisals in the face of stressful situations.

We used the same speech preparation task to induce negative emotional experience. Across all participants, the greatest emotion experienced during the speech task was anxiety. As in the previous study, the groups did *not* differ in self-reported levels of anxiety, nor in magnitude of cardiovascular reactivity in response to the task, indicating that regardless of their level of resilience or the appraisal condition to which they were assigned, all participants experienced the speech task as equally stressful, both subjectively and physiologically. Group differences did emerge, however, in subjective reports of positive emotionality. Specifically, amid the high anxiety they experienced, those with low resilience who were assigned to appraise the speech task as a challenge reported feeling more amused, happy, and "psyched-up," as compared with those with low resilience who were assigned to appraise the task as threat. Among participants with high resilience, "challenge" and "threat" groups did not differ in self-reported positive emotionality.

We then examined group differences in rates of cardiovascular recovery from the speech task. Among participants with low resilience, those who interpreted the task as a challenge experienced faster cardiovascular recovery from the arousal caused by the task, as compared with those who interpreted the task as a threat. However, among highly resilient participants, recovery was equally fast, regardless of whether the task was interpreted as a challenge or a threat. Moreover, as predicted by the broaden-and-build theory, for those with low resilience, positive emotions mediated the effect of appraisals on recovery (Tugade & Fredrickson, 2002).

These findings highlight the importance of positive emotions and positive appraisals in the emotion regulation processes of resilient individuals. Expanding on the undoing hypothesis of positive emotions (Fredrickson & Levenson, 1998; Fredrickson et al., 2000) and cognitive appraisal theories of stress and coping (e.g., Lazarus & Folkman, 1984; Tomaka et al., 1997), findings from this study provide support for the

prediction that positive emotions and appraisals of challenge (versus threat) are important factors that contribute to psychological resilience. Indeed, these findings are especially promising, because they suggest that those with low levels of psychological resilience are not necessarily destined to poor emotion regulation and its consequences: With the use of positive appraisals that generate positive emotions, they also have the capacity to effectively regulate negative emotional experiences. These results imply that interventions that promote positive appraisal styles may be especially useful for those with lower levels of psychological resilience.

POSITIVE EMOTIONS IN EVERYDAY LIFE

Up to this point, readers may wonder how the wise use of positive emotions can be reflected in the circumstances of everyday life. People are faced with positive and negative events over the course of their lives, all of which can influence their emotional and physical well-being. Even seemingly uneventful or ordinary occurrences can have significant effects, depending on how individuals construe these situations and the contexts in which they occur. In their research on caregivers of people with AIDS, for example, Folkman and Moskowitz (Folkman, 1997; Moskowitz et al., 1996) found that even amid their distress, a majority of participants were able to find positive meaning in ordinary events, whether they were planned events (e.g., being thankful for friendship during a social gathering) or more random (e.g., appreciating a flower along one's path).

In their longitudinal study, Folkman and Moskowitz interviewed the caregivers and found that more than 99% of participants had no problem recalling a positive event that helped them get through their days (Folkman, 1997). Folkman and Moskowitz (2000) suggest that infusing ordinary events with positive meaning may be an adaptive form of coping. When a negative event occurs, the individual psychologically creates a positive event or reinterprets a commonplace event more positively, as a way of buffering the negative consequences of the negative event. Notably, according to these authors, it is likely that the ability of the caregivers in their study to find positive meaning in run-of-the-mill events did not occur by accident. Rather, these caregivers may have purposefully looked to positive aspects of their lives as a way of coping with their distress. According to Folkman and Moskowitz (2000), this positive reappraisal generated experiences of positive emotion even amid stress. These experiences of positive emotion gave them the needed psychological lift to help them continue and move forward in their

lives. Similar results can be seen in research pointing to the benefits of seeking visual art, music, and nature to momentarily liberate oneself from stress and uplift one's psychological well-being in preparation for further coping efforts ahead. For instance, visual and musical art have been shown to be related to the release of unexpressed emotions in women coping with breast cancer (Predeger, 1996), and they are said to help urban minority youth develop resiliency against sources of daily stress (Canino, 1995). Similarly, leisure activities and environments, particularly in nature (e.g., hiking outdoors), have been shown to facilitate coping with daily sources of stress (Ulrich, Dimberg, & Driver, 1991).

In line with the broaden-and-build theory of positive emotions, finding positive meaning in negative circumstances broadens one's scope of attention and cognition, which should aid in effective coping. Contemporary theorists have begun to include positive-meaning finding and stress-related growth in their models of stress and coping (e.g., Folkman, 1997; Park & Folkman, 1997). For example, Taylor's (1983) model of cognitive adaptation emphasizes the adaptive value of positively reinterpreting stressful experiences. Positive reappraisal involves strategies for reframing an event to see it in a more positive light. Applying this coping mechanism, cognitive behavioral therapists have encouraged individuals to use positive reappraisal strategies to assist them in confronting and dealing with difficult situations (e.g., Eifert & Wilson, 1991; Kuyken & Brewin, 1994).

Tennen and Affleck (1999) have made major contributions to this area of research with studies showing that benefit-finding enhances emotional and physical adaptation in the face of adversity. For example, they have found that benefit-finding is related to less negative affect in cancer patients, less depression and greater meaningfulness in life in stroke victims, and greater psychological adjustment in women with breast cancer (see Tennen & Affleck, 1999, for a review). This reconstruction of meaning leads to a renewal of faith and a redefinition of the self in relation to others (Calhoun & Tedeschi, 2001; Tedeschi, Park, & Calhoun, 1998; Wolin & Wolin, 1993). Taken together, these studies provide further demonstrations of how coping strategies that use positive emotions wisely can be rewarding to an individual in otherwise stressful situations.

The broaden-and-build theory (Fredrickson, 1998, 2001) may help explain how particular strategies that cultivate positive meaning and positive emotions can enhance coping outcomes. Strategies that elicit positive emotions, the theory suggests, broaden the scope of attention and cognition, which in turn should facilitate coping (Fredrickson, 2000a). Coping benefits are likely to accrue because the broadening ef-

fects of positive emotion increase the likelihood that individuals find positive meaning in stressful circumstances. It is important to note that the relation between positive meaning and positive emotions is considered reciprocal: Not only does finding positive meaning trigger positive emotion, but positive emotions—because they broaden thinking—should increase the likelihood of finding positive meaning in subsequent events (Fredrickson, 2000a). Thus, the broadening effects of positive emotions may provide the cognitive context for finding positive meaning, which in turn, can help individuals cope with adversity.

To test these hypothesized effects, we asked undergraduate research participants to provide us with narratives about "the most important personal problem" they were currently facing (adapted from Moos, 1988). Then, participants responded to the following questions: Why do you think you are facing these circumstances?; What is the significance of these current circumstances?; What kind of sense can you make of these circumstances?; and Will there be any long-term consequences of these circumstances? Participants then rated the degree of benefit finding, positive reappraisal, and positive meaning they experienced in response to the problem they described. Finally, we assessed individual differences in psychological resilience using Block and Kremen's (1996) resiliency scale. This scale assesses the extent to which an individual can modify his or her responses to changing situational demands.

We discovered that individual differences in psychological resilience predicted the ability to find positive meaning in the problems of daily life. An important finding in our study was that highly resilient and less resilient individuals reported equal levels of frustration in response to the problem they described. Differences emerged, however, in participants' reports of positive emotions: Even before they were asked to describe their most important current problem, highly resilient participants reported higher levels of positive affect on an initial mood measure. Then, when they were asked about how they felt in response to the problem they described, highly resilient individuals reported feeling more happiness amid their high level of frustration as compared with those less resilient. As predicted by the broaden-and-build theory of positive emotions, positive-meaning finding was mediated by differences in positive emotions (Tugade & Fredrickson, 2002).

In sum, as we expected, highly resilient individuals were better able to find positive meaning in the problems of their daily life, more so than their less resilient peers. For resilient people, positive-meaning finding may reflect insight about the benefits of positive emotions in helping to adapt to, and overcome, stressful circumstances. Moreover, the experience of positive emotions may contribute to people's ability

to learn from negative life events, to be optimistic about their resolve, to find benefits, and to grow from negative experiences. Although past literature and data from this study suggest the possibility that resilient individuals intentionally recruit positive emotions in times of stress (e.g., using humor to cope, finding positive meaning in negative circumstances), empirical studies remain to be conducted to test whether the "intelligent" use of positive emotions is an automatic or controlled process.

Findings from this study illuminate how positive emotions can produce increasing benefits over time. As the broaden-and-build theory posits (Fredrickson, 1998, 2001), finding positive meaning amid stress can build personal resources, such as strengthened relationships and enhanced values (by inspiring more courage, tolerance, and wisdom; cf. Tennen & Affleck, 1999; Janoff-Bulman, 1992). In time, such resources can foster further experiences of positive emotions, which in turn can build even further personal resources that will contribute to future positive emotional experiences.

POSITIVE EMOTIONS TRIGGER UPWARD SPIRALS TOWARD IMPROVED EMOTIONAL WELL-BEING

Preliminary evidence, then, suggests that positive emotions may fuel individual differences in resilience. Noting that psychological resilience is an enduring personal resource, the broaden-and-build theory makes the bolder prediction that experiences of positive emotions may also, over time, build psychological resilience, not just reflect it. That is, to the extent that positive emotions broaden the scopes of attention and cognition, enabling flexible and creative thinking, they should also augment people's enduring coping resources (Aspinwall, 1998, 2001; Isen, 1990). In turn, by building this psychological resource, positive emotions should enhance people's subsequent emotional well-being. Consistent with this view, studies have shown that people who experience positive emotions during bereavement are more likely to develop long-term plans and goals. Together with positive emotions, plans and goals predict greater psychological well-being 12 months postbereavement (Stein, Folkman, Trabasso, & Richards, 1997; for related work, see Bonanno & Keltner, 1997).

The suspected reciprocal relations between positive emotions, broadened thinking, and positive meaning suggest that, over time, the effects of positive emotions should accumulate and compound: The broadened attention and cognition triggered by earlier experiences of positive emotion should facilitate coping with adversity, and this im-

proved coping should predict future experiences of positive emotion. As this cycle continues, people build their psychological resilience and enhance their emotional well-being.

The cognitive literature on depression has already documented a *downward spiral* in which depressed mood and the narrowed, pessimistic thinking it engenders influence one another reciprocally, over time leading to ever worsening moods, and even clinical levels of depression (Peterson & Seligman, 1984). The broaden-and-build theory predicts a comparable *upward spiral* in which positive emotions and the broadened thinking they engender also influence one another reciprocally, leading to appreciable increases in emotional well-being over time. Positive emotions may trigger these upward spirals, in part, by building resilience and influencing the ways people cope with adversity. (For a complementary discussion of upward spirals, see Aspinwall, 1998, 2001.)

Fredrickson and Joiner (2002) conducted an initial prospective test of the hypothesis that, through cognitive broadening, positive emotions produce an upward spiral toward enhanced emotional well-being. Positive and negative emotions were assessed, as well as a concept called broad-minded coping, at two time points, 5 weeks apart. Broad-minded coping was tapped by items such as "Think of different ways to deal with the problem" and "Try to step back from the situation and be more objective."

Data revealed clear evidence for an upward spiral. Individuals who experienced more positive emotions than others became, over time, more resilient to adversity, as indexed by increases in broad-minded coping. These enhanced coping skills, in turn, predicted increased positive emotions over time (Fredrickson & Joiner, 2002).

These findings suggest that positive emotions and broad-minded coping mutually build on one another: Positive emotions not only make people feel good in the present, but also—through their effects on broadened thinking—increase the likelihood that people will feel good in the future. Because broad-minded coping is a form of psychological resilience, these data are consistent with the prediction, drawn from the broaden-and-build theory, that momentary experiences of positive emotion can build enduring psychological resources and trigger upward spirals toward enhanced emotional well-being.

SUMMARY AND CONCLUSIONS

The broaden-and-build theory (Fredrickson, 1998, 2001) posits that positive emotions are useful in several ways. They guide present behav-

ior, by broadening one's attention and cognition, setting the stage for creative, explorative, and innovative pursuits. Moreover, positive emotions build personal and social resources to help individuals achieve better lives in the future. Like the broaden-and-build theory, emotional intelligence theory marks the intersection between two fundamental components of psychology: the cognitive and the emotional systems. By linking the two theories, it becomes apparent that the knowledge and use of positive emotions constitute an important skill set for effective personal and social functioning.

Given the beneficial effects of positive emotions and emotional intelligence on physical and psychological well-being, it may be useful to modify current theories of emotional intelligence to include a discussion of positive emotions. To date, most research and theory about emotional intelligence focuses on recognizing, understanding, and managing *negative* emotions in the service of effective interpersonal and intrapersonal functioning, with little mention of how *positive* emotions may be important to the construct of emotional intelligence. However, as we have shown in this chapter, the ability to recognize and use positive emotions to manage negative circumstances can have beneficial effects on one's well-being. Thus, understanding these benefits and using positive emotions to one's advantage during times of stress may exemplify emotional intelligence.

It is likely that an emotionally intelligent person can fully appreciate the advantages of positive emotions. One of the main determinants of the intelligent management of emotions is having access to one's own emotional life (Mayer & Salovey, 1993). This involves the ability to draw on one's feelings as means of understanding and guiding one's behavior. However, our data also suggest that emotionally intelligent skills may be taught and interventions developed to promote them. In other words, a person may learn to develop internal models of emotion that include standards of effective emotional functioning. More specifically, interventions may be used to teach individuals how to utilize effectively their knowledge of positive emotions at opportune moments to optimize their well-being as well as their personal and social growth.

In sum, investigating the broaden-and-build theory of positive emotions in conjunction with emotional intelligence theory provides greater insight into the reasons that certain emotionally intelligent individuals are able to effectively function within society while others may not fare as well. These individuals may possess complex understandings of their positive emotions and use this knowledge to adapt resourcefully in response to negative stimuli. It is also conceivable that emotionally intelligent individuals proactively cultivate positive emotions as paths toward development and growth, a direct implication of the broaden-

and-build theory. Thus, positive emotions are key resources that should be recognized for their worth—although positive emotions are a part of everyday life, they are not merely experiences that produce momentary pleasures. Indeed, they also appear essential for effective and optimal personal and social functioning.

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