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REGULATION OF POSITIVE EMOTIONS: EMOTION REGULATION STRATEGIES THAT PROMOTE RESILIENCE

ABSTRACT. The regulation of emotions is essential in everyday life. In this paper, we discuss the regulation of positive emotional experiences. Our discussion focuses on strategies aimed at maintaining and increasing experiences of positive emotions. We discuss the importance of these strategies for well-being, and suggest that cultivating positive emotions may be particularly useful for building resilience to stressful events. Then, we explore possible mechanisms that link positive emotions to coping for resilient people, with a focus on the automatic activation of positive emotions while coping. We conclude by discussing alternative models and proposing future directions in the work on positive emotion regulation and resilience.

KEY WORDS: resilience, emotion regulation, positive emotions

Our everyday lives are governed by a host of complex processes of emotion regulation. Consider your responses to negative feelings. At times, when feeling down, you might watch a comedy film (cf., Ruch, 1993) or take a walk through the park (cf., Iwasaki and Mannell, 2000, 2003), actively seeking a means to momentarily lift your spirits. At other times, you might decide to go a party with friends. This act of celebration might be useful in making one feel better, and even prolong good feelings for an extended period of time (Langston, 1994). In yet other instances, something in your environment (e.g., a faint whiff of chocolate chip cookies, the smile of a passerby) might capture your attention, somewhat irresistibly. Suddenly and unsuspectingly, you may feel better (Isen and Diamond, 1989). Although coping with negative feelings can involve a variety of emotion regulatory behaviors, each of the responses above illustrates how a positive emotion can be a useful response for coping with a negative experience.

The focus of our paper is on the regulation of positive emotions. We begin by defining what emotion regulation is, and how this can be applied to positive emotional experiences. We then move to a discussion of different strategies aimed to maintain or enhance positive emotional experiences. Using the broaden-and-build theory of positive emotions (Fredrickson, 1998; 2001) as a theoretical framework, we suggest that cultivating positive emotions may be particularly useful for building resilience to stressful events. We then propose new avenues for investigating the mechanisms that link positive emotions to effective coping for resilient people, with a focus on the automatic activation of positive emotions while coping. Finally, we discuss future directions in the work on positive emotion regulation and resilience.

REGULATING POSITIVE EMOTIONS

Emotion regulation refers to the attempts to influence the *types* of emotions people experience, *when* they experience these emotions, and *how* these emotions are expressed and experienced (Gross, 1998). It has been suggested that regulation efforts can be made by either up-regulating or down-regulating aspects of both positive and negative emotional episodes (Parrot, 1993). As well, processes of emotion regulation can be conscious or unconscious (Gross, 1998). An enormous amount of research attention has been devoted to understanding how people regulate negative emotions as a way to cope with negative events, with relatively little attention given to the regulation of positive emotions (Gross, 1999). This may not be altogether surprising, as the usual concern in everyday life and in clinical settings is to regulate distress (Folkman and Moskowitz, 2003a), rather than to modify or maintain pleasant experiences.

Despite the paucity of research on the regulation of positive emotions, emerging research shows that people do engage in positive emotion regulation (Gross et al., in press). In a recent study, for example, participants were asked (in a semi-structured interview and via survey) to report on the frequency with which they regulated their emotions in their daily lives.

Although participants reported regulating negative emotions more frequently, they also reported using strategies to alter their experience and expression of positive emotions, such as love and pride (Gross et al., in press). These findings begin to stretch existing conceptualizations of emotion regulation to include positive emotions, and suggest that novel questions in this literature are worth exploring. Why, for example, do people need to regulate positive emotions at all? What strategies do people use to regulate positive emotions? To begin to address these points, we focus our discussion on strategies aimed at *maintaining* (prolonging) or *increasing* (enhancing) positive emotional experiences.

Maintaining Positive Emotional Experiences

Emotion regulation does not necessarily involve changes in the quality or intensity of emotional experience; under certain circumstances, regulation may involve the *maintenance* of affective experiences (e.g., Denham, 1998; Gross, 2001). Hedonic accounts indicate that people generally want to feel good (vs. bad), and it is commonly held that people aspire to maintain or prolong these pleasant feelings. For instance, after receiving good news, many are eager to share their news with close friends and loved ones so as to prolong their positive experience. Supportive evidence can be found in studies showing that, when feeling happy, people engage in behaviors that protect their existing happy state (Isen and Simmonds, 1978; Isen and Patrick, 1983; for reviews, see Isen, 2000). Employing strategies to maintain positive emotions also resonates with ideas proposed by the hedonic contingency model (Wegener and Petty, 1994), which states that, when in a positive subjective state, individuals seek out activities to maintain that state. According to the model, people learn to associate benefits with positive emotional experiences over time, and as a result, they strategically select behaviors or cognitions that will allow them to maintain (or even elevate) their positive experiences (Wegener and Petty, 1994).

Savoring can be considered a cognitive form of emotion regulation used to maintain and extend positive emotional experiences (Bryant, 1989). Savoring involves conscious awareness of,

and deliberate attention to, one's pleasant experiences (Bryant, 1989). It is also defined as beneficially interpreting positive events by engaging in social behaviors, such as communicating the event to others or celebrating (termed "capitalizing" by Langston, 1994). A theoretical model of savoring proposes that positive emotions are maintained while savoring because one draws attention to feelings (a) in anticipation of upcoming positive events; (b) when appreciating current pleasant events; and (c) when reminiscing about past positive experiences (Bryant, 2003). Consider, for example, a relaxing summer vacation at the beach. Savoring can prolong the duration of positive emotional experiences when thinking about the impending arrival of your airplane to your summer destination (anticipation); when sharing pleasurable moments with friends or loved ones during your vacation (current pleasant events); and when relishing the memories after returning home (reminiscence) (Bryant, 1989). Contentment, an emotion relevant to savoring (Fredrickson, 1998, 2001), resonates with the reminiscence aspect of the savoring process.

Savoring has important implications for coping and well-being. Having a general tendency to savor experiences (measured via the Savoring Beliefs Inventory; Bryant, 2003) appears to benefit individuals across the lifespan. Correlational studies indicate that the tendency to savor predicts subjective well-being for grade school children, adolescents, college students, and the elderly (Bryant, 1989; Meehan et al., 1993). As well, savoring is positively related to favorable advantages in well-being, including self-reported optimism, internal locus of control, self-control behaviors, life satisfaction, and self-esteem; it is negatively correlated with hopelessness and depression (Bryant, 2003). Although studies that empirically test the causal relations between savoring and positive outcomes are needed, these correaltional findings lend support to the idea that maintaining positive emotional experiences can have important outcomes for an individual's well-being.

A number of different interventions promote savoring. For example, relaxation therapies and guided meditation practices require participants to engage in thematic imagery exercises that

can induce and extend the duration of pleasant experiences. Sessions might include instructions to bring to mind scenes of nature, childhood triumphs, or recent good experiences (Smith, 1990). These techniques can effectively prolong positive emotional experiences and can benefit physical and psychological health (Chesney et al., 2005). Indeed, meditative practices are associated with enhanced subjective quality of life (Shapiro et al., 2005; Surawy et al., 2005); reductions in stress (Kabat-Zinn et al., 1992; Miller et al., 1995; Shapiro et al., 1998); prevention of disease (Chesney et al., 2005); and improvements in coping and health for both clinical and nonclinical samples (for reviews see Grossman et al., 2004; Kabat-Zinn, 1990; Smith, 1990). Together, these studies suggest that regulatory behaviors that help people sustain and maintain positive emotional experiences can be beneficial to health and well-being.

Increasing or Enhancing Positive Emotional Experiences

Within the array of emotion regulatory behaviors used in daily life, people sometimes engage in strategies that increase and enhance their positive emotional experiences. For example, some may smile when feeling sad or upset in attempts to feel more uplifted after receiving disappointing news (cf., Ekman, 1989). Regulating positive expressions of emotions in this way can reduce the impact of negative emotions, at least in the short term. Although modifying the behavioral aspect (e.g., facial display) of emotion can create a discrepancy between inner experience and outer expression (e.g., Gross et al., in press) it can nonetheless have an important impact on emotional functioning. Smiling in the midst of sadness, for instance, can speed cardiovascular recovery from negative emotional arousal (Fredrickson and Levenson, 1998, Study 2). This strategy may be contrasted with other strategies aimed at enhancing positive emotional experience. On other negative occasions, for instance, people may pause to consider the blessings in their lives, which enhances feelings of gratitude (cf., Emmons and McCullough, 2003). These strategies are useful in increasing or enhancing positive emotional experiences, which in turn, can be effective for coping with negative experiences.

A host of studies point to the psychological and physical benefits of increasing or enhancing positive emotional experiences. Benefits accrue from cultivating positive emotions in everyday life (see Fredrickson, 2000 for a review) as well as in response to negative circumstances. One important strategy is to find positive meaning in negative events, which produces positive emotions that help buffer against stress (Folkman and Moskowitz, 2000). People find positive meaning in daily life through multiple pathways. These include: (1) positive reappraisal (i.e., finding a "silver lining"), (2) problem-focused coping (i.e., efforts directed at solving or managing the problem causing distress), and (3) infusing ordinary events with positive meaning (e.g., appreciating a compliment).

Although it may seem like a trivial act, infusing ordinary events with positive meaning is linked to striking advantages in 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 from distress. In their research on caregivers of people with AIDS, for example, Folkman and Moskowitz (Folkman, 1997; Moskowitz et al., 1996) found that even amidst their distress, over 99% of their participants were able to find positive meaning in ordinary events. Helping them get through their days, caregivers found positive meaning in planned events (e.g., being thankful for friendship during a social gathering) or even more random events (e.g., appreciating a beautiful sunset) (Folkman, 1997; Folkman and Moskowitz, 2000). Notably, 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 accidentally (Folkman and Moskowitz, 2000). Rather, these caregivers may have intentionally looked to positive aspects of their lives as a way of coping with their distress. Positive emotions are said to play an important role in this process: Positive reappraisal generates experiences of positive emotion even amidst stress. In turn, these positive emotional experiences can provide the needed psychological lift to help people continue and move forward in their lives (Folkman and Moskowitz, 2000).

The findings reported thus far suggest that regulation strategies that maintain or enhance positive emotions are valuable for establishing beneficial coping outcomes. Although these benefits can be valuable for coping in the short run, even more importantly, positive emotions can have long-lasting benefits for an individual. The short-term and long-term effects of positive emotion regulation on well-being may be better understood by examining the distinction between hedonic and eudaimonic well-being. Hedonic well-being is conceptualized as short-term, pleasurable subjective experiences in ones' life. In contrast, eudaimonic well-being is characterized by long-term activities that provide opportunities for continued personal growth, positive relationships with others, positive self-regard and a sense of mastery (Ryff and Singer, 1998, 2000). Hedonic and eudaimonic well-being are distinct though related constructs, with an array of distinct correlates and predictors (cf., Ryan and Deci, 2001). How is positive emotional regulation related to hedonic and eudaimonic well-being? It is possible that, like a muscle exercised over time, experiencing positive emotions in daily life (hedonic well-being) can produce important long-term benefits (eudaimonic well-being) (cf., Fredrickson, 2000). We have found that cultivating positive emotions (exercising the muscle) is important for promoting resilience (a personal strength).

POSITIVE EMOTIONS AND RESILIENCE

The *broaden-and-build theory* of positive emotions (Fredrickson, 1998, 2001) provides a valuable framework with which to understand the functional significance of positive emotions, especially when coping with negative emotional circumstances. This theory stipulates that, positive and negative emotions have distinct and complementary adaptive functions and physiological effects. Whereas negative emotions are associated with specific action tendencies that focus and narrow thoughts and actions (to prepare the body for fight or flight), positive emotions should broaden ones thoughts and actions, and by consequence build important personal resources (Fredrickson, 1998, 2001). Supportive evidence for the broaden-and-build theory

shows that experimentally induced positive emotions quell autonomic arousal generated by negative emotions (Fredrickson and Levenson, 1998; Fredrickson et al., 2000). As well, positive emotions have been shown to broaden people's thought-action repertoires (Fredrickson, 1998, 2001; Fredrickson and Branigan, 2005) by producing patterns of thought and actions that are notably unusual, creative, and flexible (Isen and Daubman, 1984; Isen et al., 1985, 1987; Kahn and Isen, 1993). When there are no immediate problems to handle, one is free to engage in exploratory behaviors that may incidentally enhance personal abilities or resources (Bonnano, 2001), including coping resources. As such, to the extent that positive emotions are useful in counteracting negative emotional experiences and broadening thoughts and actions (Fredrickson, 1998, 2001), they should also be useful in building important personal resources, such as resilience to negative circumstances.

Models of Resilience
Psychological resilience has been characterized by (1) the ability to bounce back from negative emotional experiences and by (2) flexible adaptation to the changing demands of stressful experiences (Block and Block, 1980; Block and Kremen, 1996; Lazarus, 1993). More specifically, Block and Block (1980) defined psychological resilience as "Resourceful adaptation to changing circumstances and environmental contingencies, analysis of the 'goodness of fit' between situational demands and behavioral possibility, and flexible invocation of the available repertoire of problem-solving strategies (problem-solving being defined to include the social and personal domains as well as the cognitive)." This definition captures a psychological frame of mind that has been shown to be associated with a variety of behavioral and psychological outcomes.

For several years, developmental researchers and theorists had highlighted various protective factors (e.g., social support networks) that promote healthy outcomes among children exposed to large-scale sources of adversity that have sustained influences on one's life, such as abuse or poverty (e.g., Rutter, 1987). Beyond adverse situations that can continually affect one's daily life, resilience is also manifested in response to

isolated traumatic events (Bonanno, 2005). A resilient response to the death of a loved one, for example, is characterized by flexibility: mild, short-lived disruptions, and a relatively stable, healthy trajectory of healthy functioning over time (Bonanno, 2004). As such, resilience may be more common than previously conceptualized (Bonanno, 2004; Masten, 2000). Indeed, Masten argues that resilience is ordinary, rather than extraordinary. In line with this idea, resilience may be something that all individuals have the capacity to achieve.

Individual Differences in Trait Resilience
Trait resilience is described as the general tendency to modify one's responses effectively to changing situational demands, and by having ability to recover effectively from stressful circumstances (Block and Block, 1980). We have argued that resilient individuals may expertly use of positive emotions in the coping process, "intelligently" drawing on positive emotions in times of stress (Tugade and Fredrickson, 2002; 2004).

Research indicates that individual differences in trait resilience predict the ability to capitalize on positive emotions when coping with negative emotional experiences. For instance, trait resilient people frequently use humor as a coping strategy (e.g., Werner and Smith, 1992; Wolin and Wolin, 1993), which has been shown to help people cope effectively with stressful circumstances (e.g., Martin and Lefcourt, 1983; Nezu et al., 1988). Likewise, trait resilient children under stress score high on humor generation, compared to less resilient children facing equally high levels of stress (Masten et al., 1990). Trait resilient individuals also use other coping strategies that elicit positive emotions to regulate negative emotional situations. For instance, during heightened levels of distress, they engage in relaxation (allowing time to interpret and assess problems), exploration (to consider behavioral alternatives), and hopeful, optimistic thinking (having faith to overcome adversity) as means of regulating negative emotional experiences (Werner and Smith, 1992). Together, these findings indicate that trait resilient people are able to marshal positive emotions to guide their coping behavior, allowing for the reduction of distress and restoration of perspective.

In our research, we found that psychologically resilient individuals were physiologically resilient as well, and that positive emotions were useful in achieving this outcome (Tugade and Fredrickson, 2004). Theoretical descriptions of psychological resilience indicate that resilient individuals are able to "bounce back" from distressing experiences quickly and efficiently (Carver, 1998; Lazarus, 1993). In line with this theoretical definition, we found that although both low and high resilient individuals experienced equal levels of cardiovascular arousal and subjective negative experience in response to a stressor, high trait resilient individuals exhibited faster cardiovascular recovery from negative emotional arousal. Additionally, "bouncing back" to cardiovascular baseline levels was partially mediated by resilient people's experiences of positive emotion in the midst of distress (Tugade and Fredrickson, 2004). These findings resonate with theoretical conceptions of resilient individuals, which include their abilities (1) to recognize the effects of stressful situations and (2) to experience positive outcomes despite sources of adversity (Masten, 2000). Further, these findings demonstrate that positive emotions contribute to the ability for resilient individuals to physiologically recover from negative emotional arousal, which can have important health implications. Although it is important to allow negative emotions unfold so as not to short-circuit the adaptive functions associated with negative emotional experiences, sustained experiences of negative emotional arousal can be associated with long-term cardiovascular illness and disease. In all, these findings linking positive emotions to beneficial coping outcomes indicate that trait resilient people effectively harness positive emotions to their advantage when coping, and they do so with a seeming intuitive sensibility (Tugade and Fredrickson, 2002).

Why are positive emotions important to resilience? According to the broaden-and-build theory (Fredrickson, 1998, 2001), positive emotions can momentarily broaden people's scopes of thought and allow for flexible attention, which in turn can improve one's well-being. Over time, and with repeated experiences of positive emotions, this broadened mindset might become habitual. By consequence, recurrent experiences of

positive emotion can increase one's personal resources, including coping resources. Importantly, the arsenal of personal resources produced by positive emotions can be drawn on in times of need, which may have important value in the coping process (Fredrickson, 2000).

In line with this conceptualization, we have found that positive emotions help to build psychological resources that are essential in coping effectively with traumatic circumstances, such as the September 11th terrorist attacks. In a prospective study on resilience and positive emotions, we found that higher trait resilience was associated with greater experiences of positive emotions (such as gratitude, interest, and love) amidst negative emotions (such as anger, sadness and fear) during the attacks. In addition, higher trait resilience was linked to post-crisis growth in personal resources (indexed by increases in optimism, subjective well-being, tranquility). Importantly, post-crisis experiences of positive emotions fully mediated the effect of psychological resilience on psychological growth after the attacks (Fredrickson et al., 2003). Such findings suggest the timely cultivation of positive emotions is one way that resilient people use positive emotions intelligently.

As each of the studies reviewed above indicates, using positive emotions to cope can be considered an essential coping skill (Folkman and Moskowitz, 2000, 2003a, b; Tugade and Fredrickson, 2002), and the broaden-and-build theory (Fredrickson, 1998, 2001) suggests that recurrent experiences of positive emotions may help people to build and strengthen this skill. As we indicated earlier, all people share the capacity to use positive emotions to cope (Fredrickson, 2000) and to develop resilience (Masten, 2000). Resilient people, however, may tap this skill more readily than others. Given that resilient people appear particularly adept at using positive emotions when coping (Tugade and Fredrickson, 2002), it is important to consider how and why they are able to do so. Do resilient individuals intentionally recruit positive emotions to cope? Or are positive emotions automatically activated in a coping context? Because automatic and controlled psychological processes are not mutually exclusive (cf., Bargh, 1994, 1997), the mechanisms of

resilience likely involve the interaction of automatic and controlled processes.

MECHANISMS OF RESILIENCE

Exploring the mechanisms of resilience is an area of research that warrants further investigation. Towards this aim, dual-process theories of the mind may lay the groundwork for understanding important, unexamined processes associated with resilience. Dual-process theories of the mind permeate through much of psychology (cf., Barrett et al., 2005; Chaiken and Trope, 1999). A central principle of these theories is that behavior is determined by the interplay of automatic and controlled processing. Although it has not been extensively studied, we suggest that dual-process theories may be useful in investigating emotion regulation. Indeed, although it may often involve conscious processes, emotion regulation does not always require awareness or explicit strategies (Gross and Munoz, 1995), and therefore can be unconscious and automatic. Through the lens of dual-process theories, we may glean important information about the automatic and controlled nature of resilience.

For resilient individuals, cultivating positive emotions when coping can become an automatized behavior, just like any other behavior or complex action sequence can become automatized with repetition (Bargh and Chartrand, 1999; Norman and Shallice, 1986). Automatic skill acquisition (like emotion regulation) depends on the frequent and consistent pairing of internal responses with external events (Shiffrin and Dumais, 1981; Shiffrin and Schneider, 1977). Along these lines, resilient people may initially use positive emotions while coping in a strategic fashion, actively cultivating positive emotions to cope with distress. To the extent that this same strategy is enacted over time, the conscious strategy can become automatized (Bargh and Chartrand, 1999). Using positive emotions to cope, then, may be likened to mastering a technique, procedure, or skill via repeated practice to such a degree that the skill becomes automatic, requiring only minimal attention from working memory.

Similar ideas have been proposed by Isen and Diamond (1989), who suggest that positive affect is a frequent experience for most individuals (e.g., Isen and Daubman, 1984; Isen and Diamond, 1989). As such, certain emotions, like happiness, may generally be more automatic than other emotions. Said differently, frequently experienced positive emotions should take little effort to exert their influence on behavior. There may be individual differences in this regard, however (Isen and Diamond, 1989).

Positive emotions may influence thought processes and behavior with little effort for most, but especially for resilient people. If resilient people typically experience positive emotions (e.g., Block and Block, 1980; Masten, 2000; Tugade and Fredrickson, 2002, 2004), these emotions are chronically accessible to them. Chronically accessible emotions require minimal cognitive resources to be activated. As such, for resilient people, the activation of positive feelings even in the midst of cognitively challenging situations (i.e., stressful contexts) may seem effortless (Isen and Diamond, 1989). By contrast, those who are less accustomed to positive emotions (i.e., less resilient people) may find it harder to generate positive emotions or may have to work at doing so more effortfully, especially when coping with negative experiences, which can require the use of additional cognitive resources.

Another way to think about how emotions and emotion regulation become automatized over time is to consider the automaticity of goal pursuit. Emotion regulation can be considered a means to achieve a goal of effective coping. An increasing body of research has suggested that goal pursuits may often be initiated and pursued automatically, and such automatic strivings may have significant implications for behavior and subjective experience (Bargh et al., 2001). If an individual has the same goal (use positive emotions) within a given situation (under stress) repeatedly over time, then that goal representation will become active automatically whenever those situational features are present in the environment (Bargh, 1990; Bargh and Gollwitzer, 1994). Through time, these conscious goals may be chosen frequently and consistently in particular situations,

such that they eventually become triggered automatically in those same environments without their conscious thought or even intent. The environment (e.g., a stressful situation) may activate the implicit regulation goals and put the goal into motion (Bargh, 1990, 1997).

One study demonstrated that regulation goals aimed at maintaining positive emotions can be automatically activated. Experimentally induced happiness (vs. sadness or neutral emotion) activated an automatic goal to maintain ones happy state. Specifically, when asked to rank preferences for future activities, participants induced to experience happiness selected activities that would maintain their happiness, even though the participants could not articulate the reasons for their selection. These findings suggest that positive mood maintenance goals can be automatically activated, even without overt expectations to maintain feelings of happiness (Handley et al., 2004).

Other research shows that automatically activated positive emotions can influence behavior, even in the absence of the conscious awareness of one's subjective state (Winkielman and Berridge, 2004). Specifically, in one study, subliminal presentations of positive (vs. neutral or negative) faces influenced people's responses when presented with an ostensibly unrelated task of drinking a beverage. Subliminally presented positive emotional faces influenced participants' preference judgments (they reported higher ratings of liking the beverage) and even the amount of beverage they consumed (they drank a greater amount). The authors argued that their findings are consistent with evolutionary considerations suggesting that nonconscious systems, which underly basic affective reactions, originated prior to systems for conscious awareness (Winkielman and Berridge, 2004).

Findings on the automatic activation of positive emotions have relevance to coping. We are currently investigating the possibility that automatically activated (vs. deliberately cultivated) positive emotions can exert important benefits in the coping process (M.M. Tugade and E.A. Fonseca, 2005, unpublished raw data). In the coping domain, the automatic activation of positive emotion may be particularly useful

because stressful situations deplete cognitive resources. If people constantly have to deliberate on using positive emotions to cope, they may exhaust cognitive resources, hindering their ability to effectively cope with the situation at hand. In contrast, with the automatic activation of positive emotions when coping, cognitive resources are freed up, and can be allocated to other concerns. Although these ideas require further empirical support, they suggest new grounds for novel discoveries in the research of positive emotions, emotion regulation, and resilience.

SUMMARY AND CONCLUSIONS

When examining coping behavior, it is clear that emotional life is governed by several complex processes. In this paper, we organized our discussion around the intersections of positive and negative emotions. We reviewed literature that supports the idea that maintaining and enhancing positive emotions yield important advantages in the coping process. We then directed our discussion to trait resilient people, and suggested that they are especially proficient at using positive emotions to cope. Next, we discussed the interplay of automatic and controlled processes in psychology to push our understanding of resilience further. Dual-process theories, we suggest, lay important groundwork for further inquiry about the mechanisms of resilience. Specifically, we proposed that examining automatic and controlled processes of coping may shed important information about how resilient people develop useful coping skills that help them fare well in the face of stress.

Although we have proposed new directions for research on positive emotions, emotion regulation, and resilience, there are other relevant areas that are also worth exploring. One area worth attention is whether there are temperamental differences in the capacity to recruit positive emotions in the coping process. Similar ideas have been proposed by Lyubomirsky in her work on the "set point' for chronic happiness, which is genetically determined, fixed, stable, and immune to influence or control from external factors (Lyubomirsky et al., 2005).

Another area for further inquiry involves the measurement of emotions and emotion regulation across different contexts and in naturalistic settings. For instance, advanced methodological techniques might reveal important information about the coping behavior of resilient people: Which situations spark their use of positive emotions to cope? By examining situations over extended periods of time, what can we learn about the dynamics of positive emotions in the coping process? Are these stable processes, or do they change over time? Experience-sampling methodology (ESM) may be useful to address these questions. ESM enables the measurement of dynamic within-person patterns, emotional behavior as it occurs, and people as they live their lives. As such, ESM can reveal nuanced patterns of coping for individuals, and provide insight into the dynamic regularities of coping *in situ*. In this way, ESM is important in the extensive study of emotions, health, and well being (Scollon et al., 2003; Schimmack and Diener, 2003; Tugade et al., in press; Conner et al., 2004). Thus, ESM can reveal, rather than assume, behavioral patterns that are true for resilient individuals.

Another area of study could involve examining other goals for regulating positive emotions. Some individuals may vary in their goals for maintaining or enhancing positive emotional experiences, which may produce maladaptive outcomes. Some, for instance, may regulate positive emotions by engaging in behaviors (e.g., taking drugs, drinking alcohol, engaging in risky behavior) towards hedonic aims, which, if unmoderated, can be maladaptive. As such, it would be important to examine conscious and nonconsicous goal pursuit, and investigate their effects on coping outcomes.

Related to goals for regulating positive emotions, we reviewed strategies that maintain and enhance positive emotional experiences. Research and theory shows, however, that people also engage in the *dampening* of positive emotional experiences, which is considered the counterpart of savoring. Recent research shows that there are individual differences in dampening (vs. savoring). High self-esteem individuals are more likely to savor positive experiences, whereas low self-esteem individuals

tend to dampen positive experiences (Wood et al., 2003). Extrapolating from these findings to examine other individual differences in savoring versus dampening can be a fruitful avenue for future studies on the regulation of positive emotions.

Cross-cultural studies on positive emotion regulation are also needed. Based on cultural proscriptions for emotional expression, Asians and Asian Americans, for instance, should have a greater tendency to suppress expressions of positive emotions. Recent research found supportive evidence for this idea. When asked to suppress facial displays while viewing a positive emotion-eliciting film, Asian American participants reported less difficulty in suppressing their expressions of amusement, compared to European American participants (Gross et al., in press). These findings indicate that examining cultural differences in the regulation of positive emotions are important to consider when examining the role of positive emotions in coping behavior.

Finally, future research should focus on targeted aspects of emotion to more clearly understand the processes that link positive emotions to resilience. Emotions comprise of several components, including subjective experiences, cognitive appraisals, behavior, and physiology. In this paper, we have largely focused our discussion on how cognitive appraisals (i.e., finding positive meaning) and resulting subjective experiences of positive emotions affect coping outcomes (assessed via subjective reports, physiological responding). Do all aspects of positive emotion have comparable effects on coping? Furthermore, how does the automatic activation of positive emotions in a coping context affect cognitive, physiological, or behavioral responding? Future lines of research aimed at exploring how different aspects of positive emotions (appraisals, experience, behavior, physiology) and processes of positive emotions (deliberately cultivated vs. automatically activated) could illuminate several unanswered questions about resilience.

As each of these lines of future research suggest, that there is still much to learn about the processes associated with the regulation of positive emotions. Such intriguing directions of research await further study and highlight the utility of

considering the complex ways in which positive emotions are activated and pursued in the coping process.

REFERENCES

Bargh, J.A.: 1990, 'Auto-motives: Preconscious determinants of social interaction', in E.T. Higgins and R.M. Sorrentino (eds.), Handbook of Motivation and Cognition, Vol. 2 (Guilford Press, New York) pp. 93–130.

Bargh, J.A.: 1994, The Four Horsemen of automaticity: Awareness, efficiency, intention, and control in social cognition, in R.S. WyerJr. and T.K. Srull (eds.), Handbook of Social Cognition, 2nd edition (Erlbaum, Hillsdale, NJ)pp. 1–40.

Bargh, J.A.: 1997, The automaticity of everyday life, in R.S. Wyer (ed.), Advances in Social Cognition, (Lawrence Erlbaum Associates Inc, Mahwah, NJ).

Bargh, J.A. and T.L. Chartrand: 1999, 'The unbearable automaticity of being', American Psychologist 54, pp. 462–479.

Bargh, J.A. and P.M. Gollwitzer: 1994, 'Environmental control of goal-directed action: Automatic and strategic contingencies between situations and behavior', Nebraska Symposium 41, pp. 71–124.

Bargh, J.A., P.M. Gollwitzer, A. Lee-Chai, K. Bardollar and R. Trotschel: 2001, 'The automated will: Nonconscious activation and pursuit of beheavioral goals', Journal of Personality and Social Psychology 81, pp. 1004–1027.

Barrett, L.F.: 2005, 'Feeling is perceiving: Core affect and conceptualization in the experience of emotion', in L.F. Barrett, P.M. Niedenthal and P. Winkielman (eds.), Emotions and consciousness, (Guilford Press, New York) pp. 255–284.

Bonanno, G.A.: 2001, Emotion self-regulation, in T.J. Mayne and G.A. Bonanno (eds.), Emotions: Current Issues and Future Directions, (Guilford Press, New York, NY) pp. 251–285.

Bonanno, G.A.: 2004, 'Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events?', American Psychologist 59(1), pp. 20–28..

Bonanno, G.A.: 2005, 'Resilience in the face of potential trauma', Current Directions in Psychological Science 14, pp. 135–138.

Block, J. and A.M. Kremen: 1996, 'IQ and egoresiliency: Conceptual and empirical connections and separateness', Journal of Personality and Social Psychology, 70(2), pp. 349–361.

Block, J.H., and J. Block: 1980, 'The role of ego-control and ego-resiliency in the origination of behavior', in W.A. Collings (ed.), The Minnesota Symposia on Child Psychology, Vol. 13 (Erlbaum, Hillsdale, NJ), pp. 39–101.

Bryant, F.B.: 1989, 'A four-factor model of perceived control: Avoiding, coping, obtaining, and savoring', Journal of Personality 57, pp. 773–797.

Bryant, F.B.: 2003, 'Savoring Beliefs Inventory (SBI): A scale for measuring beliefs about savouring', Journal of Mental Health 12, pp. 175–196.

Carver, C.S.: 1998, 'Resilience and thriving: Issues, models and linkages', Journal of Social Issues 54, pp. 245–266.

Chaiken, S. and Y. Trope: 1999, Dual-Process Theories in Social Psychology (Guilford Press, New York).

Chesney, M.A., L.A. Darbes, K. Hoerster, J.M. Taylor, D. B. Chambers, and D. E. Anderson: 2005, 'Positive emotions: Exploring the other hemisphere in behavioral medicine', International Journal of Behavioral Medicine 12(2), pp. 50–58.

Conner, T., M.M. Tugade and L.F. Barrett: 2004, Ecological momentary assessment, in N. Anderson (ed.), Encyclopedia of Health and Behavior, (Sage, Thousand Oaks, CA) pp. 291–292.

Denham, S.A.: 1998, Emotional Development in Young Children (Guildford Press, New York, NY).

Ekman, P.: 1989, The argument and evidence about universals in facial expressions of emotion, in A. Manstead and H. Wagner (eds.), Handbook of Social Psychophysiology, (John Wiley & Sons, Oxford, England) pp. 143–164.

Emmons, R.A. and M.E. McCullough: 2003, 'Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life', Journal of Personality and Social Psychology 84, pp. 377–389.

Folkman, S.: 1997, 'Positive psychological states and coping with severe stress', Social Science and Medicine 45, pp. 1207–1221.

Folkman, S. and J.T. Moskowitz: 2000, 'Positive affect and the other side of coping', American Psychologist 55, pp. 647–654.

Folkman, S. and J.T. Moskowitz: 2003a, 'Coping: Pitfalls and promise'", Annual Review of Psychology 55, pp. 745–774.

Folkman, S. and J.T. Moskowitz: 2003b, 'Positive psychology from a coping perspective', Psychological Inquiry 14, pp. 121–125.

Fredrickson, B.L.: 1998, 'What good are positive emotions?', Review of General Psychology: Special Issue: New Directions in Research on Emotion 2, pp. 300–319.

Fredrickson, B.L.: 2000, 'Cultivating positive emotions to optimize health and well-being. Prevention and Treatment, 3, Article 1. Available on the World Wide Web: http://journals.apa.org/prevention/volume3/pre0030001a.html.

Fredrickson, B.L.: 2001, 'The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions', American Psychologist: Special Issue 56, pp. 218–226.

Fredrickson, B.L. and C. Branigan: 2005, 'Positive emotions broaden the scope of attention and thought-action repertoires', Cognition and Emotion 19, pp. 313–332.

Fredrickson, B.L. and R.W. Levenson: 1998, 'Positive emotions speed recovery from the cardiovascular sequelae of negative emotions', Cognition and Emotion 12, pp. 191–220.

Fredrickson, B.L., R.A. Mancuso, C. Branigan and M.M. Tugade: 2000, 'The undoing effect of positive emotions', Motivation and Emotion 24, pp. 237–258.

Fredrickson, B.L., M.M. Tugade, C.E. Waugh and G. Larkin: 2003, 'What good are positive emotions in crises?: A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001', Journal of Personality and Social Psychology 84, pp. 365–376.

Gross, J.J.: 1998, 'Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology', Journal of Personality and Social Psychology 74, pp. 224–237.

Gross, J.J.: 1999, 'Emotion regulation: Past, present, future', Cognition and Emotion 13, pp. 551–573.

Gross, J.J.: 2001, 'Emotion regulation in adulthood: Timing is everything', Current Directions in Psychological Science 10, pp. 214–219.

Gross, J.J. and R.F. Munoz: 1995, 'Emotion regulation and mental health', Clinical Psychology: Science and Practice 2, pp. 151–164.

Gross, J.J., J.M. Richards and O.P. John: 'Emotion regulation in everyday life', in D.K. Snyder, J.A. Simpson and J.N. Hughes (eds.), Emotion Regulation in Families: Pathways to Dysfunction and Health (American Psychological Association, Washington DC) (in press).

Grossman, P., L. Niemann, S. Schmidt and H. Walach: 2004, 'Mindfulness-based stress reduction and health benefits', Journal of Psychosomatic Research 57, pp. 35–43.

Handley, I.M., G.D. Lassiter, E.F. Nickell and L.M. Herchenroeder: 2004, 'Affect and automatic mood maintenance', Journal of Experimental Social Psychology 40, pp. 106–112.

Isen, A.M.: 2000, Positive affect and decision making, in M. Lewis and J. Haviland-Jones (eds.), Handbook of Emotion, 2nd edition (Guilford, New York) pp. 417–435.

Isen, A.M. and K.A. Daubman: 1984, 'The influence of affect on categorization', Journal of Personality and Social Psychology 47, pp. 1206–1217.

Isen, A.M., K.A. Daubman, and G.P. Nowicki: 1987, 'Positive affect facilitates creative problem solving', Journal of Personality and Social Psychology 52(6), pp. 1122–1131.

Isen, A.M. and G.A. Diamond: 1989, Affect and automaticity, in J.S. Uleman and J.A. Bargh (eds.), Unintended Thought, (Guilford Press, New York) pp. 124–152.

Isen, A.M., M.M. Johnson, E. Mertz, and G.F. Robinson: 1985, 'The influence of positive affect on the unusualness of word associations', Journal of Personality and Social Psychology 48(6), pp. 1413–1426.

Isen, A.M. and R. Patrick: 1983, 'The effect of positive feelings on risk taking: When the chips are down', Organizational Behavior and Human Decision Processes 31, pp. 194–202.

Isen, A.M. and S.F. Simmonds: 1978, 'The effect of feeling good on a helping task that is incompatible with good mood', Social Psychology 41, pp. 345–349.

Iwasaki, Y. and R.C. Mannell: 2000, 'Hierarchical dimensions of leisure stress coping', Leisure Sciences 22(3), pp. 163–181.

Iwasaki, Y. and R.C. Mannell: 2003, 'Leisure, stress, and coping: An evolving area of inquiry', Leisure Sciences 25(2–3), pp. 107–113.

Kabat-Zinn, J.: 1990, Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness (Delta, New York).

Kabat-Zinn, J., A.O. Massion, J. Kristeller, L.G. Peterson, K.E. Fletcher, L. Pbert, W.R. Lenderking and S.F. Santorelli: 1992, 'Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders', American Journal of Psychiatry 149, pp. 936–943.

Kahn, B.E. and A.M. Isen: 1993, 'The influence of positive affect on variety seeking among safe, enjoyable products', Journal of Consumer Research 20(2), pp. 257–270.

Langston, C.A.: 1994, 'Capitalizing on and coping with daily-life events: Expressive responses to positive events', Journal of Personality and Social Psychology 67, pp. 1112–1125.

Lazarus, R.S.: 1993, 'From psychological stress to the emotions: A history of changing outlooks', Annual Review of Psychology 44, pp. 1–21.

Lyubomrisky, S., K.M. Sheldon and D. Schkade: 2005, 'Pursuing happiness: The architecture of sustainable change', Review of General Psychology Special Issue: Positive Psychology 19, pp. 111–131.

Martin, R.A. and H.M. Lefcourt: 1983, 'Sense of humor as a moderator of the relation between stressors and moods', Journal of Personality and Social Psychology 45, pp. 1313–1324.

Masten, A.S.: 2001, 'Ordinary magic: Resilience processes in development', American Psychologist 56(3), pp. 227–238.

Masten, A.S., K.M. Best and N. Garmezy: 1990, 'Resilience and development: Contributions from the study of children who overcome adversity', Development and Psychopathology 2, pp. 425–444.

Meehan, M., J. Durlak and F.B. Bryant: 1993, 'The relationship of social support to positive life events and subjective mental health in adolescents', Journal of Community Psychology 21, pp. 49–55.

Miller, J.J., K. Fletcher and J. Kabat-Zinn: 1995, 'Three-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders', General Hospital Psychiatry 17, pp. 192–200.

Moskowitz, J.T., S. Folkman, L. Collette and E. Vittinghoff: 1996, 'Coping and mood during AIDS-related caregiving and bereavement', Annals of Behavioral Medicine 18, pp. 49–57.

Nezu, A.M., C.M. Nezu and S.E. Blisset: 1988, 'Sense of humor as a moderator of the relation between stressful events and psychological distress: A prospective analysis', Journal of Personality and Social Psychology 54, pp. 520–525.

Norman, D.A. and T. Shallice: 1986, 'Attention to action: Willed and automatic control of behavior', in R.J. Davidson, G.E. Schwartz and D. Shapiro

(eds.), Consciousness and Self Regulation: Advances in Research and Theory, Vol. 4 (Plenum, New York), pp. 1–18.

Parrot, W.G.: 1993, Beyond hedonism: Motives for inhibiting good moods and maintaining bad moods, in D.M. Wegener and J.W. Pennebaker (eds.), Handbook of Mental Control, (Prentice Hall, Edgewood Cliffs, New Jersey)pp. 278–308.

Ruch, W.: 1993, 'Exhilaration and humor', chapter 42, in M. Lewis and J.M. Haviland (eds.), The Handbook of Emotions (Guilford Publications, New York, NY), pp. 605–616.

Rutter, M.: 1987, 'Psychosocial resilience and protective mechanisms', American Journal of Orthopsychiatry, 57(3), pp. 316–331.

Ryan, R.M. and E.L. Deci: 2001, 'On happiness and human potentials: A review of research on hedonic and eudaimonic well-being', Annual Review of Psychology, 52, pp. 141–166.

Ryff, C.D. and B. Singer: 1998, 'The role of purpose in life and personal growth in positive human health', (Lawrence Erlbaum Associates Publishers: Mahwah, NJ, US).

Ryff, C.D., and B. Singer: 2000, 'Interpersonal flourishing: A positive health agenda for the new millennium. 'Personality and Social Psychology Review', Special Issue: Personality and Social Psychology at the Interface, New Directions for Interdisciplinary Research 4(1), pp. 30–44.

Shapiro, S.L, J.A. Astin, S.R. Bishop and M. Cordova: 2005, 'Mindfulness-based stress reduction for health care professionals: Results from a randomized trial', International Journal of Stress Management 12, pp. 164–176.

Shapiro, S.L., G.E. Schwartz and G. Bonner: 1998, 'Effects of mindfulness-based stress reduction on medical and premedical students', Journal of Behavioral Medicine 21, pp. 581–599.

Shiffrin, R.M. and S.T. Dumais: 1981, The development of automatism, in J. Anderson (ed.), Cognitive Skills and Their Acquisition, (Erlbaum, Hillsdale, NJ)pp. 111–140.

Shiffrin, R.M. and W. Schneider: 1977, 'Controlled and automatic human information processing: II. Perceptual learning, automatic attending, and a general theory', Psychological Review 84, pp. 127–190.

Schimmack, U. and E. Diner: 2003, 'Experience sampling methodology in happiness research', Journal-of-Happiness-Studies 4, pp. 79–106.

Scollon, C.N., C. Kim-Pietro and E. Diener: 2003, 'Experience sampling: Promises and pitfalls, strengths and weaknesses', Journal of Happiness Studies 4, pp. 5–34.

Smith, J.C.: 1990, Cognitive-Behavioral Relaxation Training: A New System of Strategies for Treatment and Assessment (Springer, New York).

Surawy, C., J. Roberts and A. Silver: 2005, 'The effect of mindfulness training on mood and measures of fatigue, activity, an quality of life in patients with chronic fatigue syndrome on a hospital waiting list: A series of exploratory studies', Behavioural and Cognitive Psychotherapy 33, pp. 103–109.

Tugade, M.M., T. Conner and L.F. Barrett. Assessment of mood. Chapter to appear in S. Ayers, A. Baum, C. McManus, S. Newman, K. Wallston, J. Weinman, and R. West (eds.), The Cambridge Handbook of Psychology, Health, and Medicine, 2nd edition (in press).

Tugade, M.M. and B.L. Fredrickson: 2002, Positive emotions and emotional intelligence, in L. Feldman Barrett and P. Salovey (eds.), The Wisdom of Feelings, (Guilford, New York)pp. 319–340.

Tugade, M.M. and B.L. Fredrickson: 2004, Emotions: Positive emotions and health, in N. Anderson (ed.), Encyclopedia of Health and Behavior, (Sage, Thousand Oaks, CA)pp. 306–310.

Wegener, D.T. and R.E. Petty: 1994, 'Mood-management across affective states: The hedonic contingency hypothesis', Journal of Personality and Social Psychology 66, pp. 1034–1048.

Werner, E. and R. Smith: 1992, Overcoming the Odds: High-risk Children from Birth to Adulthood (Cornell University Press, New York, NY).

Winkielman, P. and K.C. Berridge: 2004, 'Unconscious emotion', Current Directions in Psychological Science 13, pp. 120–123.

Wolin, S.J. and S. Wolin: 1993, Bound and Determined: Growing Up Resilient in a Troubled Family (Villard, New York).

Wood, J. V., S.A. Heimpel and J.L. Michela: 2003, 'Savoring versus dampening: Self-esteem differences in regulating positive affect', Journal of Personality and Social Psychology, 85(3), pp. 566–580.

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