CHAPTER ONE

Why Is Emotion Regulation Important?

All of us experience emotions of various kinds and attempt to cope with these emotions in either effective or ineffective ways. It is not the experience of anxiety that is the real problem. It is our ability to recognize our anxiety, accept it, use it if possible, and continue to function in spite of it. Without emotions, our lives would lack meaning, texture, richness, joy, and connection with others. Emotions tell us about our needs, our frustrations, and our rights—they motivate us to make changes, escape from difficult situations, or know when we are satisfied. Yet there are many people who find themselves overwhelmed by their emotions, fearful of their feelings, and unable to cope because they believe that their sadness or anxiety prohibits effective behavior. This book is aimed toward all clinicians who help these people cope more effectively with their emotions.

We view emotion as comprising a set of processes, no one of which is sufficient for us to call an experience an "emotion." Emotions, such as anxiety, include appraisal, sensation, intentionality (an object), a "feeling" (or "qualia"), motoric behavior, and, in most cases, an interpersonal component. Thus, when you have the emotion of "anxiety," you recognize that you are concerned that you will not get your work done on time (appraisal), you have a rapid heartbeat (sensation), you focus on your competence (intentionality), you have a dreaded feeling about life (feeling), you become physically agitated and restless (motoric behavior), and you might very well tell your partner that it is a bad day (interpersonal). Because of the multidimensional nature of emotion, clinicians can consider which dimension should be the first focus, choosing among a variety of approaches, each of them represented in this volume. For example, in choosing which techniques to use for which patients, clinicians can consider their technical options on the basis of the presenting problem of the moment. For example, if a patient's struggle with sensations of arousal was most problematic, the therapist might employ stress management techniques (e.g., relaxation, breathing exercises), acceptance-based interventions, emotional schema-focused strategies, or mindfulness. If the patient is confronted with a sense that a situation is overwhelming, the therapist might consider cognitive restructuring or problem solving to put things in perspective and to consider possible modifications of the stressful situation. Thus, emotion regulation may involve cognitive restructuring, relaxation, behavioral activation or goal setting, emotional schemas and affect tolerance, behavioral changes, and modifying problematic

attempts to seek validation. In each of the chapters in this volume, we provide suggestions for clinicians in evaluating which techniques might be best for which patients.

Emotions have a long history in Western philosophy. Plato viewed emotions as part of a metaphor of the charioteer who attempts to control two horses: one that is easily tamed and needs no direction and the other that is wild and possibly dangerous. Stoic philosophers such as Epictetus, Cicero, and Seneca viewed emotion as the experience that misled the rational capability, which should always dominate and control decisions. In contrast, emotion and its expression have been highly valued in Western culture. Indeed, the pantheon of Greek gods represented a full range of emotions and dilemmas. Euripides' play *The Bacchae* represents the danger of ignoring and dishonoring the wild and free spirit of Dionysius. Emotion plays a central role in all of the major world religions that stress gratitude, compassion, awe, love, and even passion. The Romantic movement rebelled against the "rationality" of the Enlightenment, stressing the natural, free nature of man, the capability of creativity, excitement, novelty, intense love, and even the value of suffering. In Eastern religious tradition, Buddhist practice discusses emotions that are life affirming and those that are destructive, encouraging the individual to fully experience their range of emotions, while letting go of attachment to the permanence of any emotional state.

WHAT IS EMOTION REGULATION?

Individuals coping with stressful experience will experience increasing intensity of emotion, which, in itself, can be a further cause of stress and further escalation of emotion. For example, a man experiencing the dissolution of an intimate relationship experiences sadness, anger, anxiety, hopelessness, and even a feeling of relief. As these emotions become more intense, he may misuse drugs or alcohol, binge eat, lose sleep, act out sexually, or criticize himself. Once the emotions of anxiety, sadness, or anger have occurred, problematic styles of coping with the emotional intensity may determine whether his stressful life experience spirals into further problematic ways of coping. His emotional dysregulation may lead him to complain, pout, and attack or withdraw from others. He may ruminate on his emotions, trying to figure out what is really going on, which sinks him deeper into depression, isolation, and inactivity. Problematic styles of coping may temporarily reduce arousal (e.g., drinking reduces anxiety in the short term) but may exacerbate emotional coping later. These temporary solutions (bingeing, avoidance, rumination, and substance abuse) may work in the short term; however, the solutions may become the problem.

We define emotion dysregulation as difficulty or inability in coping with experience or processing emotions. Dysregulation may manifest as either excessive intensification of emotion or excessive deactivation of emotion. Excessive intensification of emotion includes any rise of the intensity of an emotion that is experienced by the individual as unwanted, intrusive, overwhelming, or problematic. Increases of emotion resulting in panic, terror, trauma, dread, or a sense of urgency that one is overwhelmed and has difficulty tolerating an emotion would qualify under these criteria. Excessive deactivation of emotion includes dissociative experiences, such as depersonalization and derealization, splitting, or emotional numbing in the context of experiences that would normally be expected to result in some felt intensity or magnitude of emotion. For example, in confronting a life-threatening event, a woman responds with a sense of emo-

tional numbness and reports feeling like she was in another dimension of time and space while observing what seemed like a movie. This deactivation of emotion, marked by derealization, would be viewed as an atypical response to a traumatic event. Excessive deactivation of emotion impedes emotional processing and is part of a coping style of avoidance. However, there may be situations when deactivating or temporarily suppressing an emotion may assist in coping. For example, a first responder to a catastrophic event may be more adaptive by suppressing fear in the short term in order to cope with the situation in the present moment.

Emotion regulation may include any coping strategy (problematic or adaptive) that the individual uses when confronted with an unwanted intensity of emotion. It is important to recognize that emotion regulation is like a homeostatic thermostat. It can moderate emotions and keep them within a "manageable range" so that one can cope. Or the moderation—up or down—may offset things so extremely as to create a situation that is "too hot" or "too cold." Emotion regulation is like any coping style: It depends on the context, on the situation. It is not problematic or adaptive independent of the person and the situation at the present time.

Adaptation is defined here as the implementation of coping strategies that enhance the recognition and processing of useful responses that increase, either in the short term or long term, more productive functioning, as defined by valued goals and purposes held by the individual. Folkman and Lazarus (1988) have identified eight strategies for coping with emotion: confrontive (e.g., assertion), distancing, self-controlling, seeking social support, accepting responsibility, escape–avoidance, planful problem solving, and positive reappraisal. Coping with experience is part of emotional regulation. If the individual copes better—either by problem solving, asserting him- or herself, engaging in behavioral activation to seek more rewarding experiences, or reappraising the situation—his or her emotions are less likely to escalate. Examples of maladaptive strategies in coping with emotion include alcohol intoxication and self-cutting. These strategies may temporarily reduce emotional intensity and even provide a momentary sense of well-being, but they fail to adhere to valued goals and purposes that the individual would endorse. It is assumed here that very few individuals endorse the belief that alcohol abuse and self-mutilation define a valued life. Adaptive strategies might include self-soothing relaxation exercises, temporary distraction during crises, physical exercise, linking emotions to higher values, trumping an emotion with a more pleasant or valued emotion, mindful awareness, acceptance, pleasurable activities, shared intimate communication, and other strategies that assist in processing, coping with, reducing, tolerating, or learning from intense emotions. In each case, the valued goals and purposes are not compromised but may, in some cases, be further affirmed.

THE ROLE OF EMOTION REGULATION IN VARIOUS DISORDERS

In recent years there has been increasing attention to the role of emotional processing and regulation in a variety of disorders. Emotional processing through the activation of the "fear schema" during exposure has been implicated in the treatment of specific phobias and each of the anxiety disorders (Barlow, Allen, & Choate, 2004; Foa & Kozak, 1986). The activation of fear in the treatment of specific phobia allows for new learning and new associations to occur during exposure treatment. Indeed, the use of tranquilizing medications may compromise exposure treatment and prevent new associations from occurring. If one considers exposure as a form of habituation to a stimulus, including habituation to the fearful sensations that occur with initial

exposure, then activation of fear is an important experiential factor in the new learning that results through exposure. This new learning includes the recognition that the feared stimulus "predicts" a rise and decline in emotional intensity and that emotional intensity is not to be feared in itself. Intense feelings can be tolerated as they eventually decline in intensity.

Emotion regulation is also implicated in the treatment of generalized anxiety disorder (GAD). GAD is now viewed as primarily a disorder marked by excessive worry and increased physiological arousal (American Psychiatric Association, 2000). Although there are many components to excessive worry (such as intolerance of uncertainty, decreased problem-focused strategies, and metacognitive factors), emotional avoidance has been found to be a key component in the activation and perpetuation of worry (Borkovec, Alcaine, & Behar, 2004). Similarly, rumination (repeated negative thoughts about past or present) has been shown to be a high-risk cognitive style for depression (Nolen-Hoeksema, 2000) and has also been conceptualized as a strategy of emotional or experiential avoidance (Cribb, Moulds, & Carter, 2006). Hayes and his colleagues have proposed that experiential avoidance is a process underlying a variety of forms of psychopathology (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Individuals who utilize experiential or emotional avoidance may be at greater risk for psychological problems; however, those who engage in emotional suppression in certain situations may be coping more adaptively. For example, emotional suppression, a form of emotional avoidance, has been identified as a risk factor for heightened emotional difficulties. Individuals instructed to suppress an emotion reported more negative emotions. In contrast, expression of emotion has been linked to improvement in psychological stress such that individuals believe that by journaling emotions over a period of time events make more sense, perhaps helping them process the experience and the emotion better (Dalgleish, Yiend, Schweizer, & Dunn, 2009; Pennebaker, 1997; Pennebaker & Francis, 1996). Indeed, simply activating, expressing, and reflecting on emotion may have ameliorative effects for depression. Depressed individuals who were initially higher on a measure of emotional suppression benefited from a 6-week treatment of expressive writing, which resulted in a reduction of their depressive symptoms (Gortner, Rude, & Pennebaker, 2006). However, in one study emotional suppression was more effective than acceptance in reducing the impact of watching a traumatic event on video (Dunn, Billotti, Murphy, & Dalgleish, 2009). In addition, emotional suppression was not related to binge eating in another study (Chapman, Rosenthal, & Leung, 2009). Moreover, suppression of emotion was associated with reporting a "better day" for individuals high on features of borderline personality disorder (BPD; Chapman et al., 2009). Clearly, there are no absolutes when it comes to emotional processing. Sometimes suppression helps; other times it impairs.

Although eating disorders may be the result of a number of factors (e.g., self-image, perfectionism, interpersonal difficulties, and affective disorders), there is considerable evidence that emotion regulation plays a significant role, with complex cases (marked by a combination of the risk factors just listed) benefiting from a "transdiagnostic" treatment strategy (Fairburn et al., 2009; Fairburn, Cooper, & Shafran, 2003). Part of the transdiagnostic treatment strategy is using emotion regulation techniques to assist patients who resort to problematic coping (bingeing, purging, drinking, cutting) because they do not know what else to do to handle their emotions (Fairburn et al., 2003, 2009; Zweig & Leahy, in press). Further, emotion regulation mediates shame and eating disorders (Gupta, Zachary Rosenthal, Mancini, Cheavens, & Lynch, 2008). Rumination is another strategy that may be used by individuals with eating disorders, as suggested by the work of Nolen-Hoeksema, Stice, Wade, and Bohon (2007).

Emotional suppression can result in decreased efficacy in communication. In one study, participants instructed to suppress their emotions while discussing a difficult topic had increased blood pressure and decreased effectiveness of communication. In addition, participants assigned to listen to speakers who were attempting to suppress emotions also had increased blood pressure (E. A. Butler et al., 2003).

Individuals differ in their "philosophies" about the expression and experience of emotion. In marital therapy, Gottman identified a variety of emotional philosophies that affect how individuals think about, evaluate, and respond to their partner's emotional state. Thus, some partners may view emotion as a burden and, therefore, use a dismissive or even disparaging style. Others may view emotions as an opportunity to get closer to and get to know their partner better and get to help them (Gottman, Katz, & Hooven, 1997). Emotion regulation is also part of anger management, with angry individuals often showing an intense rise in the sensations of activation (pulse rate, physical tension), along with a full range of maladaptive appraisals, communication styles, and physical action (DiGiuseppe & Tafrate, 2007; Novaco, 1975). In fact, the emotional intensity may become so overwhelming for some that self-imposed "time-out" is sometimes the first line of intervention. Finally, emotion dysregulation underlies self-injurious behavior, which is often a negatively reinforced behavior for reducing intense emotion (Nock, 2008). The self-injury releases endorphins, which temporarily decrease the negative emotional intensity of anxiety and depression.

Perhaps the earliest and most comprehensive work highlighting the role of emotion dysregulation in a particular clinical disorder is Linehan's theoretical work on the development of borderline personality disorder (BPD). Linehan (1993a, 1993b) conceptualized BPD as a disorder of pervasive emotion dyregulation resulting from the transaction of a biologically based vulnerability to emotions with an invalidating caretaking environment. The invalidating environment has three defining features. First, it responds in a critical, punitive, or dismissive way to the emotionally vulnerable child, thereby exacerbating the child's emotional vulnerability. Second, it responds erratically to extreme emotional displays, reinforcing them intermittently. Third, it overestimates the ease of problem solving. As a result, the invalidating environment fails to teach skills needed to regulate intense emotions. Consequently, the emotional vulnerable individual may resort to maladaptive emotion regulation strategies such as cutting, bingeing, and overdosing as a way to escape or decrease the intensity of emotions. Central to Linehan's conceptualization of BPD is emotional avoidance. Indeed, she characterizes the individual with BPD as "emotionally phobic." The fear of emotions is thought to derive in part from negative evaluation of emotional experience.

Linehan's conceptualization of BPD as a disorder of emotion regulation informs her treatment approach: dialectical behavior therapy (DBT; Linehan, 1993a, 1993b). DBT is a mindfulness-based behavioral treatment that balances the use of acceptance and change techniques. Within a DBT framework, emotion regulation is conceptualized as a set of adaptive skills, including the ability to identify an emotion, understand emotions, control impulsive behaviors, and use situationally adaptive strategies to modulate emotional responses. An essential part of the treatment is helping patients to overcome their fear and avoidance of emotions and to increase acceptance of emotional experience.

Increasingly, cognitive-behavioral models of psychopathology are being expanded to reflect emotion regulation perspectives. Emotion regulation deficits have been implicated in a range of clinical disorders, including substance abuse and posttraumatic stress disorder (PTSD; Cloi-

tre, Cohen, & Koenen, 2006). Mennin and colleagues have developed an emotion dysregulation model of GAD in which the disorder is characterized by heightened intensity of emotions, poor understanding of emotions, negative reactivity to one's emotional state, and maladaptive emotional management responses (Mennin, Heimberg, Turk, & Fresco, 2002; Mennin, Turk, Heimberg, & Carmin, 2004). Barlow and colleagues (2004) have developed a theory and unified treatment of the mood and anxiety disorders based on emotion regulation theory.

Recent research has examined differential disturbances in emotional processing in GAD and social anxiety disorder (Turk, Heimberg, Luterek, Mennin, & Fresco, 2005). Newer treatment models of GAD call for the integration of emotion-focused techniques (Roemer, Slaters, Raffa, & Orsillo, 2005; Turk et al., 2005).

There are a wide variety of emotion regulation strategies, which may or may not be useful. A recent meta-analysis of emotion regulation strategies across a variety of disorders indicated that the most frequent strategies are rumination, followed by avoidance, problem solving, and suppression; there is relatively less emphasis on reappraisal and acceptance (Aldao, Nolen-Hoeksema, & Schweizer, 2010). This meta-analysis provides important information on the relative utilization of strategies but, of course, cannot argue which strategies might be most *helpful* in changing emotion dysregulation. In any case, the transdiagnostic nature of emotion dysregulation appears to be gaining importance (Harvey, Watkins, Mansell, & Shafran, 2004; Kring & Sloan, 2010).

EVOLUTIONARY THEORY

Darwin (1872/1965) is credited as the originator of the comparative psychology of emotional expression. His detailed observations and descriptions—often depicted in photographs and drawings—indicate the similarity between humans and animals and also suggest universal patterns of facial expression. Emotions are viewed in evolutionary theory as adaptive processes that allow individuals to assess danger (or other conditions), activate behavior, communicate with other members of the species, and increase adaptive fitness (Barkow, Cosmides, & Tooby, 1992; Nesse, 2000). For example, fear, a universal emotion, is an adaptive response to natural danger, such as heights. Fear may freeze the animal in its footsteps, motivate it to escape or avoid, and provide the facial and vocal cues to warn others of impending danger. Negative emotions may be particularly adaptive because they are invoked at times of danger or threat and may require immediate response to ensure survival (Nesse & Ellsworth, 2009). Ethologists have noted that emotions may be displayed in apparently universal patterns in facial expression, posturing, eye gaze, and gestures of appeasement or threat (Eibl-Eibesfeldt, 1975).

Darwin was particularly interested in the facial expressions of various emotions, collecting numerous photographs from people from all social classes (including a "lunatic asylum"). The apparent universal nature of facial expression has been supported by the cross-cultural work of Paul Ekman, who demonstrated that facial expression and perception of expression of basic emotions are found in all cultures, suggesting that there are basic emotions that are universal (Ekman, 1993). Indeed, the natural tendency to express emotions facially makes it almost impossible to hide the emotions that one is actually feeling (Bonanno et al., 2002). Similarly, the difficulty in reading the emotions of others may confer disadvantage for some individuals.

THE VALUE OF EMOTIONS

Emotions assist us in evaluating our alternatives, providing the motivation to make a change or to do something, and tell us about our needs. For example, individuals with brain damage to the centers linking emotion and reason may be able to weigh rational pros and cons but unable to make decisions. Damasio (2005) has referred to emotions as "somatic markers" that tell us what we "want" to do. Although rational approaches to decision making based on utility theory suggest that individuals should or do weigh all the available evidence and make decisions based on trade-offs, research on *actual* decision making suggests that we often rely on heuristics (rules of thumb) and that emotions are one heuristic that is often relied on. This approach is similar to the popular idea of "gut reaction," as reflected in the title of cognitive social psychologist Gerd Gigerenzer's (2007) book *Gut Feelings: The Intelligence of the Unconscious.* Contrary to a rationalist model that gut responses are less valid or reliable, there is increasing evidence that gut responses may often be more effective, quicker, and more accurate (Gigerenzer, 2007; Gigerenzer, Hoffrage, & Goldstein, 2008). Moreover, emotional or intuitive evaluations are often the basis of most moral or ethical judgments rather than complex moral reasoning (Haidt, 2001; Keltner, Horberg, & Oveis, 2006). This view that there are gut responses underlying traditional ethical decision making—or what some might call "wisdom"—suggests that there may be some emotional basis to "wise mind."

Emotions help link us with others and constitute a shared "theory of mind." Individuals suffering from Asperger syndrome or autism are unable to accurately assess the emotions of others, often resulting in awkward and dysfunctional interpersonal behavior (Baron-Cohen et al., 2009). The inability to recognize, label, differentiate, and link emotions to events is called "alexithymia," and is associated with a wide variety of problems, including substance abuse, eating disorders, GAD, PTSD, and other problems (Taylor, 1984). The language of emotion is part of the emotional socialization of children. Families differ in their use of words referring to emotion, distinguishing and labeling emotions, and encouraging discussion of emotions. This "emotion talk" has an effect on later "alexithymic" tendencies, or the ability to recognize and label emotions. Families that talk about emotions are less likely to have alexithymic children (Berenbaum & James, 1994).

The concept of emotional intelligence captures the general nature of emotional awareness and adaptation, suggesting a general trait that has wide-ranging implications for adaptive functioning. Emotional intelligence comprises four factors: perceiving, using, understanding, and managing emotion (Mayer, Salovey, & Caruso, 2004). These abilities are important in intimate relationships; in problem solving, decision making, expressing appropriate emotions, controlling emotions, and in the workplace (Grewal, Brackett, & Salovey, 2006). Throughout the present volume, we describe emotion regulation techniques that address (1) the perception and labeling of emotion, (2) the ability to use emotions to make decisions and clarify values and goals, (3) understanding the nature of emotion by dispelling negative interpretations of emotion, and (4) the manner in which emotions can be managed and contained. Indeed, emotion regulation techniques may be viewed as part of a larger and more integrative approach that recognizes the central role of emotional intelligence. In the current volume, we offer an integrative, overarching theory that incorporates each of these techniques: emotional schema theory, which describes the various interpretations, strategies, and goals that one might utilize to cope with

emotions (Leahy, 2002, 2005a). We view emotional schema therapy (EST) as a case conceptualization of the patient's theory about emotion, models of emotion control, and strategies for coping with emotions. We suggest that many contemporary approaches to emotional regulation can be viewed as models of coping with the issues raised by EST. However, readers may use the techniques in this book without incorporating EST as a guiding theory.

NEUROBIOLOGY OF EMOTIONS

Research on the neuroscience of emotion regulation has led to important yet potentially confusing and contradictory findings. Nevertheless, researchers and theorists have recently begun to integrate this literature to provide a comprehensive framework for understanding the neurobiology of emotion regulation. Ochsner and Gross (2007) have offered a theoretical model of the interactive neural systems involved in emotion regulation, based on their review of the literature. Their model integrates both "bottom-up" and "top-down" aspects of emotional processing.

A "bottom-up" model of emotion regulation describes emotions as a response to an environmental stimulus. Certain triggering stimuli in the environment may be seen as possessing inherent qualities that provoke specific emotions in humans, also described as the "emotion-as-stimulus property view" (Ochsner & Gross, 2007). Nonhuman research has demonstrated that the amygdala is involved in learning the prediction of aversive stimuli and the unpleasant experiences that follow exposure to them, while extinction appears to involve activity in the medial and orbital frontal cortices (LeDoux, 2000; Ochsner & Gross, 2007; Quirk & Gehlert, 2003).

"Top-down" emotion regulation models hypothesize that emotions emerge as a result of cognitive processing. Such processing involves discriminating which stimuli should be approached, avoided, or selected for attention in the environment. This also involves an assessment of whether a stimulus will be beneficial or harmful to the individual, particularly in terms of their needs, goals, and motivations (Ochsner & Gross, 2007). Human beings are uniquely qualified to employ language, rational thinking, relational processing, and memory to execute deliberate, conscious emotion regulation strategies. According to Davidson, Fox, and Kalin (2007), findings from nonhuman studies, human neuroimaging research, and lesion studies suggest that a series of interrelated regions of the brain may serve as our emotion regulation "circuitry." These regions include the amygdala, hippocampus, insula, anterior cingulate cortex (ACC), and dorsolateral and ventral regions of the prefrontal cortex (PFC) (Davidson, 2000). Prefrontal activity has been hypothesized to be a central component of emotion regulation in humans, particularly in top-down processing (Davidson, 2000; Davidson et al., 2007; Ochsner & Gross, 2005). Furthermore, relatively left lateralized PFC activity may be involved in a superior capacity to regulate and reduce negative emotions (Davidson et al., 2007).

Ochsner and Gross's (2007) model hypothesizes that both bottom-up and top-down modes of processing are involved in emotion regulation. When a human being encounters an aversive stimulus in the environment, such as a threatening, predatory animal, a bottom-up emotional response may ensue. This response may involve the activation of appraisal systems, including activity in the amygdala, the nucleus accumbens, and the insula (Ochsner & Feldman Barrett, 2001; Ochsner & Gross, 2007).

These appraisal systems communicate with the cortex and with the hypothalamus to generate behavioral responses. A top-down emotional response also may begin with a stimulus in the environment. However, it may be a discriminative stimulus, which suggests that an individual might predict that an aversive stimulus or sensation may be on its way. The stimulus in top-down processing may also be a neutral one that may provoke a negative response in a given context. In such cases, higher cognitive processes are involved in generating a modulated emotional response. These processes involve PFC appraisal systems acting through such structures as the lateral and medial PFC as well as the ACC (Ochsner & Gross, 2007). As such, we can see the potential for interdependence across modes of affective processing, which suggests the possibility that neither mode of processing needs to be viewed as dominant. Indeed, these models of processing may be related in a sophisticated continuum that researchers have yet to fully understand or explain.

PRIMACY: COGNITION OR EMOTION?

A recurring debate in the field is the question of causality: Do emotions have primacy, or do cognitions lead to emotions? Zajonc (1980) proposed that the apprehension of novel or threatening stimuli can occur almost immediately without conscious awareness and that evaluations of the stimuli may follow after an emotional response has been activated. Lazarus, in contrast, argued that appraisals of a situation result in emotional responses and that cognition has temporal primacy over emotion (Lazarus, 1982; Lazarus & Folkman, 1984). As with many dichotomized debates, there is some validity to both positions. Favoring the primacy of emotion over cognition is a considerable body of research demonstrating that some stimuli (such as novel and threatening stimuli) initially bypass the cortical sections of the brain and are almost instantaneously processed by the amygdala outside of conscious awareness. This nonconscious processing of fear affects learning, memory, attention, perception, emotion inhibition, and regulation (LeDoux, 1996, 2003; Phelps & LeDoux, 2005). Linking the rapid "processing" outside of conscious awareness to evolutionary adaptation, neuroscience has attempted to place fear conditioning in the context of adaptive responses to threat that cannot be delayed for conscious processing. For example, the individual is walking along, suddenly becomes afraid, jumps back in alarm, and then *subsequently* says, "That looks like a snake." The conscious awareness of the nature of the stimuli occurs *after* the emotional response. To further complicate the role of conscious awareness, there is considerable evidence that conscious awareness is a poor historian of internal events. For example, if we think of conscious awareness as a bookkeeping process of internal events, there is ample empirical support for its inaccuracy. We are often not aware of the stimulus events that have impacted on our emotional or even cognitive processes (Gray, 2004).

Lazarus (1991) has argued that Zajonc has confused *cognitive* processing with *conscious* processing and that one can have a cognitive appraisal without being conscious of it. Thus, in this model, appraisals may occur immediately and outside of conscious awareness. If one takes this view, then it can be argued that the amygdala does "appraise" stimuli in terms of intensity, novelty, change, looming, or other "relevant" stimulus dimensions. Further, models of the primacy of emotion fail to provide an adequate account of the differentiation of emotions that may be characterized by similar physiological processes. For example, fear, jealousy, anger, and other

emotions may be "reduced" to *similar* physiological processes of arousal, but the experience of these emotions is dependent on the appraisal of the threat and the context in which the arousal occurs. I may be afraid of the snake, jealous of my partner's attentions to another, angry at being blocked in traffic, or aroused as I run faster on the treadmill. The underlying physiological sensations may be quite similar, but the appraisal and the context help define the emotion for me.

Bower's network theory of emotion and cognition shares some common emphasis with the Zajonc position. According to this model, emotions, thoughts, sensations, and behavioral tendencies are linked associatively in neural networks. Thus, activating one process activates the others. The network model often utilizes emotional induction to activate the physiological processes and cognitive content that may be linked in the network (Bower, 1981; Bower & Forgas, 2000). Research by Forgas and colleagues indicates that induction of emotion affects judgment, decision making, person perception, attention, and memory—all cognitive processes (Forgas & Bower, 1987). Moreover, induced affect also affects attribution or explanatory processes (Forgas & Locke, 2005). Forgas has further elaborated an affect infusion model, which proposes that affective arousal influences cognitive processing, especially when heuristics (shortcuts) or more extensive processing is activated (Forgas, 1995, 2000). Indeed, people often assess how risky an alternative may be based on their current affective state (Kunreuther, Slovic, Gowda, & Fox, 2002). Arntz, Rauner, and van den Hout (1995) suggest that this emotion heuristic is used as "information" in the assessment of danger in phobic individuals such that they reason, "If I feel anxious, there must be danger." The affect infusion model and the network model proposed by Bower both suggest that emotional arousal may activate specific cognitive biases, which further exacerbate the triggering of further dysregulation. Consequently, the ability to soothe or calm affective arousal should it occur and the ability to modify the negative cognitive biases that are activated by affect should be useful in facilitating emotional regulation.

The foregoing does not resolve the primacy of emotion debate—and, indeed, its resolution may depend on semantic meanings of "appraisal," "consciousness," and "cognitive processing." Nonetheless, there is considerable evidence that emotion and cognition are interdependent and that each can influence the other in what one might view as a feedback cycle. In the current volume, we recognize that these processes are interdependent, and there is no necessity to take a position on primacy to develop useful techniques to help patients.

ACCEPTANCE AND COMMITMENT THERAPY

Acceptance and commitment therapy (ACT) is based on a behavioral theory of language and cognition known as relational frame theory (RFT), which provides a theoretical account of the core processes involved in psychopathology and emotion dysregulation (Hayes, Barnes-Holmes, & Roche, 2001). According to this account, the central cause of emotion-related problems involves ways in which the nature of human verbal processing contributes to "experiential avoidance" (Luoma, Hayes, & Walser, 2007). The term "experiential avoidance" represents efforts to control or alter the form, frequency, or situational sensitivity of thoughts, feelings, and sensations, even when doing so causes behavioral harm (Hayes et al., 1996).

According to RFT, humans learn to relate events and experiences to one another in a relational network throughout their lives and learn to respond to events based, in part, on their relationship to other events rather than merely on the stimulus properties of the event at hand

(Hayes et al., 2001). In this way, one event may come to be associated with any other event. For example, if I were to attend a memorial service by a beautiful lake at sunset, my future experiences of relaxing beside a lake at the end of the day may evoke a sense of sadness. RFT also suggests that when we experience thoughts or mental representations of an event, the stimulus properties of such an event show up in a literalized fashion. For example, when a person with depression experiences the negative thought "Nobody will ever love me," he or she responds emotionally to this thought as though it were real and literal rather than as an event in the mind. This process is referred to as "cognitive fusion" (Hayes, Strosahl, & Wilson, 1999). Given the processes of relational responding and cognitive fusion, we find ourselves in an interesting situation where we can learn to relate any event to any other, and when a mental representation of an event is triggered, we may respond to the stimulus properties of that mental representation as though it were literal.

A natural and reasonable way that humans respond to distressing and difficult situations involves attempts to avoid or escape these situations. This strategy is appropriate and effective for interactions involving our environment. For example, if I fear that a certain cave is dangerous and avoid it, I am that much less likely to be attacked by the hungry predator living in that cave. This is similar to Mowrer's (1939) two-factor theory of acquisition and conservation of fear. Avoidance is reinforced through the reduction of fear, thereby conserving fear of the stimulus. Unfortunately, the nature of human relational responding is such that attempts to avoid, suppress, or eliminate mental events such as thoughts and emotions may serve to actually amplify the distress or upset that is experienced (Hayes et al., 1999). This is easy to comprehend, in that trying to "not think about fear" involves, by definition, thinking about your fear or a feared stimulus, which can evoke fear in turn. In this way, the RFT model suggests that human relational responding and cognitive fusion contribute to experiential avoidance, which, in turn, contributes to emotion dysregulation, psychopathology, and people living lives that are less than rewarding and realized.

ACT suggests that the aim of psychotherapy may be to establish and maintain "psychological flexibility" (Hayes & Strosahl, 2004), or "the ability to contact the present moment more fully as a conscious human being and, based on what the situation affords, to change or persist in behavior in order to serve 'valued ends'" (Luoma et al., 2007, p. 17; see also Hayes & Strosahl, 2004). ACT interventions utilize six core processes, which seek to bring patients into direct experiential contact with their present-moment experiences, to disrupt cognitive fusion, to promote experiential acceptance, to help patients let go of attachment to their narrative construction of themselves, to assist them in coming to terms with what they most value, and to facilitate their commitment to valued directions in their lives. In this way, the overall aim of ACT is a process of emotion regulation and affect tolerance in the service of deeply held, intrinsically rewarding behavioral trajectories. The patients gradually learn to expand their behavioral repertoire in the presence of distressing internal events, which is, perhaps, a core element of any definition of emotion regulation.

REAPPRAISAL

One of the most widely used strategies in coping with emotion is the use of appraisal—or reappraisal. These "cognitive" models are sometimes not considered part of emotion regulation from

the viewpoint that appraisals (are presumed to) precede emotion. For example, one can divide emotion-coping strategies into *antecedent* and *response-focused strategies*. An example of an antecedent strategy would be evaluating the stressor as less threatening or as the self as fully capable of coping. Another example of antecedent strategies includes stimulus-control arrangements (e.g., not keeping high-calorie snacks in the house). Cognitive restructuring and problem solving also are examples of antecedent strategies. Examples of response-focused strategies include self-calming, suppression of emotion, distraction, and engaging in pleasurable activities; some of these strategies pose further problems. In a study comparing the two styles, reappraisers coped more effectively, experiencing more positive emotions, less negative emotions, and better interpersonal functioning, with the opposite trend evident for suppressors (Gross & John, 2003). Perhaps the most widely used clinical model for reappraisal is cognitive restructuring, using the many techniques from Beckian cognitive therapy or Ellis' rational emotive behavior therapy (Beck, Rush, Shaw, & Emery, 1979; Clark & Beck, 2009; Ellis & MacLaren, 1998; Leahy, 2003a). There is considerable empirical evidence for the efficacy of cognitive therapy for a wide range of disorders (A. Butler, Chapman, Forman, & Beck, 2006).

Reappraisal includes evaluating the thoughts about a situation that elicit emotional arousal. For example, Beck's model proposes that automatic thoughts occur spontaneously, often going unexamined or evaluated. Automatic thoughts can be categorized as distortions or biases, including mind reading, dichotomous thinking, fortune telling, personalizing, and labeling. These thoughts are linked to conditional rules of assumptions, such as "If someone doesn't like me, then it is terrible" or "I must hate myself if you don't like me." Further, assumptions and automatic thoughts are then linked to core beliefs or personal schemas about self or other, such as viewing the self as incompetent and viewing others as highly critical. Reappraisal models attempt to identify these thinking patterns and alter them through cognitive restructuring and behavioral experiments.

META-EMOTION

Gottman et al. (1996) have proposed that an important component of socialization involves parents' "philosophical" view of emotion, or what they refer to as "meta-emotional philosophy." Specifically, some parents view the child's experience and expression of emotions, such as anger, sadness, or anxiety, as a negative event that must be avoided. These negative emotional views are communicated in parental interactions, such that the parent will be dismissive, critical, or overwhelmed by the child's emotions. In contrast to these problematic emotional socialization styles, Gottman et al. (1996) identified an *emotion-coaching style* that entails the ability to recognize even low levels of emotional intensity, seeing these "unpleasant emotions" as an opportunity for intimacy and support, assisting the child in labeling and differentiating emotions, and engaging in problem solving with the child. Parents who adopt the emotion-coaching style are more likely to have children who are able to self-soothe their own emotions; that is, *emotion coaching* assists in emotional self-regulation. Furthermore, children of parents using emotion coaching are more effective in interactions with their peers, even when appropriate behavior with peers involves the inhibition of emotional expression. Thus, children of parents utilizing emotion coaching are more advanced in emotional intelligence, knowing when to express and when to inhibit expression and knowing how to process and regulate their

own emotions (see Mayer & Salovey, 1997). Emotion coaching does not simply "reinforce" a cathartic style in children; rather, it allows them to identify, differentiate, validate, self-soothe, and problem solve. The emotion-coaching style as described by Gottman and colleagues is an extension of the active listening skills and problem-solving strategies advocated by communication-based models of relationship interaction (e.g., N. S. Jacobson & Margolin, 1979; Stuart, 1980).

EMOTION-FOCUSED THERAPY

Emotion-focused therapy (EFT) is an experiential and humanistic therapy that has its origins in attachment theory, emotional neuroscience, and concepts of emotional intelligence (Greenberg, 2002). EFT is an evidence-based, empirically supported therapy. Similar to Gottman's description of effective working with emotions in parenting, in EFT the therapist can also serve as an emotion coach who helps patients to be more effective and adaptive in processing their emotional responses.

In EFT the relationship between the psychotherapist and the patient is itself viewed as serving an affect regulation function through attachment processes (Greenberg, 2007). Several processes can be found in EFT that are also present across third-generation cognitive-behavioral therapy modalities, such as acceptance, contact with the present moment, mindful awareness, the cultivation of empathy, and the activation of attachment-based self-soothing processes. Specifically, the therapeutic alliance in EFT is said to function as a soothing dyad. In this dyadic interaction, with the dynamics of evolved human attachment at work, patients may be able to internalize self-soothing capacities through repeated emotion coaching and experiential learning in therapy sessions. Additionally, the therapeutic alliance may create an environment in which patients may directly and deeply encounter challenging emotions, while learning the skills they need to tolerate distress and effectively regulate their emotional responses (Greenberg, 2002).

Although EFT acknowledges that cognition is an essential component of emotional processing, cognitive control or reappraisal of emotion is not the central process in the EFT model (Greenberg, 2002). The EFT model suggests that emotions may influence cognition just as cognition may influence emotions. Cognitions might be used to affect emotions, but emotions might even be used to change or transform other emotions. EFT suggests that appraisal processes, physical sensation processes, and affective systems activate in an integrated way to evoke the experience of an emotion (Greenberg, 2007). EFT, the concept of emotional intelligence, and EST all hold that emotional experiences involve a high level of synthesized and synchronized activity across human biological and behavioral systems.

EMOTIONAL SOCIALIZATION

Although emotions have been linked to evolutionary theory and emotions appear to be universally experienced, parental socialization does have an impact on emotional awareness, expression, and regulation. Since the publication of Bowlby's (1968, 1973) seminal work on attachment, there has been considerable interest in the importance of secure or insecure attachment on

development from infancy through adulthood. Bowlby proposed that the essential component of a secure attachment was the predictability and responsiveness of the parental figure. Bowlby and others suggested that disruptions in the attachment between child and parent can affect the development of "internal working models"—that is, schemas or concepts—about the predictability and nurturance of others. Infants and children lacking a secure attachment are at greater risk for anxiety, sadness, anger, and other emotional problems. There is some evidence that attachment patterns are moderately stable in the first 19 years of life (Fraley, 2002). In a study of adults exposed to a traumatic event (the 9/11 attack on the World Trade Center), those who had secure attachments were less likely to suffer from PTSD (Fraley, Fazzari, Bonanno, & Dekel, 2006). Although early attachment issues have primarily been a focus of object relations theories (Clarkin, Yeomans, & Kernberg, 2006; Fonagy, 2000), attachment processes have also been a focus for cognitive therapists (Guidano & Liotti, 1983; Young, Klosko, & Weishaar, 2003).

Children's understanding of the emotions of others, social competence, positive emotionality, and general adjustment are related to higher parental warmth, higher positive emotional expressivity, and lower disapproval and hostility (Isley, O'Neil, Clatfelter, & Parke, 1999; Matthews, Woodall, Kenyon, & Jacob, 1996; Rothbaum & Weisz, 1994). Negative expression of emotion and less parental warmth are associated with higher incidence of anti-social behavior (Caspi et al., 2004). Eisenberg and her colleagues have found that parental negative expressivity is associated with lower emotion regulation, which in turn is associated with more externalizing problems and lower social competence (Eisenberg, Gershoff, et al., 2001; Eisenberg, Liew, & Pidada, 2001). Thus, emotion regulation mediated the relationship between parental expression and other social capabilities.

There is considerable emphasis on the importance of invalidation in DBT theory as an early contributing factor to the development of emotion dysregulation. In a recent study, deliberate self-harm was associated with retrospective reports of parental punishment and neglect when the child was sad (Buckholdt, Parra, & Jobe-Shields, 2009). Children who had an anxiety disorder were more likely to have parents who expressed less positive affect and more negative affect and who engaged in fewer explanatory discussions about emotion (Suveg et al., 2008). All of these attachment and interpersonal processes suggest that relationship issues and processes are a central component of emotion regulation. This is consistent with the interpersonal model of depression and suicide that proposes that universal needs for belongingness and a sense that one is not a burden to others are vulnerability factors (Joiner, Brown, & Kistner, 2006).

META-EXPERIENTIAL MODELS

Emotions are social cognitive content in themselves; that is, people have their own theories about the nature of their emotion and the emotions of others. In recent years, theory of mind has been proposed as a general social cognitive capacity underlying the ability to understand the emotions of self and others and as an ability that begins development in infancy and early childhood and continues thereafter. One dimension in conceptualizing emotion is the degree to which one believes that emotions are fixed (entity) or changeable (malleable). These dimensions were predictive of adjustment in college. Entity theorists had higher rates of depression, more difficulty in social adjustment, and lower well-being and were less likely to use reappraisal strategies (Tamir, John, Srivastava, & Gross, 2007).

Metacognition is similar to nonegocentric thinking, which was emphasized by Flavell and others in developmental psychology several decades ago (Flavell, 2004; Selman, Jaquette, & Lavin, 1977). Borrowing from Piaget's concept of decentration, nonegocentric thinking entails the ability to stand back and observe the thinking and perspective of others and to coordinate self–other perspectives. Thinking about thinking was the key concept in developmental psychology that reflected the potentially recursive and self-reflective nature of social cognition. When applied to thinking about emotion—in self or other—the concept has "evolved" into theory of mind (Baron-Cohen, 1991), which has importance in both cognitive and psychodynamic models as well as neuroscience (Arntz, Bernstein, Oorschot, & Schobre, 2009; Corcoran et al., 2008; Fonagy & Target, 1996; Stone, Lin, Rosengarten, Kramer, & Quartermain, 2003; Völlm et al., 2006). The metacognitive model advanced by Adrian Wells is the most detailed clinical theory for theory of mind and how metacognitive processes underpin various disorders (Wells, 2004, 2009). For example, chronic worriers believe that they must attend to, control, and neutralize intrusive thoughts and that thoughts confer personal responsibility. The metacognitive model seeks to clarify beliefs about how the mind functions, rather than modify the content of thoughts, and to assist the patient in relinquishing unhelpful strategies, such as attempts to suppress, control, gain certainty, and use reassurance and other "mind-control" methods. Leahy has expanded on this to develop a *meta-experiential model*—called *emotional schema therapy*—that suggests that people differ in their beliefs about the nature of emotion (e.g., controllable, dangerous, shameful, unique to the self) and the necessity of invoking emotion-control strategies such as worry, rumination, blame, avoidance, or substance abuse (Leahy, 2002). The emotional schema model also shares with DBT a recognition of common emotional myths, for example, "Some emotions are really stupid," "Painful emotions are the result of a bad attitude," or "If others don't approve of my feelings, I shouldn't feel the way I do" (Linehan, 1993a). We examine the common dysfunctional beliefs about emotion that may exacerbate emotional coping and illustrate the use of EST and DBT in more effective coping strategies. In the next chapter, we provide an overview of EST, which incorporates the various components of emotional processing and regulation discussed throughout this book, and we propose specific techniques for identifying and modifying problematic interpretations, evaluations, and strategies for coping with difficult emotions.

CONCLUSIONS

Emotion is not one simple phenomenon. It comprises appraisal, physical sensation, motor behavior, goals or intentionality, interpersonal expression, and other processes. Consequently, a comprehensive approach to emotion regulation should recognize the multifaceted nature of emotion and provide techniques that can address any of these processes. That is the purpose of this volume. Moreover, coping strategies vary considerably, and individuals may prefer certain strategies over others. For some, cognitive restructuring may obviate any of the other emotion regulation strategies by modifying the emotional response through reappraisal. In contrast, others for whom intense emotions have already been activated may benefit from a wide range of stress reduction techniques, mindfulness, acceptance, or emotional schema techniques. Some patients may have difficulty with the interpersonal nature of their emotional experience and may benefit from techniques addressed at validation or interpersonal functioning (e.g., learn-

ing skills to maintain friendships and social support). Although there may be many zeitgeists within the field of psychology, patients are less interested in the theoretical allegiances of the therapist and more interested in the relevance and effectiveness of the techniques available. Consequently, each of us—representing somewhat different interests and areas of expertise—has attempted to provide the reader with a wide range of techniques that may be tailored to individual patients. As indicated earlier in this chapter, the clinician can assist patients in examining (1) whether the problem allows for modification of the situation either through problem solving, stimulus control, or cognitive restructuring; (2) whether the problem is the increase in arousal and sensations (where stress reduction techniques such as progressive relaxation, breathing exercises, and other self-calming may be useful); or (3) whether the problem is how to cope with emotional intensity once it has arisen, suggesting the usefulness of acceptance, mindfulness, compassion-focused self-soothing, and other techniques. In each of the chapters to follow, we suggest guidelines for "choosing techniques" and relate each technique to relevant alternatives.

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