Mindfulness Broadens Awareness and Builds Meaning at the Attention-Emotion Interface

Eric L. Garland
Florida State University

Barbara L. Fredrickson
University of North Carolina at Chapel Hill

The purpose of this chapter is to articulate linkages between the broaden-and-build theory of positive emotions (Fredrickson, 1998; Fredrickson, 2004) and key components of “Third Wave” psychotherapies such as mindfulness, acceptance, and commitment to valued action. We will use insights culled from cognitive and affective sciences to clarify and substantiate a series of testable ideas that have direct bearing on clinical intervention. The overarching aim of this paper is heuristic, intended to inspire new ideas for research and practice modeled on the network of relations described here. Although research and theory on Acceptance and Commitment Therapy (or ACT, Hayes, Strosahl, & Wilson, 1999) has blossomed over the past decade, comparatively little attention has been paid to positive psychological processes in the ACT literature. We contend that positive emotions and mental states, when harnessed intentionally, are keys to resilience that can propel one in the direction of living a more meaningful life.

We begin our discussion by describing the systemic, emergent, and self-maintaining nature of emotional states. Next, we detail the broaden-and-build theory of positive emotions and the body of empirical research which supports its premises. Then we discuss the interrelationship between emotion, attention, and meaning, as the context for a discussion of three key components of a positive-emotion focused intervention strategy: mindfulness, reappraisal, and savoring. Lastly, we attempt to integrate this clinical approach within the overall framework of ACT.

Emotional Systems Can Spiral Upward or Downward

Contemporary affective science portrays emotions as constellations of subjective feeling states, physiological responses in brain and body, expressions evident on the face and in posture,
and repertoires of thought and action. In other words, emotions are emergent, dynamic systems energized by the reciprocal causal links between the cognitive, behavioral, and somatic mechanisms through which emotions are instantiated. Thus, emotions can be seen as self-organizing systems that operate to maximize and maintain their own existence. Take, for example, the emotion of despair. Despair resulting from a loss may be accompanied by rumination and withdrawal behaviors coupled with a sense of fatigue. These experiential constituents of despair may then interact dynamically to produce more despairing feelings, further rumination on loss, and increased withdrawal and fatigue. Despair becomes entrenched by generating emotion-consistent appraisals, i.e., the tendency to interpret new experiences in terms of the potential for loss and lack of control. This interpretational bias produces durable negative beliefs about self and world, which, when coupled with repeated experiences of despair and isolation stemming from withdrawal behaviors, foster narrowing, socially isolating thought-action tendencies. Over time, this process may spiral further and further downward into a self-destructive cycle, leading to social alienation, the relinquishing of commitments, and acts of desperation that feed feelings of despair and fuel the hopelessness and burdensomeness that are characteristic of depression.

We refer to such dynamic, self-perpetuating, negative emotional systems as downward spirals. In contrast, we refer to self-perpetuating cycles of positive emotions as upward spirals, given their associations with improved functioning and enhanced social affiliation. Upward spirals are evident in prospective observational studies where initial positive emotions predict future positive emotions, in part by increasing broad-minded thinking (Burns et al., 2008; Fredrickson & Joiner, 2002). In turn, having a broadened mindset predicts the occurrence of such a mindset in the future, in part by promoting cognitive coping strategies that increase positive
emotions (Garland, Gaylord, & Fredrickson, 2011). Thus positive emotion, broadened cognition, and adaptive coping repertoires are links in a reciprocally-energizing system. When positive emotions expand people’s mindsets, these cognitive effects may increase the frequency and intensity of positive emotions, as one increasingly focuses attention on pleasurable, beautiful, rewarding, or meaningful events and encounters. By generating a greater awareness of positive experiences and perspectives, positive emotions tend to consolidate over time, leading to more frequent positive emotions in the future.

Upward spirals can be distinguished from downward spirals by key differences in the ways they influence behavior. Whereas downward spirals lead to excessive self-focus attention and rigid, stereotyped defensive behavior (i.e., pulling away from what matters most), upward spirals lead to increased openness to others and spontaneous or novel exploratory behaviors (i.e., a push towards what matters most). In effect, upward spirals are more open, permeable, flexible and social than downward spirals. As such, upward spirals of positive emotion and broadened thought-action repertoires may be linchpins to resilience (Fredrickson, Tugade, Waugh, & Larkin, 2003; Tugade, Fredrickson, & Barrett, 2004), stress reduction (Garland et al., 2011) and the prevention of inertia that is often observed among people with clinical disorders (Garland et al., 2010).

Emotional spirals, like other systems, are preserved by feedback processes that operate to maintain the status quo—they only change their structural configurations as a result of being disturbed from an outside source. This raises the question of whether and how disturbances and difficulties can promote greater durability and healthy functioning (instead of dysfunction). The central thesis of the present chapter is that mindfulness might facilitate access to positive
emotions with which a person can disrupt a downward spiral and in turn, nudge the emotional balance towards sustainable positivity.

*The Broaden-and-Build Theory of Positive Emotions*

Downward spirals are hinged on the capacity of negative emotions to narrow the scope of attention and cognition (Schmitz, De Rosa, & Anderson, 2009; Talarico, LaBar, & Rubin, 2004). Such cognitive narrowing is held to be an evolved adaptation that aided the survival of human ancestors in threatening circumstances (Frijda, 1988) insofar as it supported the quick enactment of bottom-up, habitual, defensive actions (e.g., fight, flight, freeze) which would otherwise be impeded by top-down, reflective thinking. For instance, in the brief time required to dodge the strike of a serpent, one could not engage in brainstorming and creative problem solving without getting a fang in the foot. Conversely, narrowly focused attention onto the head of the snake allows for the deployment of rapid, non-conscious repertoires of coordinated muscular action to step backward and avoid the strike. Only with narrow, reflexive, mindless movements would a person live to tell the tale.

The broaden-and-build theory takes a complementary position and asserts that positive emotions broaden individuals’ thought-action repertoires, enabling them to draw flexibly on higher-level associations and a wider-than-usual array of sensory information, ideas, and behaviors; in turn, broadened cognition engenders behavioral flexibility. As people become better able to flexibly adopt novel behaviors and familiar behaviors in new contexts, they develop more psychosocial resources such as resilience and affiliative bonds (M. A. Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Waugh & Fredrickson, 2006). Our notion of broad thought-action repertoires, or flexibility, is
similar to the ACT notion of psychological flexibility, which is the ability to contact the present moment and be sensitive to details of the situation (e.g., to contingencies of reinforcement), and the ability to persist in action or change actions, depending on what the situation demands.

Take, for example, the case of two different third graders in gym class, Edie and Max. When the gym teacher introduces has the class play tee-ball for the first time, Edie meets the new challenge with curiosity. It’s her first time playing tee-ball (or anything like it), so she’s not very good. When Edie steps up to bat and takes a swing at the ball on the tee, she misses with a resounding “whiff” of the bat through the air. When her classmates laugh, instead of being embarrassed, she laughs along with them. Edie takes another swing, and this time, the ball stays in place while the bat flies out of her hand and lands a few feet away. Her peers laugh even harder, and she joins them in sharing the hilarity of the situation. She meets their smile with her own, and feels the glow of positive emotions. Consequently, she’s more willing to give it another try. Just before her third swing, Edie notices that she’s been holding her right elbow too high. She corrects her stance and smacks the ball down the field. Her peers cheer for her, and after class, they approach her to giggle about the crazy day at tee-ball. Sharing in a few more laughs, they become friends, and later decide to ask their parents to enroll them in an afterschool tee-ball team. In no time, Edie increases her athletic skills and cements lasting friendships that promote positive emotions in the future. Eventually, Edie goes on to play ball in high school, and later decides to major in journalism to become a sports reporter. She eventually lands a high profile position on a major sports television network.

Conversely, Max is embarrassed by his inexperience with tee-ball. He tries to avoid the gaze of his gym teacher so he won’t be picked to play in the class tee-ball game. When he is called up, he swings, and misses, and focuses his attention on the laughing faces of his peers. He
interprets their expressions as evidence that they are mocking him, and he feels ashamed and angry. He refuses to take a second swing, and sits down disengaged on the sidelines. In so doing, he robs himself of the opportunity to experience positive emotions that might otherwise promote his engagement in new behaviors and relationships. He grows up believing “I’m no good at sports” and shuns any social interaction that centers on athletic events, a pattern of experiential avoidance that causes him to lead a circumscribed life well into adulthood.

Insofar as positive emotions broaden cognition and increase engagement in behaviors leading to increased social bonds and assets, they conferred an evolutionary advantage to human ancestors, who may have been better equipped to survive by virtue of the development of such adaptive mindsets, skills, and resources. Positive emotions, although fleeting, can have a long-lasting impact on functional outcomes by expanding people’s mindsets in ways that lead to enhanced well-being and social connectedness.

The broaden-and-build theory has been tested in a wide range of observational, experimental, and clinical trial studies. The proposition that positive emotions broaden cognition has been demonstrated in experiments where putting people into positive emotional states leads to a more expansive ability to attend to what is happening as the present moment unfolds; discoveries that have been found using research methods as diverse as behavioral measures (Fredrickson & Branigan, 2005; Rowe, Hirsh, & Anderson, 2007), eye-tracking (Wadlinger & Isaacowitz, 2008) and brain imaging (Schmitz et al., 2009; Soto et al., 2009). Moreover, inducing positive emotions expands the range of behaviors in which one may be likely to engage (Fredrickson & Branigan, 2005) and facilitates creative problem solving (Isen, 1987; Rowe et al., 2007). Interpersonally, being in a positive emotional state increases trust in others (Dunn & Schweitzer, 2005) and the sense of connection and identification between individuals (Aron,
Norman, Aron, McKenna, & Heyman, 2000; Waugh & Fredrickson, 2006). Hence, positive emotions broaden cognition into upward spirals that have consequential impacts on the ability to successfully create healthy social interactions and relationships.

A number of prospective, observational studies provide evidence consistent with the proposition that positive emotions build durable personal resources (M. A. Cohn, & Fredrickson, B.L., 2009; M. A. Cohn et al., 2009; Gable, Gonzaga, & Strachman, 2006; Stein, Folkman, Trabasso, & Richards, 1997). More conclusive evidence for the “build” hypothesis comes from a randomized controlled trial of lovingkindness meditation (LKM; Fredrickson et al., 2008), an intervention selected to increase daily experience of positive emotions. This longitudinal study demonstrated that, relative to a waitlist control group, those randomly assigned to the 7-week LKM intervention over time reported increases in positive emotions. Over the course of the study, participants who were trained to induce positive emotions through LKM exhibited a 300% increase in the relationship between time spent meditation and the resultant positive emotions. In other words, the longer participants engaged in LKM practice, the more intense were their experiences of positive emotions. These increases in positive emotions were durable: they persisted even on days that participants did not meditate. In turn, the upward shifts in positive emotions induced by LKM produced increases in a wide range of personal resources—including a sense of competence for handling life challenges, feeling meaningfully connected to other people, and better resistance to illness (stronger immunological functioning) – gains that led to downstream increases in life satisfaction coupled with reductions in depressive symptoms (Fredrickson et al., 2008). These salutary effects of learning LKM persisted at one-year follow-up, suggesting that engaging in LKM produced enduring changes in trait positive affect (M. A. Cohn & Fredrickson, 2010).
These two propositions of the broaden-and-build theory – that positive emotions broaden awareness and build resources – may be further understood by examining the frequency with which various emotions occur in everyday life. Fredrickson and Losada (2005) suggest that the affective quality of a person’s life can be represented by their positivity ratio, defined as the ratio of their positive to negative emotions experienced over time. Positivity ratios characteristic of optimal human functioning will surpass 1-to-1, given the operation of lawful asymmetries between positive and negative emotions: (a) positivity offset refers to the observation that the modal human experience is mild positive affect (Cacioppo, Gardner, & Berntson, 1999), and indeed, normal functioning has been characterized by positivity ratios of about 2-to-1 (Schwartz et al., 2002); (b) negativity bias, often summed up as “bad is stronger than good” (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), implies that to correct for the sheer potency of negative emotions, positive emotions would need to outnumber them, perhaps by ratios appreciably higher than a typical positivity offset. Consistent with these well-documented asymmetries, Fredrickson and Losada identified 3-to-1 as the tipping point ratio, above which the broaden-and-build effects of positive emotions generate well-being. Thus, persons who experience a proportion of positive-to-negative emotions in excess of 3-to-1 exhibit exemplary mental health and psychosocial function, a salutary state known as flourishing (Keyes, 2002). Below this ratio, people are thought to experience positive emotions in rates too low to support such optimal functioning, and may instead show emotional distress, social alienation, or the lack of fulfillment that Keyes (2002) calls languishing.

A third proposition of the broaden-and-build theory asserts that positive emotions undo the averse, psychophysiological consequences negative emotions. Whereas negative emotions prepare the body and mind for specific defensive actions (e.g., fight, flight), positive emotions
appear to dismantle or “undo” such preparation, an effect presumably linked to the broadened thought-action repertoires that accompany positive emotions. In a series of laboratory experiments, Fredrickson and colleagues tested the “undo effect” by first inducing negative emotions in participants who were then randomly assigned to one of three conditions in which they experienced subsequent positive, neutral, or negative emotions. Continuous measures of heart rate and blood pressure responding revealed that positive emotions sped cardiovascular recovery from anxiety and fear (Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000). This line of research indicates that positive emotions can be a potent means of counteracting the effects of negative emotional states.

If positive emotions exert consequential effects on well-being, it follows that they would facilitate resilience (Folkman & Moskowitz, 2000), i.e., the ability to successfully adapt and cope with adversity. In fact, people reporting higher levels of resilience experience more positive emotions when faced with a stressor than their less resilient counterparts, and greater positive emotions mediate the facilitative effects of resilience on recovery from stress (Ong, Bergeman, Bisconti, & Wallace, 2006). This higher incidence of positive emotions accounts for the greater ability of resilient people to rebound from adversity, undo cardiovascular reactivity, prevent the occurrence of depressive symptoms, and continue to flourish (Fredrickson et al., 2003; Ong et al., 2006; Tugade & Fredrickson, 2004). Further, biobehavioral research indicates that resilient people, who are better able to maintain their focus on the present moment and worry less about future negative contingencies than their less resilient counterparts, exhibit more situationally appropriate physiological activation in response to an emotional provocation, from which they are then able to efficiently recover (Waugh, Wager, Fredrickson, Noll, & Taylor, 2008).

However, resilience is not merely innate; it may also be trained (Cicchetti & Blender, 2006). For
instance, a laboratory experiment showed that when non-clinically disordered people scoring low on measures of trait resilience are taught to positively reappraise a stressful situation as a challenge to be met and overcome, they exhibit the faster cardiovascular recovery that is a hallmark of resilience (Tugade & Fredrickson, 2004). Importantly, in this study, the extent to which resilient people could find positive meaning in challenging life events was partially mediated by their experience of positive emotion in the face of those circumstances. In other words, people appear to spontaneously or naturally utilize positive emotions to find meaning within stressful situations. How then might positive emotions be intentionally cultivated to foster resilience in clinical populations? To answer this question, we must delve into the very nature of attention, emotion, and meaning itself.

**Meaning and the Attention-Emotion Interface**

Human beings are meaning-makers. Although at core we experience the same primordial drives towards approach and avoidance as do all invertebrates, and the same basic emotional states of joy, contentment, love, disgust, anger, and fear as our mammalian ancestors (Ekman, 1971, 1977; Plutchik, 1962, 1980), our capacity for appraising and constructing the meaning of our experience creates a multifarious and ever-shifting palette of moods and affect. In other words, we derive our decidedly human emotional experience from these basic emotions through the processes of cognitive appraisal (Ellsworth & Scherer, 2002; Lazarus, 1991, 1999) We must look no further than the example of pleasure. For although pleasure is a primal and universal human experience (Kringelbach & Berridge, 2009), sources of pleasure vary to a near infinite extent. That people could experience pleasure from experiences as diverse as sky diving, fasting and kneeling on hard wooden pews, eating a Big Mac, sado-masochistic sex acts, the discovery
of a new mathematical theorem, pulling weeds and pruning in a garden, a death metal concert, running a marathon, or focusing bare attention on the sensation of the breath is indicative of the relativistic nature of meaning-making and its emotional consequences. Moreover, an event or behavior that is pleasurable in one context may be perceived as aversive in another. For instance, sprinting from a ravenous tiger bears a wholly different hedonic tone than sprinting towards a finish line, even though both events involve the behavior of running as fast as humanly possible.

What then governs how meaning and emotion are generated in the encounter between self and world? Human experience accesses an interconnected, undivided universe, a holism that, upon analysis, reveals infinite layers of data (Lazlo, 1996). What we “see”, that is, what our sensory organs register, is an interconnected world with “the structure of ever-receding levels of detail that blend into a nonspecific background” (Varela, Thompson, & Rosch, 1991). This notion sits well with the philosophy underlying ACT, functional contextualism, which also posits an undivided universe (Ciarrochi and Bailey, 2008).

Although our everyday human experience can potentially access an infinitely complex universe, an individual can only process a limited set of data as information at any one moment. Thus human information processing is selective and involves attention, that is, the function by which certain subsets of data gain preeminence in the competitive processing of neural networks at the expense of other subsets of data (Desimone & Duncan, 1995). Thus, attended stimuli govern behavior, insofar as they receive preferential information processing. Attention can be driven by reflexive, stimulus-driven, bottom-up processes, or by reflective, strategic, top-down processes (Corbetta & Shulman, 2002). While basic stimulus properties such as brightness or contrast attract attention in a bottom-up fashion, the salience, goal-relevance, or higher-order
meaning of the object can guide attention to select and distinguish it from the environmental matrix in which it is embedded (Koivisto & Revonsuo, 2007).

As William James asserted in an oft-cited quote, “My experience is what I agree to attend to” (1890). Yet, despite its centrality, attention exists in a reciprocal relationship with emotion. The object of attention elicits emotion, while emotion tunes and directs attention (Anderson, Siegel, Bliss-Moreau, & Barrett, 2011; R. S. Friedman & Forster, 2011; P. J. Lang & Bradley, 2011; P.J. Lang, Bradley, & Cuthbert, 1997). This attention-emotion interface is the psychological substratum that makes motivated goal achievement possible. Thus, the human mind is not merely a passive receptor of sensory information which reacts in an input-output fashion, but rather, an active agent that selects information and appraises this information for its contextual meaning or value. Emotion arises from these selection and appraisal processes. Bateson (1972) asserted that ordinary awareness often fails to capture the rich, interconnected complexity of the environment because our desires and goals limit our attention to small portions of data. Depending on how people attend to the components of their experience, different phenomenological realities are constructed. Consistent with this view, appraisal accounts of emotions (Ellsworth & Scherer, 2002; Lazarus, 1991) hold that the emotional quality of any given circumstance springs from what we attend to and how we subsequently interpret the objects of attention.

People interpret the meaning of the objects of attention by ascribing to them conceptual categories according to their memories of past experiences. The way we organize and categorize the influx of information from our senses creates our lived experience of “reality” (Keeney, 1983). Thus, there is no inherent meaning in these details of experience outside of the contexts in which they are observed. This observation reveals that the ubiquitous concepts – like “self,”
“world,” and “causality” – derived from sense data and social feedback are in fact malleable and subject to contextual change.

The manner in which individuals ascribe meaning to an emotional stimulus relative to its context has been described by Relational Frame Theory (Hayes & Wilson, 1995), the foundation of ACT. According to this theory, humans use language and cognition to arbitrarily relate events to one another, and to alter the functions of events based on their contexts (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Language and cognition encode these arbitrary relations between events. As such, behavioral responses derive not from events themselves but rather from the network of arbitrary relational rules established via a history of conditioning and reinforcement. By virtue of such relational framing, we make sense of events and appraise their emotional significance.

The drive to make sense or meaning of one’s experiences is central to human existence (Frankl, 1959; Singer, 2004). Moreover, the need to make sense of experience and to regulate emotion in desired directions motivates changes in belief (Boden & Berenbaum, 2010). In turn, appraisals of the meaning of situations relative to one’s goals and concerns evokes changes in emotion (Frijda, 1986). Appraisals are discrete and pertain to specific events or encounters; in contrast, beliefs are often extend over time and scope, and therefore have the potential to influence many discrete situational appraisals (Boden & Berenbaum, 2010; Lazarus, 1991). For instance, for an individual who holds the belief “I must be perfect,” receiving an A+ on a test will result in the appraisal “I am perfect” and consequent feelings of contentment, whereas receiving an A- results in the appraisal “I am a failure” coupled with sadness. Thus, beliefs serve as the lens through which situational appraisals are made, with attendant emotions.
In turn, emotions influence the content and conviction of beliefs. An emotion provides a signal that tunes attention to the interoceptive experience of the emotion and to the stimuli that elicited the emotion (Clore & Gasper, 2000). This emotional signal alerts the human information processing system to the presence of objects and events that are related to a given belief. Subsequently, stimuli that are mutually congruent with belief and the current emotional state are preferentially selected for further processing (Boden & Berenbaum, 2010). In addition, because emotion is directly experienced as self-evident (Clore & Gasper, 2000), it often serves as evidence that supports or disconfirms a given belief (Centerbar, Schnall, Clore, & Garvin, 2008). Put another way, emotions that are consistent with a given situational appraisal or belief tend to strengthen it, whereas explanation-inconsistent emotions tend to weaken that appraisal or belief. Moreover, emotional valence can influence the content of interpretations of ambiguous stimuli. For example, participants experiencing experimentally-induced sadness reported greater self-blame for relationship conflicts in contrast to those experiencing induced happiness (Forgas, 1994). Induction of anger and disgust result in more negative interpretations of neutral homophones (for example, hearing the word “tense” instead of “tents”) (Barazzone & Davey, 2009; Davey, Bickerstaffe, & MacDonald, 2006), and people experiencing naturally-occurring or experimentally-induced fear interpret situations as riskier (Lerner & Keltner, 2001). Thus, emotional valence can bias meaning-making processes both in terms of the content of beliefs as well as the extent to which they are held to be true.

As appraisals and beliefs change in concert with changes in emotional state, so too, changing interpretations influence emotional experience. For instance, a person who has received a cancer diagnosis might first interpret this event as a catastrophe, and feel crushing emotions of fear, despair, and hopelessness. Later, this individual might come to view the diagnosis as an
impetus to retire from an unsatisfying job and pursue a new life in a city where he or she had always dreamed of living, and feel emotions of contentment, gratitude, or even joy. This transformation of meaning, or reappraisal, is only possible due to the ambiguity inherent in most life situations.

Life is an Ambiguous Stimulus

In a very real sense, life is an ambiguous stimulus. Does survival of a heart attack indicate that death is imminent, or that one has been given a new lease on life? Is falling in love an assurance of a lifelong partnership, or the first sign of an inevitable heartbreak? Although the significance of being mauled by a tiger may seem unambiguous, many human encounters and situations are complex, their meanings subtle. Thus, to make sense of and gain agency over our experiences, we engage in the process of self-reflection (Bandura, 2001).

Through self-reflection, people come to realize that their lives are filled with uncertainty about their own identities, their relationships with others, and their environmental circumstances (Olivares, 2010). Because living involves adaptation to irregular changes and perturbations from the environment, the process of self-reflection reveals the indeterminate nature of life. The uncertainty stemming from threatening stimuli whose nature is unknown or unpredictable evokes stress (Monat, Averill, & Lazarus, 1972) and a sense of loss of control (Folkman, 1984). In response to uncertainty, we are driven to make meaning of our experience, to construct a coherent network of relations between the existential components of our lives, and in so doing to reduce that uncertainty (Olivares, 2010). Indeed, a series of cunning experiments demonstrated that the sense of lacking control promotes illusory pattern perception in ambiguous stimuli or situations (Whitson & Galinsky, 2008). Hence, people consciously or unconsciously attempt to
regain a sense of control by projecting patterns onto the chaos of their lives. This meaning making process is hinged on the appraisal of stressors and their meaningful integration into our autobiographical narratives.

**Stress Appraisal and the Downward Spiral of Perseveration**

Although evocative of psychophysiological arousal, a demanding encounter with the environment in and of itself does not carry any particular valence, and only takes on positive or negative meaning after its relevance for one’s well-being has been appraised. While many taxing events may harm or threaten to harm the individual, other stimuli present a challenge that involves the possibility of growth or benefit to the person. For instance, running reliably creates stress physiology, yet a person’s experience of those bodily changes differs whether they are running from a tiger or running towards the finish line at a marathon. While in the former case, the organism is under definite threat, in the latter case the person stands to gain a sense of accomplishment and reward for facing the challenge. Thus, the experience of stress is contextual; humans interpret context and subsequently appraise stimuli according to that context for their significance.

According to Lazarus and Folkman’s transactional model of stress, appraisal, and coping (1984), stress results from a process that initiates with a primary appraisal of stimuli for their inherent threat value. These appraisals are often automatic and executed without conscious deliberation (Bargh & Chartrand, 1999); for example, appraisals of others’ intentions are made, on average, in less than 30 seconds (Ambady & Rosenthal, 1992), and appraisals of threat (e.g., a person with a phobia of snakes detecting the presence of a snake) can be made in less than 50 milliseconds (Ohman, Carlsson, Lundqvist, & Ingvar, 2007). Such rapid and unconscious
appraisals may utilize innate reflexes, nondeclarative memory, and implicit cognitive operations, in contrast to intentional appraisal processes that rely on declarative memory and propositional reasoning (Ellsworth & Scherer, 2002).

Subsequently, a cognitive process of secondary appraisal determines the sufficiency of available resources and coping options to meet the demands of the actual or potential threat. If the stressor is appraised to be navigable, a sense of positive affect and self-efficacy will result. On the contrary, if the available resources are deemed insufficient to negotiate the challenge presented by the threatening or harmful stimulus, this appraisal will initiate the biopsychosocial sequelae of the stress reaction. This reaction involves the activation of pathways from the extended amygdala to the hypothalamic-pituitary-adrenal axis, the locus coeruleus, and the autonomic nervous system. This pathway unleashes a neuroendocrine cascade of stress hormones, in which secretion of beta-endorphin and adrenocorticotropin lead to the release of cortisol from the adrenal cortex (Brosschot, Gerin, & Thayer, 2006). Cortisol promotes the processing of threat-related information and the encoding of fear memories by sensitizing neurotransmission between the amygdala and hippocampus (McEwen, 2007). Furthermore, stress appraisal activates a rapid “fight-or-flight response” (Cannon, 1929), mediated by the central autonomic network (Thayer & Lane, 2009), a system of neural circuits linking prefrontal cortex, amygdala, brainstem, sympathetic and parasympathetic nervous systems, viscera, and periphery. During the fight-or-flight response, the central autonomic network innervates muscle groups, drives and modulates the pacemaker of the heart, effects gastric contractions, stimulates sweat gland activity, and regulates shifts in body temperature (Janig, 2002). These physiologic reactions subserve defensive action.
This response evolved as a mean of adapting to an immediate, life threatening stressor, yet the context of modern, industrialized society rarely presents humans with such threats. In comparison with the environment of our ancestors where the scenario of fleeing from a wild beast was more commonplace, today we more often face stress from our attribution of symbolic meaning to events deemed exigent to well-being (Rosmond, 2005). For instance, our bodies may react to a critical email from a supervisor as if we were being attacked by a tiger. Furthermore, while the acute stress response may be adaptive, chronic stress can be deleterious, and is often maintained and prolonged through mental representations of the stressor. Humans often engage in perseverative cognition, a maladaptive process of fruitlessly maintaining a cognitive representation of the stressor even after it is no longer present (Brosschot et al., 2006). Perseverative cognitive styles such as catastrophizing (i.e., exaggeration of the threat value of a stimulus) or rumination (the experience of recurrent, intrusive negative thoughts about an event), result in a downward spiral of cognitive stress-appraisal processes, negative affect, and sustained activation of the autonomic nervous system.

In turn, protracted activation of physiologic systems subserving the stress response exacts a toll on multiple body systems known as allostatic load (McEwen & Wingfield, 2003), which, over time, can result in atrophy of brain tissue, hormonal and metabolic dysregulation, and susceptibility to physical and mental disorders (McEwen, 2003). Allostatic load is thought to dysregulate stress and reward neurocircuitry within the extended amygdala, moving the brain reward set point from its normal level, resulting in decreased sensitivity to reward and increased sensitivity to stress, punishment, or aversive states (Koob & Le Moal, 2001). Effects of this sensitization may be observed among persons suffering from depression and anxiety, who may cognitively biased toward processing objects, persons, and events that they construe as
disappointing, upsetting, or frightening, while neglecting what is beautiful, affirming, or pleasurable (Garland et al., 2010; Mathews & MacLeod, 2005). Such information processing biases maintain and reinforce dysphoria, fear, and self-loathing via downward spiral processes, creating a maladaptive affective balance tipped towards negativity.

Positive Reappraisal

Fortunately, the stress response is fluid and mutable; new data from the changing environment coupled with novel information about one’s own reactions to the threat may initiate a reappraisal process, in which the original stress appraisal is changed as a result of the feedback. For example, a stimulus that was originally appraised as threatening may be reinterpreted as benign. Reappraisals modify the physiological, psychological, and social consequences of the stress reaction through dynamic feedback-feedforward mechanisms which alter the informational value or meaning of the stimulus while calibrating the behavioral response to that stimulus.

Reappraisal may be one of the keys to resilience. In the face of adversity, people often believe that they have personally benefitted or grown from dealing with the stressful event. This positive-emotion focused coping strategy, known as positive reappraisal, is the adaptive process through which stressful events are re-construed as benign, beneficial, or meaningful (Lazarus & Folkman, 1984). Positive reappraisal, alternately conceptualized as benefit-finding (Affleck & Tennen, 1996), is associated with reduced distress and improved mental health outcomes (Helgeson, Reynolds, & Tomich, 2006), and also appears to exert salutary influences on physiological parameters associated with stress (Bower, Low, Moskowitz, Sepah, & Epel, 2008; Carrico et al., 2006; Cruess et al., 2000; McGregor et al., 2004; Tugade & Fredrickson, 2004). Positive reappraisal is an active coping strategy (Folkman, 1997), rather than a defense
mechanism used to repress or deny; it involves active contemplation of the stressor, its context, and its relevance for the individual. Moreover, positive reappraisal has a distinct physiological signature characterized by increases in parasympathetic nervous system activation (Witvliet, Knoll, Hinman, & DeYoung, 2010), and does not bear the same physiological or psychological consequences as suppression of negative emotions (Gross, 2002; Ochsner, Bunge, Gross, & Gabrieli, 2002), which causes increased sympathetic nervous system activation (Gross & Levenson, 1997) and leads to behavioral avoidance. In contrast, positive reappraisal is often a critical step towards an active reengagement with the stressor. For instance, a person inflicted with a non-fatal heart attack might positively reappraise the event as an opportunity to alter their lifestyle and consequently begin to make modifications to diet and exercise behaviors. Similarly, a person who has recovered from cancer might view their survival of the disease as evidence of their strength and resilience, and they might decide to dedicate their life to helping others make similar recoveries. Hence, positive reappraisal is an adaptive and often approach-oriented strategy, rather than an avoidant strategy - one that may produce the sense of coherence (Antonovsky, 1987) which is so critical to health and wellbeing.

In light of the body of research that suggests positive reappraisal is an adaptive form of coping and may be a crucial component in resilience, this cognitive strategy may hold significant therapeutic potential if intentionally harnessed and promoted above and beyond its naturalistic occurrence. It is an open question how best to facilitate positive reappraisal in the clinical setting. This remains an understudied area, perhaps due to the emphasis of Second Wave cognitive therapies on positivism (the philosophical view that one can know Reality through information derived from the senses and the use of evidence to verify beliefs) and techniques designed to promote more rational or logical thinking. It is not overtly logical or rational to interpret a cancer
diagnosis as a life-affirming blessing, and in fact, such reappraisals may actually run counter to
the objective evidence often used as “grist for the mill” in standard cognitive restructuring
techniques. Yet, the Third Wave approach embodied by ACT is more constructivist than
positivist, emphasizing functional contextualism and pragmatism over “truth.”

The functional contextualism inherent in ACT urges us to abandon attempts to establish
the veracity of beliefs and instead focus on the function of beliefs. Positive reappraisal is sensible
from this functional contextualist view. Given that most situations in life are ambiguous with
regard to their relevance for the individual, they may be appraised negatively or positively. Yet,
negative appraisals spawn negative emotions and initiate habitual, mindless patterns of
stereotypic defensive behavior. In contrast, positive appraisals result in positive emotions, which
broaden cognition and build personal resources through novel, exploratory, and creative
problem-solving behaviors. Thus, the operative question is not “Is this belief correct?” but rather
“What is the consequence of holding this belief?” (Ciarrochi & Bailey, 2008). As Hayes,
Analyses are true only in terms of the accomplishment of particular goals” (p. 19). Insofar as
positive reappraisal facilitates goal achievement by bolstering resilience in the face of adversity
and broadening thought-action repertoires via upward spiral processes, it satisfies this truth
criterion. Hence, positive reappraisal may be especially relevant for a clinical approach marrying
the Third Wave orientation with principles drawn from the broaden-and-build theory. The
integration of these approaches is hinged on the construct of mindfulness.

The Role of Mindfulness in Positive Reappraisal
In sum, emotional processing of stressful life events is dynamic, involving the engagement, adaptation, and re-engagement of attentional and appraisal mechanisms that change over time (Gross & Thompson, 2007; Kalisch, 2009). Initial appraisals flow from orienting attention to the stressor and the subsequent triggering of learned stimulus-outcome associations, which include both non-declarative or implicit associations, as well as declarative, verbal-semantic interpretations of the meaning of the stimulus grounded in schemas and beliefs. This dynamic unfolding of responses to perturbations by emotionally-salient stimuli reciprocates in a re-processing or reappraisal of the trigger stimulus in a recurrent or iterative manner. Indeed, reappraisal requires an influx of novel information with which to reformulate the original stress appraisal (Lazarus & Folkman, 1984). What process then allows one to access this source of new data in the presence of emotionally-charged stimuli and events that reflexively fixate attention?

Elsewhere we (Garland, Gaylord, & Park, 2009) have argued that the state of mindfulness allows for the possibility of positive reappraisal. This naturalistic state involves an attentive and nonjudgmental metacognitive monitoring of moment-by-moment cognition, emotion, perception, and sensation without fixation on thoughts of past and future (Garland, 2007; Lutz, Slagter, Dunne, & Davidson, 2008). Mindfulness is metacognitive in the sense that it involves a meta-level of awareness which monitors the content of consciousness while reflecting back upon the process of consciousness itself (Nelson, Stuart, Howard, & Crowley, 1999). Mindfulness is naturalistic in that it is a basic and inherent capacity of the human mind, although people differ in their ability and willingness to wield this ability (Brown, Ryan, & Creswell, 2007; Goldstein, 2002). As such, the innate function of mindfulness can be fostered by practice. The practice of mindfulness (which involves repeated placement of attention onto an object while alternately acknowledging and letting go of distracting thoughts and emotions) engenders
the transitory state of mindfulness, which, when engaged repeatedly over time, may accrue into *trait* or *dispositional* mindfulness (Chambers, Gullone, & Allen, 2009), the propensity towards exhibiting nonjudgmental awareness in everyday life.

The metacognitive state of mindfulness can moderate the impact of potentially distressing psychological content through the mental operation of stepping back from thoughts, emotions, and sensations, known as *decentering* (Segal, Williams, & Teasdale, 2002) or *reperceiving* (Shapiro, Carlson, Astin, & Freedman, 2006). This set-shifting function may be a key link between appraisal and reappraisal, involving a shift in mental process rather than in contents (Hayes & Wilson, 2003). Shifting from the contents of consciousness to the process of consciousness is thought to lead to a lack of attachment to thoughts and emotions, liberating awareness from fixed or rigid narratives about self and world (Shapiro et al., 2006). “Through reperceiving brought about by mindfulness, the stories (e.g. about who we are, what we like or dislike, our opinions about others, etc.) that were previously identified with so strongly become simply ‘stories’” (Shapiro et al., 2006). The cognitive set-shifting process of reperceiving or decentering may afford a fundamental cognitive flexibility, facilitating the flexible selection of cognitive appraisals, as “we become able to reflectively choose what has been previously reflexively adopted or conditioned” (Shapiro et al., 2006). Ultimately, decentering creates distance between thoughts and thinker, and thus, from socially-conditioned narratives. This new distance or space enables the selection of values that are more congruent with individual goals.

Mindfulness is arguably the keystone in the arch of positive reappraisal. For one to reconstrue his or her appraisal of a given event as positive, one must suspend the initial stress appraisal and disengage cognitive resources from it - in effect, “letting go” of the appraisal while viewing it from a metacognitive vantage point that attenuates semantic evaluations associated
with the event. According to the mindful coping model (Garland et al., 2009), when a given event is viewed as a threat that exceeds one’s capabilities, this stress appraisal results in perturbations to bodily homeostasis. In turn, feedback from the body is often interpolated as emotion (B. H. Friedman, 2011; James, 1890). As one becomes aware of the presence of negative emotions resulting from the stress appraisal, he or she can initiate an adaptive response by “stepping back” or decentering from this stress appraisal and its resultant emotions into the state of mindfulness. Operating from this mindful state results in increased capacity to re-orient attention to novel stimuli (Jha, Krompinger, & Baime, 2007) as well as greater cognitive flexibility (Moore & Malinowski, 2009). As a result, individuals can access new data with which to reappraise their circumstances and reframe them as meaningful or even beneficial. Attending to what is benign, purposeful, or affirming in the situation may result in experiences of positive emotion, which mediate and further promote positive reappraisal (Tugade & Fredrickson, 2004). Hence, from the metacognitive vantage point afforded by mindfulness, positive features of the object, event, circumstance, or context which had been previously unattended now become accessible to consciousness as the “stuff” that reappraisals are made of.

While mindfulness may temporarily suspend evaluative language, because the human mind is embedded in narratives which reduce uncertainty and produce a coherent life story (Olivares, 2010), it is inevitable that one will re-engage into a semantic-linguistic mode as they integrate the encounter with the stressor into their autobiographical memory. As one returns to this narrative mode from the state of mindfulness, reappraisals may arise either through a conscious process of reflection or through more automatic processes, based on spontaneous insight. The result of such positive reappraisal are positive emotions such as hope, compassion,
and love, and accepting attitudes such as trust, confidence and equanimity which reduce stress and in turn influence subsequent appraisal processes.

Ultimately, the repeated, intentional engagement of the metacognitive state of mindfulness may result in the development of trait mindfulness over time. Developing a more mindful dispositionality, in turn, leads to a heightened propensity toward making positive reappraisals in the face of distress as a cognitive coping style (see Figure 1). Recent evidence from our prospective observational study of adult participants of a mindfulness-based stress and pain management program supports this assertion; we found that increases in dispositional mindfulness were reciprocally linked with increases in positive reappraisal, and that the stress-reductive effects of increases in dispositional mindfulness were mediated by increases in positive reappraisal (Garland et al., 2011). Similarly, findings from a quasi-experimental study comparing college students participating in a mindful communication course to those receiving a standard communications curriculum found that mindfulness training was associated with significant increases in dispositional mindfulness which were correlated with increases in positive reappraisal (Huston, Garland, & Farb, in press). Unpublished data from our lab indicate that among populations of people recovering from severe addictive and mental health disorders, treatment-related increases in mindfulness and positive reappraisal are significantly correlated. Lastly, a recent study found that when compared with controls, meditators exhibited greater attenuation of negative emotions during reappraisal of stressful stimuli as evidenced by reduced brain activity in centro-parietal regions subserving attentional and emotional processing (Gootjes, Franken, & Van Strien, 2010). Convergent findings across these diverse samples suggest the presence of a fundamental psychological relation: positive reappraisal and
mindfulness appear to serially and mutually enhance one another, creating the dynamics of an upward spiral that reduces distress and leads to flourishing.

**Appraisal Begets Attention and Savoring**

The upward spiral of mindfulness and positive reappraisal does not terminate with the reframing of circumstances as benign, beneficial, or meaningful. As the process unfolds, attention becomes tuned in accordance with the new mental set and meaning imbued by the reappraisal. Accordingly, *what one attends to and ultimately sees is shaped by the newly established semantic frame*. This radical proposition is supported by findings from an elegant experiment conducted by Koivisto and Revonsuo (2007). Participants attended to pictures of furniture or animals in displays containing one of each type of picture as well as two filler pictures from other categories. On the third and fourth trials, an unexpected stimulus word (either cat or sofa) replaced the fixation cross at the center the pictures. Subjects were randomly assigned to either attend to animals or furniture, with the stimulus word either being congruent or incongruent with the category of the attended pictures, and were asked to write down what objects they saw and whether or not they noticed something “new and additional that was not present in the previous trials.” Results indicated that participants were significantly more likely to detect the presence of a word that was congruent with the attended picture category. In other words, the semantic relation between an observer’s attentional set and the unexpected stimulus determine whether that stimulus will be seen. An unexpected stimulus that is related in meaning to the interests of the observer is more likely to be seen, whereas unexpected stimuli that are incongruent with the semantic frame of the observer are likely to be overlooked. These findings are complemented by those of a recent study in which neutral
human faces paired with negative gossip were more likely to be seen, and seen for longer, than other neutral faces (Anderson et al., 2011). Hence, meaning influences attentional selection and may ultimately dictate whether or not one perceives a given feature, object, or event.

Given the significant influence of meaning on attentional selection, when a person positively reappraises his or her circumstances, they may begin to focus on and become aware of the beautiful, affirming, and rewarding elements of their lives. This intentional awareness of pleasant events in the present, or savoring (Bryant, Chadwick, & Kluwe, 2011), is one of the most powerful means of amplifying positive emotion (Quoidback, Berry, Hansenne, & Mikolajczak, 2010). Indeed, selectively attending to positive stimuli is an effective form of positive emotion regulation (Wadlinger & Isaacowitz, 2008). As one savors, one attends not only to the most perceptually salient, conspicuous features of the event, but also to its more subtle features, broadening the diversity and range of sensations and feelings. Yet, savoring is more than attention to pleasant stimuli. Savoring involves metacognition and self-reflection, in which one focuses awareness on both the pleasurable stimulus and the experiences of positive emotion that unfold from the stimulus (Frijda & Sundararajan, 2007). In other words, savoring contains an element of mindfulness. By virtue of mindfully attending not only to the pleasant object or event but also the pleasurable state that arises from the encounter with that object or event, people can deepen or prolong the savored experience.

By instructing clients to mindfully focus attention on pleasurable objects and events (e.g., the sight of a beautiful sunset or the satisfying taste of a meal), mindfulness training may increase the perceived hedonic value of natural rewards, and thereby counter the insensitivity to pleasurable objects, events, and experiences that results from chronic stress (Koob & Le Moal, 2001) Such exercises may amplify pleasure from perceptual and sensorimotor experience in a
similar fashion to sensate-focus techniques (Albaugh & Kellogg-Spadt, 2002; Heiman & Meston, 1997; Masters & Johnson, 1970) and promote emotion regulation by generating positive attentional biases (Wadlinger & Isaacowitz, 2010). Controlled clinical trials of sensate focus training as a means of enhancing sexual pleasure and function demonstrate that individuals can learn to attend to the sensory quality of experiences to increase pleasure and improve response (Heiman, & Meston, 1998). Similarly, increased attention to the sensory experience of eating has been shown to elevate consummatory pleasure (LeBel & Dubé, 2001). Given that attending to present-moment experience has been robustly and prospectively associated with happiness in time-lagged analyses (Killingsworth & Gilbert, 2010), it is plausible that learning to mindfully attend to and savor positive events may offset the anhedonia involved in downward spirals of psychopathology. In support of this hypothesis, a recent randomized controlled trial of Mindfulness-Based Cognitive Therapy with adults with residual depressive symptoms found that mindfulness training increased the experience of reward and positive emotion from pleasant daily life activities (Geschwind, Peeters, Drukker, van Os, & Wichers, 2011).

Furthermore, as one cultivates a self-reflexive awareness during the savoring process, one elaborates on the appraisal, triggering networks of wider associations and meanings to emerge during the temporally extended apprehension of the implications of the object of savoring (Frijda & Sundararajan, 2007). For example, consider the example of “David,” a 60 year old man who was recently diagnosed with a potentially life threatening cancer. After undergoing treatment for cancer David might mindfully decenter from the stress appraisal “I’m doomed – I’m going to die” to attend to the fact of his present survival, leading to the reappraisal “I’m lucky to be alive” and a sense of relief or contentment. Savoring this emotion might lead to the association “I’ve had so much good fortune in my life,” resulting in a broadening of attention to encompass other
positive features of past and present circumstances, such as finding a loving partner, enjoying time with friends, experiencing successes at work, engaging in meaningful activities, and even appreciating the beautiful view from one’s window. Consequently, the reappraisal might mature into feelings of deep gratitude and joy coupled with the conviction that “I’ve been given a second chance so I can appreciate the blessings in my life and share them with others.” Such elaborative processing of positive reappraisals and their attendant emotions, when punctuated by the self-reflexivity and absorption found in momentary states of mindfulness that occur during savoring, may allow for the emergence of holistic meaning and the “felt sense” that gives an experience its affective flavor (J.D. Teasdale, 1997). Thus, when savoring, pleasure evolves into meaning and, ultimately, into a way of being that further reinforces tendencies to positively reappraise until these tendencies consolidate into a new, more adaptive schema. In this way, mindfulness promotes a self-reinforcing cycle of positive reappraisal and savoring – the expanding gyre of an upward spiral that broadens awareness and builds meaning toward the development of sustainable wellbeing.

*Implications for Clinical Practice*

The network of concepts introduced above has direct importance for the clinical practitioner. According to Victor Frankl, the inventor of a seminal form of existential therapy known as logotherapy, the role of the psychotherapist “consists of widening and broadening the visual field of the patient so that the whole spectrum of potential meaning becomes conscious and visible to him” (Frankl, 1959). This broadening of the world of experience is a fundamental therapeutic process that makes possible cognitive techniques like restructuring and may represent a heretofore underspecified link between Second and Third Wave therapies.
This link may be the answer to the question posed by Longmore and Worrell (2007) in their highly controversial paper, “Do we need to challenge thoughts in cognitive behavior therapy?” After reviewing the literature, these authors conclude that there is a lack of empirical support for the notion that cognitive change is a causal factor in the clinical outcomes of cognitive behavior therapy (CBT), based on findings suggesting that: a) there is no significance difference in therapeutic efficacy of cognitive restructuring and behavioral activation; b) adding cognitive interventions to behavioral treatments has little added value; and c) there is limited evidence that cognitive processes mediate the treatment effect of CBT. Yet, the authors suggest that there may be common therapeutic change processes that underlie techniques like cognitive restructuring and behavioral experiments. Both of these techniques may involve decentering from previously held beliefs or appraisals into a broadened, metacognitive state, where one accesses a larger scope of information with which to construct a new appraisal and activate a more adaptive schematic model of the world. If implemented as procedures that promote new ways of behaving and experiencing, both of these techniques have the capacity to change the client’s actual ways of being in the world.

Hence, clinicians can capitalize on the attention-emotion interface to help clients to construct more meaningful narratives by providing them with training in mindful reappraisal. Through explicit training in mindfulness skills coupled with cognitive restructuring techniques aimed at producing functional, rather than realistic, appraisals, the natural facilitation of positive reappraisals afforded by mindfulness practice may be further bolstered. Clinicians could promote reappraisal by teaching clients to first become aware of the presence of distressing thoughts or emotions in response to an activating event, and then to engage in mindfulness of the breath to decenter from stress appraisals into the state of mindfulness. After the client has decentered from
distressing mental content into the mindful state, the therapist could use Socratic questioning to generate positive reappraisals of the event (e.g., “How has dealing with this situation made you a stronger person? How can you learn something from this situation? Is there a blessing in disguise here?”). Then the therapist could employ a Socratic approach to direct the client’s attention to previously unattended features of the activating event and its larger environmental context. From the perspective of functional contextualism or pragmatism, the therapist would be especially interested in focusing on those features that are life-affirming, meaningful, or valued by the client. Clearly, this is a lineal description of an iterative and recursive process that involves numerous cycles of mindful decentering and reappraisal within and across multiple treatment sessions, during which time clients are taught to oscillate between decentering and reappraisal until catastrophic appraisals abate and new, adaptive appraisals are more readily constructed, accepted, and integrated.

When the wider spectrum of potential meaning becomes “visible” to the client through this process, the therapist can then direct the client to savor these features and the positive mental states that arise from their contemplation. The savoring component of mindful coping should be conducted with intensity, as if it were the last time one would ever experience those positive events, or, as Carlos Castenada (1968) posed the challenge, like a warrior who always keeps death over his shoulder. By savoring with this degree of engagement, the hedonic value of experience is maximized (Higgins, 2006).

For instance, in the previous example, David might first appraise his experience of a grueling treatment regimen of chemotherapy and surgery as evidence that he is “doomed” and become afflicted with fear and despair. A therapist could guide David to initiate mindful breathing practice as a means of disengaging from this stress appraisal into the equanimous state
of mindfulness. Once David mindfully attends to his breath, in letting go of feelings of worry and sadness he might become aware of the sense of being alive in the present moment. In so doing, he might generate the reappraisal “I’m lucky to be alive,” and subsequently feel a sense of relief and gratitude.

The therapist could then ask David to focus his attention on the feeling of gratitude, and to notice what thoughts, emotions, images, or memories arise into awareness as he savors and contemplates the sense of being grateful. Consequently, he might experience a vivid image of the beautiful view out his apartment window overlooking a river at sunset, and feel a deep sense of appreciation and joy, which in turn might lead to the memory of playing with his adorable grandchildren and the thought, “I have so much I want to share with them.” The therapist could then ask David to contemplate the realizations that he wishes to impart to his grandchildren, and how his cancer diagnosis and treatment has played a role in bringing him to this stage of his life. In the course of contemplating these issues, he might experience feelings of strength, resolution, and acceptance. The therapist could ask David to mindfully focus his awareness on these positive emotions, and in savoring them, he might come to believe, “Facing this cancer has made me a stronger person and has brought meaning to my life. I am grateful for it.” The therapeutic process could be completed by helping David to commit to valued actions or behaviors that would support this new belief. The therapist could ask him, “As a person who has become stronger in facing cancer, what steps or actions can you take to continue to live the meaningful life you want to live?” The ultimate goal of this mindful reappraisal process (see Figure 2) would be to aid the client to reframe adverse circumstances in his or her life as opportunities for personal growth or sources of meaning.
Although I (i.e., the first author) have implemented these therapeutic processes extensively and with success in private practice and agency settings with people suffering from depression, anxiety, addictive behaviors, and stress-related biobehavioral conditions, clinical trials are still needed to ascertain whether adding mindfulness and positive reappraisal training to cognitive-behavior therapy: a) facilitates reappraisal; b) is an effective means of reducing distressing thoughts and emotions; and c) increases wellbeing, a sense of coherence, and resilience. We are in the midst of conducting controlled research for the purpose of answering these questions.

Clinical Recommendations

- Provide mindfulness training as a means of increasing psychological flexibility and promoting positive reappraisal, by encouraging clients to engage in formal mindfulness practice after the initial stress appraisal and prior to developing the reappraisal. This technique of “mindful reappraisal” is outlined below and further detailed elsewhere (Garland, forthcoming):

1. Help the client to become aware of what he/she are thinking and feeling in response to a challenging life event.

2. Remind the client that even if he/she feels upset, he/she still has a choice about how to think about and respond to the situation.

3. Instruct the client to practice a few minutes (3 – 5) of mindful breathing, to help him/her to step back from distressing thoughts and feelings and become more open to new possible meanings.

4. Encourage the client to ask him/herself the following questions:
a. What are some other ways that I could view this situation?

b. How can I find personal meaning in this situation?

c. How can I learn something from this situation?

d. How can dealing with this situation make me a stronger person?

e. Is there a blessing in disguise here?

5. Guide the client to focus on and savor these new meanings.

- Encourage clients to intentionally and mindfully savor pleasant, satisfying, or meaningful events and their positive emotional responses to those events.

- Use clients’ experiences of positive emotion to promote the generation of more functional beliefs and foster commitment to valued action.

- Have clients complete weekly positive data logs (Padesky, 1994) as homework assignments to reinforce positive reappraisals and new adaptive schemas.

Conclusion: How Mindful Coping Can Be Integrated Into Acceptance and Commitment Therapy

The mindful coping model that we articulate here raises an apparent paradox: mindfulness encourages non-evaluative contact with phenomenological experience and attenuates emotional distortions of the perceptual process (Hayes & Wilson, 2003), whereas positive reappraisal attributes a positively-valenced, semantic meaning to experience. Hence, striving to re-construe situations as positive would seem to be contrary to the ethic and quality of mindfulness. Indeed, the integration of mindfulness and positive reappraisal detailed here may seem incongruent with classic Buddhist literature (Kalupahana, 1987), which are often taken to frankly discourage attachment to or cultivation of positive experiences. Pursuit of positive experience inevitably results in emotional pain, this view holds, as the transience of events and
objects leads to loss of what was pursued (Watts, 1957, 1961). On the other hand, Buddhism emphasizes the cultivation of the four noble states of mind known as the *Brahmaviharas*, or Four Immeasurables (lovingkindness, compassion, sympathetic joy, and equanimity), three of which are infused with positivity. Yet, Buddhist traditions emphasize equanimity (a construct closely linked with the notion of acceptance within ACT) as vital for keeping pursuit of the other three noble states from turning saccharine.

Some modern theorists conceptualize mindfulness as antithetical to reappraisal due to the supposition that reappraisal requires identification with and aversion toward the original stress appraisal (Chambers et al., 2009). Moreover, ACT may be apparently incompatible with reappraisal, given its focus on undermining emotion regulation efforts in favor of developing acceptance toward unwanted psychological experiences (Hayes et al., 1999). ACT’s guiding theoretical framework posits that the attempt to alter or regulate undesirable thoughts and feelings promotes experiential avoidance, which in turn leads to distress, suffering, and compromised functioning. From this perspective, reappraisal as an emotion regulation strategy seems counterproductive at best and altogether incongruent with mindfulness.

A broader perspective is needed to resolve this paradox. We contend that the state of mindfulness is a key mechanism that makes reappraisal possible. Chambers et al. (2009) highlight a fundamental difference between mindfulness and reappraisal: reappraisal alters the content of consciousness while mindfulness alters one’s relationship to those contents. While we agree with this characterization, we contend that mindfulness and reappraisal are not diametrically opposed poles along a single continuum, but rather represent different but complementary stages of an adaptive process. To reiterate, we hypothesize that mindfulness facilitates positive reappraisal in that it allows for a decentered mode of awareness in which
thoughts and emotions are accepted. Mindfulness may therefore be seen as a precondition or initial phase in the reappraisal process, but should not be considered synonymous with positive reappraisal itself. By accepting experiences instead of perseverating on them, cognitive resources are freed up, broadening the scope of attention to encompass pleasurable and meaningful events and building psychological flexibility.

Put another way, the accepting stance of mindfulness aids in decentering or undoing the perceived fusion between the initial cognitive appraisal and its correlated behavioral responses. In facilitating cognitive defusion, mindfulness opens a space in which the client can witness distressing thoughts and emotions as merely insubstantial events and not truths or fixed determinants of action. Thus, the initial appraisal is deliteralized, that is, exposed for what it is, a relational framing of events rather than an experiential reality. Through deliteralization, the initial appraisal loses its power to determine the behavioral response. It is through the space afforded by decentering that the client can come into closer contact with a wider range of experiences, some of which may be reward or reinforce valued action. As Hayes, Strosahl, and Wilson (1999) state, “Cognitive defusion and openness to experience have the side effect of sensitizing the client to natural rather than verbally constructed contingencies, which in turn may allow the client to respond more effectively to environmental demands” (p. 237). Consequently, new cognitive appraisals of self and world can be made that advance the commitment to act in accordance with deeply held values. As such, mindfulness and acceptance may be key mechanisms that underlie the therapeutic influence of reappraisal on wellbeing, a notion supported by data showing that lower levels of experiential avoidance (i.e., greater acceptance) mediate the relationship of cognitive reappraisal and positive psychological outcomes (Kashdan, Barrios, Forsyth, & Steger, 2006). Further, the capacity to accept experiences rather than avoid
them moderates the effect of traumatic life events on meaning in life and post-traumatic growth (Kashdan & Kane, 2011), a construct closely linked with positive reappraisal. Thus, we argue that mindful acceptance is the fulcrum on which reappraisals can be leveraged in service of living a more meaningful life.

The aim of this process is not to regulate thoughts and emotions “away” by suppressing, denying, or avoiding them, but rather, to foster committed action and imbue life with value. Ultimately, mindfulness imparts the individual with the freedom, and therefore, the responsibility, for constructing a more purposeful and meaningful existence.
Figure 1: Mindful Coping Model: Longitudinal View
Figure 2: Mindful Reappraisal: An Expanded View of the Mindful Coping Model
References


Cohn, M. A., & Fredrickson, B.L. (2009). In search of durable positive psychology interventions: Predictors and consequences of long-term positive behavior change. *Manuscript under review*.

Cohn, M. A., & Fredrickson, B. L. (2010). In search of durable positive psychology interventions: Predictors and consequences of long-term positive behavior change. *Manuscript under review*.


Hejmadi, A., Waugh, C. E., Otake, K., & Fredrickson, B. L. (manuscript in preparation). Cross-cultural evidence that positive emotions broaden views of self to include close others.


Witvliet, C. V., Knoll, R. W., Hinman, N. G., & DeYoung, P. A. (2010). Compassion-focused reappraisal, benefit-focused reappraisal, and rumination after an interpersonal offense: