Role of Emotion in Cognitive-Behavior Therapy

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In this article, we suggest that the long-term effectiveness of cognitive-behavior therapy (CBT) may be enhanced by going beyond symptoms at the cognitive level (i.e., intellectual meanings) and expanding therapeutic focus to the underlying, implicit emotional meanings. Following a discussion of the state-of-the-art view on emotion in CBT, we present empirical, theoretical, and clinical evidence from cognitive science, experimental psychology, and cognitive neuroscience pointing to the distinction between cognitive and emotional domains of information processing. We discuss the role of affective processes in reorganizing emotional meanings and consider how CBT therapists can use in-session emotional processing to facilitate clinical change.

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The behavioral tradition has clearly evolved over the past four decades, moving from its focus on specific actions to an increasing attention to cognitive and affective aspects of human functioning. In the 1960s, behavior therapy was criticized for its exclusive focus on overt behaviors and its reliance on classical and operant learning models that, while important and useful, had limited clinical value. This criticism had led to increased openness to cognitive procedures within the field: In the 1970s, behavior researchers and therapists began to take notice of the accumulated knowledge and developments in basic cognitive science, and most began referring to their orientation as "cognitive-behavioral." In the 1980s, cognitive-behavior therapy (CBT) began to expand its focus to embrace affect and to acknowledge and utilize the growing evidence on the role of emotion in the process of change (e.g., Barlow, 1988; Bower, 1981; Greenberg & Safran, 1984, 1989; Leventhal, 1979; Zajonc, 1980). The presidential address to the 15th annual convention of the Association for the Advancement of Behavior Therapy, where the 1980s was proclaimed to be the decade of affect in behavior therapy (Wilson, 1982), marked the beginning of a new, affective era in behavior therapy.

As we are entering the 21st century, the decade of affect in CBT is yet to come. Although CBT clearly addresses "emotional" problems, the role of in-session emotional arousal in CBT, with few exceptions, remains terra incognita in both research and clinical practice. While the therapeutic role of emotional arousal in therapy has been emphasized by other schools of thought, including experiential and psychodynamic orientations (Greenberg & Safran, 1987), encouraging emotional experiencing in clients is still rare in the traditional applications of CBT. Instead, more emphasis is placed on cognition and behavior, as well as *managing* or *containing* affective arousal. In an illumination of this point, Wiser and Goldfried (1993) found that in treating depressed clients, cognitive-behavior therapists viewed lowering levels of emotional experiencing as contributing more to the process of therapeutic change, in contrast to psychodynamic-interpersonal therapists who considered increasing levels of experiencing to be clinically significant.

In this article, we suggest that in-session emotional activation has the potential for enhancing the long-term effectiveness of CBT interventions. We begin with an overview of the evolution of emotion in cognitive-behavior theory. We then consider the role of emotional arousal in the formation of personal meanings by high-

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lighting the relevant evidence from cognitive science, neuroscience, and experimental psychology that points to the distinction between the two levels of information processing: cognitive and emotional. We discuss the implications of this distinction to psychotherapy and clinical change, consider the existing affective directions in contemporary applications of CBT, and conclude with a discussion of specific therapeutic strategies that can be used by CBT therapists to access and enhance clients' emotional systems.

THE EVOLUTION OF EMOTION IN COGNITIVE-BEHAVIOR THERAPY: HISTORICAL PERSPECTIVE

The limited role of emotion in traditional CBT is rooted in history of the behavioral movement. From early on, the development of behaviorism led to an attack on the introspective schools of psychology and encouraged a shift from subjective/untestable reports to more tangible and empirically testable factors in human behavior. As a result, most early traditional behavioral theorists conceptualized emotion as an inferred state: emotion (e.g., anger) could not be known directly and could only be inferred through an individual's behavior, such as an aggressive act, or one's facial expression (Rachlin, 1976).

Early behavioral theories presented emotion as a disruption in the behavioral sequence (i.e., a sequence of behavioral and cognitive responses to specific environmental stimuli) that interfered with rational thinking and behavior and typically manifested itself as a clinical symptom such as depression or anxiety. For instance, Watson (1924) viewed emotion as a persistent, hereditary pattern/reaction to stimuli, which is disruptive of organized activity. According to Watson, learning served to inhibit primitive emotional responses, and emotional expression was a sign of disruption in the learning process. Similarly, Skinner (1953) described emotions as an activation syndrome that involved marked physiological changes and manifested itself through explicit behavior. He conceptualized both emotion and behavior as by-products of environmental contingencies. Emotion was viewed as mostly disruptive and useful only in states of great physical exertion or in a primitive environment.

Early cognitive theories maintained that emotion was a product of cognitive evaluations (i.e., appraisals) of either external or internal stimuli. For example, Arnold (1960) argued that emotions were mediated by cognitive appraisals of environmental stimuli that were automatic, intuitive, and intimately connected to past experiences with the stimulus. Lazarus (1968) also asserted that emotions were determined by individuals' cognitive evaluations of external stimuli, and that each emotional reaction was distinct, as it was mediated by a distinct cognitive appraisal. Schachter and Singer (1962) held a similar perspective, stating that emotions were caused by one's interpretations of external stimuli. They believed a general pattern of physiological arousal could be interpreted in many different ways and, mediated by specific cognitive attributions, could potentially produce a variety of emotional reactions.

As pointed out by Barlow (1988), many contemporary empirically supported CBT applications have evolved from early traditional treatments that were based on these early, classical theories. It is not surprising, then, that in the clinical applications of CBT that had originated within this historical context, negative emotions were typically conceptualized as clinical symptoms that needed to be reduced or contained, and that modifying specific thoughts, beliefs, and attributions would be sufficient for changing emotion. Beck's cognitive therapy (CT) for depression (Beck, Rush, Shaw, & Emery, 1979), for example, aims to reduce depressed feeling by targeting specific depressogenic cognitions (i.e., having clients identify and reevaluate their negative thoughts), assuming that the depressed feeling results from maladaptive thinking.

At the same time, the view of emotion within the field is starting to shift. More CBT researchers are beginning to take notice of the integrative developments in emotion theory, as well as empirical findings and clinical observations suggesting that symptoms often persist despite extensive self-understanding at the rational/logical level (Greenberg & Safran, 1984; Teasdale, 1993; Teasdale & Barnard, 1993). These integrative trends are reflected in the recent writings by classical theorists who have significantly expanded their views on emotion. For example, recent work by Lazarus (1998) highlights biological universality of emotion, and Izard, Ackerman, and Schultz (1999) go beyond behavioral aspects of emotion emphasized by Skinner and Watson to point out the cognitive aspects of emotional experiencing. As discussed below, recent applications of CT have also begun to focus more on the emotional aspects of cognitive schemas (Young, 1999), and to use in-session emotional arousal as a way to access and challenge clients' emotional structures (Kennedy-Moore & Watson, 1999).

INTEGRATIVE DEVELOPMENTS IN EMOTION THEORY: TWO LEVELS OF MEANING

The distinction between two levels of meaning—emotional versus intellectual knowing—is familiar to most clinicians, and clients who believe something intellectually but not emotionally (i.e., knowing without feeling) present a common clinical challenge. Although it is beyond the scope of this article to review this vast literature, it is interesting to note that the distinction between intellectual and emotional knowing has been consistently highlighted by non-CBT schools of thought. For instance, the experiential theorists highlight the distinction between the two levels of information processing by distinguishing between emotional "schemes" and cognitive "schemata" (Greenberg, Rice, & Elliott, 1993; Greenberg & Safran, 1987). In contrast to the rational/intellectual cognitive schemata, emotional schemes are meaning-producing networks that result from the interaction between the innate response repertoire, past experiences and the present situation. They are nonverbal, highly subjective, and idiosyncratic and are closely connected to memories and expectations (Greenberg & Safran, 1987). According to the experiential perspective, it is emotional schemes, and not cognitive schemata, that lie at the core of people's personal meanings. Thus, the in-session emotional expression is used to activate client's emotional schemes in order to restructure old meanings and to create new ones (Greenberg & Paivio, 1997). Even though the evidence in support of this theory is still limited, research on the relation between emotional expression in experiential therapy and outcome points to the importance of intense emotional expression in resolution of schematic memories (e.g., Mohr, Shoham-Solomon, Engle, & Beutler, 1991; Paivio & Greenberg; 1995).

Within the psychodynamic tradition, a similar distinction has been made by several scholars (e.g., Clyman, 1991; Westen, 1999). For instance, Epstein's (1994, 1998) cognitive-experiential self-theory distinguishes between the two parallel systems of information processing: an emotionally driven experiential system and a rational system. He argues that the experiential system is holistic, global, highly emotional, and associative in nature. It encodes reality in concrete images, metaphors, and narratives, relies on "vibes" from past experiences, and is oriented toward immediate action. Moreover, it is experienced passively (i.e., we are "driven" by our emotions) and is very slow to change (i.e., changes with repeated intense experiencing). On the other hand, the rational system is analytic, logical, more specific and free of affect. It encodes information in abstract propositions, requires justification through logic and evidence, and is geared toward delayed action. It is experienced actively and consciously and may change rapidly. Extending this theory to therapy, Epstein makes a qualitative distinction between insight and information and suggests that a personally meaningful emotional experience (e.g., in-session emotional expression) is more likely to produce change, compared to information provided at a rational level (e.g., cognitive restructuring).

The qualitative distinction between the two levels is not typically recognized by the cognitive-behavioral models, and the contrast between "cold" and "hot" cognitions is often viewed as a difference in the *degree* of belief (Goldfried, 1979). Interestingly, clinical observations show that interventions attempting to change feelings by encouraging a client to "know better" or "know more" may not always work in the long run, because "feeling it"—emotionally believing it—refers to a *qualitatively* distinct meaning level. In the following sections, we consider why "knowing with the head" does not always lead to "knowing with the heart." We highlight evidence showing that while the emotional and the cognitive systems are certainly linked (which explains why pure cognitive interventions can change people's feelings, and why in-session emotional arousal can change people's beliefs without cognitive restructuring), the two systems can also function independently of one another. Although the emotional system can be affected by a change in the cognitive system (and vice versa), the emotional system also has a set of unique pathways that can be used to directly activate and change a client's emotional structures.

Evidence From Cognitive Science and Experimental Psychology

Evidence from cognitive science and experimental psychology has linked emotion to personal meanings and emphasized the role of implicit meanings in the process of change. For instance, several scientists have described two different types of knowledge that correspond to the discrete levels of information processing (e.g., Polanyi, 1966; Weimer, 1973). Specifically, "tacit" knowledge involves the emotional-affective system and represents the most archaic, deeply rooted structure common to all species. It provides an "immediate knowing response" that directs the organism to action. Even in the context of rational

thought and language, this mode of processing remains primary and most powerful. It is based on a primitive evolutionary learning and memory system, and it operates automatically. "Explicit" knowledge—a rational, logical knowledge system—is a most sophisticated, specialized, intentional, and inevitably partial system that needs constant support of an immediate tacit knowledge. Within this framework, cognition is conceptualized as a product of the ongoing match between the incoming data and existing meanings that result from the tacit and explicit interaction, and is assumed to be permeated with emotion. Similarly, Rosch (1983) wrote about logical versus prototypical mental systems, Tulving (1984) focused on the distinction between procedural, semantic, and episodic memory, and Paivio (1986, 1991) has presented an empirically validated dual coding theory that focuses on the distinction between verbal and nonverbal processes.

A similar distinction has been made by Tversky and Kahneman (1983), who have distinguished between a natural/intuitive and an extensional/logical mode of thinking and have demonstrated experimentally that heuristic processes (automatic and unconscious cognitive shortcuts) are closely connected to the natural/intuitive mode of thinking. Their work indicates that people often think in nonrational heuristic ways that are vulnerable to error and do not necessarily make sense from a rational point of view. Such heuristics are evident, as when knowledge about probability has no effect on behavior or when increased emotional consequences lead to irrational acts in the presence of "rational" arguments against such behavior.

All of the above conceptualizations emphasize the various differences between the two kinds of mental processes: their acquisition, their maintenance, their role in processing information, and most important, their differential significance in the process of change. Whereas the explicit (logical, declarative, semantic) processing may influence rational judgments, the implicit (tacit, procedural, prototypical, nonverbal) type of processing, by contrast, is closely linked to emotion and is considered primary in changing global experiential states.

The Interactive Cognitive Subsystems

A theory with important clinical implications has been proposed by Teasdale and Barnard (1993). Their interactive cognitive subsystems (ICS) perspective provides a comprehensive framework for understanding the two different levels of meaning from an information processing perspective. Specifically, the ICS distinguishes among three tiers of information: (1) raw sensory information (i.e., acoustic, visual, and body state), (2) structural description codes (i.e., structurally integrated sounds and objects) that represent repeated patterns extracted from the raw sensory information, and most relevant to our thesis, (3) meaning structures, which either are explicit and propositional or are implicit and implicational.

According to Teasdale and Barnard (1993), *propositional meaning* codes represent semantic concepts that correspond to linguistic statements, which can be assessed as true or false. Propositional meanings arise from repeated co-occurrences across patterns in structural speech and/or object codes that are assimilated at the level of structural description. *Implicational meaning* structures, on the other hand, tap a more global, holistic level of experience. For example, the concept "springtime" has both propositional and implicational meanings. The propositional meaning is denotative in nature and provides a conceptual definition of springtime without taking on emotional/connotative associations (e.g., a season between winter and summer, when leaves come out and it gets warmer, etc.). By contrast, the implicational meaning of "springtime" goes beyond conceptual definition and involves sensory and affective connotations that may tap a complex emotionally charged sense of rejuvenation and joy, the smell of grass and fresh flowers, the feeling of sunshine and warm wind, and the desire to live and be in love. Alternatively, for a person who associates spring with a traumatic loss, the implicational meaning of springtime may be colored by feelings of loss and hopelessness. Individuals construct their own implicational meanings of "springtime" by weighing these idiosyncratic associations, based on their emotional significance. This example clearly demonstrates how the straightforward linear connection between conceptual definition and personal meanings breaks down at the implicational level. Thus, unlike propositional entities, implicational codes cannot be adequately expressed in language, as there is no *direct* relationship between the words and related concepts.

Implicational meaning is challenging to describe, as it refers to what we infer from "reading between the lines." For instance, the propositional input "she is crying" may contain certain implicational meaning that is not present in the original sentence (e.g., that "she is upset" and that "she is hurting"). Implicational (nonverbal) meaning is difficult to convey in single sentences, and narratives, stories, and parables appear to be more appealing to the higher order meaning structures (Epstein, 1998). This

may explain a long-standing clinical observation of the value of metaphor and narratives in therapy, as well as empirical findings that the use of metaphor increases the persuasiveness of messages (Kahneman & Tversky, 1973).

The most intriguing characteristic of the implicational structures is their inherent affiliation with emotion. Repeated co-occurrences of sensory code patterns (e.g., the smell of grass) with situations that provoke emotion (e.g., loss of a loved one) are encoded at the implicational level as prototypes—features of emotionally charged situations integrated with corresponding sensory patterns. Over time, these implicational prototypes inherit the emotion-eliciting qualities that were originally restricted to particular sensory codes. An implicational meaning of a particular thematic content then becomes emotionally charged in its own right, and the original sensory input is no longer necessary to produce emotion. For instance, a mother who watched horror movies about clowns as a child may unexpectedly experience fear and apprehension 20 years later, as she sees a clown during a circus visit with her son. In this case, her fear is elicited in a situation (the circus) that has no clear sensory features of the situation that originally produced that emotion (horror movie). Although at the rational propositional level, she does not anticipate any real threat from the clown, the implicational meaning associated with clowns had become emotionally charged with a sense of evil and imminent danger.

The influence of sensory input and emotion on implicational meaning may also be illustrated with an experience the second author had during a trip to Poland, during which time he and his wife had visited Auschwitz and other concentration camps. It was an emotionally moving and highly personal experience, seeing the camps and viewing films about how people were taken there. When the time came to board the train to leave Poland, he experienced some difficulty in locating the car in which his compartment was located. Amidst the crowd and confusion, where nobody spoke English, he and his wife were finally instructed to walk toward the front of the train. As they found themselves at the end of the platform, their luggage fell off the cart, the whistle blew, and the train started to move. At the moment, he felt an overpowering surge of fear and helplessness, and experienced a clear sense that he and his wife were being taken to a concentration camp! Even though there was a part of him that knew the train was really going to Prague, it nonetheless felt as if they were being shipped off to the camp.

The above examples are reminiscent of classical conditioning, where the direct association between stimulus and response breaks down and, instead, the person's response is mediated by the emotionally charged meaning or association the stimulus carries for them. Because implicational prototypes are rarely explicit (i.e., they are rarely rational and are not adequately expressed through a specific behavior), sensory and emotional experiencing becomes the most direct way of accessing implicational meanings. This has strong implications for therapy, as clinical change is often produced at the implicational level (Teasdale, 1993). Restructuring cold cognitions (e.g., appealing to the rational mind by bringing the mother to verbalize a lack of real threat from the clown or by telling oneself that the train is really going to Prague) may temporarily relieve the fear but not necessarily eliminate the underlying emotional context of the experience loaded with a sense of dread. In order to change the core emotional meaning, working with hot cognitions becomes critical. As discussed below, there are several therapeutic techniques that may be useful in this work, including encouraging the detailed exploration of the phenomenology of the fear, elaborating on the implicit associations and expectations that have been formed, "holding" and "tolerating" the fear in session, and only then, at the height of emotional arousal, introducing an element of cognitive restructuring.

The ICS conceptualization of change explains why people sometimes have difficulty changing negative self-perceptions (e.g., as "hopeless losers"), even though they may be able to evaluate the truth value of their beliefs and even verbalize evidence to the contrary (e.g., having a stable job, loving family, respect from peers, etc.). Specifically, rather than explaining logical distortions in depressive thinking (e.g., overgeneralization) as a faulty cognitive process at the propositional level, the ICS views depressive thinking as an expression of an overall shift of emotional context at the implicational level. Thus, a depressed person's overall sense of self and environment is shifted to acquire a new (implicit/affective) character, reflecting themes of sadness, hopelessness, loss, and worthlessness. The meaning representation of any new experience or information is then colored by the implicit depressive character and, as a result, is interpreted in a "dysfunctional" way (i.e., consistent with its depressive context). In a vicious cycle, depressive thinking then gets worse because clients assign more weight to experiences that are consistent with their current "depressive" view of self (Teasdale & Barnard, 1993).

Indeed, clinical evidence supports this proposition by showing that depressive thinking decreases with the remission of the depressive episode (Teasdale & Rezin, 1978), even when the intervention does not directly target depressogenic cognitions (e.g., interpersonal psychotherapy, behavior therapy, and antidepressant medications). Further, evidence shows that depression is characterized by the overall shift in emotionally charged meaning structures versus a mere increase in negative thinking. For instance, studies on mood-congruous memory with experimentally induced moods (Teasdale & Fogarty, 1979; Teasdale, Taylor, & Fogarty, 1980) and studies of depressed patients with marked diurnal variation (Clark & Teasdale, 1982) show that memories of autobiographical events are better recalled when affective tone of the events matches the affective tone of the mood in which memory retrieval takes place. Bower (1981) reviewed evidence showing that subjects' interpretations of events are congruent with their ongoing mood states. Further, in a recent series of studies to examine whether negative thinking in depression reflected a generalized increase in the accessibility of negative constructs or a higher level shift in meaning structures, depressed subjects and normal controls were instructed to complete sentences that involved situations of social approval or personal achievement (Sheppard & Teasdale, 1996; Teasdale, Lloyd, & Hutton, 1998). The negative thinking view predicted that depressed patients would endorse more negative completions (e.g., "being disliked") because, according to this view, depressive state makes negative constructs more accessible. On the other hand, the ICS view predicted that depressed subjects would endorse more positive completions (e.g., "being liked") because, rather than biasing the valence of subject responses, depressive states are directly connected with and are likely to activate the emotionally loaded meaning structures related to social acceptance and achievement. The findings indicated that depressed subjects were significantly more likely to endorse positive completions, thus supporting the ICS view.

Evidence From Cognitive Neuroscience

Recent developments in cognitive neuroscience highlight the distinction between the cortically based and the subcortical information processing. In particular, recent neurophysiological findings suggest that emotion networks have direct anatomical connections to *both* the neurocortex (the "thinking brain") and to the amygdala, a subcortical structure that mediates motivation and action (the "emotional brain"). Until recently, it had been assumed that raw sensory information is first received by the thalamus, which then routes signals to the neurocortex, where signals are processed and sorted into comprehensive meanings. From the thalamus, information is assumed to travel to the amygdala, and to the rest of the brain and body to initiate the appropriate response. Although this is how it works most of the time, Joseph LeDoux (1994, 1995, 1996, 1998) recently uncovered a short neural pathway that leads *directly* from the thalamus to the amygdala. This smaller and shorter pathway allows the amygdala to receive direct input from sensory organs and initiate response *before* the information is registered by the neurocortex. In one of his experiments, LeDoux (1993) severed the auditory cortex of the rats and exposed them to a tone paired with electric shock. He found that rats learned to fear the tone, even thought it never registered in the cortex; they learned to fear the tone without any cognitive involvement. According to LeDoux, the degree of the amygdala arousal increases with the increased emotional significance of the stimulus (i.e., signals that have higher emotional significance are more likely to be responded to by the amygdala). Thus, events that are highly emotional are likely to be registered at both subcortical (emotional) and cortical (thinking) levels.

Morris, Öhman, and Dolan (1998) studied human subjects' emotional responses by examining neural activity in the amygdala in a series of brain imaging studies. Subjects were shown slides of two angry faces, one of which (the target) was previously conditioned to a burst of noise. In half of the trials, the target was masked: a slide with the target face was presented for less than 40 milliseconds (which did not allow for conscious perception) and was followed immediately by a slide with a neutral mask. They found that subjects' emotional responses to the masked versus unmasked targets activated neurologically distinct pathways. While the unmasked targets elicited neural response in the left, but not the right amygdala, the aversively conditioned masked targets produced neural activity in the right, but not the left amygdala. These results show that different parts of the amygdala respond to information that is emotionally "explicit" versus emotionally "implicit."

These recent discoveries support the qualitative distinction between the cortically based and the subcortical levels of information processing. They challenge the notion that all emotional reactions are mediated by cortical processes, and imply that certain meanings, memories,

and responses can be initiated without any cognitive participation or awareness. Moreover, this work appears to have has direct implications for psychotherapy: In order to restructure emotional meanings, interventions must target both cortical (e.g., rational restructuring) and subcortical levels (e.g., exploring implicit meanings via increasing in-session emotional arousal).

Bioinformational Theory of Emotion

In a recent article, Peter Lang (1998) summarized two decades of research and theory on his bioinformational theory of emotion. This comprehensive, integrative framework conceptualizes emotion as a complex system of interconnections between the *stimulus* (sensory-based perceptions), *response* (behavioral, physiological, and linguistic reactions to the stimulus), and *meaning* units (both semantic and nonsemantic processes). The model assumes that the emotion network must be fully activated in order to be restructured, and that it is activated by input that matches its original representations; the more elements that are activated, the greater the likelihood of network activation.

Of particular interest is Lang's special emphasis on the role of nonsemantic, subcortical elements of an emotion network. Lang suggests that the emotion network is closely connected to evolutionary-based, survival-related states and is not fundamentally language based, indicating "that is it is not dependent on language for its activation, nor does its processing depend on a consciously apprehended causal connectedness" (Lang, Cuthbert, & Bradley, 1998, pp. 657–658). He notes further that network activation "does not depend on input from true events (e.g., actual danger or pain). Representations in the net may be broadly cued externally by language descriptions, moving and still pictures, diagrams, and other symbolic stimuli remote from the natural context; or internally, by semantic association, neuromuscular patterns, and autonomic states" (p. 658).

Lang's work has been used in clinical applications of CBT and has been found to enhance both assessment and treatment of anxiety disorders. For instance, Cook, Melamed, Cuthbert, McNeil, and Lang (1998) used the *imagery paradigm* to study subjects' emotional responses to neutral and feared stimuli. They measured subjects' autonomic arousal along with their subjective ratings of affective arousal while they were presented with feared and neutral stimuli. Although subjects' verbal ratings of fear were similar across the groups, measures of autonomic arousal (i.e., changes in heart rate and skin conductance) indicated that subjects with a simple phobia showed the strongest physiological reactivity, and subjects with panic disorder, the weakest. In the treatment of pathological anxiety, the increase in heart rate during fear imagery and exposure have been found to be predict positive outcome (Lang et al., 1998).

In his more recent work, Lang shifted from the *imagery paradigm* to a more sophisticated *startle probe paradigm,* which involves both cortical (slides) and subcortical (tone probe) emotional stimuli. Within this paradigm, subjects are presented with "emotional primers" (i.e., pictures or scripts that vary on the dimensions of arousal and valence) and are then presented with a visual or acoustic startle probe. The difference between this new and the old *imagery paradigm* is that it allows one to measure people's reaction to the secondary emotional stimulus (i.e., probe) while the primary emotional reaction is already activated. Using the startle probe paradigm, Bradley, Cuthbert, and Lang (1996) found that emotional states induced by the primary stimulus (i.e., picture) *primed* subjects' motivational circuits in terms of the direction and magnitude of emotional arousal (i.e., subjects' startle response was greater when they were viewing the most aversive pictures). These findings suggest that primary emotional states can directly affect secondary emotional reactions.

Lang's recent findings highlight the distinction between the primary and secondary emotions. While primary emotions are contexts (just like picture-induced states in Lang's study, or the second author's state of frustration and helplessness while confronted with the departing train), secondary emotions can be conceptualized as emotional responses to environmental stimuli that occur within the contexts of primary emotion (e.g., the sensation of overwhelming fear in response to the sound and sight of the train). Given that clinical symptoms are often manifested as secondary emotions (Greenberg & Safran 1989), CBT therapists may be able to enhance the long-term effectiveness of CBT interventions by assessing and challenging emotional *contexts* in which the target symptoms are embedded.

EMOTION AND COGNITIVE-BEHAVIOR THERAPY: CLINICAL IMPLICATIONS.

Although most cognitive-behavioral treatments aim to reduce symptomatic emotion within and between therapy sessions, several existing CBT applications make use of the facilitative function of in-session emotional experiencing.

For instance, cognitive-behavior therapists increase patients' in-session affective arousal in order to loosen the hold of patients' old habits and beliefs by either having patients repeatedly confront fear-producing stimuli (e.g., in vivo exposure for anxiety reduction) or by incorporating experiential techniques into traditional CBT (e.g., using the two-chair technique for cognitive restructuring). We would suggest, however, that cognitive-behavioral interventions may be further enhanced by distinguishing between the propositional constructs (e.g., depressed thinking) and the implicational contexts (i.e., higher level meaning contexts associated with depression) in which symptoms are experienced. With its long tradition of extrapolating from basic research, CBT can readily benefit from developments in emotion theory. In this context, we turn to a consideration of specific therapeutic strategies that make use of emotional processing and implicit meanings within CBT.

Emotional Arousal in Treating Anxiety and Bereavement

Anxiety reduction is the major CBT application that considers the role of emotion, and *in vivo* and imaginal exposure are common CBT techniques that make use of in-session emotional arousal. Interestingly, exposure is considered an orthodox behavioral treatment strategy that predates CBT. Yet, it comes closer than many cognitive interventions in targeting higher order meaning structures, as it makes most use of intense emotional arousal inherent in exposure exercises.

Drawing on Lang's (1979) bioinformational theory of fear, Foa and Kozak (1986, 1998) have suggested that fear is represented in memory structures that contain three types of information: information on stimulus, response, and meaning elements of fear. In order to reduce fear, the fear structure must be first activated, and next, information incompatible with the original structure must be presented to the client. For the emotional change to occur, the new information (both cognitive and affective) has to be integrated into the evoked information structure via emotional processing. Research evidence seems to confirm this theory, and exposure to corrective information remains one of the most powerful applications of CBT, as well as one of the most effective treatments for anxiety disorders (Foa & Kozak, 1986). Of particular importance to our thesis is the notion that within the exposure model, emotion can be modified only when the emotion structure is sufficiently activated (Foa & Kozak, 1986; Lang, 1979; Rachman, 1980). Whereas cognitive avoidance, insufficient duration, or vividness of exposure may impede emotional processing, physiological arousal is considered essential for accessing and restructuring emotional structures. In fact, evidence indicates that emotional arousal during exposure may be critical in producing change, and that without an adequate level of arousal, exposure procedures are less effective (Lang, 1979).

Barlow (1988) has taken the concept of exposure a step further by introducing the concept of "affective therapy" for fear and anxiety. Whereas classic behavioral theories of exposure aim to increase in-session anxiety in order to eventually extinguish it, Barlow speculates that the crucial function of in-session emotional arousal during exposure is to access and modify *action tendencies* associated with anxiety (vs. extinguishing anxiety per se). For instance, he argues that the anxious apprehension central to anxiety disorders is not a specific behavior, but rather is readiness to behave, which may eventually produce behavioral or cognitive avoidance. Barlow suggests that the "hot" anxious apprehensive cognitions that are marked by a sense of helplessness, worry, and chaos represent the implicit emotional contexts of anxiety disorders and are to be the main target of CBT interventions. He suggests that these contexts can be targeted, at first, through the process of attention-narrowing, which helps to increase the salience of these cognitive-affective structures, and then through repeated exposure, which over time helps the client help to develop the sense of control and power. Interestingly, he speculates that a procedure such as relaxation or the use of humor that is used by CBT therapists to counteract anxiety may be useful not because of its arousal-reducing properties or change in self-statements, but because it directly provides an alternative action tendency (e.g., body posture, facial expressions) that can replace the arousal.

Several other CBT interventions target the emotional contexts of clinical symptoms rather than clinical symptoms per se. For instance, the posttraumatic stress disorder (PTSD) literature emphasizes the critical role of emotional processing in the effective cognitive-behavioral treatment of PTSD. According to this model, victims of chronic PTSD experience a shift in the pretrauma meanings of the world and oneself, and tend to see the world as extremely threatening and themselves as very fragile, unable to handle stress (Foa & Jaycox, 1998). It is suggested that cognitive-behavioral interventions must help

facilitate emotional processing (i.e., restructuring implicational meanings) of the trauma through exposure to the memory of the traumatic event, support a focus on emotionally significant content, obtain an understanding of conscious and unconscious meanings of the trauma, and ultimately facilitate cognitive restructuring.

Another CBT application that focuses on emotional contexts by increasing in-session emotional arousal comes from bereavement work. For example, Fleming and Robinson (1991) conceptualize grief as an adaptive and expected reaction to loss. The emotional component of this reaction is viewed in the context of a complex meaning network and is seen as reflecting an adaptive process. In therapy, the goal is to assist a client in acknowledging the affective dimensions of loss, identifying factors blocking full emotional experiencing, and exploring the personal meaning of death. As is the case with PTSD, such interventions require a focus beyond the cognitive content of grief per se and deal with clients' fundamental personal meanings of self and the world. The emotional aspect of grief becomes a primary focus in grief work, and emotional experiencing and expression become a focus of therapeutic exploration.

Emotional Arousal to Enhance Meaning Structures

Goldfried (1979) has argued that, in therapy, semantic information will not be incorporated into patients' existing cognitive structures unless it becomes meaningful experientially, and recommends using techniques involving *cognitive-affective associations* (e.g., asking a patient to complete a sentence such as "If I fail, it means . . ."), as opposed to direct rational instruction or query (e.g., "What is going through your head when you fail?"). He also suggests the use of experiential techniques that move away from a focus on discrete behaviors and cognitions and attempt to target emotion-related implicational meaning structures.

Today, several CBT applications use experiential techniques to facilitate cognitive and behavioral restructuring. For instance, Goldfried (1988) described the use of the experiential *two-chair technique* to facilitate cognitive restructuring. In this application, patients are instructed to identify and to have a dialogue between their unrealistic and realistic meaning structures. They are encouraged to speak from only one meaning structure at a time, switching chairs every time the other side contributes to the dialogue. The goal is to provide a more direct access to patients' hot cognitions than traditional discussion, using the increased emotional arousal that typically accompanies this exercise. A clinical vignette highlighting the essence of this work was recently presented in the American Psychological Association film series as a cognitive-affective behavior therapy videotape (Goldfried, 1996). In the film, the in-session emotional expression is used to help access and destabilize client's old cognitive constructions. The two-chair technique is used to activate the client's cognitive-affective meaning structures, which is then integrated with cognitive restructuring, skill building role playing, and between-sessions experiences.

Guided imagery is another experiential approach that has been used in behavioral procedures, such as systematic desensitizations and covert modeling. In an application described by Edwards (1990), former adult victims of child abuse are instructed to emotionally relive images of abuse in session. In imagery, the element of control that they now have as adults is introduced into the higher order meaning structure associated with abuse, and a new, more adaptive meaning is eventually adopted. Intense emotional arousal that accompanies imagery is believed to help to activate higher order meanings and to destabilize the network associated with them.

Kennedy-Moore and Watson (1999) have suggested a combination of specific therapeutic techniques to enhance clients' emotional processing skills in CBT. *Focusing* involves having clients attend to the here-and-now inner experience and to symbolize their feelings in words or pictures. Once clients are able to symbolize their experience, *empathic responding* can be used to highlight the essence of clients' stories and to uncover the unstated feelings that remain unarticulated by the clients. *Evocative empathic responses*—creative conjectures in which therapists use their knowledge of their clients to "extend" their narratives by using vivid, creative language (e.g., metaphor)—can be used to shift clients' level of processing from intellectualized (rational) to a deeper, emotional level. Further, *homework assignments* can be used to facilitate clients' emotional processing between session. For example, keeping diaries of feelings can enhance their awareness of their inner states.

Another intervention that can be used to enhance emotional processing in CBT involves *destabilization* of clients' implicit meaning structures (Hayes & Strauss, 1998), a phenomenon that may explain why in therapy "things sometimes need to get worse before they get bet-

ter" (e.g., Bein & Levenson, 1994). Destabilization has been defined as the extent of variability in a client's functioning, including signs of in-session distress (e.g., anxiety, panic, dread), external distress (changes in sleep and appetite, somatic complaints), and shifts in old patterns (reports of insights, emergence of new beliefs, feelings, and behaviors). In CBT, this process can be facilitated by deliberately enhancing a client's awareness of in-session emotional disturbance as a problematic trait or behavior is being challenged. For instance, a therapist might focus on a client's emotional experiencing in the here and now, encourage in-session emotional expression, or use narrative and metaphor. Evidence indicates that increasing clients' emotional experiencing is directly linked to the destabilization and reorganization of personal meaning structures (Goldfried, 1979; Greenberg & Safran, 1987; Hager, 1992; Mahoney, 1980, 1991). Hayes and Strauss (1998) found that the degree of client destabilization in sessions of cognitive therapy was the strongest predictor of outcome in depressed patients and was associated with significant reduction in depression and better global adjustment at post-treatment. They found that destabilization was strongly associated with the in-session affective expression and was manifest as the initial worsening of the symptoms, followed by shifting of old maladaptive patterns, which then led to eventual improvement.

Although the increasing recognition of the role of affect in CBT is evidenced by the growing body of empirical work and theoretical writings on the topic, the role of in-session emotional processing within CBT remains largely underresearched. On the empirical front, there are but a few recent reports pointing to the significance of emotional processes in cognitive therapy. For instance, Castonguay, Goldfried, and Hayes (1996) found a positive relationship between clients' in-session emotional experiencing and the reduction of depression symptoms by the end of therapy. Similarly, Castonguay, Pincus, Agras, and Hines (1998) report that patients' increased emotional experiencing during group cognitive-behavioral treatment for binge eating disorder predicted positive treatment outcome. Interestingly, they found that patients' early negative emotions regarding the group process predicted positive response to treatment. As indicated above, Hayes and Strauss (1998) found that increase in emotional distress was positively correlated to symptom reduction in cognitive therapy for depression. Although these findings hold promise, the overall effectiveness of the above-discussed therapeutic techniques, as well as considerations of how, when and with whom they are to be applied, remains an empirical question.

CONCLUSIONS

With the growing interest in the role of affective processes in cognitive and behavioral change, and with the emerging attempts to incorporate them into behavior therapy, the decade of affect in behavior therapy is finally beginning to emerge. While it is only in its early stage of development, the contemporary cognitive-behavioral theory is beginning to take notice of the integrative trends in emotion theory and basic research and, as a result, to adopt a more integrative stance toward emotion. At the same time, the long-term effectiveness of CBT interventions may be further enhanced by making more use of the qualitative distinction between intellectual and emotional modes of mental processing. In this article, we reviewed empirical and theoretical evidence pointing to the importance of this distinction in therapy, and discussed some specific therapeutic techniques that can be used by CBT therapists in targeting implicit emotional meanings.

The growing acknowledgment of the primary importance of higher order meaning structures in the change process and the convergence of views on the two types of meaning structures (cognitive and emotional) are particularly impressive, especially in light of the diversity of methods (inductive vs. deductive) employed by those who have made this distinction. The emerging consensus is that there are two basic systems involved in information processing: "hot," or implicit/experiential, and "cold," cognitive/propositional that is more related to logical thinking. Furthermore, the "hot" system seems to be closely linked to emotion and appears to be involved in the process of change.

In contrast to the traditional cognitive-behavioral conceptualization of meanings as beliefs, assumptions, and expectations, basic research in cognitive psychology and neuroscience shows that "hot" meanings are largely implicit and can emerge indirectly through behavioral reenactment and associated affective states. These core affective structures may involve different neural processes and may be subject to different change principles than those involving cognitions. Whereas working with cold cognitions can change explicit meanings, working with hot cognitions is more likely to change meanings that are implicit in nature. Thus, in-session emotional arousal may

be viewed as essential in exerting pressures toward reorganization of underlying emotional themes, assimilation of new information, and formation of new implicit meaning structures.

In light of growing evidence that points to the need for an affective expansion in CBT, cognitive-behavioral researchers are beginning to take promising steps toward understanding and making use of emotion in therapy. Although the relevance of affective arousal to the efficacy of cognitive-behavioral interventions remains underresearched, with growing empirical evidence —both basic and applied —we may be able to further understand and measure the contribution of an emotional/experiential component to CBT.

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REFERENCES

Arnold, M. B. (1960). *Emotion and personality.* New York: Columbia University Press.

Barlow, D. H. (1988). *Anxiety and its disorders: The nature and treatment of anxiety and panic.* New York: Guilford Press.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression.* New York: Guilford Press.

Bein, E., & Levenson, H. (1994, July). *Outcome and follow-up data from the Vast Project.* Paper presented at the annual meeting of the Society for Psychotherapy Research, York, England.

Bower, G. H. (1981). Mood and memory. *American Psychologist, 36,* 129–148.

Bradley, M. M., Cuthbert, B. N., & Lang, P. J. (1996). Lateralized startle probes in the study of emotion. *Psychophysiology, 33,* 156–161.

Castonguay, L. G., Goldfried, M. R., & Hayes, A. M. (1996). Predicting the effect of cognitive therapy for depression: A study of unique and common factors. *Journal of Consulting and Clinical Psychology, 64,* 497–504.

Castonguay, L. G., Pincus, A. L., Agras, W. S., & Hines, C. E. (1998). The role of emotion in group cognitive-behavioral therapy for binge eating disorder: When things have to feel worse before they get better. *Psychotherapy Research, 8,* 225–238.

Clark, D. M., & Teasdale, J. D. (1982). Diurnal variation in clinical depression and accessibility of memories of positive and negative experiences. *Journal of Abnormal Psychology, 91,* 87–95.

Clyman, R. B. (1991). The procedural organization of emotions: A contribution from cognitive science to the psychoanalytic theory of therapeutic action. *Journal of the American Psychoanalytic Association, 39,* 349–382.

Cook, E. W., III, Melamed, B. G., Cuthbert, B. N., McNeil, D. W., & Lang, P. J. (1998). Emotional imagery and the differential diagnosis of anxiety. *Journal of Consulting and clinical Psychology, 56,* 734–740.

Edwards, D. J. A. (1990). Cognitive therapy and the restructuring of early memories through guided imagery. *Journal of Cognitive Psychotherapy: An International Quarterly, 4,* 33–50.

Epstein, S. (1994). Integration of the cognitive and psychodynamic unconscious. *American Psychologist, 49,* 709–724.

Epstein, S. (1998). Cognitive-Experiential Self Theory: A dual process personality theory for diagnosis and psychotherapy. In R. F. Bornstein & J. M. Masling (Eds.), *Empirical perspectives on the psychoanalytic unconscious.* Washington, DC: American Psychological Association.

Fleming, S., & Robinson, P. J. (1991). The application of cognitive therapy to the bereaved. In T. M. Vallis, J. L. Howes, & P. C. Miller (Eds.), *The challenge of cognitive therapy: Applications to nontraditional populations* (pp. 135–158). New York: Plenum Press.

Foa, E. B., & Jaycox, L. H. (1998). Cognitive-behavioral treatment of posttraumatic stress disorder. In Spiegel (Ed.), *Psychotherapeutic frontiers: New principles and practices.* Washington, DC: American Psychiatric Press.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99,* 20–35.

Foa, E. B., & Kozak, M. J. (1998). Clinical applications of bioinformational theory: Understanding anxiety and its treatment. *Behavior Therapy, 29,* 675–690.

Goldfried, M. R. (1979). Anxiety reduction through cognitive-behavioral intervention. In P. C. Kendall & S. P. Hollon (Eds.), *Cognitive-behavioral interventions: Theory, research, and procedures* (pp. 65–77). New York: Academic Press.

Goldfried, M. R. (1988). Application of rational restructuring to anxiety disorders. *The Counseling Psychologist, 16,* 50–68.

Goldfried, M. R. (1996). *Cognitive-affective behavior therapy (videotape).* Washington, DC: American Psychological Association.

Greenberg, L. S., & Paivio, S. (1997). *Working with emotions: Changing core schemes.* New York: Guilford Press.

Greenberg, L. S., Rice, L. N., & Elliott, R. (1993). *Facilitating emotional change: The moment-by-moment process.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1984). Integrating affect and cognition: A perspective on the process of therapeutic change. *Cognitive Therapy and Research, 8,* 559–578.

Greenberg, L. S., & Safran, J. D. (1987). *Emotion in psychotherapy: Affect, cognition, and the process of change.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1989). Emotion in psychotherapy. *American Psychologist, 44,* 19–29.

Hager, D. (1992). Chaos and growth. *Psychotherapy, 29,* 378–384.

Hayes, A. M., & Strauss, J. L. (1998). Dynamic systems theory as a paradigm for the study of change in psychotherapy: An application of cognitive therapy for depression. *Journal of Consulting and Clinical Psychology, 66*, 939–947.

Izard, C., Ackerman, B. P., & Schultz, D. (1999). Independent emotions and consciousness: Self-consciousness and dependent emotions. In J. A. Singer & P. Salovey (Eds.), *At play in the fields of consciousness: Essays in honor of Jerome L. Singer* (pp. 83–102). Mahwah, NJ: Erlbaum.

Kahneman, D., & Tversky, A. (1973). On the psychology of prediction. *Psychological Review, 80,* 237–251.

Kennedy-Moore, E., & Watson, J. C. (1999). *The expression and nonexpression of emotion* (pp. 205–224). New York: Guilford Press.

Lang, P. J. (1979). A bio-informational theory of emotional imagery. *Psychophysiology, 16,* 496–512.

Lang, P. J., Cuthbert, B. N., & Bradley, M. M. (1998). Measuring emotion in therapy: Imagery, activation and feeling. *Behavior Therapy, 29,* 655–674.

Lazarus, R. S. (1968). Emotions and adaptation: Conceptual and empirical relations. In W. J. Arnold (Ed.), *Nebraska symposium on motivation* (pp. 175–266). Lincoln: University of Nebraska Press.

Lazarus, R. S. (1998). *Fifty years of research and theory of R. S. Lazarus: An analysis of historical and perennial issues*. Mahwah, NJ: Erlbaum.

LeDoux, J. E. (1993). Emotional memory systems in the brain. *Behavioural Brain Research, 58,* 69–79.

LeDoux, J. E. (1995). Emotion: Clues from the brain. *Annual Review of Psychology, 46,* 209–235.

LeDoux, J. E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. New York: Simon and Schuster.

LeDoux, J. E. (1998). Fear and the brain: where have we been and where are we going? *Biological Psychiatry, 44,* 1229–1238.

Leventhal, H. (1979). A perceptual-motor processing model of emotion. In P. Pilner, K. Blankstein, & I. M. Spiegel (Eds.), *Perception of emotion in self and others*. New York: Plenum Press.

Mahoney, M. J. (1980). Psychotherapy and the structure of personal revolutions. In M. J. Mahoney (Ed.), *Psychotherapy process* (pp. 157–180). New York: Plenum Press.

Mahoney, M. J. (1991). Human change processes: *The scientific foundations of psychotherapy.* New York: Basic Books.

Mohr, D.C., Shoham-Solomon, V., Engle, D., & Beutler, L. E. (1991). The expression of anger in psychotherapy for depression: Its role and measurement. *Psychotherapy Research, 1,* 124–134.

Morris, J. S., Öhman, A., & Dolan, R. J. (1998). Conscious emotional learning in the human amygdala. *Nature, 393,* 467–470.

Paivio, A. (1986). *Mental representations: A dual coding approach*. New York: Oxford University Press.

Paivio, A. (1991). Dual coding theory: Retrospect and current status. *Canadian Journal of Psychology, 45,* 255–287.

Paivio, S. C., & Greenberg, L. S. (1995). Resolving "unfinished business" : Efficacy of experiential therapy using empty-chair dialogue. *Journal of Consulting and Clinical Psychology, 63,* 419–425.

Polanyi, M. (1966). *The tacit dimension*. Garden City, NY: Doubleday.

Rachlin, H. (1976). *Behavior and Learning*. San Francisco: Freeman.

Rachman, S. (1980). Emotional processing. *Behavior Research and Therapy, 18,* 51–60.

Rosch, E. (1983). Prototype classification and logical classification: The two systems. In E. Scholnick (Ed.), *New trends in conceptual representation: Challenges to Piaget's theory* (pp. 73–86). Hillsdale, NJ: Erlbaum.

Schachter, S., & Singer, J. E. (1962). Cognitive, social and physiological determinants of emotional state. *Psychological Review, 69,* 379–399.

Sheppard, L. C., & Teasdale, J. D. (1996). Depressive thinking: Changes in schematic mental models of self and world. *Psychological Medicine, 26,* 1043–1051.

Skinner, B. F. (1953). *Science and human behavior.* New York: Macmillan.

Teasdale, J. D. (1993). Emotion and two kinds of meaning: Cognitive therapy and applied cognitive science. *Behaviour Research and Therapy, 31,* 339–354.

Teasdale, J. D., & Barnard, P. J. (1993). *Affect, cognition, and change: Re-modeling depressive thought*. Hillsdale, NJ: Erlbaum.

Teasdale, J. D., & Fogarty, S. J. (1979). Differential effects of induced mood on retrieval of pleasant and unpleasant events from episodic memory. *Journal of Abnormal Psychology, 88,* 248–257.

Teasdale, J. D., Lloyd, C. A., & Hutton, J. M. (1998). Depressive thinking and dysfunctional schematic mental models. *British Journal of Clinical Psychology, 37,* 247–257.

Teasdale, J. D., & Rezin, V. (1978). The effects of reducing frequency of negative thoughts on the mood of depressed patients—tests of a cognitive model of depression. *British Journal of Social and Clinical Psychology, 17,* 65–74.

Teasdale, J. D., Taylor, R., & Fogarty, S. J. (1980). Effects of induced elation depression on the accessibility of memories of happy and unhappy experiences. *Behaviour Research and Therapy, 18,* 339–346.

Tulving, E. (1984). How many memory systems are there? *American Psychologist, 40,* 385–398

Tversky, A., & Kahneman, D. (1983). Extensional versus intu-

itive reasoning. The conjunction fallacy in probability judgment. *Psychological Review, 90,* 293–315.

Watson, J. B. (1924). *Psychology from a standpoint of a behaviorist,* 2nd ed. Philadelphia: Lippincott.

Weimer, W. B. (1973). Psycholinguistics and Plato's paradoxes of the Men. *American Psychologist, 28,* 15–33.

Westen, D. (1999). Psychodynamic theory and technique in relation to research on cognition and emotion: Mutual implications. In T. Dalgleish & M. Power (Eds.), *Handbook of cognition and emotion* (pp. 727–746). New York: Wiley.

Wilson, G. T. (1982). Psychotherapy process and procedure: The behavioral mandate. *Behavior Therapy, 13,* 291–312.

Wiser, S., & Goldfried, M. R. (1993). Comparative study of emotional experiencing in psychodynamic-interpersonal and cognitive-behavioral therapies. *Journal of Consulting and Clinical Psychology, 61,* 892–895.

Young, J. E. (1999). *Cognitive therapy for personality disorders: A schema-focused approach.* Sarasota, FL: Professional Resource Press.

Zajonc, R. B. (1980). Feeling and thinking. Preferences need no inferences. *American Psychologist, 35,* 151–175.

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