Available online at www.sciencedirect.com

ScienceDirect

Cognitive and Behavioral Practice 26 (2019) 201-213

Cognitive and Behavioral Practice

www.elsevier.com/locate/cabp

Affect Labeling to Facilitate Inhibitory Learning: Clinical Considerations

Elizabeth H. Marks, Rosemary S.W. Walker, Heidi Ojalehto, Michele A. Bedard-Gilligan, Lori A. Zoellner, *University of Washington*

Exposure-based treatments known to be effective for a wide range of psychopathology are thought to work via inhibitory learning, where new learning acquired during exposure exercises inhibits previously learned fear and avoidance responses. One way in which this inhibitory learning may be enhanced is through affect labeling, during which clients verbalize their internal emotional experiences. Theoretically, affect labeling may be a subtle, implicit form of emotion regulation and may facilitate more explicit forms of extinction learning. Experimental research suggests that affect labeling may lead to attenuated fear responses to emotionally evocative stimuli in healthy samples and may be a helpful strategy in reducing physiological arousal experienced during exposure tasks, particularly for clients with inhibitory deficits. Research with clinical samples is limited and mixed, at best. Case examples illustrate how affective labeling may help get a client "unstuck" from unproductive processing loops, can contribute to shifts in perspective and meaning making, and may modulate distress and promote distress tolerance. We argue that routine use of affect labeling in clinical care is premature. When used, it should be employed strategically within a broader case conceptualization and may be of a limited benefit beyond what is already employed in quality exposure therapy.

Exposure is a common technique used in cognitive-behavioral therapy, particularly for anxiety and stressor-related disorders. The basic tenets of exposure include emotional engagement with the fear-provoking or avoided stimuli and systematic prolonged and repeated exposure to the stimuli, with the primary goal of learning new, corrective information such as its lack of dangerousness or the tolerability of the related distress. Although exposure-based techniques are used to treat a wide range of psychopathology including specific phobias, panic disorder, social anxiety disorder, posttraumatic stress disorder (PTSD), depressive disorders, and obsessive-compulsive disorder (OCD), the approach differs depending on the client's primary presenting problem and symptom presentation. Exposure may be conducted as real-life exposures to situations, places, or objects, termed "in vivo exposure," or via exposure to thoughts, memories, or imagined situations, termed "imaginal exposure." Individuals also learn to block maladaptive responses to feared stimuli such as the use of of safety signals and compulsive behaviors as a part of exposure. Procedures can range from starting with mildly to moderately distress-evoking stimuli and progressing to the most intense stimuli, termed "graduated exposure," to starting with the most intense stimuli, sometimes termed "flooding." In general, exposure-based techniques are some of the strongest empirically supported interventions for anxiety, distress, and traumatic stress-related disorders (e.g., Bisson, Roberts, Andrew, Cooper, & Lewis, 2013; Institute of Medicine, 2008; Norberg, Krystal, & Tolin, 2008; Powers & Emmelkamp, 2008). As the research focus has shifted from efficacy to effectiveness and dissemination, research now focuses on understanding for whom exposure works best, why it works, and how to optimize exposure treatments in order to enhance treatment outcomes.

More specifically, recent work has emphasized understanding how we can enhance corrective learning (e.g., Craske et al., 2008; Craske, Treanor, Conway, Zbozinek, & Vervliet, 2014). Learning models have shifted from conceptualizing the processes involved in exposure as erasing the original association between conditioned stimuli (CS)—that is, neutral stimuli (e.g., dog approaching or running)—which serve as predictors of an unconditioned stimulus (US; e.g., dog bite), to learning of a new inhibitory association that is contextually gated (e.g., Bouton, 2002; Bouton, Westbrook, Corcoran, & Maren, 2006; Bouton, Winterbauer, & Todd, 2012). This suggests that repeated exposure to nondangerous stimuli that were initially learned to predict danger (CS) creates a new association that then inhibits the conditioned fear

Keywords: affect labeling; exposure; inhibitory learning; emotion regulation; PTSD

response, making the meaning of the CS ambiguous. The individual then uses information around him or her—that is, context (e.g., friends' reactions)—to determine whether the CS is signaling danger or no danger. This new corrective learning is considered weaker, is considered weaker learning learning, with the default being the earlier excitatory danger association. The weakness of this new inhibitory association and its contextual gating make return of the original fear (e.g., relapse) a possibility. More recently, some have argued that memory reconsolidation—or the occurrence of fear extinction within a specific time frame after the activation of a fear memory when the memory is particularly vulnerable to updating via protein synthesis—may actually disrupt the original learning rather than create new inhibitory learning, potentially reducing the likelihood of a later return of fear (e.g., Schiller et al., 2010). Augmentation strategies, whether altering the original learning or strengthening new inhibitory learning, may enhance outcomes and prevent relapse.

Theoretical Underpinnings of Affect Labeling

One specific technique that has been proposed to potentially enhance this new inhibitory learning is known as "affect labeling." As the name suggests, affect labeling refers to verbalizing or putting words to one's emotional experiences. Affect labeling is not proposed to be a standalone process accounting for improvement during exposure therapy. Further, as will be reviewed below, the evidence for its ability to substantially alter subjective experience or long-term outcomes is weak at present. Nevertheless, theories of how affect labeling works have been proposed and are reviewed briefly here.

Activation of higher cortical regions during affect labeling such as the right ventrolateral prefrontal cortex (PFC) may facilitate a subtle form of emotion regulation (e.g., Ochsner & Gross, 2005) or more broadly facilitate executive functioning modulation during exposure exercises, consistent with enhanced PFC activation observed during extinction learning (e.g., Phelps, Delgado, Nearing, & LeDoux, 2004). Labeling one's emotional state in such a way as it disrupts the experience of the emotion may be an implicit, incidental rather than explicit, intentional form of emotion regulation (e.g., Burklund, Creswell, Irwin, & Lieberman, 2014; Niles, Craske, Lieberman, & Hur, 2015). This may differ from explicit strategies such as cognitive reappraisal or expressive suppression. As suggested by LeDoux (2015), exposure therapy is hypothesized to involve both extinction of implicit, fear-related memories and changes in maladaptive beliefs that result from more explicit, or conscious, memory processes. Thus, affect labeling may facilitate these more implicit processes rather than the explicit, conscious memory processing in extinction.

Facilitation of these implicit extinction processes may then, in turn, facilitate more conscious, explicit extinction processes. Labeling of emotions may be a conduit to enable cognitive emotional processing—namely, the theoretical process by which emotional disturbances are thought to be tolerated and eventually decline, allowing for other experiences and behavior to occur without disruption (Foa, Huppert, & Cahill, 2006; Foa & Kozak, 1986; Rachman, 1980, 2001). As reviewed below, affect labeling may enhance this process by interrupting intrusive processes (e.g., when a client is "stuck"), by helping shift the meaning of the learned associations themselves, and by increasing distress during the exposure exercises. These are theorized ways that affect labeling may enhance exposure, rather than empirically tested ways in which it may function.

Interrupting Unproductive Loops: Getting "Unstuck"

Affect labeling may serve as a technique to help clients get "unstuck" from repetitive loops in negative thinking. Repetitive negative thinking, as seen in worry or rumination, is a transdiagnostic construct common across a wide range of psychopathology, including anxiety disorders, traumatic stressor-related disorders, and depression (e.g., McEvoy, Watson, Watkins, & Nathan, 2013). When clients stay stuck in these thought patterns, they are unable to access new information and instead the unproductive processing loop is reactivated again and again, leading to what some have termed a "downward spiral," maintaining or increasing negative emotions. Even if potentially corrective information that could inhibit the undesired response is presented, given these unproductive processing loops, the information is most likely to be assimilated into the current set of maladaptive beliefs rather than acting as new, perspective-shifting information (Hayes, 2015). Thus, techniques that interrupt or alter these patterns are imperative to changing emotional and behavioral responses. Accordingly, affect labeling may serve to interrupt repetitive, intrusive processes, resulting in the patient getting "unstuck" from the unhelpful loop and thereby allowing for new learning to occur.

Creating Expectancy Violations and Meaning Making

A second way in which affect labeling may promote constructive processing is setting up expectancy violations and making the meaning of the CS ambiguous (e.g., Craske et al., 2014; Hofmann, 2008). An expectancy violation is when the actual frequency or intensity of an aversive outcome during an exposure exercise is inconsistent with what the client anticipates. This type of violation sets up an opportunity for more in-depth processing of the stimuli for altering the meaning of the CS for the individual. Processing at a more conceptual level helps the individual put stimuli and associated

responses in context, make meaning of the experience, and alter future responses. This meaning-making process involves reducing the discrepancy between how an individual has appraised an experience's meaning and that individual's global system of beliefs and goals (Joseph & Linley, 2005). Ultimately, the person is able to be more flexible, gaining access to other appraisals and the larger meaning of the experience (e.g., Brewin, 2014; Hayes, 2015; Park, 2010; Watkins, 2008).

Affect labeling may facilitate cognitive and emotional flexibility through increased specificity of a client's current emotional experience and her feared outcomes of exposure (i.e., expectancies). Increased specificity through the use of affect labels (e.g., "I will get so anxious that I will throw up" vs. "I will throw up") can allow for enhanced likelihood of expectancy violation, as well as more nuanced outcomes (e.g., "I got anxious but I tolerated it and didn't throw up" vs. "I did not throw up."). It may also help change the eventual meaning for the individual. For example, it is common for individuals who were severely intoxicated during a sexual assault to have a profound sense of shame or responsibility for what occurred, even being ashamed of telling the story to another person. By labeling both the shame and the fear during imaginal exposure to the trauma memory, an expectancy violation can occur when the client's therapist helps her process the assault in a nonjudgmental manner. This helps the client to discriminate between the shame felt during the traumatic event and the shame she feels related to herself, and she learns that her therapist does not judge her or reject her for what happened, which is inconsistent with what she expected prior to beginning the imaginal exposure. This may help alter the meaning of her shame to be less global.

Increasing Distress and Learning Distress Tolerance

A third way in which affect labeling may help to facilitate therapeutic change is through increasing distress, which can then help teach a client to tolerate distress during exposure. Consistent with some of the literature reviewed below, in our clinical experience, we have observed that affect labeling at times can temporarily increase distress by drawing attention to the crux of the meaning of an event or situation for the client. For a client who is avoidant during exposures, labeling an emotion quite literally draws the client's attention to the presence of that emotion, thereby increasing the intensity of his or her emotional experience and decreasing avoidance. Theoretically, overly general memories of one's experiences are thought to prevent overwhelming negative emotions, truncating the memory search before specific details and negative emotions are activated (e.g., Williams, 2006). Labeling of the specific emotion may reduce avoidance of the emotion and the specific memory content and facilitate activation of more specific memory content (e.g., Williams, 2006). In the case of a client who is not fully engaging with an emotion during exposure due to his or her fear of being unable to tolerate the emotion or due to the aversive experience of the emotion, labeling an emotion can be a way of gaining specificity of the client's experience (e.g., "I feel really sad" instead of "I feel off") while also moving him or her toward the emotion by decreasing experiential avoidance (e.g., putting words to the internal emotional experience). When avoidance is reduced, a client will likely experience an increase in emotional intensity and distress. In this instance, affect labeling can indeed function as a way to increase emotional experiencing for those who may be underengaged during an exposure exercise.

Emotion labeling can also help concretize the interpretation of the event for an individual and open the door for more in-depth, constructive processing that may not occur without increasing emotional engagement during the exposure. This experience is much more revelatory for the client and may be accompanied by a flood of emotion. Examples of these experiences that represent increased revelation are statements such as "I was terrified. I really thought he was going to kill me"; "I was so helpless, there was nothing I could do"; and "I was frozen with fear, like a corpse, and could not move my body to fight back." In these examples, the labeling of the emotion helps alter the meaning of the CS–US association for the individual.

As a natural consequence of increasing emotions and distress, learning to tolerate high levels of distress becomes an important goal of exposure exercises. This ability to tolerate distress is a form of new, inhibitory learning that occurs during the exposure (e.g., Craske et al., 2014). If a client believes that he or she will lose control by engaging fully in an exposure and will be unable to tolerate the painful emotions each time he or she emotionally engages and effectively tolerates the distress, the client is strengthening this new, inhibitory learning. This produces an expectancy violation, as the client's preconceived expectations regarding his or her ability to tolerate an exposure are repeatedly violated, and new learning occurs.

Taken together, affect labeling may allow for more in-depth processing of the exposure exercises, whereby the client gains insight and awareness into his or her emotional experience and how that experience changes over repeated exposures. Affect labeling can be used to modulate emotional engagement and distress *up or down*, depending on the client, and can provide a gateway to a wide range of shifts in perspective or meaning that are critical in enhancing treatment outcomes.

Evidence for Affect Labeling Altering Emotional Responses

An emerging line of research has identified potential effects of affect labeling, but the overall findings are mixed and clinical translation of this line of research to date remains limited. Affect labeling is typically studied using a within-subjects manipulation by showing individuals a series of briefly presented affectively valenced and neutral pictures and asking them to select an emotion word that corresponds with the picture. Control conditions usually have some form of passive image viewing and some alternative labeling condition, asking the participant to label or match such things as gender or the object in the picture. Several studies using emotional pictures suggest that some kinds of affect labeling result in diminished subjective distress or emotional arousal in healthy adults (e.g., Constantinou, Van Den Houte, Bogaerts, Van Diest, & Van den Bergh, 2014; Lieberman, Inagaki, Tabibnia, Crockett, 2011). Compared to "passive viewing" (i.e., viewing pictures without any emotion labeling), affect labeling reduces self-reported arousal and distress in the short-term (milliseconds to seconds). These studies also required participants to select the emotion depicted by the picture, rather than labeling their own emotional experience, which is potentially more clinically relevant.

Although the above studies suggest labeling external stimuli can reduce emotional experience, results from studies examining the specific consequences of labeling one's own internal affective state during image viewing have been more mixed, with evidence suggesting that labeling internal emotions may increase physiological arousal and emotional intensity and others suggesting the opposite (e.g., Matejka et al., 2013; McRae, Taitano, & Lane, 2010; Ortner, 2015). McRae and colleagues (2010) found that labeling one's subjective emotional experience of emotional stimuli leads to increased physiological arousal measured via skin conductance response (SCR) compared to trials where participants objectively labeled the stimuli. Ortner (2015) found no differences in autonomic arousal among subjective affect labeling, objective labeling, and passive viewing conditions, but affective labeling increased emotional experience more than passive viewing based on Likert scale ratings more than passive viewing. In contrast, Matejka and colleagues (2013) found that emotion labeling led to decreased autonomic arousal measured via SCR compared to talking about facts, but talking about facts reduced perceived emotional intensity more than emotional labeling. Taken together, although findings are inconclusive regarding autonomic and subjective arousal, including showing divergence between these indices, there is some evidence to suggest that there are certain conditions where labeling one's own internal emotional state may actually increase, rather than decrease, self-reported emotional arousal and physiological arousal in healthy adults.

Despite these divergent findings, there may be specific neurocognitive pathways by which affect labeling attenuates emotional reactivity. Neural regions implicated are primarily the amygdala, a brain region involved in emotion generation, specifically fear, and the ventrolateral or ventromedial PFC regions implicated in inhibitory processes. Notably, these are also regions implicated in extinction learning, with activation of the PFC dampening amygdala response (e.g., Phelps et al., 2004; Quirk, Likhtik, Pelletier, & Pare, 2003). During affect labeling tasks in comparison to control tasks, there are higher levels of PFC activity (e.g., Hariri, Bookheimer, & Mazziotta, 2000; Lieberman et al., 2007; Memarian, Torre, Haltom, Stanton, & Lieberman, 2017; Torrisi, Lieberman, Bookheimer, & Altshuler, 2013; Tupak et al., 2014), lower levels of amygdala activation (e.g., Hariri et al., 2000; Lieberman et al., 2007; Memarian et al., 2017; Torrisi et al., 2013), and negative modulation of PFC and amygdala activation (e.g., Hariri et al., 2000; Lieberman et al., 2007; Memarian et al., 2017; Torrisi et al., 2013). Indeed, affect labeling may promote activation specifically of the right ventrolateral PFC or right inferior frontal gyrus, arguing for its critical role during implicit emotion regulation (Memarian et al., 2017; Tupak et al., 2014). Notably, in several studies, despite consistent activation patterns, affect labeling did not lower subjective distress or skin conductance (e.g., Herbert, Sfärlea, & Blumenthal, 2013; Nils & Rimé, 2012), though others have shown improvement in subjective well-being (Memarian et al., 2017). More often than not, subjective experience of emotion was not reported. In a recent meta-analysis, the use of language with emotional experience may activate brain regions associated with semantic processing (Brooks et al., 2017), arguing that affect labeling may help facilitate conceptual or meaning changes.

None of the studies above utilized clinical samples. When compared to a clinical sample, the pattern of results may be altered. Burklund, Craske, Taylor, and Lieberman (2015) recently examined the neural substrates of affect labeling in individuals with social phobia compared to a healthy control group. During an affect labeling task, individuals with social phobia exhibited increased amygdala activation but no differences in right ventral lateral PFC activation compared to healthy controls, with those with social phobia and comorbid depression showing the largest upregulation of the amygdala activity compared to healthy controls. This is a reversal from the patterns observed above, arguing that clinical samples, particularly those with depression, may not experience corresponding reductions with affect labeling. In this same sample, greater symptom reduction, regardless of therapeutic modality or wait-list, was associated with more negative amygdala–PFC functional connectivity from pre- to posttreatment during affect

labeling (Young et al., 2017), arguing that these processes move together.

Ferri and colleagues (2017) reported that those with treatment-resistant depression showed more blunted amygdala activity compared to healthy controls during an affective labeling task, inconsistent with Burklund and colleages (2015) for those with social phobia and depression—however, higher baseline activation during the affect labeling task was associated with later improvement in depressive symptoms across psychosocial interventions. As such, treatment approaches that enhance the capacity of prefrontal regions to dampen amygdala responses *or compensate for impairments* may be helpful, and, critically, further work is needed to investigate the impact of common comorbidities, particularly depression, on these effects.

Notably, none of the above clinical studies directly examined using affect labeling during therapy. Analogue clinical research has started to emerge examining the impact of affect labeling on exposure-like tasks. Tabibnia, Lieberman, and Craske (2008) have shown immediate and somewhat longer-term (8 days postexposure) benefits of affect labeling on emotional responding in undergraduates with a fear of spiders. Repeated presentation of pictures of spiders with the negative labels, in comparison to passive viewing, resulted in larger attenuation of SCR over time but had no effect on heart rate deceleration. Extending this work to a clearer clinical analogue, Niles and colleagues (2015) examined whether affect labeling of one's internal experience enhanced exposure effectiveness in participants with public speaking anxiety. Exposures consisted of ten 1-minute speech trials in front of three confederates. Prior to each speech, participants in the affect labeling group were prompted by the computer to choose words to label their emotions (e.g., "afraid," "frustrated," "blue," "other") and words to label their feared consequence from the audience (e.g., "laugh at me," "notice I am nervous," "be disinterested," "other"). Participants in the affect labeling condition showed a steeper decrease in heart rate (small effect) and SCR (large effect) at days 3 and 8 than the exposure-alone control group, but *no differences emerged* related to self-reported distress or self-reported levels of public speaking anxiety. Notably, the benefits of affect labeling on skin conductance were most pronounced for those who used more anxiety-related labels during exposure and for those with deficits in incidental emotion regulation, defined by a lack of subjective distress reduction during a separate affect labeling task.

In summary, at the present time, there is simply a paucity of studies examining clinical samples and no studies to date utilizing affect labeling to enhance conventional exposure therapy in the treatment of clinically significant mental disorders. Although thoughtful control conditions have been employed, the "how to" most effectively label affect is also in its nascent stages, with a lack of knowledge from the importance of actual verbalization to the importance of the accuracy of the subjective label. In nonclinical samples, affect labeling may decrease emotional arousal to aversive stimuli, as indexed by reduced amygdala activity and increased right ventrolateral PFC activity—however, this may not be the case in clinical samples, where amygdala activation may actually increase with affect labeling. Notably, the impact of affect labeling on subjective experience of distress or on symptom improvement is not clear. This raises the issue of the clinical significance of the observed effects, as it appears unlikely that using an affective label will substantially alter the experience of emotion during exposures for a client to a clinically meaningful degree (i.e., shifting distress from "moderate" to "severe" or from "severe" to "moderate"). Other emotion regulation strategies like reappraisal may confer similar or even stronger activation of specific PFC regions and lower self-reported distress (e.g., Burklund et al., 2014; Payer, Baicy, Lieberman, & London, 2012).

Although very preliminary, probably the most interesting implication across the experimental and clinical studies to date is the speculation that affect labeling may be most useful for clients with amygdala–PFC inhibitory deficits. This argues that tasks such as affect labeling may have the potential to augment exposure therapy, particularly for the clients who may need it the most. Yet, common comorbidities such as depression, which are almost always present with severe anxiety or stressor-related disorders, may alter observed patterns. Taken together, the evidence base to date is simply too sparse to confidently predict how affect labeling will operate during specific exposures with a client or whether it will enhance long-term exposure therapy outcomes or prevent relapse. Given these critical unknowns, the clinical use of this technique should not be considered empirically supported at the present time.

How and When to Use Affective Labeling

As researchers and clinicians, we are eager to augment exposures and enhance therapeutic outcomes, yet, with regard to affect labeling specifically, we need to be thoughtful about for whom it may help and why. Although the concept of affect labeling appears quite straightforward and intuitively helpful, as illustrated in the review of the research above, we need to be mindful of how quickly we incorporate strategies based almost solely on experimental, nonclinical research into exposure-based interventions with our clients.

How to Label Affect

The explicit or routine use of affect labeling should be viewed as an "experimental technique" that is potentially efficacious rather than a proven technique to enhance new inhibitory extinction learning during exposure

therapy. Given that affect labeling frequently occurs in routine exposure already, greater clinician awareness may help facilitate the strategic use of affect labeling. This is consistent with its use as part of a larger functional analysis and case conceptualization rather than a stand-alone technique that is incorporated into *every* exposure exercise. The necessity of the latter is simply premature given the lack of current evidence.

On the surface, the clinical process of affect labeling appears reasonably simple. The therapist asks, "What are you feeling?" and the patient responds with a specific emotion. This assumes, however, that the client both identifies that an emotion is present and can label the emotion properly. As discussed above, the goal may not be the labeling per se, but the ability to use the emotional information to alter future perceptions and behaviors in a more adaptive way. Thus, labeling emotions in therapy is a strategy that can be used to facilitate insight and change, and, if used, ought to be used intentionally and with a goal in mind on the part of the therapist.

Although there is considerable debate in the field about the nature of emotions, there is reasonable agreement that emotions related to fear, anger, disgust, sadness, and happiness are generally universal across individuals and cultures, and some agreement around the universality of the emotions of shame, surprise, and embarrassment (Ekman, 2016). In many respects, this list is generally sufficient for most therapeutic affect labeling that is applied to enhance inhibitory learning. Both a therapist and client can easily get caught in a quagmire of minute definitions, terms, and details of various secondary emotions, which is generally to be avoided in exposure exercises as it can derail and distract from therapeutic processes. As done in Niles and colleagues (2015), clients selected among only four labels (an anxious word, an anger word, a sad word, or other) and selected among the feared object or consequence of the exposure prior to the start of the exposure task. The additional labeling of the feared consequence or object may be an important clinical addition to typical affect labeling to explicitly connect stimuli, thoughts, and emotions.

Accordingly, one way to utilize affect labeling is to incorporate it prior to every exposure task. However, as discussed above, we consider this premature, as its clinical benefits have not been well studied. We discuss below its more strategic clinical use, as affect labeling may not be needed for all clients or across all exposure exercises. When the client has problems labeling emotions, clinically, it is preferable to ask directed questions rather than explicitly label the emotion for the client. These questions can help isolate emotional experiences, such as querying about valence, magnitude, autonomic physiological arousal, triggers, related behaviors, or urges for action. Explicitly labeling the emotion for the client can be done, if necessary, to point to the emotion being experienced but should only be used as a teaching tool within the context of targeted querying. If done, the therapist likely should discontinue this direct labeling quickly, shifting back to querying. Ideally, the therapist wants the client to learn to identify the emotion and its related consequence by him- or herself. If repeated problems identifying the emotion persist, the therapist can use tools like simplified "feelings charts" to help increase emotional awareness and specificity. Psychoeducation about the nature of emotions and distinctions between them can be helpful for some patients, particularly those for whom emotional experiences have been consistently invalidated. That said, these charts often have multiple terms and labels, which can confuse rather than help a client struggling to identify a specific emotion. Notably, it seems like the goal ought to be to have the client be able to quickly and easily identify basic emotions that he or she is experiencing, rather than to have an in-depth affect labeling vocabulary.

Sometimes two or more apparently contradictory emotions can be held seemingly simultaneously. These include the pairing of happiness and sadness and the pairing of fear and sadness. These emotions may be experienced concurrently or one emotion may serve to "block" or prevent the experience of the other. When two or more emotions exist, labeling both emotions allows for more in-depth processing of the meaning of the experience, realizing events, people, and things can have both good and bad qualities simultaneously—that is, accepting the presence of the dialectic or contradiction. This is often the case in memories of traumatic events from childhood, where certain key people from someone's childhood were awful and other key people were warm and trustworthy. Probably two of the more common contradictory pairs of emotions are the combinations of anger with fear or sadness, with the latter often taking a form of helplessness. Anger is often viewed as an appraisal of wrongdoing and an action tendency to counter that wrongdoing in some way (Fernandez & Johnson, 2016)—however, the distinction between anger and other emotions in terms of physiology (e.g., autonomic activation) or specific brain activation has been elusive (e.g., Stemmler, 2010). In general, common clinical impressions are that experiencing and expressing intense anger can interfere with the processing of other, potentially more clinically critical emotions (Feeny, Hembree, & Zoellner, 2003; Hembree, Rauch, & Foa, 2003). Clinically, it is important to acknowledge the validity and appropriateness of the anger. It is also helpful to explain how anger can be used to direct or channel one's focus on getting better and moving on to the next chapter of one's life. However, it is also helpful to explain that anger is a "hot" or "quick" emotion and how it can

sometimes be an easier feeling to access than the more "hidden" emotions of fear or sadness. Anger can serve to block other emotions that are more difficult to experience or tolerate, such as fear. As suggested by Hembree et al. (2003), the client may need to move anger aside to focus on other aspects of his or her experience. This will likely take practice and potentially multiple clinical conversations.

Finally, teaching the observation and labeling of gradations in emotion is often important for the client and for the clinician to monitor change and implement strategies to increase or decrease specific emotions. In the anxiety and traumatic stressor-related disorders, monitoring of distress during exposure exercises is commonly the most useful approach. This is typically done through either the use of a fear thermometer or subjective units of discomfort or distress scale (SUDs; e.g., Wolpe, 1969). Typically, zero is set as the most calm and relaxing image, place, or state imaginable (e.g., watching a sunset, feeling the sun while lying on the beach) and the top of the scale, usually a 10 or a 100, is set as the most distress ever experienced or imagined (e.g., the most awful panic attack imaginable, the traumatic event itself). The choice of the upper-end anchor of 10 or 100 is largely arbitrary—however, if it is anticipated that the client will have problems with gradations, sometimes a scale limited to 11 options is better than one with 101 options. The more simplified scale is frequently used for children and adolescents, where initial emotion gradation labeling is either "not present" to "present" or "okay" to "awful" with little differentiation. Before using the scale, it is often helpful to set specific anchors, usually mild (25), moderate (50), and severe (75) discomfort. The more these anchors can be stable (i.e., not treatment targets that are likely to shift during therapy), the better they are as anchors (e.g., having a cavity filled, riding a roller coaster). If anchors are chosen that are therapeutic targets (e.g., recounting the memory of the trauma), the scale consistently has to be recalibrated over the course of therapy. The discussion of anchors can also help with psychoeducation in terms of getting finer gradation on labeling emotional experiences. Often, when teaching this gradation, it is helpful to use physiological, emotional, and behavioral anchors. For example, "When your anxiety is at a '75' or 'severe,' you may feel your heart pounding hard, feel light-headed, you know that you are really upset, and you feel like you need to immediately escape the situation and you are not sure you can handle it." Once anchors are established, the fear thermometer or SUDs can be used to identify and label anticipatory anxiety, peak anxiety, and anxiety after exercises in session, during homework, and around specific events or activities. Finally, instead of solely focusing on distress, we have also started using a subjective units of pleasure (SUPs) scale, particularly when we are monitoring positive mood, when tasks are focused on reducing anhedonia or behavioral activation rather than targeting fear per se. Other emotions can also be put on this scale to monitor clinical changes.

In summary, the labeling of emotions themselves is not always straightforward. The therapist needs to focus on the function or purpose of the labeling to make good clinical decisions about when to label, what to label, and when not to label emotions. Good use of affect labeling may help appropriately increase or decrease client distress in order to facilitate new learning and create new meaning of their experiences.

When to Use Affect Labeling

At present, affect labeling is a potentially helpful experimental technique that therapists should implement strategically, based on the therapy process and case conceptualization. Given that affect labeling is thought to be effective in increasing or reducing distress by promoting increased constructive processing and altering meaning of emotions and beliefs, it may be a strategy that is employed routinely at the beginning of exposure therapy as a client is learning to observe and label affective experiences. In the case of a client for whom this process comes naturally, the therapist may take more of a "backseat" role in reinforcing this behavior and encouraging the client to verbalize affective experiences. In the case of a client for whom labeling affect is more difficult or nonintuitive, the therapist may be more active in helping this client devise and apply emotion words to the affect. Regardless, at the beginning stages of exposure, it is likely that affect labeling may be most useful as a client first begins to approach difficult situations, places, or memories. This is in contrast to later in therapy as clients have become more accustomed to exposure exercises. Here, affect labeling becomes more of a strategic, and possibly optional technique, to be employed particularly with a client who either is not putting a verbal label on his or her affect or is labeling affect in a manner that is inaccurate or incomplete. In these cases, a therapist may put particular emphasis on encouraging the client to accurately label affect in order to open up pathways for discussion about the emotional experiences that have not yet been processed.

The timing of labeling within session is also an important component to consider. Labeling affect, which may trigger an in-depth discussion of affective experiences, is usually best avoided at the conclusion of a session, as that type of processing may not be able to be fully achieved with limited time remaining in the session. For example, a client may identify shame for the first time at the end of an exposure session and is thus not allowed

adequate time to process this emotion with the support of the therapist and have the corrective experience of not being negatively judged for his or her actions. This client may then leave the session ruminating on his or her experience of shame and may actually experience an increase in shame that results in unhelpful coping responses (e.g., getting drunk to numb the shame) or in avoidance of future therapy sessions. Ensuring that emotions can be adequately dealt with before leaving the session is a crucial part of new and corrective learning that needs to accompany exposure practices. Thus, labeling and discussion of affect should be timed to occur as soon as possible after the affect occurs but with an explicit awareness of the need to fully process the experience before the client leaves the session. At times, providers may make the strategic choice to delay affect labeling or processing, even when the opportunity presents, in an explicit attempt to ensure that patients do not have the experience of needing to leave a session feeling emotionally dysregulated, an experience that can make approaching future exposures difficult and does not usually result in the corrective learning we hope for in exposure.

In the absence of strong empirical data, individual case conceptualization will also inform when to label affect. For an emotionally avoidant client, he or she may not benefit from exposure to affective cues because the client is not actually engaging with emotion. By labeling the emotion, it can open the door to processing the experience. Alternatively, the therapist should be attuned to when affect labeling may actually be counterproductive. Extensive discussion of affect or emotion can serve the function of avoidance as it can serve to discourage the therapist from moving forward in processing the emotion. Similar to how overt behaviors such as crying or yelling can redirect attention away from difficult topics, a client who spends a significant amount of a session talking about his or her emotions can also waylay a well-intentioned therapist. In these cases, the therapist may actually want to discourage the client from speaking explicitly about emotions. As discussed above, labeling affect can decrease or increase the experience of emotion—thus, in cases when a client is underengaged during exposure (i.e., avoiding full contact with his or her emotions, showing flat affect), labeling affect could be used as a way to increase emotional engagement by encouraging the client to increase expression of his or her affect. At the same time, after a difficult exposure, labeling the affect might be useful for decreasing the intensity of emotional experience by giving the client some distance from the experience through verbalization. This could then prompt a discussion of the affect and help new learning to occur following exposure. When used for this purpose, statements such as "Your heart is pounding, you are sweating, you feel afraid. What happens next?" can help a client move through an imaginal exposure during which he or she is overengaged and stuck on the worst moment. Similarly, statements such as "You feel really sad as we talk about the loss. What other emotions do you feel when you think of the son you lost?" can be used to decrease a client's emotion to a level where you can then discuss context and meaning and help the client move forward.

Overall, affect labeling is a strategy that may be useful in modulating distress during exposure, increasing constructive processing and meaning making, and should be applied purposefully when the therapy process or case conceptualization indicates its use. In order to illustrate specific ways in which affect labeling can be used clinically across a range of psychopathology, we next describe a series of clinical case examples. These examples represent combinations of issues we have seen with different clients who we have treated; no one case represents a single client and any identifying information has been altered in order to protect client privacy. These examples are designed to highlight ways in which affect labeling may uniquely contribute to facilitating exposure therapy, as one potentially helpful strategy in the larger context of exposure therapy. In these examples, skilled clinicians may recognize that they intuitively already incorporate affect labeling strategically in their practice. Given the relative lack of empirical evidence for affect labeling as a crucial component contributing to the efficacy of exposure therapy, it is worth noting that the use of affect labeling should always be rooted in theory and conceptualization of individual clients and their presenting problem. It also should be noted that we, as a clinical team, do not as of yet routinely incorporate explicit affect labeling into our exposure therapy exercises. We, too, are awaiting strong clinical empirical evidence to show that affect labeling facilitates inhibitory learning.

Clinical Case Examples of Affective Labeling

Getting "Unstuck"

At times clients in exposure therapy may have difficulty making progress due to getting "stuck" in an unproductive processing loop before, during, or after exposure exercises. One way that this process of becoming "stuck" in an unproductive processing loop manifests is when a client's prolonged sobbing and incredibly high distress (i.e., "overengagement") during exposure prevents meaningful processing of the experience. In such instances, affect labeling may have the potential to be used as a strategy to titrate emotional engagement down during the exposure. For example, a client with PTSD related to years of repeated partner violence consistently showed signs of being overengaged during imaginal exposure (e.g., persistent rocking in her chair, scratching her arms, shielding herself from imagined blows). She

would become stalled during imaginal exposure, being so overwhelmed that she would be unable to continue with her narrative of what happened and would weep for long periods of time instead of continuing with the story. The therapist worked with her to put a label on her sadness, actively at first by making direct statements such as explicitly linking what she was remembering to the emotions she experienced: "You see your son crying in the corner and you are feeling sad and helpless." Gradually, the client began to name the emotion herself with only a little encouragement. By labeling the sadness, she was able to move past the emotion itself and gradually approach the other details associated with the memory, such as the degree of violence that she endured and the intensity with which she protected her son, in a way that helped her process her feelings of fear and anger. She eventually came to terms with the horrific nature of what happened and made a decision to move on for the sake of her family. By labeling the sadness and thereby gaining some distance from the emotion, she was able to make room for other valid emotional reactions she had at the time, including fear and anger, and was able to move past maladaptive interpretations of failing her children and being solely responsible for the effects of the violence on her son.

Sometimes it is important to use the labeling of the emotion as a means to help the client identify a critical process rather than solely focusing on the emotion itself. Clients with anxiety or PTSD often have comorbid depression; with an anxious and depressed client, ruminative spinning or looping can serve to keep a client stuck in a depressed state. When this is the case, labeling the emotion can be used to stop the spinning. For one of our clients who lost her entire immediate family in a freeway crash, approaching memories of the event and driving on the freeway evoked not only considerable anxiety but also immense sadness. Repeatedly over the course of therapy, she would burst into tears, hardly able to talk, and when driving she would pull the vehicle over and cry. During these times, she would either focus on how awful it felt or how alone she felt. Both of these reactions were entirely valid—however, when the therapist solely labeled the emotion as feeling "sad," it only prolonged or even exacerbated the reaction. Note that this is also an example of when affect labeling heightened an emotional experience rather than mitigated it, pointing to the "tricky" nature of this technique. The client was unable to process any new incoming information, essentially becoming stuck in the emotion, and being unwilling to further approach her driving exposure tasks. After observing this process over multiple sessions, the therapist shifted techniques and labeled the feeling of sadness as part of a "spinning" process that kept her stuck in an unproductive processing loop and prevented more in-depth, meaningful processing of what happened. In this case, it was important to discuss the process at other times in the session rather than when the client was stuck in her sadness. This helped her eventually move through the sadness to revisit the memory of what happened and drive again on freeways. Accordingly, the labeling of the role of the emotion as part of the ruminative process can then be used to prevent getting stuck in the negative feelings loop and also help the client learn skills to short circuit this spinning or looping.

Meaning Making and Expectancy Violation

Labeling of emotional experiences can be a potent means for altering the meaning of one's behavior and experience. Sometimes the thought or emotion that is identified by the client is not the actual feared stimulus or object, and affect labeling can serve as a gateway to identifying the core fear, thus changing the meaning of a client's experiences and behaviors. Similarly, when a client approaches a previously avoided stimulus, expectancies of an aversive outcome are often out of proportion to what actually occurs. Affect labeling has the potential to be a useful strategy in highlighting when the experience violates the client's expectation. In the treatment of an older male with social anxiety disorder, the exposure exercise was to walk into a grocery store and ask several questions of a store employee. When the therapist inquired about how the exercise went, the client responded that it was not worth trying to talk to store employees because they were not actually knowledgeable about the store's products and would not be able to answer his questions accurately. In fact, he came across as being irritated, reporting that doing the in vivo exercise was not worth his time. His therapist asked him whether there were any other possible reasons that kept him from talking to the cashier, specifically what his thoughts were on the cashier's perception of him. She also asked whether he would talk to the cashier if he could be certain that the cashier was knowledgeable, and how it was that he knew for certain that the cashier was not knowledgeable. The therapist then asked more targeted questions, such as "Was there a possibility that anxiety was influencing your decision to not interact with the cashier?" and "Was there any possibility that you were worried about being judged?" By eventually labeling the client's fear of judgment, they were better able to tailor subsequent exposure exercises and start with an exercise that would directly target the fear of judgment. In the process, his therapist was able to revisit the rationale for exposure and how doing repeated and prolonged exposures would eventually help him to gather information to challenge his fear that he would always be judged in social interactions and that he would not be able to

handle it. The therapist was also able to highlight how the expected outcome of rejection was motivating his fear and link the absence of rejection to decreases in his fear. Thus, labeling the affect appropriately helped illustrate how his actual experience violated his expectation, consistent with expectancy violation as a critical process in exposure therapy.

Affect labeling also has the potential to facilitate the development of new meaning to previously held stimuli, responses, and associations. In individuals with PTSD, specific aspects of a traumatic event often consume a client's focus at the expense of the role of emotional experience during the event. One of the women we worked with was focused on the questions "Why did I let him rape me?" and "Why didn't I fight back?" These questions were in contrast to how she viewed herself as a person before the event, as someone strong and able to take care of herself. During imaginal exposure, in the moments before the rape, the therapist queried about what she was seeing around her and what it felt like to be on the ground. These queries brought out important details, including that the rapist was considerably bigger than her, his weight was crushing her, and he held a large rock next to her head. From this, she was able to identify that she was terrified that he was going to kill her. This terror helped explain for her the answers to her questions and helped reduce her feelings of shame about what had happened.

A third example illustrating how labeling important emotions during an exposure can shift the meaning of a client's experience can be seen in a 7-year-old boy with OCD. One of his main fears was of sticky, gooey objects such as glue, gum, masking tape, peanut butter, paints, etc. He would avoid arts and crafts projects at school because he described the glue sticking on his fingers as "really gross." He also had a hard time during recess when it rained; instead of playing outside, he would stay close to the building to avoid getting any mud on his shoes. He said that the mud was "yucky" and hated it when other kids would wipe their feet on the mat coming inside. Although the boy identified the gross, "yucky" feeling as the primary emotion, it was the feeling of being trapped or constrained that was truly the underlying fear. Exposure exercises (e.g., touching dried mud, paint) did not provoke any distress unless he could not easily remove the substance from his body. Although he labeled the affect as "gross," the clinical presentation in session did not align; he did not demonstrate behavioral indicators of feeling disgusted but instead looked anxious and afraid. In this case, his inappropriate labeling of affect helped the therapist recognize they were focusing on the wrong emotion. Upon further exploration, the boy could not wear anything tight around his neck or arms (e.g., turtlenecks, watches) and was having his mother remove all of the tags from his clothes. Exposure exercises shifted to sitting with distress of those feelings—that is, the lack of control, rather than solely approaching or touching disgusting substances. The therapist, parents, and teacher worked together, helping the boy learn to sit with his feelings of distress until those feelings dissipated, reinforcing that when things felt "yucky" it was important to wait for the feeling to go away, that the bad thing he expected to happen would not occur, and that eventually he would even forget that the "yucky" thing was still there. Thus, the focus was not disgust per se but the fear of being trapped or helpless to easily remove the object and his expectations around what would occur when he approached these situations. Notably, this is also an illustration of how affect labeling (i.e., the focus on a "gross" or "yucky" experience) might actually backfire, leading a therapist away from the true core fear of being trapped. This again points to the "tricky" nature of affect labeling and argues for careful case conceptualization and functional analysis driving clinical intervention, rather than assuming the accuracy of the affective label as part of that case conceptualization.

Meaning of a client's experience can also shift when a therapist helps the client identify an emotion that may be being "blocked" by a second emotion. The "blocked" emotion at times may be the more important emotion to process in order for new learning to occur. One example of this is of a client who fixated on anger as her primary emotional experience during a rape that occurred while she was in the military. She consistently was able to feel and label her anger around how her perpetrator went on to have an "esteemed" military career, while she felt "forced" to leave the military and spent years struggling with depression and PTSD. She would report that the event itself did not feel like a "big deal" and invalidated her experience of her PTSD symptoms, saying that if she had just been able to "get over it" she would have been able to stay in the military. Her focus on anger and the aftermath of the rape kept her from identifying and engaging with her fear during imaginal exposures and kept her from acknowledging that the event was a terrifying experience where her physical integrity was threatened. At the beginning of treatment, she reported low SUDs levels during the imaginal exposure and consistently reported in processing that she did not find the recounting of the memory to be very challenging given that her mind was already thinking about the aftermath. In order to help the client be as present as possible during imaginal exposure, her therapist asked her what she was feeling at specific moments where her actions suggested she was afraid, such as crawling on the floor to escape from the room. As she described reaching for her phone to call for help, the therapist asked, "What are you feeling?" When the client responded that she

wasn't sure, the therapist followed up with questions about physical sensations, like "What are you feeling in your chest?" or "What are you feeling in your stomach?" This helped the client to eventually identify fear, based on her behaviors and on her physical experiences. Before explicitly labeling her fear during the event, the client was unable to process the full emotional experience of being assaulted and what that meant to her.

Increasing Distress and Distress Tolerance

Affect labeling can also be applied to increase engagement with emotional experiencing. A common experience we see in individuals with PTSD is building, metaphorically speaking, a protective emotional wall around the traumatic event. One of our clients with PTSD, who would retell the "police report" version of her childhood abuse during imaginal exposure (i.e., devoid of emotion, smiling incongruent with content to mask distressing emotions), benefited from affect labeling. During the most intense parts of the memory in imaginal exposure, the therapist would probe gently with questions, such as "As he is telling you to sit on his lap, what are you feeling?" and "What does the shame feel like to you?" By encouraging her to label explicitly the emotional experiences, the therapist gradually helped this client intensify her recall of the trauma narrative, allowing her to feel more of the distressing emotions associated with the abuse, such as fear, anger, and shame. Over time, labeling the affect helped the client feel less afraid of going back to those memories and ultimately helped her differentiate emotional experiences she had as a small child from those she experienced as an adult while revisiting the memory. She learned she could tolerate these negative emotions and that she did have the skills to effectively cope with these feelings. This example also illustrates how many exposure therapists who utilize imaginal exposure likely already incorporate affect labeling to routinely increase emotional engagement with some clients—what is being illustrated should not come as a shock or anything new to experienced therapists.

A common therapeutic situation where affect labeling contributes to new learning is through teaching a client that he or she can tolerate intense emotions and associated distress. This can increase awareness and salience of the feared consequence associated with the pathological emotions and behaviors, including being able to tolerate uncertainty of feared outcomes. A female client presented for therapy with a fear of germ contamination accompanied by compulsive cleaning and washing that prevented her from participating in group meetings at the school where she taught, eating lunch in the lunchroom, and from attending activities in public places. Using exposure and response prevention for OCD, the therapist employed affect labeling to enhance the corrective learning experience of tolerating the distress during exposure exercises. One of the client's fears was "getting sick" after she touched doorknobs and railings in high-traffic areas, particularly if she was not allowed to engage in compulsive hand washing afterward. When discussing the upcoming exposure exercises, the therapist would label her fear of contracting methicillin-resistant Staphylococcus aureus (MRSA) and dying a terrible death, allowing for the uncertainty that it could come true (e.g., "You are afraid that touching doorknobs in this clinic and not washing your hands may result in your getting sick, but despite your fear, it is unlikely") and connecting the thoughts/feared consequence explicitly with affect. By doing this in session, the therapist confirmed that the feared outcome was possible, and thus challenged the client to tolerate uncertainty around contracting an illness (i.e., her feared outcome) and to tolerate the affect that accompanied that uncertainty. This in turn enhanced the learning associated with exposure, as the client increased both her tolerance of her anxiety and also her tolerance of the thoughts connected to her emotions.

Teaching a client to tolerate distress and discomfort through exposure is also notable in the labeling of anticipatory anxiety. Identifying and labeling the anticipatory anxiety helps the client put the experience in perspective (e.g., "This is normal," "This is to be expected," "This is not a heart attack," "I am not going to die") and alters subsequent behavior, such as reducing the urge to flee a situation and encouraging persistence through the distress. One of our clients had extreme test anxiety and, as a new college student, was sure he was going to fail out of his most difficult courses. As part of psychoeducation, the therapist explained the physiology of anxiety, what anticipatory anxiety was, and used two analogies with the patient. The first analogy was of anxiety being like riding a roller coaster, where the buildup to the big first drop is often the worst part. The second analogy was of anxiety being like a surfer riding a wave, understanding that the wave had a natural progression and would eventually dissipate. For homework, the client was asked to track his anticipatory anxiety. This simple increase in knowledge and insight into his anxiety patterns identified through the tracking exercise shifted how he experienced taking tests and led to increased confidence in his ability to "ride the wave." Each time that he was able to label his anxiety as anticipatory anxiety and stick with this emotion, he learned that he was able to tolerate the discomfort, the physiological sensations, and the fluctuations in emotional intensity. Over time, his anticipatory anxiety lessened as his catastrophic thoughts about needing to escape and being unable to sit with the

distress decreased. Notably, across all three of these clinical examples of using affect labeling to identify distress, increase or decrease engagement, and promote distress tolerance, the use of affect labeling largely reflects good clinical instincts and what would be considered routine clinical practice for the expert exposure clinician. This may potentially argue that the incremental effects of adding more systematic affect labeling may be modest, at best, given its already common use in high-quality, standard practice.

Future Directions and Implications of Affect Labeling for Exposure Therapy

Affect labeling is not a stand-alone technique necessary for therapeutic change to occur, nor do we have the evidence base to say that it does indeed enhance clinical outcomes of exposure-based therapies. Furthermore, many clinicians likely already use this strategy, as identifying and labeling emotions is a basic component of many psychotherapies. That said, it is a relatively simple strategy that may be helpful to employ intentionally during exposure-based interventions for a range of psychopathology. Affect labeling may serve as a gateway for new, inhibitory learning and for in-depth emotional processing to occur. It may serve to increase the experience of an emotion or give the client some distance from his or her emotion. Rather than "being" the emotion, the client may be able to objectify his or her emotion by identifying his or her emotional experience with a label and further activate higher cortical processes important to fear extinction.

To date, there is minimal clinical research that systematically examines the role of affect labeling; we were surprised at the lack of clinical research looking specifically at extinction processes with and without affect labeling, given the aspiration to augment exposure-based treatment outcomes. Future research should examine affect labeling in a manner more consistent with its therapeutic applications and common comorbidities, so that we can better understand the mechanisms through which it may function prior to implementing it systematically in clinical settings. We need to understand how best to label affect and also begin to explore the magnitude of any effects in enhancing therapeutic outcomes for clients in exposure-based treatments.

References

Bisson, J. I., Roberts, N. P., Andrew, M., Cooper, R., & Lewis, C. (2013). Psychological therapies for chronic post-traumatic stress disorder (PTSD) in adults. *Cochrane Database of Systematic Reviews*, *12*CD003388. https://doi.org/10.1002/14651858.CD003388.pub4.

Bouton, M. E. (2002). Context, ambiguity, and unlearning: Sources of relapse after behavioral extinction. *Biological Psychiatry*, *52*(10), 976–986. https://doi.org/10.1016/S0006-3223(02)01546-9.

Bouton, M. E., Westbrook, R. F., Corcoran, K. A., & Maren, S. (2006). Contextual and temporal modulation of extinction: Behavioral and brain mechanisms. *Biological Psychiatry*, *60*, 352–360. https://doi.org/10.1016/j.biopsych.2005.12.015.

Bouton, M. E., Winterbauer, N. E., & Todd, T. P. (2012). Relapse processes after the extinction of instrumental learning: Renewal, resurgence, and reacquisition. *Behavioural Processes*, *90*, 130–141. https://doi.org/10.1016/j.beproc.2012.03.004.

Brewin, C. R. (2014). Episodic memory, perceptual memory, and their interaction: Foundations for a theory of posttraumatic stress disorder. *Psychological Bulletin*, *140*, 69–97. https://doi.org/10.1037/a0033722.

Brooks, J. A., Shablack, H., Gendron, M., Satpute, A. B., Parrish, M. H., & Lindquist, K. A. (2017). The role of language in the experience and perception of emotion: A neuroimaging meta-analysis. *Social Cognitive and Affective Neuroscience*, *12*, 169–183. https://doi.org/10.1093/scan/nsw121.

Burklund, L. J., Craske, M. G., Taylor, S. E., & Lieberman, M. D. (2015). Altered emotion regulation capacity in social phobia as a function of comorbidity. *Social Cognitive and Affective Neuroscience*, *10*, 199–208. https://doi.org/10.1093/scan/nsu058.

Burklund, L. J., Creswell, J. D., Irwin, M., & Lieberman, M. (2014). The common and distinct neural bases of affect labeling and reappraisal in healthy adults. *Frontiers in Psychology*, *5*221. https://doi.org/10.3389/fpsyg.2014.00221.

Constantinou, E., Van Den Houte, M., Bogaerts, K., Van Diest, I., & Van den Bergh, O. (2014). Can words heal? Using affect labeling to reduce the effects of unpleasant cues on symptom reporting. *Frontiers in Psychology*, *5*807. https://doi.org/10.3389/fpsyg.2014.00807.

Craske, M. G., Kircanski, K., Zelikowsky, M., Mystkowski, J., Chowdhury, N., & Baker, A. (2008). Optimizing inhibitory learning during exposure therapy. *Behaviour Research and Therapy*, *46*, 5–27. https://doi.org/10.1016/j.brat.2007.10.003.

Craske, M. G., Treanor, M., Conway, C. C., Zbozinek, T., & Vervliet, B. (2014). Maximizing exposure therapy: An inhibitory learning approach. *Behaviour Research and Therapy*, *58*, 10–23. https://doi.org/10.1016/j.brat.2014.04.006.

Ekman, P. (2016). What scientists who study emotion agree about. *Perspectives on Psychological Science*, *11*, 31–34. https://doi.org/10.1177/1745691615596992.

Feeny, N. C., Hembree, E. A., & Zoellner, L. A. (2003). Myths regarding exposure therapy for PTSD. *Cognitive and Behavioral Practice*, *10*, 85–90. https://doi.org/10.1016/S1077-7229(03)80011-1.

Fernandez, E., & Johnson, S. L. (2016). Anger in psychological disorders: Prevalence, presentation, etiology and prognostic implications. *Clinical Psychology Review*, *46*, 124–135. https://doi.org/10.1016/j.cpr.2016.04.012.

Ferri, J., Eisendrath, S. J., Fryer, S. L., Gillung, E., Roach, B. J., & Mathalon, D. H. (2017). Blunted amygdala activity is associated with depression severity in treatment-resistant depression. *Cognitive, Affective, & Behavioral Neuroscience*, *17*, 1221–1231. https://doi.org/10.3758/s13415-017-0544-6.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*, *99*(1), 20–35.

Foa, E. B., Huppert, J. D., & Cahill, S. P. (2006). Emotional processing theory: An update. In B. O. Rothbaum (Ed.), *Pathological anxiety: Emotional processing in etiology and treatment* (pp. 3–24). New York, NY: Guilford Press.

Hariri, A. R., Bookheimer, S. Y., & Mazziotta, J. C. (2000). Modulating emotional responses: Effects of a neocortical network on the limbic system. *Neuroreport*, *11*, 43–48. https://doi.org/10.1097/00001756-200001170-00009.

Hayes, A. M. (2015). Facilitating emotional processing in depression: The application of exposure principles. *Current Opinion in Psychology*, *4*, 61–66. https://doi.org/10.1016/j.copsyc.2015.03.032.

Hembree, E. A., Rauch, S. A. M., & Foa, E. B. (2003). Beyond the manual: The insider's guide to prolonged exposure therapy for PTSD. *Cognitive and Behavioral Practice*, *10*(1), 22–30. https://doi.org/10.1016/S1077-7229(03)80005-6.

Herbert, C., Sfärlea, A., & Blumenthal, T. (2013). Your emotion or mine: Labeling feelings alters emotional face perception: An ERP

study on automatic and intentional affect labeling. *Frontiers in Human Neuroscience*, 7378. https://doi.org/10.3389/fnhum.2013.00378.

Hofmann, S. G. (2008). Cognitive processes during fear acquisition and extinction in animals and humans: Implications for exposure therapy of anxiety disorders. *Clinical Psychology Review*, *28*, 199–210. https://doi.org/10.1016/j.cpr.2007.04.009.

Institute of Medicine (2008). *Treatment of posttraumatic stress disorder: An assessment of the evidence*. Washington, DC: National Academies Press.

Joseph, S., & Linley, P. A. (2005). Positive adjustment to threatening events: An organismic valuing theory of growth through adversity. *Review of General Psychology*, *9*, 262–280. https://doi.org/10.1037/1089-2680.9.3.262.

LeDoux, J. (2015). *Anxious: Using the brain to understand and treat anxiety*. New York, NY: Viking.

Lieberman, M. D., Eisenberger, N. I., Crockett, M. J., Tom, S. M., Pfeifer, J. H., & Way, B. M. (2007). Putting feelings into words: Affect labeling disrupts amygdala activity in response to affective stimuli. *Psychological Science*, *18*, 421–428. https://doi.org/10.1111/j.1467-9280.2007.01916.x.

Lieberman, M. D., Inagaki, T. K., Tabibnia, G., & Crockett, M. J. (2011). Subjective responses to emotional stimuli during labeling, reappraisal, and distraction. *Emotion*, *11*, 468–480. https://doi.org/10.1037/a0023503.

Matejka, M., Kazzer, P., Seehausen, M., Bajbouj, M., Klann-Delius, G., Menninghaus, W., & Prehn, K. (2013). Talking about emotion: Prosody and skin conductance indicate emotion regulation. *Frontiers in Psychology*, *4*260. https://doi.org/10.3389/fpsyg.2013.00260.

McEvoy, P. M., Watson, H., Watkins, E. R., & Nathan, P. (2013). The relationship between worry, rumination, and comorbidity: Evidence for repetitive negative thinking as a transdiagnostic construct. *Journal of Affective Disorders*, *151*, 313–320. https://doi.org/10.1016/j.jad.2013.06.014.

McRae, K., Taitano, E. K., & Lane, R. D. (2010). The effects of verbal labeling on psychophysiology: Objective but not subjective emotion labeling reduces skin-conductance responses to briefly presented pictures. *Cognition and Emotion*, *24*, 829–839. https://doi.org/10.1080/0269993090297141.

Memarian, N., Torre, J. B., Haltom, K. E., Stanton, A. L., & Lieberman, M. D. (2017). Neural activity during affect labeling predicts expressive writing effects on well-being: GLM and SVM approaches. *Social Cognitive and Affective Neuroscience*, *12*, 1437–1447. https://doi.org/10.1093/scan/nsx084.

Niles, A. N., Craske, M. G., Lieberman, M. D., & Hur, C. (2015). Affect labeling enhances exposure effectiveness for public speaking anxiety. *Behaviour Research and Therapy*, *68*, 27–36. https://doi.org/10.1016/j.brat.2015.03.004.

Nils, F., & Rimé, B. (2012). Beyond the myth of venting: Social sharing mode determines the benefits of emotional disclosure. *European Journal of Social Psychology*, *42*, 672–681.

Norberg, M. M., Krystal, J. H., & Tolin, D. F. (2008). A meta-analysis of d-cycloserine and the facilitation of fear extinction and exposure therapy. *Biological Psychiatry*, *63*, 1118–1126. https://doi.org/10.1016/j.biopsych.2008.01.012.

Ochsner, K. N., & Gross, J. J. (2005). The cognitive control of emotion. *Trends in Cognitive Sciences*, *9*, 242–249. https://doi.org/10.1016/j.tics.2005.03.010.

Ortner, C. N. M. (2015). Divergent effects of reappraisal and labeling internal affective feelings on subjective emotional experience. *Motivation and Emotion*, *39*, 563–570. https://doi.org/10.1007/s11031-015-9473-2.

Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin*, *136*, 257–301. https://doi.org/10.1037/a0018301.

Payer, D. E., Baicy, K., Lieberman, M. D., & London, E. D. (2012). Overlapping neural substrates between intentional and incidental down-regulation of negative emotions. *Emotion*, *12*, 229–235. https://doi.org/10.1037/a0027421.

Phelps, E. A., Delgado, M. R., Nearing, K. I., & LeDoux, J. E. (2004). Extinction learning in humans: Role of the amygdala and vmPFC. *Neuron*, *43*, 897–905. https://doi.org/10.1016/j.neuron.2004.08.042.

Powers, M. B., & Emmelkamp, P. M. G. (2008). Virtual reality exposure therapy for anxiety disorders: A meta-analysis. *Journal of Anxiety Disorders*, *22*, 561–569. https://doi.org/10.1016/j.anxdis.2007.04.006.

Quirk, G. J., Likhtik, E., Pelletier, J. G., & Pare, D. (2003). Stimulation of medial prefrontal cortex decreases the responsiveness of central amygdala output neurons. *Journal of Neuroscience*, *23*, 8800–8807.

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

Rachman, S. (2001). Emotional processing, with special reference to post-traumatic stress disorder. *International Review of Psychiatry*, *13*, 164–171. https://doi.org/10.1080/09540260120074028.

Schiller, D., Monfils, M. H., Raio, C. M., Johnson, D. C., LeDoux, J. E., & Phelps, E. A. (2010). Preventing the return of fear in humans using reconsolidation update mechanisms. *Nature*, *463*, 49–53. https://doi.org/10.1038/nature08637.

Stemmler, G. (2010). Somatovisceral activation during anger. *International Handbook of Anger* (pp. 103–121).. https://doi.org/10.1007/978-0-387-89676-2_7.

Tabibnia, G., Lieberman, M. D., & Craske, M. G. (2008). The lasting effect of words on feelings: Words may facilitate exposure effects to threatening images. *Emotion*, *8*, 307–317. https://doi.org/10.1037/1528-3542.8.3.307.

Torrisi, S. J., Lieberman, M. D., Bookheimer, S. Y., & Altshuler, L. L. (2013). Advancing understanding of affect labeling with dynamic causal modeling. *NeuroImage*, *82*, 481–488. https://doi.org/10.1016/j.neuroimage.2013.06.025.

Tupak, S. V., Dresler, T., Guhn, A., Ehlis, A. C., Fallgatter, A. J., Pauli, P., & Herrmann, M. J. (2014). Implicit emotion regulation in the presence of threat: Neural and autonomic correlates. *NeuroImage*, *85*, 372–379. https://doi.org/10.1016/j.neuroimage.2013.09.066.

Watkins, E. R. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin*, *134*, 163–206. https://doi.org/10.1037/0033-2909.134.2.163.

Williams, J. M. G. (2006). Capture and rumination, functional avoidance, and executive control (CaRFAX): Three processes that underlie overgeneral memory. *Cognition and Emotion*, *20*, 548–568. https://doi.org/10.1080/02699930500450465.

Wolpe, J. (1969). *The practice of behavior therapy*, 4th ed. New York, NY: Pergamon Press.

Young, K. S., Burklund, L. J., Torre, J. B., Saxbe, D., Lieberman, M. D., & Craske, M. G. (2017). Treatment for social anxiety disorder alters functional connectivity in emotion regulation neural circuitry. *Psychiatry Research: Neuroimaging*, *261*, 44–51. https://doi.org/10.1016/j.psychresns.2017.01.005.

Preparation of this manuscript was funded in part by F31MH106194 (Marks, PI) and R01MH066347 (Zoellner, PI). Clinical examples reflect a compilation across clients, with pertinent details changed to conceal identities.

Address correspondence to Elizabeth H. Marks, University of Washington, Dept. of Psychology, Department119A Guthrie Hall, Box 351525, Seattle, WA 98195-1525; e-mail: ehm4@uw.edu.

Received: December 21, 2016
Accepted: May 14, 2018
Available online 8 June 2018