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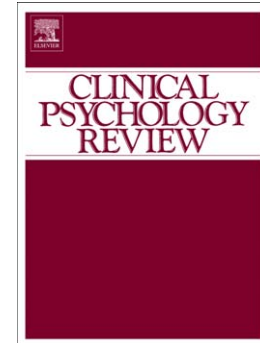
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Integrating Affective and Clinical Science

Elizabeth T. Kneeland, John F. Dovidio, Jutta Joormann, Margaret S.  
Clark

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Emotion Malleability Beliefs, Emotion Regulation, and Psychopathology:

Integrating Affective and Clinical Science

Elizabeth T. Kneeland,<sup>1</sup> John F. Dovidio,<sup>1</sup> Jutta Joormann,<sup>1</sup> & Margaret S. Clark<sup>1</sup>

<sup>1</sup>Yale University, Department of Psychology

*\*Corresponding Author:*

Elizabeth T. Kneeland

Yale University

Department of Psychology

P.O. Box 208205

New Haven, CT 06520

[elizabeth.kneeland@yale.edu](mailto:elizabeth.kneeland@yale.edu)

248-840-6043

### Abstract

Beliefs that individuals hold about whether emotions are malleable or fixed, also referred to as emotion malleability beliefs, may play a crucial role in individuals' emotional experiences and their engagement in changing their emotions. The current review integrates affective science and clinical science perspectives to provide a comprehensive review of how emotion malleability beliefs relate to emotionality, emotion regulation, and specific clinical disorders and treatment. Specifically, we discuss how holding more malleable views of emotion could be associated with more active emotion regulation efforts, greater motivation to engage in active regulatory efforts, more effort expended regulating emotions, and lower levels of pathological distress. In addition, we explain how extending emotion malleability beliefs into the clinical domain can complement and extend current conceptualizations of major depressive disorder, social anxiety disorder, and generalized anxiety disorder. This may prove important given the increasingly central role emotion dysregulation has been given in conceptualization and intervention for these psychiatric conditions. Additionally, discussion focuses on how emotion beliefs could be more explicitly addressed in existing cognitive therapies. Promising future directions for research are identified throughout the review.

*Keywords:* anxiety, coping; depression; emotion; regulation

**Emotion Malleability Beliefs, Emotion Regulation, and Psychopathology:****Integrating Affective and Clinical Science**

Emotion regulation represents the ability to modulate one's emotional experience and emotional expression in alignment with one's goals and desires (Gross, 1998, 2013). Difficulty modulating emotions – emotion dysregulation – has been linked to a wide range of undesirable psychological outcomes, such as depression, problematic substance use, and chronic worry and anxiety (Garnefski & Kraaij, 2006; Mennin, Haloway, Fresco, Moore, & Heimberg, 2007). By contrast, effective emotion regulation promotes psychological health and is associated with multiple positive psychological outcomes, such as better interpersonal functioning (Gross, 1998; Gross & John, 2003; Tamir, John, Srivastava, & Gross, 2007), greater perceived well-being (Gross & John, 2003), and better physical health (e.g., Folkman & Moskowitz, 2000; Gross & John, 2003). The current paper integrates research from basic affective science, relating to the study of emotion, and research from clinical science, which focuses on conceptualizations and treatments of psychiatric disorders, to provide a new perspective on how beliefs about emotion's malleability or fixedness could influence both emotion regulation and the development and maintenance of psychopathology, specifically major depressive disorder and anxiety disorders. Understanding the role of emotion malleability beliefs in psychopathology can provide a more comprehensive description of how emotion dysregulation relates to psychopathology, and potentially suggest novel avenues for intervention.

In this paper, we review past research on beliefs about emotion's malleability (also referred to as implicit emotion theories; Tamir et al., 2007). Emotion malleability

beliefs are assumptions that individuals hold about whether emotions are malleable and dynamic in their nature and can be influenced by individual effort or whether emotions are fixed entities that exist outside personal control. We consider the impact of beliefs about malleability in relation to how they influence attributions of controllability and motivation to engage in self-regulation. After that, we discuss the importance of integrating affective and clinical science and the possible ties between these two areas of research. The final portion of the current paper situates emotion malleability beliefs within the current understanding of clinical disorders, with consideration of depression, social anxiety disorder, and generalized anxiety disorders as case examples. In this final section of the paper, we also discuss how emotion malleability beliefs can be integrated into cognitive therapy. We identify promising future directions for research within each section and at the conclusion of the paper.

### **The Influence of Emotion Malleability Beliefs**

The study of beliefs about the stability of personal attributes, broadly, began with the examination of lay theories about the stability or malleability of human attributes (Molden & Dweck, 2006). Lay theories are basic assumptions about the fixedness or malleability of a construct, such as intelligence, that form the framework that shapes related goals, attributions, and behaviors (Dweck, 2000; Dweck & Molden, 2005). These lay theories also are referred to as implicit theories, because they are usually not consciously held and are rarely explicitly stated (Dweck & Leggett, 1988).

Research on the impact of lay theories about malleability of other constructs, such as intelligence, has tied the implications of these theories to two broad domains: (a) the level of motivation individuals possess to face challenging situations and engage in self-

regulation, and (b) the attributions individuals make about themselves and the degree of control they have over their abilities and external challenges. Because entity theorists believe that a specific attribute is static and outside personal control, they make fewer efforts at self-regulation, attribute potential failure in self-regulation to their intrinsic ability (or inability), and believe that the challenge cannot be overcome through exerting additional effort (Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999). For example, students who believe that intelligence is malleable are more likely to expend additional effort learning new study skills and exhibit more resilience in the face of academic setbacks (Blackwell, Trzesniewski, & Dweck, 2007; Dweck, Chiu, & Hong, 1995). By contrast, incremental (or malleable) theorists believe that a specific attribute is changeable and dynamic, and can be actively developed through individual effort (Dweck, 2000; Dweck & Leggett, 1988). As a result, malleable theorists exhibit a more active regulatory orientation and a more assertive pattern of coping, such as through reaching out for social support or problem-solving (Doron, Stephan, Boiché, & Scanff, 2009; Dweck, 2000; Dweck & Leggett, 1988; Tamir et al., 2007). Malleability beliefs could be tied not only to the effort individuals expend when regulating their emotions, but also to how individuals perceive a stressful or challenging situation and, as a result, how they cope with their unwanted emotions.

The measurement of emotion malleability beliefs to date has largely relied on self-report measures of these beliefs. Tamir and colleagues developed the Implicit Theory of Emotion Scale (Tamir et al., 2007) consisting of four questions designed to assess individuals' beliefs about emotion's malleability. Two items assess the degree to which individuals believe emotions can change ("If they want to, people can change the

emotions they have.”; “Everyone can learn to control the emotions that they have.”), and two items assess a more fixed, entity view of emotion (“No matter how hard they try, people can’t really change the emotions that they have.”; “The truth is, people have very little control over their emotions.”). Scores on this scale are calculated by reverse-scoring the two entity items and calculating the average of the four items. Higher scores indicate more malleable emotion beliefs. A more recent variation of this measure has been designed to assess individuals’ beliefs about the malleability of their own, personal emotions rather than the emotions of people in general (De Castella, Goldin, Jazaieri, Ziv, Dweck, & Gross, 2013). The four items of this scale parallel the original items of the original Implicit Theories of Emotion Scale that assess general beliefs about emotion, with the wording changed to capture personal emotion beliefs. For example, the original item, “If they want to, people can change the emotions they have,” was changed to read, “If I want to, I can change the emotions that I have” in order to have the new items assessing personal emotion beliefs parallel the original scale items as much as possible. The scale assessing personal emotion malleability beliefs was developed because it was hypothesized and found that personal emotion beliefs account for more variance in psychological distress than general emotion beliefs (De Castella et al., 2013).

### **Linking Emotion Malleability Beliefs to Emotion Regulation**

Emotion malleability beliefs, overall, refer to the degree to which individuals believe that emotions can change in the moment, in contrast to malleability beliefs in other domains, such as intelligence, that center on whether or not a construct can change and be developed across time (Dweck, 2000). In this review, we consider how emotion malleability beliefs influence the degree, and potentially the ways, in which people

engage in emotion regulation, as well as the clinically-relevant consequences of this process. We illustrate these conceptual processes in Figure 1. Specifically, we discuss how the extent to which people believe that emotions are malleable can influence, particularly when people experience more negative affect, emotion regulation processes and, consequently, clinically-related outcomes (such as depressive and anxiety disorders). As shown in Figure 1, we propose a conceptual model for how emotion malleability beliefs could relate to emotion regulation efforts. Specifically, as illustrated in Figure 1, we predict that emotion malleability beliefs motivate people to engage in emotion regulation and to expend more efforts at emotion regulation. We further propose that it is through this path that individuals become more or less inclined toward experiencing major depressive disorder and/or anxiety disorders. We provide greater discussion on how emotion malleability beliefs could relate to selected psychiatric disorders in later sections of this paper.

Although not a focus of our current review, we hypothesize that mood and affect more broadly generally moderate the relationship between emotion malleability beliefs and emotion regulation. Previous work on implicit theories in other domains, such as intelligence, has found that the relationship between malleability beliefs and behavior is strongest in conditions of challenge or threat (Dweck, 2000; Dweck & Leggett, 1988). For example, students who hold more malleable theories of intelligence are more likely to believe that effort can help overcome a challenging academic problem and, therefore, they work harder and engage more positive study strategies when coping with academic challenges, compared to students who have more fixed views of intelligence (Blackwell et al., 2007). As a result, it has been hypothesized that implicit theories are most directly



tied to effort and self-regulation during challenging conditions (Blackwell et al., 2007; Dweck, 2006). Applying this to the topic of the present paper, the effects of emotion malleability beliefs on emotion regulation would likely apply most strongly when the situation involves strong negative affective experiences and conditions that could lead to pathological levels of distress.

When faced with distress or emotional upset, individuals differ substantially in their ability to change their experience of negative emotions (e.g., sadness or anxiety), as well as of positive emotions (Gross, 2008). One explanation for this difference is that individuals hold various beliefs regarding emotion's malleability, which influence their own emotional experiences, and, more specifically, their engagement in effective emotion regulation. Emotion malleability beliefs may thus provide a valuable perspective on individual differences in spontaneous emotion regulation (Gross & John, 2003), and ultimately in conceptions of psychiatric disorders and new avenues for intervention.

Gross (2008) and others (Tamir et al., 2007) further hypothesized that individuals who hold malleable versus more fixed views of emotion engage in different emotion regulation strategies based on when these strategies occur in the emotion generative process. This theorizing about the influence of emotion malleability beliefs is drawn from previous work about malleability beliefs in other domains, such as intelligence. In particular, holding a more malleable or "incremental" view of a construct, such as intelligence, is associated with more flexible interpretations of stressful situations, more active attempts at self-regulation when faced with potential setbacks, and an increased likelihood of engaging effectively in self-regulation (Dweck, 2000; Dweck, Chiu, & Hong, 1995; Gross, 2008). Therefore, holding a more malleable view of emotion should

similarly incline individuals to engage in more active efforts to regulate their emotions, to make more flexible appraisals regarding their degree of control and self-efficacy, and, therefore, to achieve regulation of their emotions in line with their goals.

Because malleable theorists take a more active regulatory stance, they may be more inclined to engage in early-stage, “antecedent-focused,” emotion regulation strategies, such as cognitive reappraisal, that involve direct efforts to change the unfolding emotion before the emotion has fully arisen (Gross, 2008; Tamir et al., 2007). Clarifying this association between emotion malleability beliefs and emotion regulation is important because some emotion regulation strategies have stronger ties to psychological health than others (e.g., Aldao, Nolen-Hoeksema, & Schweizer, 2010). Overall, efforts that are more active and that occur earlier in the sequence of the elicitation and unfolding of emotion, such as reappraisal, have been tied to a wide array of beneficial psychological outcomes such as decreased negative emotional intensity and generally better well-being (Gross, 1998; Gross & John, 2003). In addition, strategies that modulate an emotional response as it is unfolding, rather than after it is fully felt, are less costly in that they require less cognitive resources (Sheppes & Gross, 2011).

By contrast, individuals who have fixed emotion theories may engage in more late-stage, response-focused efforts after emotion has been fully experienced, such as suppression and rumination, to cope with that emotion (Gross, 2008; Tamir et al., 2007). Such strategies are less likely to be effective in regulating their emotions (Gross, 2002; Sheppes & Gross, 2011). As a result, fixed emotion theorists potentially have a decreased capacity to alter the targeted emotion most effectively. For example, the use of expressive suppression (a response-focused regulatory strategy) to downregulate negative

affect has been shown to be ineffective or to lead to an undesired enhancement of negative affect, possibly because this strategy only acts on tamping down the emotional response once it has fully emerged (Gross, 2008; Gross & John, 2003). The use of expressive suppression produces greater cognitive depletion because individuals must continually self-monitor and correct their outward emotional expression, leading to ineffective emotion regulation (Gross, 2002; Gross & John, 2003).

Empirical work has begun to examine how emotion malleability beliefs might relate to emotion regulation and emotional experiences. Researchers conducting correlational work have found that trait (as opposed to manipulated) emotion beliefs relate to how participants chose to regulate their negative emotions, and ultimately how successful they are in these efforts. Overall, individuals generally view emotions as somewhat more malleable than fixed (Tamir et al., 2007). Moreover, participants who believe emotions are more malleable report higher levels of well-being, higher emotion regulation self-efficacy (Tamir et al., 2007), and greater willingness to confront negative affect (Kappes & Schikowski, 2013). Affectively, individuals who hold more malleable views of emotion have lower depressive symptomatology and lower levels of negative affect during a stressful life transition (Tamir et al., 2007) and also lower levels of negative affect when confronted with aversive stimuli in a laboratory environment (Kappes & Schikowski, 2013). In addition, trait-level emotion malleability beliefs are tied to trait-level engagement in emotion regulation. Specifically, individuals who hold views that their own emotions are malleable reported use more cognitive reappraisal overall and their greater use of cognitive reappraisal mediates the relationship between their emotion malleability beliefs and their well-being (De Castella et al., 2013).

Although these studies provide preliminary evidence supporting Gross's (2008) hypothesis that believing emotion is malleable is associated with increased engagement in early stage emotion regulation efforts (on the trait level), it also could be that individuals who believe their emotions are malleable engage in more emotion regulation overall, regardless of the temporal point at which the regulatory strategy exerts its influence. In one study, individuals who held more malleable views of emotion in general were more likely to engage in antecedent-focused cognitive reappraisal (supporting the early versus late emotion regulation distinction), whereas more malleable views of anxiety were associated with the greater use of both reappraisal and suppression (Schroder, Dawood, Yalch, Donnellan, & Moser, 2014). Therefore, these findings regarding trait-level emotion malleability beliefs provide initial evidence that possessing a more malleable view of emotion inclines individuals to engage in the more active, antecedent-focused strategy of cognitive reappraisal, yet more malleable emotion beliefs also may incline individuals to engage in more regulatory efforts overall.

Although these correlational findings between trait-level emotion malleability beliefs and emotion regulatory efforts, affect, and psychological well-being provide much-needed support for how emotion malleability beliefs are linked to psychological distress and health, it is important to note that these studies cannot clarify whether these beliefs are a causal factor influencing self-regulation, and by extension, psychological well-being. Experimental studies in which beliefs regarding emotional malleability are manipulated as some prior empirical work suggests is possible (Manucia, Baumann, & Cialdini, 1984) are needed to establish such causality. Understanding the role of emotion malleability beliefs could provide a valuable perspective from which to examine

individual differences in spontaneous emotion regulation and the overall role of emotion-related beliefs in how people respond and react to emotional experiences (John & Gross, 2007). For example, people who hold the view that emotion is malleable may be inclined to engage in more active emotion regulation efforts, such as acceptance and cognitive reappraisal. Moreover, individuals who rely more on antecedent-focused strategies may have more success with emotion regulation, and this success then feeds back to give them more of a sense that emotions, and their own emotions, are malleable. By contrast, believing that emotions, particularly one's own emotions, are fixed (De Castella et al., 2013), can have adverse psychological effects. Individuals who believed that their own emotions were more fixed compared to how they viewed the malleability of emotions generally were more likely to be diagnosed with social anxiety disorder (SAD) (De Castella, Goldin, Jazaieri, Ziv, Heimberg, & Gross, 2014).

The findings of De Castella et al. (2014; see also De Castella et al., 2013) also suggest the particular importance of studying the role of personal emotional malleability beliefs ("self-theories," Dweck, 2000) *relative* to general emotion malleability beliefs. For example, psychologically healthy individuals may show less of a distinction between their own emotions and emotions generally, whereas individuals experiencing more pathological levels of depression or anxiety may see other people's emotions as more malleable than their own (DeCastella et al., 2014). Believing one has less control over his or her emotions relative to others' control could lead to disengagement from such self-regulation, and possibly lead to a greater sense of hopelessness overall.

### **Integrating Clinical and Affective Science**

Theories on the etiology and maintenance of psychological distress assert the centrality of difficulty controlling emotions to the experience of psychopathology. In particular, it has been hypothesized that individuals who are currently experiencing psychopathology exert less effort in regulating their emotions (Kring & Sloan, 2009) and/or that they employ a more limited range (Werner & Gross, 2009) or less effective strategies for regulating their emotions (Gross, 1998, 2013; Kring & Sloan, 2009). Despite the purported link between pathological levels of psychological distress and difficulties in emotion regulation, direct empirical evidence of this connection remains limited (Gross & Jazaieri, 2014).

Affective science refers to research on emotion, emotion regulation, and factors that can influence emotion reactivity and emotion regulatory efforts in general. Clinical science represents research drawn primarily from the realm of clinical psychology that focuses on conceptualizations and related treatment for psychiatric disorders (Kring & Sloan, 2009; Sheppes, Suri, & Gross, 2015; Werner & Gross, 2009). Although we discuss these two terms as separate domains, a consideration of the intersection of these two research domains suggests viable domains for future research. When we use the term “affective science,” we refer to research examining the affective process generally, as well as to processes that contribute to clinically-relevant issues, such as depression or anxiety. Clinical science focuses on a range of issues and treatments, many in which affective processes are integral (Gross & Jazaieri, 2014; Kring & Sloan, 2009; Sheppes, Suri, & Gross, 2015).

Overall, while difficulty with effective emotion regulation represents a transdiagnostic factor implicated in the etiology and maintenance of a wide array of

psychiatric disorders, the dysregulation of emotion through the reliance on different emotion regulatory strategies, such as rumination or reappraisal, can vary across psychiatric disorders. For example, emotion regulation strategies involving rumination and avoidance have stronger ties to depression and anxiety compared to eating or substance use disorders, perhaps because the role of emotion and mood is more complex, and perhaps less direct, in eating and substance use disorders (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Specifically, it has been hypothesized that reward sensitivity might moderate the relationship between emotion regulation and disordered eating or substance use (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Carver, Johnson, & Joormann, 2008) or that eating or substance use should be considered emotion regulation strategies (Sher & Grekin, 2007). Clarifying factors such as beliefs about emotion's malleability that could influence emotion regulatory behavior is important through potentially providing an avenue through which to promote more active and flexible use of strategies, such as reappraisal.

From a clinical perspective, emotion malleability beliefs could decrease an individual's rigid and inflexible reliance on more maladaptive strategies or on a limited repertoire of regulatory strategies through promoting a more active coping stance and a greater willingness to expend effort and engage in emotion regulation. Recent work has emphasized focusing on an individual's emotion regulation repertoire, or pattern in which that person engages in multiple emotion regulation strategies, rather than exclusively focusing on how much an individual uses a specific emotion regulation strategy (Dixon-Gordon, Aldao, & De Los Reyes, 2014). In this vein, emotion malleability beliefs could promote emotion regulation flexibility through inclining individuals to make greater,

active effort in emotion regulation and second, through making individuals more inclined to shift flexibly amongst emotion regulation strategies in their repertoire (Dweck & Leggett, 1988). Stated from a different perspective, holding malleable emotion beliefs could incline individuals away from rigidly applying a narrow set of emotion regulation strategies across contexts, and more toward a flexible approach to regulation.

Despite the recent growth in emotion regulation research (Gross & Thompson, 2007), and the increased desire to link emotion dysregulation to psychiatric disorders, it remains unclear why some individuals use certain strategies to regulate their emotions and why some individuals experience more success in regulating their emotions while others struggle. From an affective science perspective, the elucidation of factors, including emotion malleability beliefs, that influence emotion regulation could also clarify how individuals shape their emotional lives. Clinically, if emotion malleability beliefs can impact related regulatory behavior that then influences psychological distress, these emotion beliefs could play a larger role in how clinicians and clinical researchers conceptualize clinical disorders and intervene therapeutically.

### **Emotion Malleability Beliefs and Clinical Conceptualizations of Depression and Social Anxiety Disorder**

Emotion malleability beliefs hold implications for how clinicians and researchers conceptualize psychopathology because emotion dysregulation sits at the core of the majority of primary psychiatric disorders (Gross, 1998, 2013). Emotion malleability beliefs may be at the root of several different clinical disorders and thus, whereas recognizing the distinct qualities of psychiatric disorders is important, taking a transdiagnostic view to examine common pathways, processes, and mechanisms shared



across disorders can also shed important insights into causes and treatment (e.g., Gross & Jazaieri, 2014; Kring & Sloan, 2009). We focus on three disorders, major depressive disorder, social anxiety disorder, and generalized anxiety disorder, as case examples for how emotion malleability beliefs are situated within our current clinical conceptualizations.

**Depression and emotion malleability beliefs.** Major depressive disorder represents a psychiatric condition characterized by dysregulated emotion states coupled with difficulty regulating both positive and/or negative affect (American Psychological Association, 2013). Malleability beliefs may be particularly relevant to depression because current cognitive theories of depression focus on the potentially related dynamics of an individual's attributional style, emotional schema, and impaired emotion regulation in the etiology and maintenance of major depressive disorder (Alloy, Abramson, Metalsky, & Hartlage, 1988; Joormann & Vanderlind, 2014; Leahy, 2002).

Classic work on depression proposed that an individual's attributions about control are tied to clinical depression (Abramson, Seligman, & Teasdale, 1978). Emotion malleability beliefs complement and extend this attributional theory of depression as a potential factor that influences the attributions individuals make regarding control.

Researchers conducting studies on attributional styles in depression posited that individuals who attribute negative experiences to more internal, stable and global factors (e.g., "I am a depressed person and that is why this happened to me") are at risk for depressive symptoms (Abramson, Seligman, & Teasdale, 1978; Sweeney, Anderson, & Bailey, 1986). Specifically, the belief that one has a lack of control over sadness and the external environment is linked with difficulty controlling negative affect and risk for

development of depression (Alloy & Clements, 1992; Alloy, Peterson, Abramson, & Seligman, 1984).

Emotion beliefs could fit into existing attributional models of depression through inclining individuals to perceive that internal events, such as emotion, are uncontrollable, paralleling an externally oriented sense of lack of control (Alloy, Abramson, Metalsky, & Hartlage, 1988). It could be that holding an attributional style in which external events are seen as uncontrollable inclines individuals to then hold more fixed, uncontrollable views of internal events, such as their own emotions. By contrast, the attributional style-emotion belief relationship could lie in the opposite direction; holding more fixed theories of emotion could incline individuals to possess an attributional style that leads them to blame themselves for negative experiences (external or emotional) and perceive the external world as another domain that is outside of their personal control.

In addition, emotion malleability beliefs could be integrated readily into Leahy's (2002) model of depression, which situates depressed individuals' view of their own emotions and emotions, more generally, in a central role. Specifically, Leahy (2002) proposed that the experience of depression was tied to individuals viewing their own emotions as unknowable, uncontrollable, and different from the emotions others experience. In this emotional schema model, these metacognitive beliefs regarding emotions incline individuals to engage in putatively maladaptive regulatory strategies, such as avoidance, rumination, or substance use, which in turn feeds back to reinforce the individual's negatively biased beliefs about personal and general emotions, further inclining the individual to experience depression (Leahy, 2002). Therefore, it could be the belief that emotion is fixed provides the genesis for a cognitive schema about how

one's own emotions are outside of personal control, thereby providing the foundation and maintenance for clinical levels of depression and psychological distress. Most work on emotion malleability beliefs is cross-sectional, and therefore cannot speak to the developmental trajectory of emotion malleability beliefs and how the development malleability beliefs could confer depression risk.

More recent models of depression consider impaired emotion regulation an integral feature of this disorder (Joorman & Gotlib, 2010; Joormann & Vanderlind, 2014; Joormann & Siemer, 2013). Under this depression model, deficits or dysfunction in emotion regulation are central to the etiology and maintenance of clinical depression, and much empirical work under this conceptualization focuses on how individual differences in the general, habitual use of specific emotion regulation strategies relate to depression (e.g., Joormann & Gotlib, 2010; Joormann & Vanderlind, 2014). Specifically, depressed individuals utilize more frequent putatively maladaptive emotion regulation strategies, such as rumination, and less use of largely effective emotion regulation strategies, such as cognitive reappraisal (Joormann & Vanderlind, 2014). Under this depression model, also as depicted in Figure 1, impaired emotion regulation is the avenue through which depressed individuals experience sustained negative affect and reduced positive affect, hallmark features of the disorder (American Psychological Association, 2013; Joormann & Gotlib, 2010; Joormann & Vanderlind, 2014).

As represented on Figure 1, emotion malleability beliefs could represent a cognitive factor that causally influences emotion regulation and thereby relates to clinical depression. As discussed earlier, holding the belief that emotion is malleable could incline individuals to be more motivated for self-regulation, and therefore engage in more

emotion regulation efforts overall. Similarly, believing that emotion is malleable could influence individuals to engage in more active regulatory strategies, such as reappraisal, and disincline them to engage in more ineffective strategies, such as rumination, thereby decreasing their risk for depression. In addition, individuals who hold more fixed views of emotion could be more inclined to adopt a nonaccepting stance toward negative emotions and experience more fear of heightened negative emotional experiences as a function of believing that emotions cannot be changed in the moment. In terms of therapeutic intervention, the examination of individual differences that relate to how individuals respond and regulate positive and negative affect could clarify causes of depression, and could be harnessed to enhance intervention efforts (Campbell-Sills & Barlow, 2007).

**Social anxiety disorder and emotion malleability beliefs.** Maladaptive beliefs also have been consistently tied to pathological levels of social anxiety (e.g., Hofmann, 2007). Cognitive theories of social anxiety disorder hold that an individual's maladaptive beliefs and cognitive biases set the stage for a pattern of rigid social avoidance and problematic social anxiety (Hofmann, 2007; Rapee & Heimberg, 1997). Belief that one's emotions are fixed rather than malleable may represent one of these maladaptive personal beliefs (De Castella et al., 2014; De Castella, Goldin, Jazaieri, Heimberg, Dweck, & Gross, 2015; Hofmann, 2007).

In the realm of malleability beliefs and social anxiety disorder, recent work has extended more classic cognitive models and examined the role of beliefs about malleability over personality attributes related to social anxiety, such as shyness, to the experience of socially-tied anxiety (Valentiner, Mounts, Durik, & Gier-Lonsway, 2011).

Specifically, the belief that poor social performance reflects one's innate, fixed personality has been tied to a related increase in the experience of social anxiety (Hofmann, 2007; Rapee & Heimberg, 1997). In addition, the belief that shyness, as a personality construct, is fixed has been tied to greater social performance anxiety and decreased efficacy of exposure therapy for social anxiety disorder (Valentiner et al., 2011; Valentiner, Jencius, Jarek, Gier-Lonsway, & McGrath, 2013). In terms of controllability more broadly, it appears that individuals with SAD (social anxiety disorder) underestimate their control over external events, and also believe that they have less control over their physical symptoms of anxiety compared to healthy individuals (Hofmann, 2007; Leung & Heimberg, 1996).

Building on the role of maladaptive self-beliefs in social anxiety disorder, there exists preliminary evidence that beliefs about the malleability and controllability of emotions influence social anxiety symptomatology, as well as how individuals respond in an anxiety-eliciting social context. Theoretically, Barlow (2002) describes a lack of control over emotions and anxiety as a central facet in the development and maintenance of SAD. Specifically, Barlow proposes that individuals with pathological levels of social anxiety repeatedly experience events that they perceive as uncontrollable and experience subjectively increased levels of perceived anxiety during these uncontrollable events. Increased perceived anxiety, Barlow suggests, then leads to the perception that their own emotions are uncontrollable (Barlow, 2002). DeCastella and colleagues (2014) found empirical support for this claim; individuals diagnosed with SAD held more fixed views of their own emotions, emotions in general, and their own social anxiety. Additionally, individuals with SAD viewed their own emotions and own social anxiety as more fixed

than emotions generally, demonstrating that personal emotion beliefs could play a stronger role in pathological levels of distress, at least within the context of SAD (De Castella et al., 2014).

From a therapeutic perspective, it appears that Cognitive Behavioral Therapy (CBT) for SAD induces individuals diagnosed with SAD to hold more malleable views of emotion. In particular, CBT for SAD led to less fixed beliefs about anxiety as a function of treatment even when controlling for baseline social self-efficacy, perceived social costs, and unhealthy interpersonal beliefs (De Castella et al., 2014). Moreover, this change to a more malleable view of anxiety directly predicted changes in social anxiety levels at the end of treatment, and at 12-month follow-up (De Castella et al., 2015). Therefore, preliminary evidence suggests that CBT could represent a means to promote a more malleable view of emotion, and viewing emotions as malleable may lead to tangible therapeutic improvement and decreased psychiatric symptoms of social anxiety disorder.

Future work might elucidate how emotion malleability beliefs operate within the realm of pathological social anxiety, and also how these beliefs could operate as risk factors to social anxiety disorder. Clarifying how emotion malleability beliefs could relate to regulatory strategies used to cope with social anxiety is important because the use of specific emotion regulatory strategies, such as cognitive reappraisal and expressive suppression, have been the focus both of conceptualizations of social anxiety, as well as treatments for social anxiety (e.g., Hofmann, Heering, Sawyer, & Asnaani, 2009; Jamieson, Mendes, & Nock, 2013).

**Generalized anxiety disorder and emotion malleability beliefs.** Generalized Anxiety Disorder (GAD) represents an interesting case from the perspective of our

current consideration of emotion malleability beliefs. On one hand, holding more malleable views of personal and general emotions could be beneficial. As with depression and SAD, holding the view that emotion is malleable, and by extension controllable, could be associated with a more active coping stance to combat worry or anxiety, and resultantly decreased anxiety or worry in the moment and decreased risk for generalized anxiety disorder. By contrast, there could be situations in which holding a more fixed view of emotion is beneficial for individuals with GAD, specifically. Certain conceptualizations of GAD highlight over-active attempts to control internal experiences, the fear of the loss of control of emotions and anxiety, and overly controlled emotions as core facets of the disorder (Mennin, Heimberg, Turk, & Fresco, 2005; Roemer, Salters, Raffa, Orsillo, 2005); therefore, holding a more fixed view of emotion could be beneficial in this context. Under this conceptualization of GAD, individuals with the disorder are more motivated to regulate their negative emotions and engage in increased, problematic self-monitoring and emotion regulation. Therefore, promoting a more malleable view of emotion could further incline individuals with GAD to over-engage in regulatory efforts, furthering their pathological worry and anxiety. In summary, future research might further clarify the parameters of when holding a more malleable view of emotion is helpful, and GAD could represent a special case in terms of a clinical disorder in which this caveat could hold true.

Additionally, a wide-reaching and viable area of future examination could focus on how these emotion malleability beliefs operate within any of these previously discussed disorders through inclining individuals to engage in certain coping or emotion regulation strategies such as using substances, ruminating, or reappraising. It could be

that emotion malleability beliefs incline individuals to engage in more or less self-regulation overall. It also could be that these beliefs induce individuals to engage in specific patterns of emotion regulation strategies, for example more active, early stage strategies or late-stage, response-focused regulatory strategies, and this differential engagement could then alleviate or worsen clinical symptoms. There exists preliminary evidence that emotion malleability beliefs represent a causal factor in influencing regulatory behavior to cope with unwanted negative emotions. Specifically, recent work has experimentally manipulated emotion beliefs through a simple paradigm in which individuals read information about emotion's malleability or fixedness and then summarize their assigned passage's message to further enhance internalization of the induction. In one study, individuals who were experimentally induced to view their emotions as malleable engaged more in specific emotion regulation strategies such as blaming themselves and perspective-taking, when regulating negative affect when recalling an upsetting personal memory (Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2015a). In another sample, individuals induced to view their emotions as malleable engaged in more cognitive reappraisal in a social stress task compared to individuals who were induced to hold more fixed views of emotion (Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2015b). Although preliminary evidence suggests that emotion malleability beliefs influence regulatory behavior to cope with unwanted negative emotions, it remains an open research question if these emotion malleability beliefs fit into the etiology and maintenance of psychopathology directly or through inclining individuals to engage in specific regulatory strategies, which in turn predispose an individual to psychopathology or serve to maintain pathological levels of distress.



### **Emotion Malleability Beliefs in Clinical Interventions: Cognitive Behavioral Therapy**

From a therapeutic perspective, Cognitive Behavioral Therapy (CBT) emphasizes to clients that they have the power to change their emotions through changing the thoughts they have on a superficial level, through challenging negative automatic thoughts, and, on a deeper level, through examining underlying assumptions, world-views, and core beliefs (Beck, 1995). Therefore, emotion malleability beliefs could provide the implicit premise or pre-condition for such cognitive (and behavioral) interventions to be effective. Consistent with this conjecture, in one recent study, CBT for SAD led to less fixed beliefs about anxiety as a function of treatment, and this change to a more malleable view of anxiety directly predicted lower levels of social anxiety at the end of treatment and at 12-month follow-up (De Castella et al., 2015).

One direction for future research would be to clarify how emotion malleability beliefs could be enhanced to substantiate therapeutic change through promoting emotion regulation self-efficacy and active emotion regulatory behavior is an important area for future research. Through engaging in these cognitive exercises, such as cognitive restructuring, clinicians are either explicitly or implicitly conveying the message that emotions are malleable, and these cognitive therapeutic exercises could work through this mechanism. Importantly, it could be that having clients or patients endorse the idea that emotion is malleable and that they can actively work to change their emotions then provides the basic premise for these exercises and provides the platform through which these interventions have their efficacy.

Another area of future research involves how emotion malleability beliefs could be assessed pre-, during, and post- treatment to understand how psychotherapeutic interventions could moderate these beliefs and how these beliefs can be modulated as a function of therapy engagement. For example, clinicians could assess emotion beliefs at the beginning of treatment to determine if a client possesses more entity, fixed views of emotion or anxiety at treatment onset. If a client has more fixed emotion beliefs (either about emotions in general or their own emotions), the client could then benefit from a targeted treatment module that explicitly focuses on enhancing more malleable view of emotion before initiating more active cognitive and behavioral interventions that rely on the premise that emotions, by their very nature, are changeable and dynamic. In this case, a more malleable view of emotion should be addressed explicitly in therapy modules that occur near the onset of therapy, in order to enhance the degree to which clients internalize later cognitive interventions that focus on strategies that can be used to change emotions. In this vein, it is likely important to address emotion malleability beliefs in the therapy room, perhaps through psychoeducation, before clinicians engage clients to change the way they regulate their unwanted emotions. More research is needed to determine how best to promote a more malleable view of emotion in a therapeutic contexts to enhance treatment outcomes. Alternatively, if an individual holds a more malleable view of emotion (or their own emotions) at treatment onset, then the therapist moves into more active cognitive and behavioral interventions, such as challenging automatic thoughts to change emotions, in a faster, more efficacious, way.

These malleability beliefs could also influence the engagement and belief in exercises conducted in therapy that focus on enhancing active emotion regulation and

healthy coping strategies. Emotion malleability beliefs could represent a factor that could explain a relatively common obstacle in cognitive therapy. Specifically, often clients can effectively regulate their emotions in the more controlled environment of the therapy room when the emotion regulation is more cued, but then fail to tap into their new emotion regulation strategy repertoire in more real life, naturalistic contexts. It could be that individuals who hold more fixed personal or general beliefs about emotion could engage in therapeutic exercises in the therapy room, such as challenging unwanted thoughts to reduce potent negative emotions, yet not believe that such an intervention would work on their own emotions, which they view as fixed. Clarifying factors, such as emotion malleability beliefs, that promote more positive client expectancies deserve further empirical attention (Greenberg, Constanino, & Bruce, 2006).

As discussed earlier in the subsection on emotion malleability beliefs and SAD, there exists preliminary evidence that cognitive behavioral therapy acts on these malleability beliefs through promoting a more malleable view of emotion (De Castella et al., 2015). These findings are important for several reasons. First, these preliminary results not only show that CBT can directly change emotion malleability beliefs, but also that these changes in beliefs can be tied to meaningful change in social anxiety. Secondly, given the unique contribution of changes in malleability beliefs about anxiety, it appears that changes in these beliefs, specifically, can provide a mechanism for therapeutic change. Additionally, there exists preliminary evidence that trait-level emotion malleability beliefs could influence the type of treatment individuals prefer to address their emotional issues. Specifically, individuals who beliefs that their personal attributes are more malleable were more inclined to engage in psychotherapy rather than take

psychotropic medication (Schroder et al., 2014). Therefore, the assessment of emotion malleability beliefs could produce better treatment preference matching or could be explicitly addressed in order to increase client's expectations regarding efficacy of psychotherapy if their fixed emotion beliefs disincline them to pursue and believe in therapy as a viable treatment option.

### **Conclusion and Future Directions**

Integrating emotion malleability beliefs, emotion regulation, and psychopathology draws on both affective and clinical science to further our understanding of how emotional experiences can go awry in healthy and disordered individuals. An accumulation of preliminary evidence demonstrates that emotion malleability beliefs are tied to emotion regulation efforts through promoting a greater engagement in emotion regulation overall, or through the engagement in more early or late stage strategies.

Future work in this domain should clarify along what lines emotion malleability beliefs influence regulatory behavior, as well as the directionality of the relationship between emotion beliefs and emotional experience and emotion regulation. In the clinical realm, emotion malleability beliefs can be situated in the current conceptualizations of psychiatric disorders, including depression, social anxiety disorder, and generalized anxiety disorder and future work should examine how emotion beliefs function in pathological levels of distress.

Our literature review and proposed conceptual model of how emotion beliefs relate to emotion regulation have focused largely on intrapersonal emotion regulation. However, the model could also apply to interpersonal emotion regulation strategies, such as seeking social support. Seeking social support as an interpersonal emotion regulation

strategy has increasingly been the focus of emotion regulation research (Zaki & Williams, 2013). Relatedly, some evidence suggests that individuals who hold more malleable views of emotion are more likely to seek social support in times of increased stress (Tamir et al., 2007). Therefore, it could be that individuals who view their emotions as malleable could be more inclined to engage in interpersonal emotion regulation strategies (e.g., social support), as well as intrapersonal emotion regulation strategies (e.g., cognitive reappraisal).

On a related note, how emotion malleability beliefs relate to intrapersonal and interpersonal emotion regulation likely differ based on the individual's culture. Emotion regulation, specifically interpersonal emotion regulation, taking place in different cultures may be more or less likely to rely on intrapersonal or interpersonal mechanisms to regulate emotions and when individuals enact these emotion regulation strategies. For example, research has found cross-cultural differences in which emotion states that individuals value (also called ideal affect; Tsai, 2007). Specifically, college students from Hong Kong were more likely to value a peaceful type of happiness compared to American students who valued more high-arousal positive states, such as excitement or joy (Tsai, Knutson, & Fung, 2006). This difference was replicated among Asian- and European-American children (Tsai, Louie, Chen, & Uchida, 2007). Therefore, the desired emotion states and the goals of emotion regulation appear to differ cross-culturally and this could also affect how and when individuals regulate their emotions.

In addition, emotion malleability beliefs are typically assessed using self-report measures, although future work could benefit from including a broader array of assessment that might address more directly the extent to which these beliefs are implicit

– that is, automatically activated, often without conscious awareness. For instance, research on other belief systems (such as stereotypes, self-concept, and self-esteem; Greenwald, Banaji, Rudman, Farnham, Nosek & Mellott, 2002) have assessed implicit beliefs through response-latency procedures. It may thus be possible to incorporate assessment of specifically implicit emotion beliefs by developing a modified version of the Implicit Association Task (IAT; see Greenwald et al., 2002). For instance, this task could assess the speed with which individuals categorize emotion or non-emotion words as well as words related to malleability or fixedness in order to provide an index of how individuals implicitly view emotion's malleability.

In summary, emotion malleability beliefs could provide the implicit premise or precondition for the intervention work conducted through the cognitive therapy orientation and a potent mechanism of change in therapy. Overall, both clinical science and affective science act on the core idea that the beliefs individuals hold regarding emotions are powerful factors that could shape the experience of emotion and emotion regulation and function transdiagnostically to incline individuals towards or against psychopathology.

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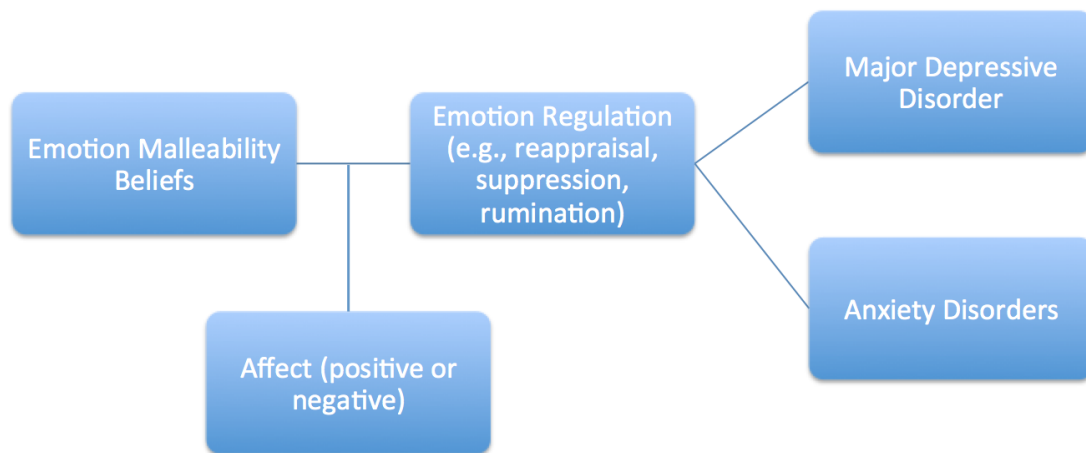
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**Figure 1:**

**Highlights**

Emotion malleability beliefs can be incorporated into depression and anxiety conceptualizations.

Emotion malleability beliefs provide the implicit premise for cognitive behavioral therapy.

Emotion malleability beliefs could represent shape emotion regulatory behavior.