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CHAPTER 10

Mindset Regulation

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Emotions impact our health (Salovey et al., 2000), well-being (Lyubomirsky et al., 2005), and performance (Diener et al., 2020). Because of these effects, researchers have devoted extensive effort (well summarized in this volume) to understanding how we can better regulate our emotions to improve our lives. Mindsets—core assumptions about the nature and workings of things in the world (Molden & Dweck, 2006)—influence health, well-being, and performance, partly by shaping our emotions. For example, when one is enduring stress, the mindset that stress can be enhancing leads to more positive affect (Crum et al., 2017), which can bolster resilience and health. As a result, changing or regulating mindsets may serve as an effective emotion regulation tool.

The purpose of this chapter is to link mindset research to emotion regulation research more explicitly than before. We do so in several ways: First, we briefly review the literature on how mindsets can influence emotions to illustrate how regulating or changing mindsets can be a form of emotion regulation. Second, inspired by existing emotion regulation techniques, we articulate a perspective for how mindsets themselves may be consciously regulated. Building on well-established emotion regulation techniques, we propose a three-step approach to "mindset regulation," defined as conscious (explicit, with awareness) and deliberate (with intention) efforts at mindset change. Finally, we discuss how, like emotion regulation, mindset regulation may be facilitated by beliefs about mindsets' controllability, which we call "meta-mindsets." We end with a discussion of key questions for future research.

Mindsets Influence Emotions

To manage the world's inherent complexity, subjectivity, and uncertainty, we adopt mindsets: core assumptions that help us organize and simplify information to create meaning,

make predictions, and motivate action (Zion et al., 2022). While the terms *mindset* and *belief* are sometimes used interchangeably, mindsets are specific types of beliefs about a domain or category (e.g., stress, intelligence, illness, or even emotions themselves) that orient people toward particular expectations (What will happen?), explanations (Why is it happening?), and goals (What should I do?). The mindsets we adopt are not necessarily true or false, or right or wrong. Nevertheless, they can influence how we feel and respond in meaningful ways.

For example, evidence suggests that the experience of stress (defined as adversity in one's goal-related efforts) can have an array of complex influences on our body, mind, and behavior, some faciliatory and some damaging. Stress mindsets refer to the simplified assumptions people make about the *general nature* of stress. They typically lie on a continuum between the mindset that "stress is debilitating" and the mindset that "stress is enhancing." Whereas a stress-is-enhancing mindset reflects the belief that stress can have enhancing consequences on health, performance, and well-being, a stress-is-debilitating mindset reflects the belief that stress debilitates health, well-being, and performance. Both mindsets could be justified—however, the degree to which people hold one mindset or another (as a result of culture, context, experiences, media reports, expert advice, or interventions) impacts their emotions, performance, and health in settings such as education (as an educator or student), military, and finance (see Walton & Crum, 2020, for a review).

Experimental interventions have linked stress mindsets to emotional outcomes. Stress mindsets, for example, are tied to increased positive affect under acute stress (Crum et al., 2017). In one study, activating a stress-is-enhancing mindset before a social stress task led to significant increases in positive emotion (Crum et al., 2017). Another intervention aimed at instilling a stress-is-enhancing mindset in the fall of students' first year of college led to more experiences of positive affect (i.e., a composite of feelings like *excitement*, *happiness*, and *confidence* using experience sampling during the exam week) in the spring semester compared to a comparison group of students who did not receive the mindset intervention (Goyer et al., 2022). The effects of a stress mindset on negative affect are more mixed. Some studies suggest that changes in one's stress mindset amid chronic enduring stressors are associated with a reduction in negative emotion (Crum et al., 2023), while others suggest that stress mindsets change positive emotion but may not reduce negative emotion in the moment of an acute stressor (Crum et al., 2017).

Growth mindsets—the belief that one's intelligence or other skills, traits, or attributes (Dweck, 2008) are malleable (vs. fixed)—also influence emotions. In education, the mindset that intelligence is malleable predicts greater motivation, mastery-oriented learning, and persistence (Dweck, 2008; Dweck & Yeager, 2019). Across three studies, Yeager et al. (2011) found that a fixed mindset about one's personality predicted a heightened desire and intention to engage in aggressive retaliation. This effect was driven by students with a fixed mindset, who were more likely to harbor negative feelings about themselves (e.g., shame), view their adversaries as bad people, express hatred toward them, and think that vengeful ideation is an effective emotion regulation strategy (Yeager et al., 2011). Further, educators who held the mindset that their teaching abilities were malleable had more positive emotions (i.e., enjoyment), which then predicted engagement (Frondozo et al., 2020; Nalipay et al., 2021) and well-being (Nalipay et al., 2022). In sum, given that mindsets influence emotions, regulating mindsets may be a potential route to regulating emotions.

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Mindsets about Emotions

The previous section discussed how mindsets about domains such as intelligence or stress could influence people's emotions when those domains are relevant—however, people can have mindsets *about emotions* (e.g., emotions are bad, beneficial, controllable) and about specific emotions (e.g., happiness or anxiety is malleable). Mindsets about emotions have consequences, most notably on effort, motivation, and the success of emotional regulation (Bigman et al., 2016; Gutentag et al., 2017; Tamir et al., 2007). Tamir et al. showed that people differ in their mindsets about emotions. Whereas some people believe emotions can be changed (growth) or controlled, others believe emotions are static (fixed).

People's mindsets about emotions are linked to regulatory strategies (e.g., acceptance, avoidance, reappraisal, perspective taking) that impact health, well-being, and social and emotional function (De Castella et al., 2013, 2018; Ford et al., 2018). In a longitudinal study, Tamir et al. (2007) found that students who held the mindset that emotions were malleable had higher emotional regulation self-efficacy and reported more use of cognitive reappraisal, which, in turn, resulted in better social (e.g., loneliness, social adjustment) and emotional (e.g., positive and negative emotions, well-being, depression) outcomes. Kneeland and colleagues (2020) found that moderately depressed individuals with a malleable mindset reported greater use of cognitive reappraisal in response to upsetting daily events, resulting in an overall decrease in negative affect. Using moderation analysis, Schroder et al. (2017) show that growth mindsets about anxiety can protect or exacerbate (moderate) the relationship between stressful life events and posttraumatic stress symptoms, depression, substance use, and motivation for nonsuicidal self-injury. Importantly, research suggests that mindsets are malleable across many domains. For example, Smith and colleagues (2018) show that adolescents can improve their well-being by changing their mindsets about emotions.

Mindset Regulation: Taking Inspiration from Emotion Regulation Strategies

In our view, there are three critical components for conscious emotion (and mindset) regulation. First, people must be *aware* of their emotions (Ludwig et al., 2020; Sendzik et al., 2017). Second, people must *understand* the mental, physiological, and behavioral impact of emotions on their lives (Brackett et al., 2019; Mayer et al., 2008). Third, people must deploy effective techniques (such as mindful breathing, visualization, reappraisal, etc.) to deliberately *regulate* (express, maintain, alter, or change) their emotional responses (Brackett et al., 2019; Webb, Gallo, et al., 2012; Webb, Miles, et al., 2012).

Similar strategies and components can be applied to regulating mindsets. Akin to emotion regulation, a critical first step in conscious mindset regulation is to *be aware that you have mindsets*. Due to "naïve realism" (Ross & Ward, 1996) it is easy and common for people to assume their mindsets are mere reflections of the world *as it is*. Nevertheless, our mindsets constantly filter our perceptions, which are informed by factors such as upbringing, experiences, and culture(s). Recognition of these sources of mindsets is critical, as it allows us to realize that the mindsets we happen to hold are not inevitable and that other mindsets may be possible. Without such awareness, preexisting mindsets continue to "unconsciously dominate perception and action" (Crum & Lyddy, 2014, p. 13).

The second component of mindset regulation involves *understanding mindsets*. Like emotion regulation, this means understanding both (1) why we have a particular mindset

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in the first place (what sources helped form it); and (2) the effect of holding that particular mindset on our behaviors, emotion, attention, and physiology. After people become aware that they have a stress-is-debilitating mindset, for example, they might begin to understand that it results from negative public health messaging. They might also notice how this stress-is-debilitating mindset, even if originally well-intentioned, may be influencing their emotions (e.g., making them *more* stressed), behaviors (e.g., overreacting to stressors or denying/suppressing them), attention (e.g., paying attention to all the ways stress is, in fact, debilitating), and physiology (e.g., making them less healthy). This process of seeking to understand mindsets and their source enables one to identify which mindsets may be more adaptive, depending on one's circumstances and goals.

Once people are aware of and understand the impact of their mindsets, they can become agentic in deploying strategies to help them *maintain or change their mindsets*. Changing to a particular mindset may be easy or difficult, and individuals might employ various strategies to try to do so. They might say the mindset aloud or write it down daily as a reminder. They might seek evidence that supports the mindset they would like to adopt, such as deliberately focusing on research that supports it (e.g., reading research documenting how the body's stress response can make us stronger), or on their own past experiences that confirm that mindset (e.g., noticing that all the times they grew in meaningful ways in their life involved enduring some stress). Finally, individuals might seek to change a mindset by acting in ways that reaffirm that the mindset is true (e.g., deliberately behaving in ways to increase the likelihood that stress will have enhancing outcomes).

Meta-Mindsets: A Precursor to Mindset Regulation?

Like mindsets about the malleable nature of emotions, mindsets about whether mindsets can be controlled or changed (what we call the controllable meta-mindset [CMM]) may be similarly consequential for mindset regulation. Believing you can control your mindset may increase your motivation and ability to engage in the skills, actions, and/or behaviors that support mindset regulation (i.e., reflection, mindfulness practice, perspective taking). Believing you can control your mindset may increase the ability and likelihood of monitoring or identifying mindsets to select or attempt to regulate (Ford & Gross, 2019). Although work on CMM is new, early research suggests that individual differences in CMM moderate the effectiveness of mindset interventions. In one study, the effect of a stress mindset intervention on educators was moderated by CMM, such that educators in the intervention condition (vs. active control), who believed they could control their mindset (high CMM), had greater improvements in stress mindsets, health, well-being, anxiety, and burnout 1 month later compared to those who did not believe they could control their mindset (Evans et al., 2022).

Key Questions and Future Directions

We have introduced the concept of mindset regulation as an additional, novel approach to regulating emotions and, more broadly, evoking positive outcomes in health, well-being, and performance. Furthermore, we have shown how the rich history and wisdom on emotional regulation can inform our understanding of the mindset regulation process. Several questions are essential to pursue in future research.

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One crucial question is how mindset and emotion regulation interact and inform each other. One benefit of mindset regulation is that it may evoke automatic emotion regulation across *many situations* broadly. For example, regulating one's stress mindset, such that one comes to adopt the mindset that "stress is enhancing," could influence how one appraises various stressors across multiple occasions. This does not mean one should not also use emotion regulation tactics within each of those situations or in response to specific emotions that arise but rather that directing regulatory efforts toward establishing a more adaptive mindset about the broader nature of stress may indirectly and automatically influence one's emotions in many stressful situations. In this way, mindset regulation becomes an antecedent-focused emotion regulation strategy.

A potential downside of mindset regulation is that the regulatory skills of awareness and understanding may be higher hurdles when it comes to mindsets versus emotions. The experience of emotions is undoubtedly visceral, making emotions sometimes impossible not to notice. Cultivating awareness of one's mindset may require a more sophisticated—and integrated—awareness of one's thoughts, beliefs, and reactions (i.e., meta-awareness). Future research should explore whether enhancing trait meta-awareness can improve mindset regulation. Interestingly, emotions may serve as a starting point or trigger for identifying one's mindset. For example, upon noticing that one has a similar emotional reaction to particular situations or circumstances, one might seek to understand what mindsets might trigger such a reaction. Decades of research have focused on identifying and understanding emotions—what they are, how they work, and their impacts. By contrast, research on mindsets is nascent, and more work is needed to identify and refine a range of potential mindsets beyond growth and stress mindsets.

Finally, more research is needed to design and test interventions that improve mindset regulation techniques, such as the three-step strategy outlined here. Boosting people's ability to regulate their mindsets may directly benefit health and well-being. Improving regulatory skills may also enhance the effectiveness of existing mindset interventions (e.g., growth and stress mindset interventions). Notable questions include What strategies are most helpful for changing mindset deliberately? Do they differ across different mindsets? Are there particular times or situations where it is more challenging to regulate mindsets successfully? Does believing you can control your mindset predict the frequency and success of mindset regulation? Do cultures differ in their beliefs about mindset regulation? How can parents, doctors, educators, and others help facilitate mindset regulation skills in others?

We have introduced the notion of mindset regulation, focusing on the conscious and deliberate regulation of mindsets. Building on the emotion regulation literature, we propose that by becoming aware of mindsets, understanding them, and then actively regulating them, people may be able to influence their emotions across situations and, more broadly, influence their lives. Understanding how to regulate emotions is an inherently human form of empowerment that is only broadened by mindset regulation.

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