Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, 56, 227–238.

Resilience. (2010). In *Oxford English online dictionary*. Retrieved from http://www.oxforddictionaries.com/definition/english/resilience

Richardson, G. E. (2002). The meta-theory of resilience and resiliency. *Journal of Clinical Psychology*, 58, 307–321.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Belmont, CA: Wadsworth.

Sonnentag, S., & Frese, M. (2003). Stress in organizations. In W. C. Borman, D. R. Ilgen, & R. J. Klimoski (Eds.), *Comprehensive handbook of psychology: Vol. 12. Industrial and organizational psychology* (pp. 453–491). Hoboken, NJ: Wiley.

Emotion Regulation and Resilience: Overlooked Connections

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According to the focal article by Britt, Shen, Sinclair, Grossman, and Klieger (2016), it seems conclusive that all definitions of resilience involve an experience of significant adversity, regardless of whether it is examined as a trait or an outcome. This experience of adversity is inherently emotional. When considering the ability or outcome of "bouncing back" from a stressful or chronic event, one must recognize the emotional experience and consider how individuals may cope with their emotions. This said, there is a clear connection between resilience and emotion regulation. The focal article presents a descriptive model of resilience for employees, which includes mention of energy and affect as individual resources but does not acknowledge the connection between resilience and emotion regulation. In this commentary I argue that these two research areas are related but largely neglected in the current literature. I will discuss the (a) process model of emotion regulation, (b) points of connection with resilience, and (c) empirical research suggesting the importance of positive emotion.

Emotion Regulation

The process model of emotion regulation (Gross, 1998) organizes emotion regulation strategies by temporal points in the emotion-generation process.

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The model describes five main families of emotion regulation strategies: situation selection, situation modification, attentional deployment, cognitive change, and response modulation. These can be sorted into three categories of emotion regulation strategies that target the different aspects of the emotional experience: the *external situation* by changing the environment, the *internal situation* of how one is thinking of the situation, or the outward *response* of emotional expression. In this commentary I focus on the external situation and internal situation strategies, as they arguably play an important role in both the capacity for and demonstration of resilience.

External regulation strategies focus on altering the physical environment. Situation selection refers to taking actions that affect the likelihood of being in a situation that will give rise to a desirable or undesirable emotion—for example, avoiding an unpleasant coworker. Situation modification refers to actions that directly alter a situation in order to change its emotional impact—for example, taking a break from a stressful meeting. External situation strategies can be especially useful because they reduce the experience of negative emotion, through either likelihood or duration.

When individuals are unable to select out of an emotional situation, internal regulation strategies are useful. These strategies focus on altering one's internal state to prevent an emotion from fully emerging. When using *attentional deployment*, people selectively direct attention in order to alter their emotional experience. One technique of attentional deployment is distraction, or shifting attention toward a particular aspect of the situation or even away from the situation. The other internal strategy of *cognitive change* refers to altering one's appraisal of the situation by changing one's perception of the situation. Reappraisal is the main strategy of cognitive change, which alters emotion by changing the meaning or self-relevance of a situation. Next, I explain how these strategies relate to resilience.

Connections With Resilience

Troy and Mauss (2011) suggested that emotion regulation and the outcome of resilience might be connected through the use of two strategies: attentional control and cognitive reappraisal. Their framework proposes that emotion regulation ability is a moderator, suggesting those with high internal emotion regulation ability should be more likely to display resilience after adversity, compared with those with low emotion regulation ability. They argue that attentional control and cognitive reappraisal strategies should lead to adaptive (less negative) emotion responses and therefore contribute to resilience.

Although Troy and Mauss (2011) seems to be the only published article explicitly connecting specific emotion regulation strategies from Gross's

framework with resilience, there are other evident links, such as in training programs for resilience. For example, the hardy coping skill of situation reconstruction helps people understand stressful situations in a broader context, which relates to reappraisal. Further, the Psychological Capital (Psy-Cap) training program "encourages employees to consider situations at work where they are stuck and think about factors in those situations they could change" (Britt et al., p. 390). This has obvious connections to situation modification strategies.

A recent meta-analysis of resilience training programs discusses cognitive appraisal and problem-focused coping strategies as psychological protective factors (Vanhove, Herian, Perez, Harms, & Lester, 2016), although this review did not specifically examine the effects of these strategies. Similarly, Meredith et al. (2011) reviewed several individual level factors of resilience that relate to emotion regulation, such as positive coping, positive affect, positive thinking, and behavioral control. Cognitive change is grouped here as positive thinking, and situation modification would likely be classified as positive coping. However, attentional deployment and situation selection do not fit well in these categories. Further, the distinctions between these different factors are somewhat unclear. For example, the authors consider the term "emotion regulation" to fall under behavioral control, possibly due to considering only response based regulation strategies. Use of Gross's (1998) process model could help identify other useful techniques for building resilience and could add to this body literature.

Experiencing Positive Emotions

Up to this point, this commentary has largely focused on down-regulating negative emotion. However, research suggests that feeling positive emotion may also be important for improving the capacity for and demonstration of resilience. Drawing on the broaden-and-build theory of positive emotions (Fredrickson, 2001) and the undoing hypothesis (Fredrickson & Levenson, 1998), research suggests that positive emotions broaden the thought-action repertoire, build personal resources, help people downregulate negative emotions, and improve coping (Tugade & Fredrickson, 2004). In these ways, it has been suggested that positive emotions aid in building the capacity for resilience (Fredrickson, Tugade, Waugh, & Larkin, 2003). For example, an interesting study of students before and after the September 11 attacks found that positive emotions fully mediated the relationship between precrisis resilience and later depressive symptoms and postcrisis growth in psychological resources (Fredrickson et al., 2003). Similarly, research suggests positive emotions mediate the effect of trait resilience on the duration of cardiovascular reactivity (Tugade & Fredrickson, 2004). Daily positive emotions also assist in rebounding from negative events and daily stress (Ong, Bergeman, Bisconti, & Wallace, 2006).

To this end, regular experiences of positive affect in the wake of an adverse event seem to be important for promoting resilience. Use of strategies for up-regulation of positive affect may be particularly important to increasing resilience outcomes. Tugade and Fredrickson (2007) suggest that strategies for prolonging and enhancing positive emotions (e.g., savoring) can help increase resilience in difficult times. Other strategies, such as seeking experiences that should lead to feeling positive emotion (situation selection), can also assist in undoing the effects of negative emotions and therefore improve outcomes of resilience. This said, future work could benefit from a broadened view of emotion regulation strategies.

For example, consider the thousands of individuals who were working in the World Trade Center on September 11, 2001. After experiencing such an intense adverse event, these people may have avoided news channels that reported on the topic in the following weeks and months. This use of situation selection prevents the reminder of the event and therefore reduces the likelihood of experiencing negative emotion associated with the memory. Similarly, one could find oneself ruminating on the event and bringing back emotional reactions months afterward. Engaging in distraction to stop the cycle of rumination could be a helpful technique. The use of strategies like these may be important for understanding and promoting resilience, although they are not considered or studied in the current literature.

Last, it is worth noting that the focal article explains that the significant adversity required for demonstrating resilience can be either a stressful event or a chronic stressor. This distinction is important in connection with emotion regulation, as effective choice of strategies may differ based on the type of adversity. For example, reappraisal may be more valuable in response to a stressful event, while situation modification may be more beneficial for coping with a chronic stressor. Future research could examine the utility of different techniques based on the type of adversity.

Conclusion

Overall, understanding effective use of emotion regulation strategies to reduce negative emotion and increase positive emotion may be crucial to promoting resilience. Although the trait of resilience is much more than emotion regulation ability, theory and existing literature on emotion regulation may help shed light on valuable strategies to create effective training programs. Considering the emotional aspect of an adverse event, investigating the benefits of emotion regulation strategies may help improve our understanding of resilience.

References

- Britt, T. W., Shen, W., Sinclair, R. R., Grossman, M. R., & Klieger, D. M. (2016). How much do we really know about employee resilience? *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 9(2), 378–404.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218–226. http://dx.doi.org/10.1037/0003066x.56.3.218
- Fredrickson, B. L., & Levenson, R. W. (1998). Positive emotions speed recovery from the cardiovascular sequelae of negative emotions. *Cognition and Emotion*, *12*(2), 191–220. http://doi.org/10.1080/026999398379718
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology*, 84(2), 365–376. http://dx.doi.org/10.1037/00223514.84.2.365
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299. http://dx.doi.org/10.1037/10892680.2.3.271
- Meredith, S., Sherbourne, C., Gaillot, S. J., Hansell, L., Ritschard, H. V., Parker, A. M., & Wrenn, G. (2011). *Promoting psychological resilience in the U.S. military*. Santa Monica, CA: RAND Corporation.
- Ong, A. D., Bergeman, C. S., Bisconti, T. L., & Wallace, K. A. (2006). Psychological resilience, positive emotions, and successful adaptation to stress in later life. *Journal of Personality and Social Psychology*, 91(4), 730–749. http://doi.org/10.1037/0022-3514.91.4.730
- Troy, A. S., & Mauss, I. B. (2011). Resilience in the face of stress: Emotion regulation as a protective factor. In S. M. Southwick, B. T. Litz, D. Charney, & M. J. Friedman (Eds.), *Resilience and mental health: Challenges across the lifespan* (pp. 30–44). Cambridge, UK: Cambridge University Press.
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, 86(2), 320–333. http://doi.org/10.1037/0022-3514.86.2.320
- Tugade, M. M., & Fredrickson, B. L. (2007). Regulation of positive emotions: Emotion regulation strategies that promote resilience. *Journal of Happiness Studies*, 8(3), 311–333. http://doi.org/10.1007/s10902-006-9015-4
- Vanhove, A. J., Herian, M. N., Perez, A. L. U., Harms, P. D., & Lester, P. B. (2016). Can resilience be developed at work? A meta-analytic review of resilience-building programme effectiveness. *Journal of Occupational and Organizational Psychology*, 89(2), 278–307. http://doi.org/10.1111/joop.12123