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Emotion regulation in context: Examining the spontaneous use of strategies across emotional intensity and type of emotion



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ABSTRACT

Emerging research suggests that two features of emotional contexts (emotion intensity, emotion type) predict spontaneous use of emotion regulation (ER) strategies. However, prior work has not examined the interactive effects of emotion intensity and emotion type on the selection of specific ER strategies. This is a noteworthy omission because in real life, emotional situations are characterized by a combination of emotion intensity and type. We recruited 562 participants and asked them to report their use of 7 ER strategies across self-identified stressful contexts that varied in emotion intensity (moderate, high) and primary emotion elicited (anger, anxiety, sadness). Participants reported using ER strategies to a greater extent in high versus moderate emotionally intense contexts, and in response to sadness (versus anger). Further, high intensity sadness prompted greater use of expressive suppression than other contexts. Our findings underscore the importance of taking into account emotional contextual features as predictors of spontaneous ER.

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1. Introduction

A wealth of literature suggests that individuals modulate their emotions using an array of emotion regulation (ER) strategies (see Gross & Thompson, 2007). For example, people may seek to change their emotions by modulating their emotional experiences (e.g., thinking differently about the situation, as in reappraisal), or by changing the way they express these emotional experiences (e.g., not showing how they feel, as in expressive suppression). Prior work has identified individual differences associated with the habitual use of ER strategies. For example, an increased tendency to use reappraisal predicts greater psychological well-being, whereas the frequent use of suppression predicts increased psychological distress and impaired social functioning (e.g., Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gross & John, 2003; John & Gross, 2004). However, contextual variation also plays an important role in the process by which individuals utilize ER strategies (Aldao, 2013; Bonanno & Burton, 2013). One particular contextual dimension that is of great importance to ER is the emotional context that precipitates the need for regulation. For instance, intense emotions may require more ER efforts, whereas less intense emotions may call for less ER effort (e.g., Barrett, Gross, Christensen, & Benvenuto, 2001). Similarly, sadness may evoke a different set of ER responses compared with anger (Rivers, Brackett, Katulak, & Salovey, 2006; Zimmermann & Iwanski, 2014). Few studies, however, have focused on the characteristics of emotional contexts that relate to ER strategy selection. Thus, in this paper we examine people's use of ER strategies within and across contexts that vary in critical emotional dimensions: intensity and emotion type.

Emotion intensity is an important context to consider when comparing use of ER strategies in response to distinct emotions. Indeed, recent research suggests that variations in emotion intensity relate to differences in the selection and implementation of ER strategies (e.g., Sheppes et al., 2014; Zimmermann & Iwanski, 2014). Specifically, at lower emotion intensities, people prefer to use reappraisal, a putatively adaptive strategy, thereby processing their emotions. Conversely, at higher emotion intensities, people prefer to use avoidance, a putatively maladaptive strategy, thus disengaging from their emotions (e.g., Sheppes, 2014; Sheppes & Levin, 2013; Sheppes, Scheibe, Suri, & Gross, 2011). In turn, the use of avoidance strategies, such as suppression, may yield further increases in intensity (e.g., Campbell-Sills, Barlow, Brown, & Hofmann, 2006). As such, these lines of work suggest that emotion intensity may play an important role in the type of regulation process that people carry out.

Emotion type is another important context to consider when seeking to understand the use of ER strategies. Emotion researchers have long held that specific emotional responses serve unique functions

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(e.g., Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Keltner & Kring, 1998). For instance, expressions of sadness (i.e., tears) elicit social support (e.g., Balsters, Krahmer, Swerts, & Vingerhoets, 2013). In contrast, fearful expressions signal danger, and therefore prompt avoidance behaviors (e.g., Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Keltner & Kring, 1998). Thus, we expect individuals to respond differently to different emotions. Indeed, recent work indicates that people have different levels of tolerance across different emotional states (Bernstein et al., 2012), and therefore different thresholds for needing to regulate emotions. Specifically, people may choose to regulate those emotions they find more difficult to tolerate, whereas they may deploy less ER effort in response to more tolerable emotions.

Despite the clear relevance of emotion type in the selection of ER strategies, only a few studies have directly examined these associations. One self-report study examined ER strategies in response to anger and sadness (Rivers et al., 2006). Specifically, undergraduates were instructed to write about situations that elicited each emotion, and describe how they regulated them. Participants reported using more ER strategies to regulate anger than sadness. The most commonly used ER strategy across both emotions was "attempts to change the situation," encompassing both problem solving and cognitive reappraisal. More recently, a self-report study examined ER in response to hypothetical situations eliciting sadness, fear, and anger (Zimmermann & Iwanski, 2014). Findings suggested that sadness (versus fear or anger) was associated with more social support, avoidance, and passive ER, whereas fear (versus sadness or anger) was associated with more expressive suppression. Finally, rumination was higher in response to anger and fear, relative to sadness. In all, anger was associated with less suppression (than fear), and less avoidance and more rumination (than sadness), consistent with the approach-oriented functions of anger (Keltner & Haidt, 1999; Keltner & Kring, 1998). In addition, anger was associated with greater emotion dysregulation (such as blaming others), compared to sadness or fear (Zimmermann & Iwanski, 2014). No significant differences across emotion types emerged for putatively adaptive ER strategies (e.g., "I calm down first and then deal with the situation").

Although these studies suggest that the type of emotional experience influences the selection of ER strategies, they were limited in terms of the scope of ER strategies examined. For instance, the widely-studied ER strategy of reappraisal was aggregated with other strategies in one study (Rivers et al., 2006), and not examined in the other (Zimmermann & Iwanski, 2014). This is an important because reappraisal is a putatively adaptive antecedent ER strategy (Gross, 1998) associated with positive outcomes (e.g., Aldao et al., 2010).

More critically, this prior work has not examined the potential interactive role between emotion intensity and emotion type on the selection of ER strategies. Yet, every emotional stressor is characterized by both of these features. As such, identifying the interactive role of these features of emotional contexts on ER selection and implementation is a critical question that remains to be answered. Doing so has the potential of leading to the identification of specific contexts in which maladaptive ER strategies are likely to be used, and therefore pinpoint areas for tailored intervention.

Bringing together these lines of inquiry, we had three goals for the present study. First, we examined the influence of emotional intensity on use of a wide range of ER strategies, both putatively adaptive (acceptance, cognitive reappraisal, problem solving) and maladaptive (experiential avoidance, expressive suppression, self-criticism, rumination) (Aldao et al., 2010; Gross, 1998). Consistent with prior work, we expected the putatively adaptive strategies to be used more at lower levels of intensity and the putatively maladaptive strategies to be used more at high levels of intensity (Campbell-Sills et al., 2006; Sheppes et al., 2014). Second, we examined the relations between specific emotions and selection and implementation of ER strategies. Building incrementally from prior work focusing on ER in response to negative emotions (Rivers et al., 2006; Zimmermann & Iwanski, 2014), we explored the

influence of specific types of negative emotions (anxiety, sadness, and anger). We expected that anxiety and sadness would elicit greater experiential avoidance, anxiety and sadness would elicit greater expressive suppression, and anger would elicit greater worry/rumination and less suppression or avoidance. Third, we explored whether emotion intensity interacted with emotion type in the prediction of specific ER strategies. Given the scarcity of research on these interactions, we considered these tests exploratory.

2. Material and method

2.1. Participants

Participants were 562 undergraduate students (74.02% female) from two (Midwestern [n=201] and Eastern [n=361]) large public universities. They completed our questionnaires as part of a larger online survey examining emotions and psychopathology for research credit (n=129 with missing data were excluded). The sample ranged in age from 18 to 32 years (M=19.31, SD=1.85), and predominately self-identified as White (68.68%; 12.63% Asian/Asian American; 8.90% Black/African American; 4.27% Hispanic/Latino; 0.71% Native American; 4.09% multiracial). This research received IRB approval from both participating institutions, and all participants provided informed consent.

2.2. ER assessment

2.2.1. Assessment procedures

For the present study, we focused on participants' recollections of 6 situations in which they experienced varying intensities (moderate, high) and types (anxiety, sadness, anger) of emotions (see Aldao & Nolen-Hoeksema, 2012). Participants rated their use of specific ER strategies in response to each of these situations. For the larger study, these procedures also prompted participants to recall "low" intensity emotional situations (although ER was not assessed in response to these since there would be little emotion to regulate), and happy situations, although the present investigation focused on negative emotions (per past research; Rivers et al., 2006; Zimmermann & Iwanski, 2014), given the insufficient range of positive emotions assessed. For each situation, participants were randomly asked to recall stressful social or achievement-related events, which were collapsed in the present study. Each combination of emotion intensity and type were presented in counterbalanced order.

2.2.2. ER strategies

We assessed the use of three putatively adaptive ER strategies: acceptance ("allow or accept your feelings"), cognitive reappraisal ("think of the situation differently in order to change how you felt"), problem solving ("come up with ideas to change the situation or fix the problem"). In addition, we examined the use of four putatively maladaptive ER strategies: experiential avoidance ("push down your feelings or put them out of your mind"), expressive suppression ("hide your feelings from others"), self-criticism ("criticize yourself for your feelings"), and worry/rumination ("worry or ruminate about the situation"). Participants rated the use of each strategy in each situation on a 4-point scale (0 "not at all" to 3 "a lot").

2.3. Data analytic plan

To examine the associations between emotion intensity, emotion types, and type of ER strategy on the use of that strategy we ran generalized estimating equations (GEE) models. This extension of the linear model permits correlated observations among dependent variables (Hanley, Negassa, Edwardes, & Forrester, 2003), given the likely associations across ER strategies (violating the assumption of independence in the general linear model), and is robust to missing data and

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