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Uninstructed emotion regulation choice in four studies of cognitive reappraisal☆,☆☆

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ABSTRACT

In emotion regulation (ER) research, participants are often trained to use specific strategies in response to emotionally evocative stimuli. Yet theoretical models suggest that people vary significantly in strategy use in everyday life. Which specific strategies people choose to use, and how many, may partially depend on contextual factors like the emotional intensity of the situation. It is thus possible – even likely – that participants spontaneously use uninstructed ER strategies in the laboratory, and that these uninstructed choices may depend on contextual factors like emotional intensity. We report data from four studies in which participants were instructed to use cognitive reappraisal to regulate their emotions in response to pictures, the emotional intensity of which varied across studies. After the picture trials, participants described which and how many strategies they used by way of open-ended responses. Results indicated that while a substantial proportion of participants in all studies described strategies consistent with cognitive reappraisal, a substantial proportion also endorsed uninstructed strategies. Importantly, they did so more often in the context of studies in which they viewed higher-intensity pictures. These findings underscore the importance of considering uninstructed ER choice in instructed paradigms and situational context in all studies of ER.

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1. Introduction

You are having a stressful morning. A winter storm created a chaotic commute to work. Upon arrival, you are reprimanded for being late. This is mildly upsetting to you but professional norms dictate that you must receive this information amiably. To regulate these unpleasant emotions, you choose to think about the situation differently: Being chastised this one time doesn't mean your supervisor has lost all respect for you.

Contrast the above situation with the following: You have to give an important presentation. Just before the presentation, you are informed that your closest work colleague was in a terrible storm-related accident and is in surgery. This is hugely upsetting to you but your presentation is critical so you must manage your negative emotions. Feeling overwhelmed by the gravity of the situation, you find yourself unable to think differently about it. Instead, you choose to focus your attention on neutral details, like the work at hand, and rehearse your presentation one more time.

Emotions are complex physiological, mental, and behavioral phenomena that arise by virtue of attending to and appraising internal and external events in our situational context. Emotions usually motivate the achievement of goals important to the organism, such as survival and well-being, and as such are typically adaptive (Gross, 2007; Levenson, 1994; Seligman, Railton, Baumeister, & Sripada, 2013). However, as the scenarios above illustrate, the circumstances of daily life often require us to diminish, amplify, or otherwise modulate our emotions when they might interfere with other goals, such as maintaining composure and effectiveness at work. The processes we use to manage our emotions are collectively termed emotion regulation (ER).

Considerable theoretical (Gross, 1998) and empirical (Webb, Miles, & Sheeran, 2012) work has identified numerous strategies that people use to regulate – that is, alter the type, intensity, and/or duration of – their emotions. According to the Gross (1998) process model of ER, there are five broad families of ER that can be implemented at various stages of the emotion generative cycle. People can choose which situations they enter (Situation Selection) and change aspects of the situations they choose (Situation Modification). Once in a situation, people can deploy their attention to (Attentional Deployment) and/or reinterpret aspects of the situation so as to change its emotional meaning (Cognitive Change). Finally, people can directly influence their emotional

response, for example by controlling their facial expressions of emotion or breathing (Response Modulation).

Research has demonstrated that people differ with regard to which of these strategies they choose to implement (Parkinson & Totterdell, 1999) and that these choices vary systematically with individual-difference factors such as age (Isaacowitz, Allard, Murphy, & Schlangel, 2009; Opitz, Rauch, Terry, & Urry, 2012b; Phillips, Henry, Hosie, & Milne, 2006), culture (Matsumoto, Yoo, Nakagawa, & Multinational Study of Cultural Display Rules, 2008; Parkinson & Totterdell, 1999), and psychiatric diagnosis (Kimhy et al., 2012). Furthermore, ER choices have been shown to also vary systematically within individuals from one emotion episode to the next (Sheppes et al., 2012). We now turn to considering theories that might explain between- and within-person variation in emotion regulation choice.

1.1. Emotion regulation choice

Recent theoretical efforts have attempted to explain variation in ER choice both as a stable individual-difference *between* people and as a reflection of the context from one emotion episode to the next *within* people. Applying P. B. Baltes and Baltes' Selection, Optimization, and Compensation meta-theory (1990) to ER (SOC-ER), Urry and Gross (2010) argued that people may regulate their emotions successfully by selecting the ER strategies they are best equipped to use. According to this framework, people are best equipped to use those ER strategies for which they have the relevant resources, defined as internal abilities (e.g., working memory) or environmental affordances (e.g., features of the environment, including other people) that help make a particular form of ER possible.

In a complementary model focused on emotion regulation choice, Sheppes et al. (2012) provide supporting evidence that one important influence on ER selection is the intensity of the emotion to be regulated. According to this model, both the emotional response and its regulation can deplete people's limited information processing capacity. When a person encounters a situation that generates a high-intensity emotional response, he or she will have fewer resources available to invest in complex, effortful ER strategies that require elaborative processing; in these instances, people should prefer relatively simple ER strategies. However, it is often advantageous to engage in elaborative processing of emotional situations in order to learn from them. Thus, when a person encounters a situation that generates a low-intensity emotional response, s/he will have more resources available; in these instances, people should prefer relatively complex ER strategies that require elaborative processing (Sheppes et al., 2012). We illustrated this relationship between high and low intensity and ER choice in our opening scenario, in which two different emotion-triggering situations elicited emotional responses of varying intensity (i.e., being reprimanded was mildly upsetting whereas hearing of a friend's grave injury was hugely upsetting), leading to different ER choices (reappraisal in the former case; attentional deployment in the latter).

1.2. Uninstructed emotion regulation choice

Considering the above frameworks, when the cognitive or emotional demands of the situation warrant it, people in laboratory settings are likely to use whichever ER strategies work best for them even when they have been trained and instructed to use one specific strategy. Aldao (2013) termed this practice "spontaneous regulation". Consistent with this idea, in a study in which participants were instructed to suppress or exaggerate facial expressions elicited by film clips, a significant number of participants reported employing uninstructed cognitive ER strategies (Demaree, Robinson, Pu, & Allen, 2006).

In addition, whether in the laboratory or in everyday life, people are not limited to choosing just one strategy. Indeed, people might at times employ multiple ER strategies to regulate emotions in response to the same events to ensure regulatory success. For example, a person may use more than one ER strategy because there is an advantage to employing multiple versus single strategies in terms of increased overall regulatory success, or because the first strategy fails and so one switches to an alternate strategy to compensate. In support of this idea, Aldao and Nolen-Hoeksema (2012) examined the number of ER strategies endorsed by participants watching a film clip depicting amputations and reported that the majority of participants (65%) used multiple (more than one) ER strategies to regulate their disgust.

As reviewed above, Sheppes et al.'s (2012) theoretical model and corroborating evidence support the hypothesis that situational contexts, such as the intensity of the emotion-triggering situation, may influence the strategies that people choose to regulate their emotions. Just as situational contexts such as intensity may influence *which* strategies people choose to use, it logically follows that situational contexts could also influence whether people choose to implement uninstructed versus instructed strategies and/or one versus multiple ER strategies. When emotional intensity is high, people may be more likely to use uninstructed strategies if the instructed strategy is not effective in regulating high emotional arousal, or if combining instructed and uninstructed strategies bolsters regulatory effectiveness. While they did not have a low-intensity comparison, the high rate of multiple strategy use in Aldao and Nolen-Hoeksema's (2012) study of responses to a high-intensity film clip is at least consistent with the idea that we should expect high rates of uninstructed strategy endorsement under conditions of high emotional intensity. In another recent study, Dixon-Gordon et al. (2015) asked participants to recall emotional memories that varied in intensity, and found that participants retrospectively reported greater ER strategy use for high intensity versus low intensity episodes. While the works reviewed above all suggest greater uninstructed strategy use under conditions of high intensity, it is of course also possible that participants in high-intensity situations may choose to use uninstructed strategies *less* often due to diminished resources.

1.3. Present work

There are gaps in our understanding of ER choice. First, while past studies of instructed ER suggest that people may frequently engage in uninstructed ER choice, these studies have focused on highly specific instances of ER choice, like supplementing expressive manipulations with cognitive manipulations (Demaree et al., 2006). Thus the extent to which people may spontaneously choose a wider range of ER strategies remains unknown. Second, while the contextual factors that may govern ER choice between instructed alternatives are becoming increasingly characterized (Sheppes et al., 2012), few if any studies have evaluated the contextual factors that may govern *uninstructed* ER choice. These untested questions are critical to our understanding of how people implement ER in our studies of instructed ER. Clarifying these open issues will allow us to refine our theoretical models and identify practical implications for instructed ER studies.

To address these gaps, we evaluated instructed and uninstructed ER choices in four studies. In all studies, participants were instructed to use CR to regulate their emotional response to negative pictures; the pictures varied in emotional intensity from one study to the next. These studies were conducted to assess CR ability and its relationship to various aspects of psychological functioning, but in all four studies we followed the CR task with an open-ended prompt asking participants to describe the tactics they used to regulate their emotions. This afforded us the opportunity to conduct a naturalistic assessment of the frequency of uninstructed ER choice in typical CR paradigms. Since we include four separate studies, this approach also permitted us to assess whether there were similar rates of uninstructed ER choice across the four studies, whose stimuli varied in emotional intensity. Two of the studies used primarily high-intensity pictures and two used primarily low-intensity pictures, which allowed us to investigate uninstructed strategy use in both intensity conditions (Studies 1 and 3) and then immediately conceptually replicate our findings (Studies 2 and 4).