Emotions define our human experience, provide important signals about the world, and shape how we feel, think, and act (Bradley & Lang, 2000). However, in order to achieve long-term goals and operate in line with social norms, individuals must learn to regulate their emotional experiences in adaptive ways (Dahl, 2004). Consequently, emotion regulation (ER), or the modification of processes involved in the generation or manifestation of emotion (Campos, Frankel, & Camras, 2004), is an essential component of psychological well-being and successful social functioning (Macklem, 2008). However, while the need to regulate emotions is commonplace, how regulation is achieved varies greatly across individuals with subsequent variations in psychosocial functioning.

In order to assess how ER is related to psychosocial functioning and psychopathology, research has focused primarily on identifying one-to-one relationships between elements of psychosocial functioning and the extent to which an individual uses one specific ER strategy (Dixon-Gordon, Aldao, & De Los Reyes, 2014). For example, Cross and John (2003) found that high levels of suppression use were related to higher levels of depression, while reappraisal use was significantly associated with lower levels of depression. However, the function, and thereby the effectiveness, of ER strategies varies across context (e.g., Troy, Ford, McRae, Zarolia, & Mauss, 2017). When receiving an unwanted gift, suppressing disappointment for the sake of maintaining social relations is often beneficial (Butler & Gross, 2004). Moreover, reappraisal becomes harmful when positively re-evaluating negative situations prevents individuals from taking action to modify the triggering event (Christensen & Aldao, 2015), and may actually only be adaptive when used in uncontrollable contexts (Troy, Shallcross, & Mauss, 2013). Therefore, the use of a single ER strategy may not be inherently “good” or “bad” on its own. The implications of a specific ER strategy may, instead, be dependent on the extent to which an individual uses a strategy at the exclusion of other possible strategies.

Consequently, attempts to examine the relation between ER and psychosocial functioning have shifted away from these one-to-one associations in exchange for an examination of ER repertoires: the range of ER strategies an individual employs, and the proportional degree to which they rely on them. This focus allows for a richer picture of an individual’s regulatory patterns and captures individual differences in strategy use and psychosocial outcomes. Recent research assessing ER repertoires has shown that reliance on a small subset of ER behaviors is likely to increase the chances of experiencing difficulties with emotion regulation (Aldao, Sheples, & Gross, 2015; Bonanno, Papa, Lalande, Westphal, & Coifman, 2004) while an ER repertoire comprised of a large range of strategies is associated with less depression, anxiety, social anxiety (e.g., Lougheed & Hollenstein, 2012), and greater well-being even when controlling for previous well-being and cognitive abilities (Bonanno et al., 2004). Therefore, reliance on a small subset of ER strategies was identified as a risk factor for greater difficulties with emotion regulation.

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**Assessing emotion regulation repertoires: The Regulation of Emotion Systems Survey**

Kalee De France *, Tom Hollenstein

Queen’s University, 62 Arch Street Kingston, Ontario, K7L 3N6, Canada

**Abstract**

Research has shown a link between emotion regulation (ER) repertoire, the range of ER strategies an individual employs and the degree to which they rely on them, and well-being. However, this advancement is hindered by the lack of a single measurement tool capable of assessing multiple ER strategies on a common scale. The current paper reports on two studies utilizing the Regulation of Emotion Systems Survey (RESS), a new self-report measure allowing for variable- and person-centered analyses of six common ER strategies (Distraction, Rumination, Reappraisal, Suppression, Engagement, Arousal Control). Study 1 (n = 1582) included scale development, validation, and Latent Profile Analysis (LPA). Results showed the RESS is a valid, reliable, and effective measure. Three profiles were identified (Average, Suppression Propensity, Engagement Propensity). The Average group reported greater psychosocial functioning than the Suppression group. Study 2 (n = 100) LPA indicated 4 profiles (Average, Suppression Propensity, Engagement Propensity, Multi-strategy) and assessed the effects of emotionality. The Average group reported lower emotional awareness than the Engagement and Multi-Strategy groups. Profiles did not differ on frequency or intensity of emotions. Findings demonstrated the utility of the RESS and confirm the importance of ER repertoires to better understand connections between ER and well-being.

* Corresponding author.

E-mail address: kalee.defrance@queensu.ca (K. De France).

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behaviors is associated with poor psychosocial outcomes, whereas the tendency to implement a wide range of ER strategies is associated with successful regulation and greater psychosocial functioning.

Approaching ER from an ER repertoire perspective, rather than a one-to-one approach, provides the potential for a broad impact both within basic emotion science and peripheral disciplines (e.g., clinical, health, sport, social, developmental, and industrial/organizational psychology) that often rely on self-report of ER. However, there are three main limitations to self-reported ER measurement that need to be resolved in order to realize this impact. First, assessing multiple ER strategies currently requires multiple ER strategy questionnaires, which is cumbersome due to the number of different surveys and items involved. Consequently, two additional problems emerge. There is a lack of concordance across response scales. Among the most reliable and often used measures, assessments of specific strategies have different response scales capturing agreement with statements (ERQ, Gross & John, 2003), truth of statements (CBAS, Ottenbreit & Dobson, 2004), or estimations of the frequency of a given behavior (RRS, Nolen-Hoeksema & Morrow, 1991). Because the types of responses participants are choosing from vary so wildly, it is unwise to simply amalgamate various scales. Also, there is great variation in the focus of the questions across scales. Some scales provide specific contexts within which regulatory strategies may occur, such as location (e.g., CBAS, Ottenbreit & Dobson, 2004), or the specific emotion being regulated (e.g., RRS, Nolen-Hoeksema & Morrow, 1991). Therefore, it is impossible to know if responses can be generalized beyond those locations and emotions.

Finally, while some ER questionnaires specify the valence of the emotion being regulated (e.g., RRS, Nolen-Hoeksema & Morrow, 1991; ERQ, Gross & John, 2003), others do not (e.g., CBAS, Ottenbreit & Dobson, 2004; EES; Kring, Smith, & Neale, 1994), therefore possibly confusing strategies used to manage positive and negative emotion. Evidence suggests that regulation of negative and positive emotions may operate differently to impact well-being, and therefore should be examined separately (e.g., Beaver, 2008; Forbes & Dahi, 2005).

To overcome these challenges, we developed a new measure aimed at assessing an individual’s ER repertoire, the Regulation of Emotion Systems Survey (RESS). The RESS overcomes each of the limitations listed above. First, the RESS integrates several common ER strategies into one measure to allow for succinct measurement of multiple ER strategies. Second, as all strategies are assessed on a single measurement scale, the RESS allows for direct comparison of the level upon which individuals rely on each strategy. Third, the RESS includes a focus only on the regulation of negative emotion, at least with this initial version. We have chosen to focus on negative emotions as regulation of negative emotion has shown the most robust and consistent associations with psychosocial functioning (e.g., M acknowledgement=0.8, 2008). For example, experiencing negative emotions such as anger, sadness, and fear have shown relations to externalizing problems in children, while experiencing positive emotions showed such a relationship (Kim, Walden, Harris, Karrass, & Catron, 2007). Moreover, while positive emotions were associated only with symptoms and diagnoses of depression, negative emotions were broadly associated with both symptoms and diagnoses of depression and anxiety disorders, and are hypothesized to partially account for the high levels of comorbidity between anxiety and depression (Beaver, 2008; Watson, Clark, & Carey, 1988). The RESS uses the questionnaire prompt “At the time I experience a negative emotion, I usually respond to it right away by...” to alleviate any confusion over the valence to which the participant responds.

When deciding which strategies to include in the RESS, several inclusion criteria were identified. First, clear evidence must exist to demonstrate a strategy’s impact on an emotional experience. Second, strategies must have a clear impact on one of three emotion components: cognition, behavior, or physiological arousal. These three emotion components are included in theoretical models of basic emotions (Rosenberg & Ekman, 1997), dimensional models (Barrett, 2006; Russell, 2003), the process model of ER (Gross, 2015), functionalist models (Campos, Mumme, Kermoian, & Campos, 1994), and both latent and emergent accounts of emotion (Coan, 2010), and can therefore be conceptualized as core emotion components. Any strategy that did not have a direct impact on one of these emotion domains was excluded. Third, strategies must be distinct from each other to avoid repetition. Any strategy that could be conceptualized as a subclass of another, or as a combination of strategies already included, was excluded (e.g., brooding as a subset of rumination). Fourth, only those strategies that are available to conscious awareness were included since this was a self-report measure. Finally, only those strategies that can be employed in the moment, while an emotion is being experienced, were included. This last criterion allowed the exclusion of mood regulation or coping efforts such as exercise and substance use that have a downstream impact on negative emotions and can be better conceived as mood-altering behaviors.

Using these criteria we identified six primary ER strategies. First, we included three ER strategies with well-documented impacts on the cognitive component of emotion: Distraction, or the withdrawal of attention away from an emotional situation (Sheppes & Meiran, 2008), Rumination, or a perseverative focus on an emotional experience and its causes and consequences (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), and Reappraisal, altering an emotional experience by changing how you think about it (McRae, Ciesielski, & Gross, 2012). Second, we included two common ER strategies that directly impact the behavioral component of emotion: Expressive Suppression (Suppression), active attempts to eliminate the outward, behavioral manifestation of an emotional experience (Gross, 2007), and Expressive Engagement (Engagement). Rather than simply being the opposite of Suppression, Engagement involves actively engaging with an emotion by amplifying expressive dynamics in order to moderate the emotional experience (Kennedy-Moore & Watson, 2001). Finally, we also included Arousal Control due to its direct impacts on an emotional experience by increasing control of the autonomic arousal component of emotion. Relatively less attention has been paid to the ability of Arousal Control to function as an ER strategy; however, there is an adequate literature to confirm the effectiveness of Arousal Control on an emotional experience, particularly in research examining treatment of anxiety, panic attack disorders, and anger (Deffenbacher, Demm, & Brandon, 1986; Deffenbacher & Stark, 1992; Hazaleus & Deffenbacher, 1986; Ley, 1999).

The RESS, therefore, includes measures of Distraction, Rumination, Reappraisal, Suppression, Engagement, and Arousal Control. Each of these strategies has clear evidence in support of its direct impact on an emotional experience and particularly on one of the three core components of emotion. Moreover, they are also each distinct, with the potential for deployment at the conscious command of the individual using it, and in the moment of an emotional experience. See Fig. 1 for an organizational display of each of the ER strategies included in the RESS and their corresponding emotion components.

### 1. The current research

The current research consisted of two independent studies. The objectives of the first study were to 1) develop a self-report measure (RESS) to assess an individual’s propensity to utilize six ER strategies when experiencing a negative emotion; 2) assess the validity of the RESS; 3) identify various ER repertoires through the use of a person-centered analysis (Loughhead & Hollenstein, 2012; Zalewski, Lengua, Wilson, Trancik, & Bazinet, 2011), and 4) determine the relation between various ER repertoires and indicators of psychosocial functioning, such as anxiety, depression, and relationship quality. The objectives of the second study were to 1) confirm the factor structure of the RESS; 2) identify ER repertoires in a second, independent sample; and 3) assess the impact of potential moderators, emotional awareness and emotionality, on repertoire membership.
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