



Spontaneous emotion regulation to positive and negative stimuli

Rachael N. Volokhov, Heath A. Demaree *

Department of Psychology, Case Western Reserve University, Mather Memorial Building, Room 109, 11220 Bellflower Road, Cleveland, OH 44106-7123, USA

ARTICLE INFO

Article history:

Accepted 13 October 2009

Available online 27 March 2010

Keywords:

Emotion regulation

Respiratory sinus arrhythmia

Reappraisal

ABSTRACT

The ability to regulate one's emotions is an integral part of human social behavior. One antecedent emotion regulation strategy, known as reappraisal, is characterized by cognitively evaluating an emotional stimulus to alter its emotional impact and one response-focused strategy, suppression, is aimed at reducing behavioral output. People are capable of using these specific emotion regulation strategies when instructed to do so; however, it is equally important to investigate natural and self-selected strategy use. This study was designed to determine to what extent people spontaneously regulate their emotions and the emotion regulation strategies they choose to achieve their regulatory goals. Participants were given no instructions to regulate their emotions before they were shown a negative and a positive film clip, but were instead asked afterwards about the specific strategies that they had used. Participants reported regulating their emotions more to the negative film than to the positive film. Reappraisal was more frequently selected as an emotion regulation strategy than suppression. As expected, participants with high baseline respiratory sinus arrhythmia (RSA) adopted reappraisal strategies more than those with low RSA but, surprisingly, RSA was not associated with facial expressivity. Suggestions for future research in this relatively young field of spontaneous emotion regulation are offered.

© 2009 Elsevier Inc. All rights reserved.

1. Introduction

Emotions have been defined as self-regulatory responses that are able to direct behaviors towards a goal (Thayer & Lane, 2000). While largely functional, emotions sometimes need to be controlled so that social goals can be achieved. In addition, the proper regulation of emotional processes is vital to mental health as well as physical well-being (Gross, 1998). For example, as seen in the *diagnostic and statistical manual of mental disorders*, 4th edition (APA, 1994), many affective disorders are characterized by emotional dysregulation (Gross, 1998).

James Gross proposed the Process Model of emotion regulation (Gross, 1998; John & Gross, 2004). This model divides emotion regulation into the two broad categories of antecedent-focused and response-focused strategies. Antecedent strategies encompass the processes enacted *before* an emotion is fully experienced; in essence, an individual manipulates the emotional input in the cognitive domain (Gross, 1998). For example, one may purposefully redirect one's attention away from an emotional stimulus or avoid an emotionally charged situation altogether. Response-focused strategies are enacted *after* the emotion has already been felt with the goal of altering the behavioral display of the felt emotion (Gross, 1998). Use of response-focused strategies usually involves muscular control of behavioral (often facial) expressions.

The most researched antecedent strategy is called "reappraisal". Gross (1998) described reappraisal as redefining emotional stimuli in unemotional terms or thinking about a potential emotion situation in a different way to alter the emotion's impact. Reappraisal is a cognitively oriented strategy. Likewise, the response-focused strategy most investigated is called "suppression" and is described as the inhibition of emotion expression during a felt emotion (Gross & John, 2003). Suppression is behavior-oriented. These two prototypical strategies can be differentiated in a number of ways.

1.1. Differences between reappraisal and suppression

Although previous research has indicated that reappraisal and suppression are both successful at reducing facial expression, only reappraisal has been shown to decrease internally felt negative emotion (Gross, 1998, 2002; Gross & Levenson, 1993, 1997). In fact, reappraisal drastically decreases self-reported negative and positive emotional response to negative and positive stimuli, respectively, whereas suppression only modestly decreases positive affect to positive stimuli and has no impact on self-reported emotional responses to negative stimuli (e.g., Richards & Gross, 2000).

In addition to differential effects of strategy use on positive and negative emotion, previous research has also found differences in how often positive and negative emotions are regulated. Via survey method, Gross and John (2003) reported that people generally tend to regulate negative emotions more frequently than positive

* Corresponding author.

E-mail address: Heath.Demaree@Case.edu (H.A. Demaree).

emotions and found both gender and ethnic differences. Specifically, 82% of men, 85% of women, 90% of European Americans, and 76% of Asian Americans reported greater negative to positive emotion regulation in their daily lives (Gross, Richards, & John, 2006).

Although many researchers choose to study these strategies by instructing participants to use either suppression or reappraisal, it is equally important to examine spontaneous, or automatic, regulation. By providing no instructions about how to respond to emotional films, the present study allowed participants to automatically regulate their emotions. This study's design was influenced by an experiment conducted by Demaree, Robinson, Pu, and Allen (2006) which investigated whether participants actually used the strategy as instructed by the experimenter. Using a post-experiment questionnaire, they found that more than half of the people told to suppress used at least some antecedent strategies as they watched either a positive or negative film clip. People instructed to suppress may use reappraisal automatically if they are habitual reappraisers, and vice versa. This idea is supported by Egloff, Schmukle, Schwerdtfeger, and Burns (2006) who reported that some people seem to favor reappraisal or suppression, use a combination of both, or use neither strategy.

1.2. Relationship between emotion regulation and respiratory sinus arrhythmia

As previously alluded, emotion regulation is closely tied to psychological and physiological well-being. One commonly used physiological measure is respiratory sinus arrhythmia (RSA). RSA measures the degree to which heart rate accelerates during inspiration and slows during exhalation (Berntson et al., 1997). RSA is used as a noninvasive method of measuring cardiac vagal tone, which is the mean level of vagal effect on the heart (Berntson et al., 1997). High vagal tone has been associated with several positive characteristics, such as increased self-regulatory ability, flexibility, and adaptability (Thayer & Lane, 2000). Conversely, low parasympathetic tone has been associated with depression, generalized anxiety disorder, post-traumatic stress disorder, cardiovascular disease, hostility, and death (Carney et al., 2000; Demaree & Everhart, 2004; Hopper, Spinazzola, Simpson, & van der Kolk, 2006; Heponiemi et al., 2007; Thayer & Lane, 2000).

RSA has been found to predict an individual's ability to control his or her facial expression. Specifically, higher vagal control is associated with less negative facial expression to negative films (Demaree, Pu, Robinson, & Schmeichel, 2006) and lower RSA indicates greater emotional display and decreased ability to regulate to negative (but not positive) stimuli (Demaree, Robinson, Everhart, & Schmeichel, 2004). In addition, Pu, Schmeichel, and Demaree (in press) found that people with higher baseline RSA evidenced larger differences between felt emotion and facial expression.

One drawback of using RSA as a physiological measure is its susceptibility to respiration rate (Ritz, Thons, & Dahme, 2001). To control for individual differences in respiration rate, a technique known as 'paced breathing' may be employed in which a baseline measurement of RSA is taken while the participant is instructed (via auditory or visual signals) when to breathe in and breathe out (Houtveen, Groot, & de Geus, 2005). This control removes potential respiratory artifacts. Most research designed to assess the ability of RSA to predict emotion regulation ability has failed to control for respiration (Grossman & Taylor, 2007).

1.3. Emotional intelligence

In addition to RSA, many researchers have proposed other factors to explain individual differences in emotion regulation abilities. Emotional intelligence (EI) is one such factor. Schutte et al.

(1998) described EI as "being able to attend rapidly, appropriately, and effortlessly to feelings" (p. 169). EI has been related to such diverse qualities as empathy, self-esteem, life satisfaction, extraversion, openness, relationship quality, and mood management (Ciarrochi, Chan, & Caputi, 2000). In contrast, low EI may lead to deficient emotion perception or emotion labeling, leading to poor emotional communication, behavior problems, and delayed social competence (Izard, 2001).

Salovey and Mayer (1990) posit that the EI construct is comprised of several subcomponents, such as perceiving emotion, understanding emotion, and regulating emotion. Many different questionnaires and measurement scales have been created in the attempt to assess EI and its subcomponents. One of these measurement scales, called the Emotion Regulation Questionnaire (ERQ), was developed by Gross and John (2003). This scale focuses only on the EI subcomponent of emotion regulation. They found that men scored higher on the suppression subscale than women and that European Americans showed the least use of suppression compared to ethnic minorities (Gross & John, 2003); no gender or ethnic differences were found on reappraisal. Though emotion regulation strategies are central to theories of EI, Gross and John (2003) found that (based on SAT scores) reappraisal and suppression were not related to intelligence. However, Schmeichel, Volokhov, and Demaree (2008) did find a relationship between emotion regulation and working memory, a strong correlate of intelligence (Ackerman, Beier, & Boyle, 2005). Specifically, people with superior working memory were able to control their emotions better to both positive and negative emotional stimuli (Schmeichel et al., 2008). In addition, they used reappraisal more successfully than people with low working memory, so that both felt emotion and emotional expressions were reduced.

This study investigated automatic emotion regulation by showing participants negative and positive film clips. Participants were subsequently asked about the regulation strategies they used. The following hypotheses were developed based on previous research regarding the relationship between self-reported strategy use, emotional control, and physiological measures:

- (1) Participants will automatically regulate their emotions more to the negative film than the positive film and will select reappraisal more often than suppression to do so. Based on reports of general emotion regulation tendencies, this hypothesis is aimed at a specific instance of actual regulation to positive and negative films.
- (2) Participants with higher baseline RSA will show less facial expression to the negative clip, but not the positive clip. This hypothesis predicts a replication of previous findings regarding RSA and facial control (Demaree et al., 2006).
- (3) Participants with higher baseline RSA will also more often select reappraisal as their regulation strategy when confronted with emotion-inducing films. Because high baseline RSA is associated with attentional control and self-regulatory ability, reappraisal seems the natural choice for people with high cardiac vagal control.
- (4) Participants with higher reappraisal scores on the ERQ will use reappraisal more than those with lower scores. In essence, what people report on the ERQ should match their actual behavior to the film clips.

2. Experiment overview

Each participant in this study began by reading and signing an informed consent form. After agreeing to participate, participants completed the demographic and medical questionnaire and the ERQ. Participants were attached to electrodes and given a five minute acclimation period followed by a 2 min baseline period in

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات