

# Individual Differences in Emotion and Thought Regulation Processes: Implications for Mental Health and Wellbeing<sup>1</sup>

Cornelia Măirean

**Abstract:** This paper focuses on two strategies – cognitive reappraisal and expressive suppression – that people use to regulate their emotions and thoughts in daily life. Cognitive reappraisal is considered to be the effort made by an individual with the aim of changing the meaning of a situation in order to decrease its intense and negative emotional impact. Expressive suppression represents the effort of inhibiting the outward signs of inner emotional states or unwanted thoughts. Many studies, both experimental and correlational, showed that cognitive reappraisal is often more effective than expressive suppression. In this paper, previous studies about the role of emotion and thought dysregulation in the development of negative psychological outcomes were reviewed. First, the definition and characteristics of emotion and thought regulation strategies are presented. Secondly, the specific individual differences in the use of emotion and thought regulation strategies, in terms of personality traits, attachment, gender, and age, are discussed. The third section presents the associations between these emotion and thought regulation strategies and various mental disorders. In the last section, previous empirical studies that analyzed the associations between such strategies and wellbeing, defined as a low level of negative affect, a high level of positive affect, and life satisfaction, are presented.

**Keywords:** cognitive suppression, expressive reappraisal, emotions, thoughts, psychopathology, wellbeing

## Introduction

Every life event, positive or negative, gives rise to a variety of emotions and thoughts that are interrelated. Emotions represent a guide for human behavior and social interactions, while thoughts can determine a reaction to these emotions. In the aftermath of a potentially traumatic event, intense

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emotional responses and negative thoughts and beliefs about oneself and the world are common and have been well documented in earlier studies (Angelakis and Nixon 2015). Fear, guilt, shame, intrusions, symptoms of arousal, dysfunctional beliefs about control, esteem, intimacy, safety, and trust are frequently reported by victims of traumatic life events (Măirean, Cimpoeșu, and Turliuc 2014). However, there is a large variability in people's reactions to various types of life events. While many people experience negative consequences of stressful or traumatic life events, there is also evidence for resilience in spite of serious threats to life and wellbeing. The study of resilience facilitates an understanding of what individual and contextual characteristics foster adjustment in the midst of adversity (Hernandez-Wolfe, Killian, Engstrom, and Gangsei 2015). The individual's efforts in monitoring his feelings and thoughts have an important role in their coping with the intense reactions generated by various life events (Boden Westermann, McRae, Kuo, Alvarez, Kulkarni, Gross, and Bonn-Miller 2013). Previous studies constantly showed that functional regulation of emotions and thoughts has an important role in the development, expression, and course of evolution of various psychological disorders (Helbig-Lang, Rusch, and Lincoln 2015).

### **Emotion and Thought Regulation Strategies**

Emotion and thought regulation strategies are the processes through which a person influences the experience and expression of various emotions and thoughts in order to reduce the distress and to appropriately respond to environmental demands (Campbell-Sills and Barlow 2007). Whereas emotion and thought regulation strategies vary according to particular contextual demands and characteristics (Erber, Wegner, and Therriault 1996), considerable stable, individual differences exist in the way people deal with their own emotional and cognitive experiences (Liu, Prati, Perrewe, and Brymer 2010). Emotion and thought regulation strategies can be divided into antecedent- and response-focused strategies. Antecedent-focused strategies (e.g. cognitive reappraisal) consist of attempts to reassess a situation before the emotional response tendencies have been completely triggered, in order to alter its significance and emotional impact. Response-focused strategies (e.g expressive suppression) involve attempts to think about a situation after the emotional response tendencies have already been produced, in order to inhibit or reduce ongoing emotional expressive behavior. Cognitive reappraisal and expressive suppression are among the most common regulation strategies that people use in everyday life (Gross and John 2003). The current study focuses on these regulation strategies.

Cognitive reappraisal is an antecedent-focused strategy that involves “construing a potentially emotion-eliciting situation in a way that changes

its emotional impact” (Gross and John 2003, 349). This regulation strategy modifies the emotional state before emotion response tendencies have been fully generated. In contrast, expressive suppression is a response-focused strategy and it involves suppressing the ongoing expressive behavior (e.g., facial expression) associated with a personal experience (Gross and Levenson 1993), without reducing the experience of negative emotions. Systematic research on thought suppression was initiated by Wegner, Schneider, Carter, and White (1987). They showed that suppression of an unwanted thought results in a higher frequency of that thought later on. Wegner (1989) called this phenomenon as the post-suppression rebound effect. The act of suppression decreases a person’s self-regulatory resources, and when these resources are depleted, the person lacks the control needed to override deviant impulses (Thau and Mitchell 2010). The repeated efforts to suppress unwanted thoughts and emotions may create a sense of discrepancy between the individual inner experience and its outer expression (Higgins 1987). In many empirical studies, it was found that reappraisal is more adaptive than suppression in context of exposure to different life events (Richards and Gross 2000).

### **Individual Differences in Emotion and Thought Regulation Strategies**

#### The Role of Personality Traits

Efforts to regulate emotions and thoughts have been proposed to be influenced by individual differences in temperament and personality traits (Jaffe, Gullone, and Hughes 2010). For example, it was found that children with a low level of flexibility and with a lower tendency to experience positive moods were more likely to use expressive suppression in order to regulate their emotions (Jaffe et al 2010). Regarding the relation between the big five personality traits and regulation strategies, previous studies reported that lower levels of extraversion, openness, agreeableness, and conscientiousness predicted greater use of expressive suppression (Gresham and Gullone 2012; Gross and John 2003; Hasking, Coric, Swannell, Martin, Thompson, and Frost 2010). At the same time, higher levels of extraversion, agreeableness, and openness were associated to a greater use of cognitive reappraisal (Gresham and Gullone 2012; Hasking et al 2010). These results suggested that persons with a greater level of assertiveness, activism, creativity and flexibility are more likely to use cognitive reappraisal in order to regulate their unwanted emotions and thoughts (Gresham and Gullone 2012).

## The Role of Attachment Bond

Another factor that may influence emotion and thought regulation strategy use is the parent–child attachment bond (Calkins and Hill 2007). It is considered that an infant’s emotion regulation strategies develop from the strategies used to maintain the attachment relationship (Cassidy 1994). Previous empirical studies showed that higher levels of trust and communication, on the one hand, and lower levels of alienation, on the other hand, predicted the use of more adaptive emotion regulation strategies. In contrast, lower levels of trust and communication, and higher levels of alienation, predicted the use of maladaptive emotional regulation strategies, like expressive suppression (Gresham and Gullone 2012).

## Gender Differences

When considering gender differences in the use of cognitive reappraisal and expressive suppression, studies have consistently found that males report greater use of expressive suppression than females (Gresham and Gullone 2012; Gullone, Hughes, King, and Tonge 2010). A number of studies showed that there are not significant gender differences regarding the use of cognitive reappraisal (Flynn, Hollenstein, and Mackey 2010; Gullone et al 2010). On the other hand, other studies showed that women use a wider variety of both adaptive and maladaptive coping strategies in stressful situations than men do, even when controlling for gender differences in depressive symptoms (Nolen-Hoeksema and Aldao 2011; Tamres, Janicki, and Helgeson 2002). Similarly, a meta-analysis found significant gender differences in 11 of 17 coping strategies, including reappraisal and suppression, with women reporting more frequent use of all strategies than men (Tamres et al 2002). These results suggest that the greater use of emotional regulation strategies by women is not a result of women’s more general tendency toward depressive symptoms, but may reflect a greater tendency of women to be more aware of their emotions than men (Nolen-Hoeksema and Rusting 1999).

## Age Differences

With respect to age differences, some studies showed that older children reported less use of both cognitive reappraisal and expressive suppression than younger children (Gullone et al 2010), while other studies found no significant age differences in the use of these emotion and thought regulation strategies (Gresham and Gullone 2012). However, more passive regulation strategies, like avoidance, suppression or withdrawal, are more frequently adopted by older adults than by younger adults (Blanchard-Fields, Stein, and Watson 2004). It is considered that such strategies may protect older adults from aversive emotions generated by different life

events and may help them maintain an optimal level of functioning (Consedine, Magai, and Bonanno 2002). An interesting result is the fact that the reported use of most emotion regulation strategies declines with age, with the exceptions of the use of expressive suppression, which increases with age only in women (Nolen-Hoeksema and Aldao 2011).

### **Expressive Suppression, Cognitive Reappraisal and Mental Health**

#### The Association Between Specific Regulation Strategies and Psychopathology

A great deal of theoretical and empirical work showed that the individual differences in emotion and thought regulation strategies have important implications for health and adaptation in daily life (Helbig-Lang et al. 2015). Specific strategies that people use to regulate their unwanted thoughts and emotions have been considered to be either adaptive or maladaptive, based on their causal relation with affect, behavior, and cognition, as well as on their relationship to psychopathology (see reviews in Aldao, Nolen-Hoeksema, and Schweizer 2010; Hurrell, Hudson, and Schniering 2015; Nolen-Hoeksema and Watkins 2011; Van Rheeën, Murray, and Rossell 2015). The strategies that individuals use to manage their emotions and thoughts also affect emotional, cognitive, and interpersonal functioning (Kashdan, Barrios, Forsyth, and Steger 2006). Successful emotion and thought regulation strategies are associated with good health outcomes (Brackett and Salovey 2004), whereas maladaptive strategies are associated with a number of different mental disorders (Mennin and Farach 2007) and specific psychopathologies, like borderline personality disorder, major depressive disorder, bipolar disorder, generalized anxiety disorder, social anxiety disorder, eating disorders, alcohol-related disorders and substance-related disorders (Berking, Margraf, Ebert, Wupperman, Hofmann, and Junghanns 2011; Cisler, Olatunji, Feldner, and Forsyth 2010; Nolen-Hoeksema, Wisco, and Lyubomirsky 2008).

Previous studies showed that cognitive reappraisal is positively associated with low levels of symptoms of psychopathology (Aldao et al 2010). On the other hand, expressive suppression has been associated with the development and maintenance of mental disorders, including depression (Nolen-Hoeksema et al 2008), anxiety disorders (Bardeen and Fergus 2014; Werner, Goldin, Ball, Heimberg, and Gross 2011), eating disorders (e.g., Evers, Stok, and de Ridder 2010), and borderline personality disorder (Dixon-Gordon, Chapman, Lovasz, and Walters 2011; Neasciu, Rizvi, and Linehan 2010). A meta-analysis confirmed this pattern of results, showing that cognitive reappraisal was negatively related to psychopathology, whereas expressive suppression was correlated with a

greater number of symptoms of depression, anxiety, substance use and eating disorders (Aldao et al 2010).

Although the relation between emotion and thought regulation strategies and psychopathology is well documented, little is known about the specific mechanisms that explain these relations. Therefore, future research should try to identify the mechanisms by which the emotion and thought regulation strategies might lead to symptoms of depression, anxiety and eating disorders, as presented above. However, several authors have tried to explain the relation between emotion and thought regulation strategies and psychopathologies. It was proposed that the difficulties of emotion regulation might determine a person to incorrectly ascribe body sensations in stressful situations. This produces an increase of sympathetic activation and may lead to elevated emotional arousal and ultimately to anxiety (Fergus and Valentiner 2010; Gørgen, Hiller, and Witthöft 2014). Moreover, the attempts to voluntarily suppress unwanted thoughts and emotions might prevent habituation to emotional stimuli and, as such, these attempts result in an increased accessibility of the suppressed thought and in an exacerbation of negative moods (Wenzlaff and Wegner 2000). Therefore, people who are prone to suppression and do not try to reappraise a stressful situation may experience a rapid escalation of catastrophic thoughts and distressing emotions. Self-destructive behaviors, like substance and alcohol abuse, are often used to escape from their negative thoughts and moods (Aldao and Nolen-Hoeksema 2010).

#### The Association Between Specific Regulation Strategies and Traumatic Stress

The relation between emotion and thought regulation strategies and traumatic stress has received a lot of attention in previous studies. The results of these studies showed that emotion and thought regulation strategies play an important role in stress management in the aftermath of stressful or traumatic life events, as they are involved in posttraumatic stress symptomatology (Badour and Feldner 2013; Bardeen, Kumpula, and Orcutt 2013; Bonn-Miller, Vujanovic, Boden, and Gross 2011; Ehring and Quack 2010; Shepherd and Wild 2014; Vujanovic, Bonn-Miller, Potter, Marshall, and Zvolensky 2011). Specifically, posttraumatic stress has been associated with the use of expressive suppression, whereas the use of cognitive reappraisal was generally associated with fewer symptoms (Boden et al 2013; Ehring and Quack 2010). Recent studies also suggest that emotions and thoughts dysregulation influence one's ability to reduce posttraumatic stress symptoms over time (Bardeen et al 2013). Therefore, the difficulties with emotion and thought regulation have been considered key mechanisms through which posttraumatic stress symptoms may develop and persist (Tull, Barrett, McMillan, and Roemer 2007). For this

reason, difficulties with emotion and thought regulation have become an important target of clinical intervention in treatment of posttraumatic stress symptoms (Cloitre, Koenen, Cohen, and Han 2002). The thought and emotion suppression paradigm was frequently used to investigate the development and persistence of intrusions and their role in psychopathology (e.g., Abramowitz, Tolin, and Street 2001). A rebound in trauma-related thoughts and emotions was noted following emotion and thought suppression in individuals with and without chronic posttraumatic stress symptoms. Moreover, this rebound is associated with an increase in negative affect, anxiety, and distress (Beck, Gudmundsdottir, Palyo, Miller, and Grant 2006). In line with these results, several studies showed that an improvement in emotion regulation ability is a good predictor of traumatic stress symptoms reduction during posttraumatic stress treatment (Cloitre et al 2002).

Several explanations were proposed for the relation between posttraumatic stress and specific emotion and thought regulation strategies. Firstly, experimental studies showed that the efforts to suppress a target emotion or thought can produce an ironic increase in the occurrence of that emotion or thought. Secondly, some authors suggested that emotion and thought suppression leads to the development of secondary emotions and thoughts such as guilt, fear or shame, and therefore increases traumatic distress (Ehring and Quack 2010; Tull et al 2007). Thirdly, emotion and thought suppression use the additional resources for the regulation process, which may lead to depletion and to a reduced level of the general wellbeing (Kashdan, Breen, Afram, and Terhar 2010). Fourth, difficulties in managing unwanted thoughts and emotions have been associated with avoidant regulation strategies (Gratz, Bornovalova, Delany-Brumsey, Nick, and Lejuez 2007).

### **Expressive Suppression, Cognitive Reappraisal and Wellbeing**

Successful regulation of emotions and thoughts in the aftermath of a stressful or traumatic life event is an important predictor of positive cognitive and emotional adjustment, as well as of overall wellbeing. It is considered that a key element of wellbeing is the ability to regulate negative emotions and thoughts (McRae, Jacobs, Ray, John, and Gross 2012).

Previous studies suggested that persons who habitually suppress unwanted emotions and thoughts experience a high level of incongruence between self and their experience (Sheldon, Ryan, Rawsthorne, and Hardi 1997) and this incongruence may lead to a negative emotional state (Heuven, Bakker, Schaufeli, and Huisman 2006). This idea is supported by several empirical studies suggesting that emotion and thought suppression may promote negative affect by strengthening 'mood-relevant associations'

(Wenzlaff and Wegner 2000). Moreover, the effects of chronic suppression extend beyond the simple expression of a decrease in positive affect and increase in negative affect. This regulation strategy can have destructive effects on overall wellbeing and quality of life (Liu et al 2010).

An interesting fact is that both the suppression of negative emotions and the suppression of positive emotions lead to negative affect (Beblo, Fernando, Klocke, Griepenstroh, Aschenbrenner, and Driessen 2012; Campbell-Sills, Barlow, Brown, and Hofmann 2006; Nezlek and Kuppens 2008). On the other hand, empirical studies reported that those who use reappraisal frequently in everyday life report greater wellbeing, defined as more positive and fewer negative emotional experiences (Gross and John 2003; Liu et al 2010; McRae et al 2012). Moreover, cognitive reappraisal is associated with a high level of life satisfaction (Kashdan et al 2006), resilience (Min, Yu, Lee, and Chae 2013; Troy, Wilhelm, Shallcross, and Mauss 2010), and with a low level of mood disturbances (Tamagawa, Giese-Davis, Specia, Doll, Stephen, and Carlson 2012). Other studies reported that reappraisal predicted a lower change of both negative affect and positive affect (Meyer, Smeets, Giesbrecht, and Merckelbach 2012). It was proposed that individuals that frequently use cognitive reappraisal are more able to live more positive emotions in their daily life and to deal with distress generated by different life events, by reinterpreting their experiences proactively. As a result of this reinterpretation, they experience more positive affect, less negative affect, and report greater life satisfaction (Ciuluvica, Amerio, and Fulcheri 2014; Gross and John 2003).

Although a great number of previous studies confirmed constantly the negative short- and long-term consequences of expressive suppression, some authors consider that it can also be adaptive (Campbell-Sill, Barlow, Brown, and Hofmann 2006). It was suggested that only habitual and inflexible use of expressive suppression contributes to the etiology and persistence of psychopathology (e.g., Richards and Gross 2000). The persons who fail to develop flexible emotion and thought regulation skills that match contextual demands are more prone to experience excessive and persistent negative emotions that interfere with their sense of wellbeing and psychological health (Aldao and Nolen-Hoeksema 2012; Bonanno, Pat-Horenczyk, and Noll 2011; Kashdan and Rottenberg 2010). In line with this assumption, several studies showed that the ability to flexibly suppress emotions and thoughts protects against the deleterious effects of life stress and predicts positive adjustment (Gupta and Bonanno 2011; Westphal, Seivert, and Bonanno 2010).

## Conclusions

The aim of the present review is to describe two emotion and thought regulation strategies that people use in daily life – cognitive reappraisal and expressive suppression. Moreover, we wanted to present how these strategies are related to psychopathology and psychological wellbeing. A widely held assumption is that cognitive reappraisal typically results in more favorable outcomes (e.g., greater wellbeing) than does expressive suppression. Specifically, when applied inflexibly, expressive suppression is associated with low levels of positive affect and life satisfaction, and is thought to contribute to greater depression, anxiety, negative emotions, posttraumatic stress and other mental disorders (Kashdan et al 2006). At the same time, previous results revealed the benefits of cognitive reappraisal, in relation with pathological symptomatology and wellbeing. This regulation strategy seems to be effective in everyday life, and it is closely related to skills taught in interventions for mental disorders (Giuliani and Gross 2009). Moreover, it is a common target of observational and experimental research (Gross & John 2003). Some authors suggested that interventions, such as mindfulness meditation practices, that directly focus on emotion and thought suppression and on teaching people to use reappraisal, may be critical precursors to interventions for different mental disorders (e.g., Aldao and Nolen-Hoeksema 2010).

However, it is important to note that most of the studies in the field, mentioned above in this paper, are cross-sectional and in the absence of longitudinal studies of the relation between emotion and thought regulation strategies and psychopathology, the direction of causality cannot be determined with any amount of precision. Therefore, future studies should further examine these relationships using longitudinal designs. Moreover, they should try to elucidate the mechanisms that explain the relations between different emotion and thought regulation strategies and various psychological disorders. Further exploration of the mechanisms by which older adults regulate their emotions and thoughts, according to their personality traits, is also necessary.

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