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## Culture and Automatic Emotion Regulation

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Margot was driving to pick up her nephew from preschool when another driver cut her off and then suddenly slowed down, forcing her to slam on her brakes. You might expect Margot to have become enraged. But she remained quite calm. How could this be? One explanation that leaps to mind is that Margot told herself to calm down, determinedly gripping the steering wheel and clenching her teeth. This explanation comes naturally to the Western mind because it fits well with the venerable Platonian metaphor of passion (e.g., an angry impulse) being reined in by reason (e.g., reminding oneself to be reasonable).

Yet, becoming angry never even crossed Margot's mind. In her native Hawaii, people just don't display anger with other drivers. It is important to note that these rules *didn't enter Margot's mind*—she decreased her anger without making a conscious effort. Interestingly, after spending some time in Southern California, the *same Margot* reports responding with intense rage at similar incursions. This example illustrates how people can regulate their emotions without conscious effort but automatically and according to their socio-cultural context. The aim of the present chapter is to further our understanding of such automatic processes in emotion regulation (AER) by examining what socio-cultural contexts engender AER, and what consequences two types of AER (response-focused versus antecedent-focused) have for individuals' emotional experiences, behaviors, and physiological responses.

## EMOTIONS AND EMOTION REGULATION

Before we can talk about emotion *regulation*, we need to define what we mean by *emotion*. We define emotions as multifaceted, whole-organism phenomena that involve changes in the domains of *subjective experience*, *behavior*, and *physiology*. Emotions arise when an individual attends to a situation and evaluates it as directly relevant to his or her goals (Frijda, 1988; Gross & Thompson, 2007). As the row labeled “Emotional Process” in Figure 2.1 (p. 45) illustrates, this definition implies a *chronological sequence* of events, involving, first, a real or imaginary situation; second, attention to and evaluation of the situation (appraisal) by the individual; and, third, an emotional response, usually involving experience, behavior, and physiology.

With an understanding of individuals as agentic beings rather than passive emitters of emotions, researchers have become interested in the ways in which individuals attempt to regulate their emotional responses. We and others define emotion regulation as deliberate or automatic changes in any aspect of the emotional response, including the eliciting situation, attention, appraisals, subjective experience, behavior, or physiology (e.g., Bargh & Williams, 2007; Gross & Thompson, 2007). In order to further categorize types of emotion regulation, an important distinction has been made based on the sequence of events outlined above. Namely, researchers distinguish *response-focused* from *antecedent-focused* emotion regulation strategies (see Figure 2.1; Gross, 1998; Gross & Thompson, 2007). This distinction has important implications, and we therefore describe it next in greater detail.

### ***Response-focused versus antecedent-focused emotion regulation***

Response-focused emotion regulatory strategies are mainly directed at emotional responses *after* emotions have been generated. An example of such a process is the act of denying an emotional experience. For example, a person might feel angry (say, for losing a soccer tournament) but not wish to admit these feelings to himself, because they do not adhere to his ideal self (e.g., being a good loser). To do so, he might deny feelings of anger. Similarly, individuals might suppress or mask emotional behaviors after an emotion has been generated. Keeping one’s face still when one is sad is an example of such behavioral regulation. Take again our soccer player, who might keep a stony face even when feeling a great deal of sadness and disappointment over losing a critical world cup game. Cognitive

engagement or disengagement (e.g., denial) as well as behavioral regulation (e.g., suppression) take place after the emotional tendency itself has been triggered, and thus occur in response to emotional cues (i.e., I realize I am angry and now need to do something about that).

Antecedent-focused emotion regulatory strategies, on the other hand, are mainly directed at aspects that occur *early* in the emotional process. As Figure 2.1 illustrates, they can involve situation selection or modification (e.g., leaving an emotional situation), deployment of attention (e.g., not paying attention to an emotional situation), or cognitive change (e.g., altering of the meaning of an emotional situation; engaging in particular beliefs about the situation). For example, before entering a situation that an individual expects to make her feel angry (e.g., dinner with a not-so-nice relative) she might resolve to pay little attention to provocative remarks or to try to take the perspective of the other person so as to feel less anger (e.g., he talks only about himself because he doesn't have many friends). These regulatory strategies take place in response to situational cues.

Crucially, response-focused versus antecedent-focused emotion regulation strategies are thought to have pervasive and divergent effects on individuals' well-being, social and cognitive functioning, and health. Specifically, altering some components of the emotional response *after* it has come under way (response-focused regulation) might have adverse effects because other components of the emotional response continue to be active and require continued effort to be kept "under control." In contrast, antecedent-focused regulation strategies alter the complete emotional response by intervening *early in the emotional process*. Such strategies seem to have beneficial effects without much cost, because they proactively alter all downstream components of the emotional response (e.g., Côté, 2005; Gross, 1998). Indeed, research on response-focused emotion regulation suggests that it is generally associated with maladaptive effects on individuals' well-being, social and cognitive functioning, or physical health (e.g., Butler et al., 2003; Davidson, MacGregor, Stuhr, Dixon, & MacLean, 2000; Gross & Levenson, 1997; Mauss & Gross, 2004; Muraven, Tice, & Baumeister, 1998). Conversely, antecedent-focused emotion regulation is generally accompanied by a relatively adaptive profile of responding (e.g., Gross & John, 2003; Mauss, Cook, Cheng, & Gross, in press; Ochsner et al., 2004).

### ***Deliberate versus automatic emotion regulation***

This research suggests that emotion regulation affects a range of important domains in individuals' lives, and that different types of emotion regulation

have quite different patterns of consequences. However, research to date has for the most part focused on *deliberate* types of response-focused versus antecedent-focused emotion regulation (cf. Bargh & Williams, 2007; Davidson et al., 2000; Parkinson & Totterdell, 1999). This is unfortunate, because response-focused versus antecedent-focused *automatic* emotion regulation (AER) might have just as pervasive effects as deliberate emotion regulation. Before we explore this hypothesis, we need to define AER, and explain why we think it may be important.

Most contemporary dual-process models contrast automatic (also called nonconscious, implicit, or impulsive) processes with deliberate (also called controlled, conscious, explicit, or reflective) processes (e.g., Chaiken & Trope, 1999; Sloman, 1996). Deliberate processing requires attentional resources, is volitional, and largely goal-driven. In contrast, automatic processing is initiated by the simple registration of sensory inputs, which in turn activates knowledge structures (schemas, scripts, or concepts) that then shape other psychological functions. Recently, Bargh and colleagues argued that four features characterize automatic processing: absence of subjective awareness, absence of intention, high efficiency, and absence of control (Bargh & Gollwitzer, 1994). A prototypically automatic process is characterized by all four features.

For many functions such as walking or riding a bike, we do not hesitate to agree that they can be performed automatically after they have been thoroughly learned. However, we hesitate to do so for so-called higher-level functions such as self-regulation. After all, until recently self-regulation was thought to be squarely located in the realm of the willful, conscious, and deliberate (cf. Bargh & Gollwitzer, 1994; Wegner, 2002). Thus, at first glance the concept of automatic emotion regulation seems oxymoronic.

However, research by Bargh and others (e.g., Aarts & Dijksterhuis, 2000; Bargh & Gollwitzer, 1994; Glaser & Kihlstrom, 2005) on automatic goal pursuit has challenged the notion that “higher-level” processes can only take place in a deliberate fashion. They propose that the full sequence of goal pursuit—from goal setting to the completion of the goal—can proceed outside of conscious awareness. In a series of studies, Bargh and colleagues show that goals such as the goal to perform well on a cognitive task can indeed be activated and executed without the intervention of conscious awareness (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001). Bargh and colleagues explain these findings by postulating that goals (including self-regulation goals) are mentally represented in the same way as are other cognitive constructs. That is, goals correspond to knowledge structures containing information such as conditional information, possible means for attaining the goal, and behavioral procedures

to enact those means. Thus, the literature on automatic goal pursuit provides theoretical and empirical precedents for AER.

How could such a process work in the context of emotion regulation? In our opening example, we described an instance in which a driver was able to respond with little anger to a situation that might have provoked a great deal of anger in other persons, *apparently without exerting deliberate effort to make herself less angry*. How are individuals able to regulate their emotions without knowing they are doing so? Following the above considerations, for emotion regulation to take place in an automatic fashion, (a) a percept must be registered, which (b) activates a schema, a concept, a goal, or a script (“don’t show this feeling” or “don’t pay attention to this situation”), which (c) alters aspects of the emotional response. The initial percept can be the emotion itself (e.g., someone who habitually responds to feelings of anger by suppressing hostile behaviors) or a situational cue (e.g., someone who has learned to decrease anger in the presence of a specific situation). As we describe below, we expect individuals’ learning history and socio-cultural context to play an important role in shaping these associative networks. Just like skills, cognitive processing within these networks can become automatized with repeated practice.

Consistent with these considerations, we define AER as changes (either increases or decreases) to any aspect of one’s emotion without making a conscious decision to do so, without paying attention to the process of regulating one’s emotions, and without engaging in deliberate control. Note that in the present chapter, we are not concerned with the automatic *elicitation* of emotions or the deliberate control of automatic emotional processes. AER can take place after (in response to an emotional cue; response-focused) or before the emotion has been fully triggered (in response to a situational cue; antecedent-focused). Because this last distinction has important functional implications, we will in the following sections separately consider response-focused versus antecedent-focused AER. First, however, we want to explain why we think that socio-cultural contexts matter so much in AER.

### ***Socio-cultural contexts and automatic emotion regulation***

As the section above illustrates, which emotion regulatory strategies individuals engage in is a function of their knowledge structures. Knowledge structures, in turn, are profoundly shaped by individuals’ socio-cultural context (e.g., Hochschild, 1983; Kitayama, Karasawa, & Mesquita, 2004;

Kitayama & Masuda, 1995; Markus & Kitayama, 1991). Gender, ethnic background, religion, and socioeconomic status are examples of socio-cultural factors that systematically affect—from infancy onward—how individuals think about the world and themselves, including emotions and emotional events (cf. Bruner, 1986; Eisenberg, Smith, Sadovsky, & Spinrad, 2004; Markus & Kitayama, 1991; Mesquita & Albert, 2007; Shweder, 1999; Trommsdorff & Rothbaum, this volume).

Crucially, *automatic* processes might be particularly important for understanding how socio-cultural contexts affect emotion regulation. Because cultural norms and practices are learned early in life, become habitual, and surround us to the point that they appear completely natural and become invisible (Adams & Markus, 2004; Kitayama & Duffy, 2004; Knowles, Morris, Chiu, & Hong, 2001) they have a powerful automatic component. Implicit norms (i.e., notions of what “the right or normal way to be” is) and practices are transmitted to individuals automatically through reinforcement contingencies, by social models, and by individuals’ engagement with cultural practices, institutions, and artifacts (cf. Adams & Markus, 2004; D’Andrade, 1984; Gordon, 1989; Mesquita & Albert, 2007; Rudman, 2004).

For example, individuals socialized to decrease emotional responses from early childhood on (e.g., “Anger is an unseemly emotion for a woman,” or “Boys don’t cry!”) would be likely to automatically decrease their emotions, without this norm even entering their awareness; on the other hand, individuals to whom emotion regulation is a new, unfamiliar, or more conflicted concept might engage in it more deliberately (Mesquita & Albert, 2007). Along these lines, Adams and Markus (2004) conclude in their review of cultural psychology that “the more typical case of cultural shaping may be as an indirect byproduct of engagement with ‘implicit’ cultural patterns” (p. 353). Together, these considerations suggest that socio-cultural contexts powerfully shape emotion regulation, and that many of these processes are automatic. In other words, wherever there is a socio-cultural context, there is AER. Against this backdrop, we now turn to the empirical evidence on response-focused and antecedent-focused AER.



## RESPONSE-FOCUSED AUTOMATIC EMOTION REGULATION

A first group of emotion regulatory strategies is mainly directed at responses once emotions have been generated (response-focused AER). As is summarized in the right side of the row labeled “Regulatory Mechanisms” in Figure 2.1, response-focused AER can involve cognitively en-

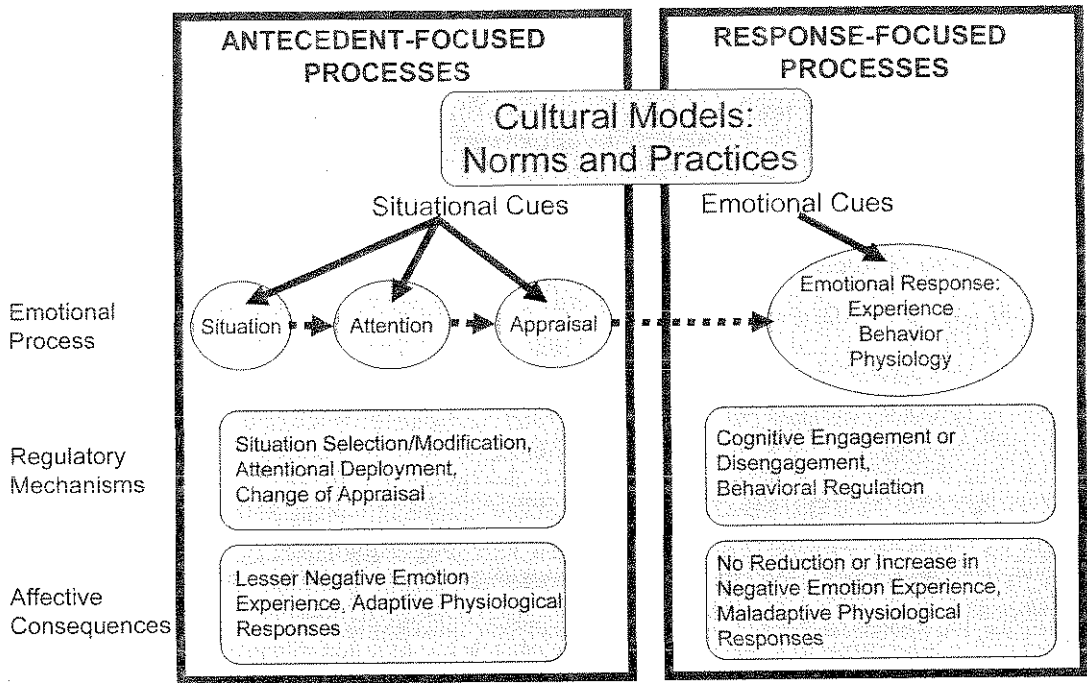


Figure 2.1 Socio-cultural factors, regulatory mechanisms, and affective consequences of two broad types of automatic emotion regulation (AER).

gaging with or disengaging from (e.g., denying) an emotional experience or regulating emotional behaviors after an emotion has been generated (in response to emotional cues). We make the assumption that these processes involve emotion *regulation* rather than simply emotion *reactivity*. We argue that this assumption is a useful one, and provide some empirical evidence for it. However, ultimately more empirical research is needed to fully understand the distinction between emotion reactivity and emotion regulation. With this caveat in mind, we next review, first, the cultural contexts that engender response-focused AER, and, second, laboratory studies that examine its affective consequences.

### ***Socio-cultural considerations***

What is the evidence for the conjecture that different cultural contexts engender response-focused AER? It has long been argued that socio-cultural contexts entail *display rules*, or norms about how to display emotions behaviorally (Ekman & Friesen, 1969). As Figure 2.1 illustrates, socio-cultural contexts provide norms about appropriate responses, which are activated in response to emotional cues. An exhaustive description of all socio-cultural contexts with implications for response-focused AER is beyond the scope of this chapter. However, as the following examples

will illustrate, contexts such as those delineated by broad societal factors, region, gender, or profession systematically affect response-focused AER.

Much of the research investigating the impact of broader societal factors on emotion regulation has compared “Western” to “Eastern” contexts. For example, many Western societies stress positive aspects of emotions (because they demonstrate one’s authentic and unique individuality), and, by extension, generally encourage emotional experience and expression (cf. Markus & Kitayama, 1991; Tsai & Levenson, 1997). In contrast, many East Asian societies more strongly value emotion decrease, especially with respect to “high-activity” emotions such as excitement (e.g., Eid & Diener, 2001; Gudykunst & Ting-Toomey, 1988; Matsumoto, 1990; Tsai, Knutson, & Fung, 2006). In line with this norm, several studies have found relatively lesser expression of a range of emotions in East Asian than in Western contexts (see Scherer, 1997). Notably, these differences were not accompanied by self-reported effortful control of emotions. Thus, societies differ widely with respect to how much they encourage the increase versus decrease of emotions.

Variation across emotions in general, however, is only part of the story. Different cultural contexts also differentially value *specific* emotions for *specific* social relationships (e.g., Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998; Tsai et al., 2006). The regulation of anger, for instance, varies widely in different socio-cultural groups (cf. Briggs, 1970; Stearns & Stearns, 1986; Stratton, 1923). For example, regional differences associated with variations in understandings of honor relate to regulation specifically of anger. As Nisbett and Cohen (1996) detail, in so-called “cultures of honor” such as the American South or some Mediterranean regions, violence and openly expressed hostility are important aspects of defending honor against real or perceived threats (see also Rodriguez Mosquera, Manstead, & Fischer, 2000). Thus, in these contexts relative to others, aggression is encouraged or at least accepted as an aspect of anger.

Positive emotions as well show systematic socio-cultural variation in response-focused regulatory norms. For example, North American cultural contexts place relatively strong value on happiness and its expression (Matsumoto et al., 1998; Sommers, 1984). Happiness is seen as a sign of a “good self” and of psychological well-being (cf. Markus & Kitayama, 1991). In contrast, in other contexts happiness and its behavioral expressions are much less valued. For example, for the Ifaluk (a people living on a Micronesian atoll) happiness is seen as an expression of frivolousness and neglect of duties (Lutz, 1987). Or, in Confucian contexts, harmony among members of a group is strongly valued. Intense personal happiness might counteract that goal, as it may elevate the individual above the group (e.g.,



Heine, Lehman, Peng, & Greenholtz, 2002). Thus, these socio-cultural contexts relatively encourage the *decrease* of happiness while North American contexts relatively encourage the *increase* of happiness.

Individuals' socio-cultural context as delineated by their profession also affects response-focused AER. One early systematic investigation of related processes was conducted in sociological studies of *emotional labor* (that is, emotion regulation at the workplace; Hochschild, 1983). Researchers in this field observed that different professions require *surface acting*, or displays of emotions, to different extents. In particular, service jobs such as airline stewards or waiters, place great value on emotional displays such as "always smile at the customer," especially in contentious situations (e.g., Côté, 2005; Hartel, Ashkanasy, & Zerbe, 2005). Because these contexts are engaged with day-in and day-out, these rules become automatic over time (Hochschild, 1983). Thus, different professions create response-focused AER to different extents.

Together, these considerations suggest that socio-cultural contexts shape individuals' response-focused AER by providing norms about how to handle emotions once they have been triggered. Because humans are in constant engagement with their socio-cultural context, socio-cultural influences—and the automatic regulatory processes they engender—are expected to be quite pervasive. The pervasiveness of these processes makes it important to understand how they work and what affective consequences they have. While no studies have directly assessed socio-cultural differences in AER, the laboratory studies we describe in the following section have examined processes which might help us understand how response-focused AER operates.

### ***Affective consequences of response-focused automatic emotion regulation***

How does response-focused AER work, and what might be its affective consequences? The concept of defense in psychodynamic theory (e.g., Freud, 1936; Vaillant, 1977) represents what is probably the first theory of response-focused AER. As formulated by Freud, defensive inhibition of negative emotional experiences is a form of AER that is motivated by the individual's need to keep from awareness emotions that are intolerably painful or incompatible with the ideal self (Freud, 1930/1961). Freud took a negative view of this type of emotion regulation, postulating that this defensive "work" would come at the cost of expenditure of "psychic energy." A type of defensiveness more specific to negative emotions has also been labeled repression, or repressive coping (e.g., Weinberger, 1995).

Several studies support the concept of defenses that are triggered by emotional cues and operate outside of awareness. For example, Shedler and colleagues (Shedler, Mayman, & Manis, 1993) identified participants who reported minimal distress on questionnaires but whose early memories were rated clinically as showing signs of psychological disturbance. The investigators categorized these participants as high in defensiveness. While undergoing a mildly stressful task (e.g., reading aloud), defensive participants showed more indirect signs of anxiety (e.g., stammering or avoiding the content of the stimulus) than other participants, while simultaneously declaring themselves to be the *least* anxious. Importantly, they exhibited greater cardiac reactivity than other participants, indicating that despite their apparent lack of awareness of their anxiety, at some level they nonetheless exhibited greater reactivity.

The correlates of *repression* have been examined with similar paradigms and also point to a relatively maladaptive response profile (e.g., Byrne, Golightly, & Sheffield, 1965; Erdelyi, 2001; Paulhus, Fridhandler, & Hayes, 1997; Weinberger, 1995). Studies indicate that participants high in repression tend to have difficulty recognizing negative emotions (Lane, Sechrest, Riedel, Shapiro, & Kaszniak, 2000). Also, when tested in laboratory inductions of negative emotions such as frustration, participants high in repression tend to report experiencing less negative emotion, but exhibit impaired cognitive and social skills, as well as greater physiological reactivity (e.g., Asendorpf & Scherer, 1983; Brosschot & Janssen, 1998; Schwartz, 1995; Weinberger, 1995).

In a similar vein, Shaver and colleagues (Shaver & Mikulincer, 2007; Shaver, Mikulincer, & Chun, this volume) describe how individuals with avoidant attachment styles (individuals who habitually avoid close emotional relationships) learn as children that the expression of negative emotion does not affect their attachment figures (Cassidy, 1994). Consequently, such individuals learn to inhibit negative emotional cues (cf. Mikulincer & Shaver, 2003), a process that becomes automatized over time. In support of this hypothesis, avoidant individuals show relatively blunted emotional responding on automatic tasks such as lexical decision tasks (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000). Crucially, this process might not entirely resolve their negative emotional reactions. Dozier & Kobak (1992) monitored electrodermal responses while participants recalled memories involving separation or rejection. They found that avoidant individuals had more difficulty generating negative memories. At the same time, avoidant individuals showed increased physiological reactivity during the task, suggesting that there might be an affective cost for cognitive disengagement from the emotion.

In addition to these negative effects of cognitive disengagement, there is

evidence that automatic *behavioral* regulation might also have relatively maladaptive consequences for individuals. For example, Egloff and colleagues (Egloff, Schmukle, Burns, & Schwerdtfeger, 2006) examined the correlates of spontaneous (uninstructed and thus relatively automatic) behavioral suppression in a laboratory emotion induction, and found that it did not reduce experience of negative emotions but was associated with greater physiological responding. Field and correlational studies of *surface acting* (changing emotional behaviors without changing the underlying feeling when a situation consistently requires it) suggest a similar conclusion. In general, surface acting is associated with greater negative affect, lesser feelings of authenticity, and greater job strain and rates of burnout (e.g., Brotheridge & Lee, 2003; Côté, 2005; Hochschild, 1983; Montgomery, Panagopolou, de Wildt, & Meenks, 2006).

Together, the studies outlined in this section suggest two conclusions. First, they suggest that socio-cultural factors profoundly shape response-focused AER in a number of ways. Second, the studies on defenses repression, spontaneous suppression, and surface acting suggest that response-focused AER plays an important role in individuals' affective responding and that it is relatively maladaptive (if not in the short term at least in the long term).

The conclusion that response-focused AER seems to have relatively maladaptive consequences suggests a difficult dilemma: either individuals fully express negative emotions (which might be socially unacceptable or impossible) or they suffer the negative consequences of response-focused AER. Such a simple dichotomy—healthy emotion expression versus unhealthy emotion regulation—is rendered implausible by the existence of at least some individuals who manage to lead quite composed lives without the numerous negative side effects of AER indicated above. How is this possible? The distinction between response-focused and antecedent-focused emotion regulation suggests a solution to this apparent dilemma. Recall that antecedent-focused deliberate emotion regulation seems to have generally more adaptive consequences than response-focused deliberate emotion regulation. Because antecedent-focused emotion regulation resolves emotions *before they are fully triggered*, it does not entail conflict about their expression. Perhaps then, antecedent-focused AER might also be relatively adaptive. Next, we will review empirical studies that provide evidence on this possibility.

## ANTECEDENT-FOCUSED AUTOMATIC EMOTION REGULATION

The second main group of automatic regulatory mechanisms (antecedent-focused AER; summarized in the left side of Figure 2.1) have their primary impact on the emotion before the emotional response has been fully generated (Gross, 1998). Antecedent-focused AER is activated according to norms and practices that are provided given a particular situation (in response to situational cues). As is summarized in the row labeled "Regulatory Mechanisms" in Figure 2.1, antecedent-focused AER can involve automatic situation selection or modification (e.g., leaving an emotional situation), attention deployment (e.g., not paying attention to an emotional situation), or appraisal (e.g., altering of the meaning of an emotional situation; engaging in particular beliefs about the situation). In the following sections, we review, first, the socio-cultural contexts that engender antecedent-focused AER, and, second, laboratory evidence that provides insight into its affective consequences.

### *Socio-cultural considerations*

Socio-cultural contexts can affect emotions by way of antecedent-focused AER, including automatic situation selection and modification, attentional deployment, or appraisal. For example, automatic situation selection and modification are thought to vary as a function of cultural contexts. In support of this notion, Kitayama and colleagues (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997) found that when asked to produce success and failure situations, "Japanese" situations (situations selected by Japanese participants) were rated by independent judges as less self-enhancing, while "American" situations (those selected by American participants) were rated as more self-enhancing. Similarly, Heine et al. (2001) found that Japanese students are more likely to keep engaging in situations that are likely to enhance self-critical views (i.e., those in which failure had been experienced) while American students are more likely to keep engaging in situations that are likely to enhance positive feelings about the self (i.e., those in which success had been experienced). Studies such as these suggest that individuals—depending on their socio-cultural context—might automatically select and modify emotional situations.

Attentional processes as well have been shown to be affected by cultural factors. For example, participants from East Asian contexts tend to direct attention in a number of subtle paradigms automatically at the context, while participants from Western contexts tend to direct their attention to focal objects (Masuda & Nisbett, 2006; Miyamoto, Nisbett,

& Masuda, 2006). In a study directly relevant to emotional situations, Cole and Tamang (1998) examined how mothers report mitigating their 4–5-year-old children's anger. They report that the majority of Tamang (a Nepali culture) mothers would attempt to distract their children from the situation (for example, by giving them food), thus teaching them not to pay attention to anger. These studies make it plausible that cultural contexts guide attention quite automatically in emotional situations.

Socio-cultural norms might also affect automatic appraisal of emotional situations. For example, individuals in cultural contexts that devalue strong emotions (e.g., Rothbaum, Pott, Azuma, Miyake, & Weisz, 2000) might learn over time (by incorporating norms or through observational learning) to appraise various situations as being relatively unimportant to the self and consequently experience relatively weaker emotions. Or, in cultures that value personal control, emotional situations that enhance personal control (e.g., anger-related ones) are likely to be appraised as important and relevant, which might lead to increased anger. In contrast, emotional situations that diminish personal control (e.g., contentment-related ones) are likely to be appraised as less important and relevant, which in turn might lead to decreased contentment (cf. Mesquita & Albert, 2007; Mesquita & Ellsworth, 2001). Along similar lines, Mesquita and Albert (2007) argue that cultural contexts that do not strongly value personal control would lead to less anger, because situations that go against the individual's plans are appraised as less antagonistic to the individual—it is to be expected, after all, that things don't always go the way the individual has planned.

Processes of antecedent-focused AER can of course be combined. For instance, cultures influenced by Buddhist religions, which construct anger as a “destructive” emotion and discourage its experience, provide norms (the self is not important) and habits (meditation on connection with others) that enable individuals to direct attention away from anger-provoking situations as well as provide appraisals that decrease anger (e.g., Nhat Hanh, 2001; Thurman 2006).

Together, these considerations suggest that socio-cultural factors powerfully shape antecedent-focused AER. This raises the question of whether the consequences of this type of AER are indeed more adaptive than those of response-focused AER.

### ***Affective consequences of antecedent-focused automatic emotion regulation***

Might antecedent-focused AER be more adaptive than response-focused AER? Four recent lines of investigation suggest that the answer to this

question may be “yes.” First, in explaining the positivity effect, which refers to the fact that as individuals enter older age, they are better able to regulate their emotions, Carstensen and colleagues (e.g., Carstensen & Mikels, 2005) invoke automatic regulatory processes. They argue that since *deliberate* processing deteriorates in older age, it is likely that more *automatic* emotion regulatory processing is responsible for the positivity effect. Thus, older individuals might make use of AER to their advantage.

Another recent study that conceptualized AER as adaptive was conducted by Jackson and colleagues (Jackson et al., 2003). In this study, participants’ resting prefrontal cortex (PFC) EEG activity was measured, which was hypothesized to be a marker of individual differences in AER. As predicted, PFC EEG was associated with smaller emotion-modulated startle in response to negative emotional pictures, indicative of successful AER. Third, Bonanno (2005) has provided data suggesting that emotional avoidance after bereavement can promote *resilience* rather than negative long-term outcomes. Lastly, field studies on emotional labor suggest that *deep acting*, or, changing the way one feels given a particular situation might be associated with positive consequences such as lower levels of burnout and greater levels of job satisfaction (Côté, 2005; Diefendorff & Richard, 2003).

These areas of research are intriguing in that they suggest that AER might be quite adaptive. However, they are limited in some ways. First, in some of these studies, AER was inferred rather than directly measured. Second, these studies do not tell us why these types of AER are more adaptive than other types of AER. These concerns raise the question of whether there might be a more direct way of assessing AER, and whether the distinction between response- and antecedent-focused AER might explain the different patterns of outcomes.

In a study aimed to provide a more direct measure of individual differences in AER, we reasoned that the automatic goal of regulating emotion might be represented as an implicit positive evaluation of emotion regulation. Such individual differences would be likely activated by emotional situations, and would thus likely produce antecedent types of AER. Thus, we developed a variant of the Implicit Association Test (cf. Greenwald, McGhee, & Schwartz, 1998) to assess individual differences in implicit evaluation of emotion regulation (emotion regulation IAT; ER-IAT).

In the ER-IAT, participants are presented with words from the categories *emotion control* (e.g., controlled), *emotion expression* (e.g., expressive), *positive* (e.g., gold), and *negative* (e.g., gloom). Participants have to judge as quickly as possible in which of the four different categories words belong. For example, they have to press the ‘a’ key whenever they see a word that refers to either emotion control or something positive and

press the 'k' key when they see a word that refers to either emotion expression or something negative. Importantly, there are two different blocks of trials: those in which emotion control and positive words share a response key, and those in which emotion control and negative words share a response key. Faster reaction times when categorizing emotion control and positive items together suggest a stronger implicit association between emotion control and positive. Conversely, faster reaction times when categorizing emotion control and negative items together suggest a stronger implicit association between emotion control and negative. A relatively stronger association between emotion control and positive items thus implies implicit positive evaluation of emotion control. By extension, we expected that it would lead to greater likelihood of *engaging in AER*.

Our goal was to put this assertion to the test by assessing whether positive implicit evaluation of emotion control (greater ER-IAT scores) would be associated with experiential, behavioral, and cardiovascular responses to an anger provocation (Mauss, Evers, Wilhelm, & Gross, 2006, study 2). As part of this anger provocation, participants were instructed by an "unfriendly" and "arrogant" experimenter to repeatedly perform a boring yet cognitively straining task. In order to control for the involvement of effortful emotion control, participants were asked after the task to what extent they had tried to control their emotions.

Predictably, most participants became angry during the task. However, those who had greater ER-IAT scores reported relatively less anger experience during this task. In addition, they exhibited a relatively adaptive challenge (as opposed to a threat) cardiovascular activation pattern, characterized by greater sympathetic activation, greater cardiac output, and lower total peripheral resistance (cf. Tomaka, Blascovich, Kelsey, & Leitten, 1993). Apparently, this relative reduction of anger experience happened without conscious effort, because ER-IAT scores were not correlated with self-reported effortful emotion control. These findings indicate that greater positive implicit evaluation of emotion control is associated with affective responses that are consistent with automatic, successful, and physiologically adaptive emotion regulation.

This correlational study of course begs the question of cause and effect, which led us to ask two questions. First, can AER be experimentally manipulated? Second, what would be the affective consequences of experimentally induced AER? To address these questions, we (Mauss, Cook, & Gross, in press) manipulated AER in two studies by priming emotion control versus emotion expression with an adaptation of the Sentence Unscrambling Task (cf. Srull & Wyer, 1979). This task unobtrusively exposed participants to words relating to emotion control or expression, thereby *implicitly* activating (priming) related concepts and goals. Importantly, we

first primed emotion regulation, and then provided an emotional context via an anger provocation, maximizing chances that antecedent-focused AER would be engaged. Three domains of affective responding were measured: anger experience, negative emotion experience, and cardiovascular responses.

Results from these studies revealed that indeed priming affected subsequent emotional responding, such that participants primed with emotion control reported less anger than did participants primed with emotion expression. Importantly, participants primed with emotion control reported experiencing slightly lesser global negative emotion experience than those primed with emotion expression and did not exhibit more maladaptive cardiovascular responding. These results imply that, like the individual-difference process associated with ER-IAT scores, situationally induced AER does not invoke a cost.

Together, results from these studies raise the intriguing possibility that people are capable—without conscious effort—of remaining calm, cool, and collected in powerfully negative situations. The relative adaptiveness of this type of AER is in contrast to the maladaptiveness of response-focused AER. How can these two results be reconciled? From the existing studies, we cannot conclusively determine what about these processes makes them maladaptive or adaptive. However, the pattern of responses suggests that individuals using response-focused AER might exhibit an emotional response at some point, which is then decreased. Even though the regulatory processes are automatic, they might thus involve some conflict about the emotion, and some aspects of the emotional response might continue to be active. On the other hand, implicit positive evaluation of emotion regulation and situationally primed values might be activated *early* in the emotional response; they might thus operate in a more antecedent-focused manner, without ever evoking a conflict about the emotion and effectively decreasing all aspects of the emotional response.

Together, the studies reviewed in this section suggest two conclusions. First, they suggest that socio-cultural contexts shape antecedent-focused AER in a number of powerful ways. Second, laboratory studies on implicit evaluation of emotion regulation and automatic goal pursuit suggest that these processes are relatively adaptive.

## ■ SUMMARY AND CONCLUDING COMMENT

The present chapter is aimed at furthering our understanding of AER. We suggest that AER is shaped by cultural contexts, which provide the individual with implicit norms and automatized practices that can be situ-



ation-cued (which situation calls for which emotion regulatory response?) or emotion-cued (which emotion calls for which emotion regulatory response?). Correspondingly, cultural contexts engender antecedent-focused (those mostly taking place before the emotion is fully initiated) or response-focused (those mostly taking place after an emotion is initiated) AER. Importantly, antecedent-focused AER seems to be relatively adaptive while response-focused AER seems to be relatively maladaptive. The notion of an adaptive type of AER is in line with socio-cultural considerations, which suggest that cultural contexts that foster emotion decrease certainly do not lead to generally decreased well-being or psychological functioning. The existence of adaptive AER suggests a possible mechanism for adaptive, socio-culturally mediated emotion regulation. We hope that by providing a conceptual framework for AER, the present overview can help us better understand AER, which will be an important step towards a better understanding of the complex mechanisms by which socio-cultural factors affect emotional responding.

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