

Emotion Regulation and Well-Being

Ivan Nyklíček • Ad Vingerhoets
Marcel Zeelenberg
Editors

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 Springer

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*This book is dedicated to our children:
Milan, Jonas, and Cato Nyklíček
Rens, Bregje, and Meike Vingerhoets
Jimmie and Storm Zeelenberg*

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Abbreviations

AAI	Adult Attachment Interview
AAP	Adult Attachment Prototypes
ACT	Acceptance and Commitment Therapy
ANS	Autonomic Nervous System
BAS	Behavioral Activation System
BIS	Behavioral Inhibition System
(C)CBT	(Computer-assisted) Cognitive Behavioral Therapy
DBT	Dialectical Behavioral Therapy
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, 4th Edition
ECG	Electrocardiogram
EEG	Electroencephalograph(ic)
EER	Emotion and Emotion Regulation
EMA	Ecological Momentary Assessment
EMG	Electromyograph(ic)
ER	Emotion Regulation
ESM	Experience Sampling Method
EW	Expressive Writing
FTP	Future Time Perspective
GAD	Generalized Anxiety Disorder
HIV+	Human Immunodeficiency Virus seropositive
KMS	Keeping a Major Secret
LEAS	Levels of Emotional Awareness Scale
MBSR	Mindfulness Based Stress Reduction
MDD	Major Depressive Disorder
PC	Perseverative Cognition
RCT	Randomized Controlled Trial
RQ	Relationship Questionnaire
SC	Self-Concealment
SIT	Social Identity Theory
STS	Superior Temporal Sulcus
SWB	Subjective Well-Being
TAS	Toronto Alexithymia Scale
ToM	Theory of Mind

Chapter 1

Emotion Regulation and Well-Being: A View from Different Angles

Ivan Nyklíček, Ad Vingerhoets, and Marcel Zeelenberg

1.1 Emotion

Emotion is a basic phenomenon of human functioning, normally having an adaptive value enhancing our effectiveness in pursuing our goals in the broadest sense. On the inter-individual level, emotions help inform others about one's internal states and behavioral intentions (Frijda, 1986). Interchange of such information between people is essential for human relationships, a crucial determinant of social and psychological well-being. In addition, important intra-individual functions of emotions have been hypothesized and demonstrated. One example of an important function is gaining insight into one's personal values, which is a crucial motivational factor in adequate decision making (Bechara, Damasio, & Damasio, 2000).

Emotions are generally the result of the appraisal of events. Dependent on the outcome of appraisal, a coordinated set of responses involving behavioral and physiological systems is triggered (John & Gross, 2004; Scherer, Schorr, & Johnstone, 2001). Thus, emotions trigger specific action tendencies and the necessary physiological support, facilitating overt action. A well-known example of this process is the fight-flight reaction involving increased heart rate and blood pressure, dilation of the bronchi and increased blood flow to the muscles, preparing the body for action. Conversely, depressed affect and grief are characterized by a quite different physiological reaction pattern, aimed at the conservation of energy. This is expressed in a passive reaction, often accompanied with a reduced muscle tone with the head directed downward (Henry & Stephens, 1977). This passive condition may be adaptive, because it saves energy and it may act as a signal to indicate that the person is in need of emotional or instrumental support from others (Nesse, 2000). In addition, it may reduce aggression in possible assaulters.

There is little doubt that emotions have played an essential role in survival and adaptation of the human species (Ketelaar, 2004; Nesse & Ellsworth, 2009).

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However, for an adequate understanding, one has to be aware of the distinction between the short-term and long-term effects of emotions and of the major changes in living conditions of our ancestors and modern man.

1.2 Emotion Regulation and Well-Being

Emotion regulation (ER) is regarded as a crucial factor in well-being, in the popular literature, clinical psychological practice, and scientific research alike. Regulation of emotions is essential for adaptive functioning, and suboptimal or dysfunctional ER is perceived as counterproductive and resulting in adverse consequences including a poor well-being (Gross & Muñoz, 1995), and sometimes even somatic disease (for recent reviews, see Denollet, Nyklíček, & Vingerhoets, 2008; Gross & John, 2003).

ER and well-being are both broad concepts that can be viewed from different angles and at different levels of analysis: from a microlevel of firing neurons in certain brain areas to a macrolevel involving overt behavior of people in social interaction with others (e.g. sharing emotional experience and expression, being active in a satisfactory way in the contexts of one's social networks and society at large). In addition, they range between different points on the continuum from optimal functioning to dysfunction such as seen in psychopathology (psychological level), social isolation (social level) and somatic disease (physical level).

ER is defined here as regulation of affective states, in its broadest sense, covering all points on dimensions such as: overt (perceivable by others) to covert (internal regulation not perceivable by others), explicit (conscious) to implicit (unconscious), and voluntary to automatic (Gross, 1998).

1.2.1 Two Examples

As stated above, cognitive appraisal is an important factor influencing the quality and intensity of the resulting emotion. Changing the way we appraise a potentially emotion-eliciting event, is one important example of *antecedent-focused* ER aimed at modifying the emotional impact of a situation (Gross, 1998). If one expects that another person plans to do harm, this may induce anxiety or anger; if an unpleasant situation is considered as being caused by one's own behavior, this will probably result in remorse, shame or guilt. If a situation is appraised as involving danger, fear is a likely emotional outcome, whereas loss experiences generally evoke sadness. Cognitive reappraisal may be applied to decrease negative feelings and increase positive feelings and adaptive behavior, which is manifested by increased interpersonal functioning and positive mood (Gross & John, 2003).

ER not only depends on our appraisal of the emotion-eliciting event. *Response-focused* ER involves behavior that manifests itself once the emotion process is already underway and response tendencies have already been generated (Gross, 1998). A common and widely studied form of this category of ER is emotion

suppression, which refers to consciously inhibiting ongoing expression of emotion-related behavior. Emotion suppression may negatively influence one's self-image: it may make individuals feel inauthentic about themselves, facilitating negative emotions and depressive symptoms. In addition, while suppression decreases the behavioral expression of negative emotions, it does not affect subjective experiences (Gross & John, 2003). Importantly, there is increasing evidence that ER styles aimed at not expressing emotion, either consciously or unconsciously – in the latter case often called repression – may have adverse effects on not only subjective well-being, but also physical health (John & Gross, 2004; Jorgensen, 1996; Nyklíček, Vingerhoets, & Denollet, 2002).

1.2.2 Conceptual and Methodological Issues

The effects of emotions and ER on well-being is depending on various factors, such as consequences of emotion experience and emotion expression for one's self-image, physiological consequences of the expression of emotions, the nature of the relationship with the person one expresses to, and his or her overt or expected reaction. For example, crying has been shown to elicit emotional support. It may be this social support or the fact that an opponent becomes less aggressive that makes one feel better rather than the shedding of tears per se (Hendriks, Nelson, Cornelius, & Vingerhoets, 2008).

When studying the relationship between ER and well-being, several methodological issues must be considered, before being able to draw valid conclusions regarding the specific nature of the association (Nyklíček et al., 2002). The first issue is a conceptual one. What is the conceptual model one is investigating? If the hypothesis is that ER influences well-being, what are the underlying mechanisms? Is the expected association a direct psychophysiological one (i.e. direct internal psychoneuroendocrine effects) or an indirect one? In the latter case, which factors mediate this association? These may involve intermediate effects such as changes in interpersonal relationships or changes in one's living environment (e.g. working environment), which subsequently influence one's psychological well-being. However, one should also take into consideration the possibility of a reverse causal path; more precisely, psychological well-being influencing the way one regulates emotions. One can imagine that when being in a positive mood, other ER strategies may be applied than when in a state of anger, sadness, or anxiety. Finally, the "third variable" option should also not be overlooked. For example, personality (e.g. neuroticism, extraversion) may influence both the preferred ER tactics as well as psychological well-being, potentially resulting in a spurious association between ER and well-being. This complexity emphasizes the need for the inclusion of basic psychological factors, such as personality characteristics, when investigating the association between factors that are at least partially dependent on them, such as ER and well-being.

Further, ER and well-being are dependent on the situational context, which possibly may also influence the association between ER and well-being (Kennedy-Moore & Watson, 1999). Another potential context ER and its relation with well-being is influenced by its phase of life. ER strategies may not be equally effective in enhancing

well-being across all life phases (Consedine, see Chap. 2). All such interactions imply statistical moderation effects that should be taken into account. ER itself may act as a moderator in a relationship between environmental challenge and psychological well-being. An example of this would be the case that only in certain stressful situations ER strategies are associated with well-being, not in situations without any challenge (Nyklíček et al., 2002). One step further, certain behavioral strategies that are generally associated with negative well-being, may simultaneously have positive psychological consequences (e.g. sense of personal growth) in certain challenging situations.

Needless to say that the study design is crucial concerning the issue to what degree causal inferences can be made. While only experimental designs allow conclusions concerning causality, prospective cohort studies with follow-up periods that are long enough and with adequate control for possible confounding variables are the second best, leaving correlational studies at the other extreme of complete inadequacy regarding attempts for answering the question of causality, no matter how advanced the statistical analysis one employs may be.

1.3 Contents of this Volume

This volume brings together various approaches to ER and it makes clear how they may relate to well-being. This allows the readers to view and examine this association and its fundamentals from different perspectives, complementing each other and thus making the resulting picture more detailed and complete. Well-being in this volume refers mainly to psychological well-being, but some chapters also discuss the relation between ER and well-being in the social context. For example, the chapter by De Hooge et al. (Chap. 12) reviews work on interpersonal behaviors that follow experiences of guilt and shame, whereas Rimé et al. (Chap. 9) discuss the effects of sharing one's emotions with others. In other chapters, the focus is more on physical well-being (physiological functioning or physical disease; Chaps. 1 and 6).

The volume is organized along three major perspectives: (1) basic psychological processes involved in the link between ER and health, (2) the social, lifespan, and gender contexts in which the associations between ER and well-being take place and which influence the nature of the associations, and (3) views and applications in the clinical context.

1.3.1 Basic Psychological Processes

In the first part, psychological processes are discussed that may be fundamental for the phenomenon of ER, especially in its relation to well-being, ranging from unconscious processes to conscious tactics and even a certain deliberate lack of volitional regulation as seen in mindfulness.

In the first chapter, Consedine considers ER from a broader perspective of the functional context the different stages of life provide. The often heard claim that ER

may improve with age is challenged by Consedine who argues that (1) not much evidence exists in favor of this view and (2) the reality is far more complex. It is argued that ER capacities and its relation to well-being depend on three main categories of factors, namely psychophysiological capacity, targets of ER, and tactics used to attain them, which all change during life.

ER from a social cognitive perspective is discussed by Tamir and Mauss in the second chapter. They argue that two important factors determining ER, namely one's beliefs about controllability and self-efficacy, and values and goals of ER, have not received adequate attention from theorists and researchers to date. They provide a theoretical framework emphasizing the relevance of these factors, in addition to strategies and competencies. They also review the empirical literature on these factors with their relation to well-being.

Ruys et al. address whether people need not be consciously aware of the eliciting events for emotions to unfold. They propose a global-to-specific unfolding view on emotional responding, analogous to the contention that perception typically unfolds from global to specific. They also demonstrate that both global moods and specific emotional reactions can be triggered unconsciously and contrast this view with appraisal theories of emotion.

Wildschut et al. address the possible role of positive emotions, in particular nostalgia, for one's well-being. Recent evidence is presented suggesting that nostalgia may occur in particular when one feels lonely, which makes sense, because nostalgia appears to have the capacity to increase perceived social connectedness. The authors further discuss how this effect may be moderated by personality characteristics, in particular resilience and attachment style.

The potentially central role of perseverative cognition in dysregulation of both mental and physiological processes is the focus of the chapter by Verkuil et al. Perseverative cognition, such as worry and rumination, substantially extends the period of experienced distress with its concomitant load on both the nervous system and the other systems of the body (e.g. endocrine, immune, cardiovascular). Evidence is reviewed for this hypothesis as well as for the role of excessive goal commitment in trait perseverative thinkers in the relation with well-being and health.

Mindfulness and its relation to ER and well-being is discussed by Nyklíček in the last chapter of this section. Mindfulness is a state of open and nonjudgmental attention to phenomena occurring in the present moment. Although its positive association with well-being is well established, the role of ER in this association is still unclear. It is claimed that mindfulness enhances adaptive ER, but that the effect is indirect, via effects such as decreased experiential avoidance and decreased perseverative cognition. A new theoretical model and preliminary evidence is presented.

1.3.2 ER and Well-Being in the Social Context

In the second part of this volume, the social, lifespan, and gender contexts of emotional regulation and more general emotional processing is discussed. Traditional

emotion research has focused primarily on intra-individual processes, while many emotions are elicited and experienced in social contexts. Moreover, many emotions and emotional phenomena are highly social in nature. This is apparent in all chapters in this section, but is central in the chapter by Spears et al. They review research on intergroup emotions and group-based emotions. Spears et al. argue that taking into account ER processes when studying intergroup behavior extends our understanding of intergroup relations but also feeds back into emotion theory. They build on the concept of social appraisal, the idea that emotional reactions of others inform people about their own emotional experience (Manstead & Fischer, 2001).

One intriguing aspect of emotional behavior is the human need to engage in the social sharing of emotion. Rimé et al. argue that social sharing of emotion and collective rituals are markedly similar. Both lack the capacity to bring emotional recovery, and are more likely to induce the reactivation of the emotional episode. However, both also elicit empathic processes and bring those interacting closer together and may hence buffer the potentially destabilizing effects that emotional events may have.

Västfjäll et al. focus on the regulation of a specific emotional experience, namely regret (cf., Zeelenberg & Pieters, 2007). Regret negatively impacts psychological and physical health and understanding how and why we experience regret and how regret influences choices and behaviors is important. Västfjäll et al. start from the premise that little is known about how and if the experience and anticipation of regret changes over the adult life-span. Hence they review the available research and merge existing findings to develop a set of novel hypotheses of how aging and emotional experience and regulation may interact in everyday life.

The relationship between attachment and ER, with a specific focus on adult crying, is explored by Maas et al. They make clear how attachment styles may exert a life-time influence on ER. They further emphasize that crying may be considered an attachment behavior, which implies that not only the exposure to an emotional event is important for crying, but also the availability (and presence) of an attachment figure. They further summarize recent findings consistently demonstrating that an avoidant attachment style is associated with the inhibition of tears and negative emotions.

De Hooge et al. review research on the self-conscious emotions and how they may facilitate or inhibit prosocial behaviors. The gist of their argument is that these emotions, as any other emotion, are best understood if one adopts a pragmatic perspective. That is, predictions about emotional behavior are best made on the basis of the experiential content of the emotions. Such an approach explains why sometimes moral emotions are regulated by means of amoral behaviors.

Evers et al. adopt a social appraisal perspective to understand gender effects in ER. They debunk the general stereotypes about how males and females cope with emotion, more specifically anger. The authors review research showing that gender affects the regulation of anger expressions but only in interaction with the social context. Males and females do behave differently in response to anger. But, this difference can easily be understood in terms of expectations about how others respond to their anger expressions.

Together these chapters are testimony to the importance of interpersonal and more general social aspects of emotion elicitation and regulation. They reveal that

emotions and the way in which people cope with them play an important role in how people interact. The chapters also show that these interpersonal processes are crucial for a full understanding of ER.

1.3.3 Clinical Perspective

The third part of this volume is devoted to several views and applications in the clinical context. This section starts with a chapter by Bylsma and Rottenberg who aptly review the Experience Sampling Method, a useful approach for the study of emotion and ER in daily life of patients and healthy individuals. The additional value of this method also relates to the fact that it offers the possibility to focus on the dynamics of experiences and behaviors as they develop over time. The authors, who have a wealth of experience with the study of mood and anxiety disorders, put forth suggestions how the method can be used for improving diagnosis and treatment of emotional disorders.

Somatoform disorders and the role of alexithymia and mentalization, also termed psychological mindedness, are discussed by Subic-Wrana. This author argues that deficits in awareness and differentiation of one's own emotional states (alexithymia) and those of others (lack of mentalization) may be etiologically involved in the development of somatization and somatoform disorders. First evidence for a link between these factors and somatoform disorders is presented and discussed.

Kret et al. focus on emotion perception processes in faces as well as whole bodies and their relation to various neuropsychological disorders, such as autism, schizophrenia, and neurodegenerative disorders. The relevance of these processes for psychiatric conditions, including anxiety and depression, and for personality factors that are associated with health risks, is also reviewed. Behavioral, electrophysiological, and neurofunctional data on these associations and their implications are discussed.

Corter and Petrie devote their chapter to the latest findings regarding the evaluation of Pennebaker's expressive writing cure among cancer patients and whether this approach is an accepted and feasible intervention for this group. It is concluded that prostate and breast cancer patients report many positive effects on symptoms and medical care use, which is consistent with results obtained in other cancer patient groups. In contrast, there is no evidence that writing may prolong survival and it neither seems to have a positive effect on emotional distress.

Current theorizing about emotional eating is discussed by Macht and Simon. In particular, they address individual differences in emotional eating behavior and the underlying mechanisms. They emphasize the role of psychological (hedonic) and physiological (more precisely neurochemical) factors, the impact of which depends on the degree of emotional eating. Whereas they consider the hedonic responses as essential in most instances of emotional eating, in some cases positive neurochemical effects may also play a role.

In the final chapter, Wismeijer discusses the intra-individual and inter-individual consequences of secrecy, especially for one's psychological well-being. It is argued

that secrecy is a multifaceted phenomenon, consisting of several independent factors that may have different consequences. A theoretical model is presented and the particular example of the sometimes opposite effects of being a secretive person as a trait, usually having a negative impact on well-being, and keeping a specific secret as a state, sometimes having positive consequences, is highlighted.

1.4 Conclusion

As can be seen from this overview, the topic of ER in its relation to well-being is discussed from different and often multidisciplinary views, providing both a broad and an in-depth discussion of the topic. The theories, reviews of the evidence, and critical reflections are relevant for both researchers from various disciplines and clinicians working with clients with emotional problems.

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Part I
Basic Psychological Processes

Chapter 2

Capacities, Targets, and Tactics: Lifespan Emotion Regulation from the Perspective of Developmental Functionalism

Nathan S. Consedine

2.1 Current Data and Interpretations Regarding Age Differences in Emotion and Emotion Regulation

Broadly speaking, there are three classes of data that address lifespan emotion regulation. First are self-report data circumscribing a less negative/more positive “affective balance” among older adults (Carstensen, Mayr, Pasupathi, & Nesselroade, 2000; Charles, Reynolds, & Gatz, 2001; Mroczek & Kolarz, 1998) and/or reporting greater emotional control (Gross et al., 1997). In many cases, such data are the basis upon which inferences about differences and/or changes in emotion regulation are made. Second, other self-report studies have assessed emotion regulatory tendencies somewhat more directly, with data showing either greater control in older groups (Labouvie-Vief, Hakin-Larson, DeVoe, & Schoeberlein, 1989; McConatha & Huba, 1999), a preference for conflict avoidance, delayed expression, de-escalation, and/or a wider range of coping/defense strategies in later life (Birditt & Fingerman, 2005; Levenson, Carstensen, & Gottman, 1994).

Finally, there are studies that have *experimentally* manipulated and measured the ability to regulate the visible (facial) expression of emotion in developmentally diverse groups – ironically, no study provides unequivocal support for the notion that there are age related improvements in emotion regulation. One study (Kunzmann, Kupperbusch, & Levenson, 2005) assigned younger and older participants to a control condition or to suppress and amplify emotional expressions during film presentation. No age differences in the effects of the regulatory instruction, or the impact of regulation on experience or physiology were found. Other experimental studies suggest that younger and older adults are equally able to inhibit expression (Magai, Consedine, Krivoshekova, McPherson, & Kudadjie-Gyamfi, 2006; Phillips, Henry, Hosie, & Milne, 2008), and that older adults are more effective in reducing the early experience of negative emotion (Phillips et al., 2008).

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Taken together, the available work has generally been interpreted as indicating lifespan improvements in emotion and emotion regulation (EER):

“a growing body of empirical research... points instead to developmental gains in later life” (Carstensen, Fung, & Charles, 2003, p. 103)

“old age is marked by ... improved regulation of emotions” (Carstensen & Charles, 1998, p. 144)

Unfortunately, writers *infer* superior regulation based on greater positive affect and accept self-reported regulatory tendencies as evidence of improved *skill*. The notion of improvement with age is central to leading theories of emotion and aging and forms the entry point into most contemporary empirical work. This interpretation has become so popular that, in the near-absence of experimental and/or longitudinal proof, the notion that emotional functioning improves with age has attained the status of a contemporary dogma. As when a supposedly prestigious wine is purchased on the recommendation of a less than reputable merchant, we are repeatedly told that EER “improve with age.” Worse yet, we strive to believe this assertion despite the evidence from our palate and knowing full well that even the best of vintages are subject to the vagaries and vicissitudes of time. Less dramatically, in accepting the consequente (greater positive emotion) as proof of the process (better emotion regulation), the field commits a major logical fallacy. The normative construal regarding lifespan differences in emotion regulation *vastly* exceeds the extant empirical base.

2.2 Developmental Functionalism: A Brief Overview

Any theory of emotion regulation must be based in a clear conceptualization of emotions. Developmental functionalism (Consedine, 2008; Consedine & Magai, 2003, 2006; Consedine, Magai, & Bonanno, 2002; Consedine, Magai, & King, 2004; Consedine & Moscovitz, 2007) is a discrete emotions approach to emotions and their links to outcome that pays explicit attention to age related issues. Each emotion represents an adaptation that evolved to facilitate adaptive responding with respect to reliably occurring selective pressures in past environments (Nesse, 1990) – specific classes of adaptive challenge or opportunity (Consedine & Moscovitz, 2007). Emotions are “particular” mechanisms, shaped by natural selection to adjust aspects of the organism’s responses in ways that have, on average, given an advantage with respect to particular *types* of situation (Tooby & Cosmides, 2008).

While immediate or future behavioral change is necessary for selection to operate (Consedine, Strongman, & Magai, 2003), emotions accomplish multiple functional ends via multiple componential changes. The components of an emotional response include cognitive changes (Keltner, Ellsworth, & Edwards, 1993), physiology (Levenson, 1994), signals (Brown & Consedine, 2004), experience (Izard, 1991), and behavior (Consedine et al., 2003). Importantly, while the components of an emotion tend to be similar notwithstanding variation in the elicitor and tend to co-occur (particularly in early life), this does not mean that each component is