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Emotion Regulation Across the Lifespan

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Abstract

Emotion regulation, the ability to control emotional experiences and expressions, is essential for positive adaption across the lifespan. Individual and contextual factors contribute to emotion-regulation variance between and within different age groups. Individual factors include, for example, genetic dispositions and neurobiological vulnerabilities. Contextual factors involve opportunities to learn about and practice emotion regulation. In infancy and childhood, the family is especially important for assisting in regulating and teaching about emotions. During adolescence, physiological and socioemotional changes can contribute to transient instability in emotion regulation. Throughout adulthood, favorable average well-being trajectories co-occur with increases in pro-hedonic motivation. Emotion-regulation abilities are maintained into old age, but towards the end of life, stressors may overtax individuals' emotion-regulation capacity. This chapter reviews key developmental theories and empirical findings on emotion regulation in childhood, adolescence, and adulthood. It also highlights shortcomings and gaps in the available knowledge and points towards future research directions.

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Introduction

Emotion regulation – the ability to modify or maintain the duration, intensity, or nature of emotional experiences and expressions (e.g., Gross, 1999) – is considered a hallmark of socioemotional competence. Numerous studies demonstrate associations between emotion regulation and developmental adjustment in all phases of the lifespan. These include a broad array of developmental outcomes, with emotion-regulation competencies predicting, for example, more prosocial behavior, better academic achievements, and fewer internalizing and externalizing problems in childhood and adolescence (Aldao et al., 2010; Compas et al., 2017; Jacobs & Gross, 2014; Lonigan et al., 2017; Schäfer et al., 2017), and improved well-being, health, relationships, and work success throughout adulthood (e.g., Doerwald et al., 2016; Kotsou et al., 2011). Indeed, some scholars view the inability to recognize and regulate emotions in early life as a common origin for a wide range of physical and mental health problems in later life phases (Crowell et al., 2015).

Emotion regulation not only contributes to developmental adaptation, it is also a developmental phenomenon itself. Variations exist both between and within different age groups in the strategies, effectiveness, and motivations for emotion regulation. Understanding its lifespan development is thus paramount. So far, however, developmental investigations zoomed into specific life phases, with little cross-talk between research on different age groups. In this chapter, we aim to integrate the available evidence from a lifespan perspective moving from infancy and childhood, via adolescence, to adulthood and old age. For each developmental period, we review key findings on developmental trajectories of emotion regulation and factors influencing it. We conclude by giving an outlook on important future research directions.

Infancy and Childhood

Particularly in the early years of life, emotion regulation is often interpersonal, that is, it involves, or is supported by, another person (see also chapter MENDEZ, this volume). Parents and other caregivers provide interpersonal emotional regulation in a variety of ways including satisfying the child's basic physiological needs, providing tactile and verbal soothing, playing with, or distracting the child (Kiel & Kalomiris, 2015). While infants initially primarily communicate their emotions via crying and directing their gaze toward their caregivers, language development later allows children to also incorporate gestures and speech (Konishi et al., 2018). Caregivers' sensitive responding helps to regulate children's emotions and is also implicated in children's developing abilities to regulate their own emotions (Morris et al., 2017). Sensitive responding is characterized by perceiving and correctly interpreting children's signals and situation, by promptly reacting in a manner that addresses their momentary emotion-regulation needs, and tailoring the response to their developmental status (see also chapter RUDRAUF, this volume). As children get older and spend increasing time outside of their homes, teachers and peers become additional sources of interpersonal regulation and can help shape the development of emotion-regulation competencies (Martin & Ochsner, 2016; Taxer & Gross, 2018).

Although support by interaction partners plays an important role for emotion regulation early in life, intrapersonal (i.e., self-initiated) emotion regulation is already evident in infancy and gains in importance throughout childhood. In infancy, for example, intrapersonal emotion regulation is evident in infants' use of gaze aversion and self-soothing (e.g., sucking and rocking). These early attempts at regulation are primarily reflexive and automatic responses to the environment. Advances in motor control soon allow for more deliberate means of intrapersonal emotion regulation such as distraction via playing with one's fingers or toes (Kim et al., 2014). Throughout childhood, developments in the frontal lobe, coinciding with

advancements in executive functioning needed for goal-directed action, allow for children to exercise more deliberate control over their own emotion regulation (Holodynski et al., 2013) and to introduce more cognitive strategies such as reappraising a problem in a more positive light or distracting one's attention from it (Zimmer-Gembeck & Skinner, 2016; see also chapter MENDEZ, this volume).

Overall, as individuals move through childhood, emotion regulation typically becomes more active and less avoidant (Eschenbeck et al., 2018), cognitive strategies (e.g., attentional distraction) become more prominent whereas behavioral strategies (e.g., self-soothing thumb sucking) decrease (Zimmer-Gembeck & Skinner, 2016), and regulation shifts from primarily interpersonal (e.g., parental support) to more intrapersonal and self-directed (Rawana et al., 2014). Children normally develop an increasing repertoire of strategies and gain experience in their effectiveness in various situations and contexts (Levine et al., 2013).

As in all other life phases, there are substantial interindividual differences during infancy and childhood in emotion-regulation abilities and their developmental trajectories. Both individual and contextual factors contribute to these differences. Individual factors include individuals' temperament, broadly speaking, such as their physiological arousal level and emotional responsivity. Contextual factors involve opportunities for children to acquire knowledge about emotions and emotion-regulation strategies and to practice emotion-regulation skills. The family context is particularly relevant in this regard.

Importance of the Family Context

Attachment

A secure bond between parent and child has long been understood as critical for the healthy development of emotion regulation (Cassidy, 1994). Attachment development is shaped by the characteristics of both the children and their parents. Children's difficult temperament

(due, for example, to genetic predispositions or neurobiological deficits) can result in an increased risk of attachment problems (e.g., Viddal et al., 2017), particularly when co-occurring with low parental responsivity. Parental behaviors also influence attachment development; for example, securely as compared to insecurely attached children have mothers who, on average, are better able to identify their children's emotions. This, in turn, facilitates sensitive responding as discussed above, and effective emotion-regulation coaching on the part of the parent. In consequence, securely attached children are more likely to discuss their negative emotions with their parents (Waters et al., 2010), and are better able, on average, to generate their own emotion-regulation strategies when confronting negative emotions (Ştefan et al., 2017). A recent meta-analysis found that securely attached children experience less negative and more positive affect in a variety of contexts (Cooke et al., 2019), suggesting that securely attached children experience a more temperate emotional climate. Furthermore, securely attached children were better able to regulate their emotions, to make use of cognitive regulation strategies, and to recruit interpersonal support for emotion regulation, whereas insecure attachment was associated with lower ability to regulate emotions (see chapter STEPHENS, this volume). However, in their review of the extant literature, Zimmer-Gembeck and colleagues (2017) noted that the majority of effect sizes regarding associations between attachment and self-regulation are in the small to moderate range, that securely attached children do not always differ from their less securely attached peers, and that more longitudinal research is necessary to support conclusions that secure attachment facilitates the improvement of emotion regulation abilities.

Parenting

Parents and other caregivers, including teachers, serve as models and coaches of emotion regulation; their reactions and responses to negative events help to shape the emotional reactions and regulation of their children (Morris et al., 2017; see also chapter RUDRAUF, this volume).

The Tripartite Model of Family Influence (Morris et al., 2007) maintains that family members serve as models of emotion regulation through their responses to their own emotions, but also can coach children in regulation by helping them to label and appropriately express their emotions, suggesting suitable strategies for managing these emotions, and encouraging children's own efforts in emotion regulation. Parents who respond to children's emotions with harsh criticism or dismissive attitudes suggest that their children's emotions are not valid and should be suppressed. Fortunately, positive parenting practices, such as creating a warm environment by increased use of positive affect and emotional responsiveness, can be taught and encouraged (Warwar & Ellison, 2019), and priming parents to use these techniques predicts higher enthusiasm and persistence in response to their children's frustration (Loop & Roskam, 2016). Additionally, parental emotion coaching can help to ameliorate the association between negative peer relationships at school and children's perceptions of their own social competence (Buckholdt et al., 2016). Parents who respond sensitively to their children's emotions, and allow children to express their emotions related to the negative peer encounters, can help children to successfully cope with these types of relationships. Research including measurements of child characteristics suggests that positive parenting may be especially important when children experience positive emotions only rarely (Wu et al., 2017) or are genetically more susceptible to regulation difficulties (Li et al., 2016). On the other hand, harsh non-supportive parenting may be especially detrimental for children who tend to experience negative emotions frequently (Morris et al., 2007).

In sum, caregivers play an important role in interpersonal emotion regulation during infancy and childhood (provided their reactions are appropriate given the child's momentary needs and developmental status), and in shaping the emotional awareness and regulatory skills of children. Throughout childhood, intrapersonal emotion-regulation gains in importance, and

developmental gains are associated with transitions to the use of less avoidant and more cognitive emotion regulation strategies. Secure attachment is associated with a warmer emotional home climate and better regulation skills in children. Individual differences and vulnerabilities in children moderate the impact of attachment and parenting on emotion regulation.

Adolescence

Adolescence is the transition period between childhood and adulthood (Casey, 2015). It starts with the beginning of pubertal transformations towards sexual maturity and legally ends with attaining age of majority. Typically developing individuals improve their emotion-regulatory capability during adolescence. This is reflected in average increases in the understanding of emotional situations and a broadening and sophistication of the repertoire of regulatory strategies (for reviews, see Rawana et al., 2014; Zimmer-Gembeck & Skinner, 2016). For example, adolescents become more likely to use planful problem solving (i.e., engage in deliberate efforts to analyze and alter a difficult situation) and cognitive strategies to deal with stressors, such as positive self-talk and reappraisal (see also chapter DEFRANCE, this volume). Adolescent improvement in emotion regulation, however, is not necessarily linear. For many adolescents, there seems to be a period of temporarily lowered emotion-regulation capacity. For example, a temporary rise in the use of potentially maladaptive regulation strategies has been observed during early adolescence, such as cognitive escape (i.e., avoiding thoughts about undesirable situations), rumination, verbal aggression, or venting (for reviews, see Rawana et al., 2014; Zimmer-Gembeck & Skinner, 2016). Characteristics of adolescent-typical emotional experiences further the idea that emotion-regulation capacity might be temporarily dampened: On average, and compared to children and adults, adolescents are more emotionally reactive, experience negative affect more frequently, and fluctuate more in their emotional experiences (for an overview, see Riediger & Klipker, 2014). Furthermore, there is an adolescence-typical

increase in the prevalence of adjustment difficulties characterized by emotional dysregulation, such as internalizing (e.g., depression) and externalizing (e.g., aggressiveness) problems (Lee et al., 2014). Also, the temporary rise during adolescence in average sensation seeking, impulsive, and risky behaviors—reflected, for example, in the adolescent-specific peak of accident-caused fatalities and deviant behaviors—has been interpreted as an indicator of a transient period of reduced self-control (Weiss et al., 2015).

Neurobiological Accounts of Adolescence-Specific Transient Decline in Emotion Control

Various researchers maintain that the apparent average temporary decline in emotion-regulation capacity in adolescence is related to neurobiological maturation (e.g., Casey, 2015; Ernst, 2014; Shulman et al., 2016). Adolescent brain development is characterized, for example, by elimination of unused neural connections, enhanced sensitivity of synaptic information transmission, and increased myelination of axons. As a result, the brain can function increasingly efficiently, and the connectivity between brain areas improves. Not all brain regions and circuits, however, mature at the same time and pace. Thus, a temporary maturational imbalance may occur between brain regions which has been linked to adolescent self-regulation. Respective models differ in their specific assumptions (for model comparisons, see Casey, 2015; Shulman et al., 2016), but converge on the following ideas: At least two brain systems (and their interaction) are assumed critical for adolescents' self-control—a subcortical system subserving affective experience and a prefrontal system subserving cognitive control (i.e., the ability to employ mental resources in a goal-directed manner, which is necessary for voluntary emotion regulation). These models also maintain that neurobiological maturation yields a transitory disjunction, with a temporarily relatively more influential affective system and a temporarily relatively less influential cognitive-control system on adolescents' experience and behavior. This is assumed to yield increased susceptibility to seek and experience intense affective experiences at a time when

the cognitive-control capacity has not yet equally matured and, hence, temporary difficulties in emotion regulation.

These assumptions receive preliminary support from primate and human postmortem and neuroimaging studies that found evidence of differential maturational timing of prefrontal and subcortical areas during adolescence (e.g., Crone & Dahl, 2012). Whether these neurobiological developments indeed map onto adolescents' self-regulation capacity (as assumed by these models), however, remains to be shown empirically (Ahmed et al., 2015). Also, differences between adolescents in their neurobiological maturation and the potential role of the timing and tempo of pubertal changes in this regard, are not yet understood (Goddings et al., 2019). Furthermore, various authors have criticized these neurobiological accounts as reflecting simplified conceptions of adolescent development of emotion regulation (e.g., Pfeifer & Allen, 2012, 2016). Nevertheless, the current state of research in this field warrants the conclusion that neurophysiological maturation needs to be considered to adequately understand adolescent development of emotion regulation. Many questions, however, still remain open. Furthermore, neurobiological maturation is not the only factor that influences adolescents' emotion regulation. Additional psychosocial influences should be considered as well, as discussed next.

Psychosocial Aspects of Emotion Regulation in Adolescence

Emotional challenges

Tackling the developmental tasks of adolescence (such as developing one's own identity, establishing and maintaining social relationships independent from one's parents and other adults, or developing goals for one's future) increases the probability of encountering emotionally challenging situations. These derive from, among other things, increased potential for conflict with parents, greater sensitivity to positive or negative interactions with peers, first romantic experiences, and growing engagement with fundamental aspects of one's own and others'

existences, identities, and futures. Adaptation to pubertal body changes is also emotionally challenging, as are the associated and increasingly demanding social expectations to not only look, but also behave, like an adult (for an overview, see Riediger & Klipker, 2014). Temporary increases in adolescents' emotionality may thus not only reflect neurobiological changes, but also an intensification of emotional challenges, which, in turn, likely requires the refinement of emotion-regulation skills.

Emotion-regulation motivation

In addition to being confronted with emotional challenges, adolescents occasionally also look for them proactively. Examples are counter-hedonic wishes to maintain or enhance negative affect or to dampen positive affect. Although pro-hedonic orientation prevails in adolescents' emotion-regulation motivation, occasional contra-hedonic motivation is reported more frequently by adolescents than adults (Riediger, 2015; Riediger et al., 2009; Riediger et al., 2014) and is consistent with accounts of increased sensation seeking. In addition, by exposing adolescents to situations where they have to deal with negative emotional experiences, occasional contra-hedonic motivation could also be helpful in refining emotion-regulation competence and tackling other developmental tasks of adolescence (e.g., establishing emotional autonomy or affirming one's sense of identity).

Emotion-regulation socialization

Contextual influences continue to shape emotion-regulation development beyond childhood. Adolescents' growing autonomy increases the respective importance of extra-familial influences, such as peers or social media, but parents and interactions within families maintain significance through observation learning, emotional climate, and parenting practices. Parenting styles, however, need adjustment to adolescents' higher cognitive and self-regulation competencies and their increased need for autonomy. While direct interventions such as soothing

or directive instructions about specific occasions are effective for younger children, indirect influences, such as talking more generally about possible emotion-regulation strategies from a meta-perspective, are better suited for adolescents (Morris et al., 2017). Balancing adolescents' opposing needs for autonomy on the one hand and for guidance on the other is a constant challenge for parents. Imbalance in either direction can have disadvantageous effects on adolescents' emotion-regulation development, and, consequently, their socio-emotional adaptation. Excessive dependence of adolescents on their parents, for example, has been proposed as a risk factor for internalizing problems, while lack or refusal of parental emotional guidance has been associated with a higher risk for externalizing problems (for an overview, see Riediger & Klipker, 2014).

In short, emotion-regulation competences typically improve in adolescence, but not necessarily in a linear manner. Neurobiological maturation has been linked to the adolescence-typical transient decline in emotion-regulation capacity. Psychosocial aspects that further shape adolescent emotion-regulation development include adolescence-specific emotional challenges, emotion-regulation motivation, and emotion socialization.

Adulthood

Legally, individuals reach adulthood with the age of majority, which in most countries is between 18 and 21 years of age. Economic independence and the assumption of adult responsibilities, however, may only occur later as economic circumstances and cultural norms in many industrialized countries encourage a phase of exploration and education in the early twenties (Arnett, 2015). Middle adulthood is often conceptualized to begin around 35 or 40, and older adulthood, around 60 or 65 years of age, although individuals' subjective perceptions of their aging may vary (e.g., Bellintier & Neupert, 2019; Bellintier et al., 2017). Most of the available studies on adult emotion regulation compare younger and older adults cross-sectionally.

Less is known about emotion regulation in middle age and about within-person change in emotion regulation as adults grow older.

Findings of average age-related stability or increases in well-being into early old age sparked increased interest in adult emotion regulation. Ambulatory assessments (e.g., via smartphones) of emotional experiences as they spontaneously occur in participants' natural life contexts, typically find that older as compared to younger adults report, on average, more positive and less negative daily affective experiences (for a review see, Riediger & Rauers, 2014). For many individuals, well-being appears to decline only towards the end of life (e.g., Gerstorf et al., 2016; Gerstorf et al., 2018). The positive trajectory of emotional well-being into old age seems at odds with aging-associated cognitive, social, and physical decline that starts much earlier. Several researchers (e.g., Blanchard-Fields, 2007; Carstensen, 2006; Charles, 2010) theorized that this "stability-despite-loss paradox" of adult well-being (Kunzmann & Wrosch, 2015) derives from increases across adulthood in both the motivation to regulate emotional states (see next section) and the competence to do so (see section after next). These ideas have been influential, and adult improvement in emotion regulation is sometimes asserted as a well-established fact. However, the extant empirical literature (reviewed below) reveals a more nuanced picture.

Affect-Regulation Motivation

Socioemotional selectivity theory (SST; Carstensen, 2006) proposes that awareness of one's shortening lifetime shifts motivational priorities throughout adulthood: Whereas young adults prioritize future-oriented over present-oriented goals, the reverse is expected for older adults who perceive their time horizons as increasingly limited. The theory postulates that with older age, adults are increasingly motivated to optimize their affective experiences in the here and now. This claim is in line with findings of an age-related increase from adolescence to old age in self-reported everyday pro-hedonic motivation (wanting to maintain or enhance positive, or to

dampen negative experiences; Riediger et al., 2009; Riediger et al., 2014). Corresponding patterns have also emerged with behavioral indicators of affect-regulatory preferences, such as older, as compared to younger, adults' higher preferences to listen to positive, low-arousal music in affectively relevant situations (Cohrdes et al., 2017). Research on the so-called age-related positivity effect in affective information processing also aligns with the proposal of adult shifts in affect-regulation motivation.

Age-Related Positivity Effect in Affective Information Processing

When exposed to experimental emotional stimuli (e.g., pictures or videos varying in valence) without further instructions, older adults, on average, preferentially attend to and remember positive over negative information compared to younger individuals (e.g., meta-analyses by Reed et al., 2014). This phenomenon has been interpreted as being due to older adults' strategic deployment of attention to protect their affective well-being. Supporting this account are findings that the positivity effect does not emerge when older adults' cognitive resource capacity is constrained (e.g. Bruno et al., 2014; Mather & Knight, 2005). Older adults' preferential attention to positive information thus seems to require resources, which is consistent with the idea that it reflects an effortful emotion-regulation strategy. Also in line with this, is the observed absence of age-related positivity effects when other personally-relevant goals (e.g., achievement or health) might be momentarily more important than emotion regulation (English & Carstensen, 2015; Reed et al., 2014).

Profound differences between the employed paradigms and typical real-life engagement with affective information have been noted as a potential limitation of this line of research (e.g., Kunzmann & Isaacowitz, 2017). Indeed, in eye-tracking research, an interesting discrepancy in findings emerged when the ecological validity of the setting was enhanced. The age-related positivity effect, typically found for participants' gaze behavior towards affective stimuli in

standard experimental settings, could not be replicated when participants freely interacted with a naturalistic emotional environment (Isaacowitz et al., 2015). Findings from a study on adult age differences in empathic accuracy, however, indirectly suggest that age-related positivity effects might also emerge in naturalistic interactions (Blanke et al., 2015). Here, empathic accuracy (i.e., correctly inferring other persons' thoughts and feelings) was lower among older empathizers for unknown interaction partners' negative versus positive thoughts and feelings, whereas no such valence effect was evident for younger adults' empathic accuracy.

Use and Effectiveness of Emotion-Regulation Strategies Across Adulthood

Urry and Gross (2010) proposed that adult changes in emotion-regulation strategy use extend beyond the positivity effect of attentional deployment. Arguing that aging-related losses in cognitive resource capacity affect the efficiency of different emotion-regulation strategies, they theorized that older adults should tailor their emotion-regulation attempts accordingly (e.g., tone down resource-demanding strategies such as cognitive reappraisal in favor of less resource-demanding strategies such as avoiding situations that elicit undesired emotions). A recent systematic review of studies employing a wide range of self-report and experimental measurement approaches, however, concluded that the available evidence does not indicate any systematic adult age differences in the use of emotion-regulation strategies (Allen & Windsor, 2019). Age invariance was also observed in studies using experience-sampling to assess emotion-regulation strategy use in daily life (Benson et al., 2019; Eldesouky & English, 2018).

Furthermore, the often-claimed improvement of emotion-regulation competence into old age is not well-supported empirically. Several researchers scrutinized the available evidence by means of systematic review and meta-analysis. Their consensus was that, although most self-report studies indeed find older adults to describe themselves, on average, as in better control of their feelings than younger adults (Doerwald et al., 2016), experimental studies yield diverse

patterns of findings and do not indicate systematic adult age differences in the ability to regulate emotions according to instruction (e.g., meta-analysis in Brady et al., 2018; systematic review in Doerwald et al., 2016). A potential shortcoming of these studies is their limited ecological validity (Kunzmann & Isaacowitz, 2017), but studies on reactions to affect-eliciting events in real life similarly yielded a heterogeneous pattern with various moderators influencing adult age differences in emotional responsivity (Bellingtier & Neupert, 2018; Charles et al., 2009; Wrzus et al., 2015).

The remarkable heterogeneity of findings indicates that emotion regulation across adulthood is likely too complex to be straightforwardly reflected in stable age-group differences regardless of context. The Strength-and-Vulnerability-Integration model (e.g., Charles & Luong, 2013), for example, maintains that highly arousing and complex contexts should render successful emotion regulation increasingly difficult with older age as relevant resources decline, such as neurobiologically determined cognitive functions (e.g., processing speed, memory span) or flexibility to recuperate from physiological arousal. In less demanding situations, however, and given the age-related increase in pro-hedonic affect-regulation motivation, older adults' emotion-regulation success should be comparable to (or even better than) that of younger individuals. Supporting evidence includes, for example, findings that adult age differences in affective stress reactivity vary with stressor complexity. Comparable or lower affective responses were observed among older as compared to younger adults in reaction to mild stressors, whereas affective reactivity to complex stressors was enhanced among older adults relative to younger participants (e.g., Birditt, 2014; Wrzus et al., 2013).

To summarize, the available evidence points to adult age differences in emotion-regulation motivation, but not in emotion-regulation strategy use and effectiveness. Pro-hedonic motivation to optimize one's emotional well-being is more pronounced among older adults than

among younger adults, as is preferential attention to positive over negative information in laboratory contexts. Age-comparative findings on the use and effectiveness of emotion-regulation strategies, however, do not support any overarching adult age differences in emotion-regulation competence. Together, enhanced pro-hedonic affect-regulation motivation and maintained emotion-regulation capacity might contribute to the “stability-despite-loss paradox” of affective well-being into young old age. Terminal decline in well-being prior to death, in contrast, might result from an increased likelihood that stressors encountered in the final phase of life overtax the remaining emotion-regulation capacity.

Conclusion

There is ample evidence demonstrating the importance of emotion regulation for developmental adaptation in all phases of the lifespan and across diverse life domains (e.g., social relations, mental health, academic or professional achievements). However, the effectiveness, motivations, and means for emotion regulation vary across age groups. Developmental investigations address these differences, but typically focus on one particular life phase in isolation. By adopting a lifespan perspective, we have mapped the key developments and influencing factors for emotion regulation across the entire lifespan from infancy to old age. The reviewed research demonstrates that internal and external factors interact to shape development of emotion-regulation throughout life, although the relative importance of individual aspects varies across different ages. Internal factors include, among others, changes in neurobiological structures and functions, cognitive capacity, and motivational preferences for influencing momentary emotional states. External factors involve contextual influences, such as family and peers that mold the social-learning of emotion regulation, and the nature and complexity of encountered emotional challenges. The extant research suggests that—although there is potential for gains and losses in emotion-regulation capacity throughout the entire lifespan—the normative

lifespan trajectory of emotion regulation depicts a pattern of average refinement in the early phases of life followed by average stability throughout most of adulthood.

Future directions

Much of the research reviewed in this chapter derived from an interest in typical (average) developmental pathways of emotion-regulation development. Individual differences within age-groups, and their influencing factors, however, have been relatively unexplored. Also, and depending on the specific research question at hand, chronological age may not always be the best approximation of individuals' developmental status. In adolescence, for example, more attention should be paid to the role of pubertal timing, status, and tempo for the development of emotion regulation. Middle adulthood is the least well-researched life period, and more rigorously investigating emotion-regulation development in that phase is an important undertaking for future research. In addition, future research should aim to address methodological limitations of the currently available research (see chapter LOUGHEED, this volume). For example, more longitudinal evidence is necessary to portray developmental changes within persons over time, also considering the possibility of non-linear trends in development, such as temporary perturbations or deviations from growth trajectories. Multi-methodological designs would be desirable to overcome the shortcomings associated with the prevailing dominance of self-report approaches or lab-based experimental designs with limited ecological validity. Finally, understanding the lifespan development of emotion regulation would benefit from deepening the conceptual and methodological exchange between researchers investigating emotion regulation in different phases of life.

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