Emotion Regulation and the Early Development of Psychopathology

Pamela M. Cole, Tracy A. Dennis, Sarah E. Martin, and Sarah E. Hall

The concept of emotion regulation has assumed a central place in contemporary Western science, particularly in the field of psychology, including the subdisciplines of clinical and developmental psychology. Although there is no consensus as to its definition, emotion regulation is generally described as the modulation of one or more component processes of emotion (e.g., changes in appraisal, expression, experience, readiness to act; Campos, Mumme, Kermoian, & Campos, 1994; Cole, Martin, & Dennis, 2004; Gross, 1998a; Mauss, Bunge, & Gross, this volume; Thompson, 1994). The concept is especially appealing within the framework of developmental psychopathology. This framework provides an overarching perspective for understanding how normal developmental processes lead to adaptive outcomes, under what conditions those same processes are compromised and lead to maladaptive outcomes, how early risk for problematic outcomes are exacerbated or ameliorated over the course of development, and how typical and atypical developmental trajectories inform each other (Cicchetti & Cohen, 2006).

The concept of emotion regulation has become a prominent focus of research conducted within the developmental psychopathology framework. The reason for this is that the concept of emotion regulation integrates an apparent contradiction. Specifically, it provides a conceptual basis for understanding how emotional functioning plays a primary role in both adaptive outcomes, such as psychological competencies tolerating frustration while maintaining interest and curiosity in a difficult task (Saarni, 1999; Shonkoff & Phillips, 2000) and maladaptive outcomes, such as hostile defiance, persistent irritability, or hopelessness (Cole, Michel, & Teti,
compromise psychological health and development under certain conditions. Individuals who are having significant psychological problems evidence significant emotional difficulties. For example, when emotions rise to the level that others are aware of them, we readily see how those emotions can endanger the individuals' relationships or interfere with their ability to engage in productive activity and prolong ill-feeling toward the self and others, even if the emotions serve some immediate goal to regain a sense of well-being. An adult, for example, may have difficulty recognizing his own anxiety (and, therefore, have difficulty managing an emotion he does not recognize), feel chronically unhappy, become irritable with himself and others, and have a cascade of interpersonal and personal difficulties that he cannot resolve because he is caught in an emotional quicksand. Indeed, most forms of psychopathology in children and adults are characterized by emotional symptoms (Cole et al., 1994; Keenan, 2000).

Within the developmental psychopathology framework, the goal of research on emotion regulation is to understand how individuals typically acquire the ability to manage anxiety and other emotions, such that they serve both their immediate goals and progress toward adaptive long-term developmental outcomes. That is, the goal is to understand how the adaptive qualities of emotional functioning evolve to lead to productive, happy adult lives and, from this normative perspective, to understand how disabling patterns of emotion develop and are corrected. Returning to the case of anxiety, it is a functional emotional response to perceived or anticipated risks and dangers to well-being. In typically developing children, anxiety helps a child hesitate to approach a novel or uncertain situation, to work harder to plan and prepare for activities that others will observe, and to resist acting on impulses and desires because they appropriately fear the consequences of criticism, embarrassment, or retribution. Indeed, a lack of appropriate anxiety is thought to be an underlying problem of some behavioral disorders (Kagan, 1994; Raine, Reynolds, Venables, Mednick, & Farrington, 1998).

Anxiety and other negative emotions, however, can paralyze or disorganize behavior. For example, in children who are referred to clinics, we often see anxiety persisting or amplifying in ways that interfere with children's transition to school or to separate comfortably from their parents, their ability to play easily with friends, the degree to which they can focus on learning materials, and their ability to cease worrying about risks and dangers long enough to fall asleep or enjoy going outside to play. Empirical evidence in studies of highly shy or inhibited children reveals how high levels of anxiety about approaching a novel, uncertain situation (e.g., a small group of unfamiliar children of the same age; Rubin, Cheah, & Fox, 2001) overwhelms their natural desire to play and be accepted by

EMOTIONS AS BOTH ADAPTIVE AND MALADAPTIVE

Contemporary emotion theories emphasize the adaptive function of emotions. Generally speaking, what we observe in ourselves and others as emotion states are the visible phases of an ongoing processing of information, the tip of the iceberg so to speak, of a particular type of processing focused on how one is faring relative to one's goals and circumstances. This information processing is of a particular type that distinguishes it from other forms of information processing (e.g., judging distances). Specifically, emotion processing involves appraising our circumstances in light of our goals for well-being and readying us to act accordingly to regain or maintain our goals (Arnold, 1960; Barrett & Campos, 1987; Frijda, 1986; Lazarus, 1991). Although emotions like anger, sadness, and guilt are often viewed as undesirable, contemporary emotion theories point out that they allow us to enact behavior that preserves or regains our sense of well-being. For example, anger allows an individual to act assertively to correct a problem and even prevent its recurrence. Sadness allows a person to cease futile action and relinquish a goal, typically eliciting comfort and support from others. Guilt allows a person to modify or repair action when self-interested action compromises the well-being of another; it prevents future errors, communicates regret to others, and typically elicits forgiveness and relationship repair.

These same adaptive processes, however, clearly have the capacity to
others. There are also children who present with behavior management problems, such as noncompliance and defiance, whose problem behaviors are fueled by anxiety and a need to feel in control of situations. In these cases, anxiety is less paralyzing and more disorganizing of social behavior or the ability to work in a focused way on a task. It is important to state, at this juncture, that children with significant problems do attempt to regulate their emotions. What is most interesting is that their regulatory attempts are often not adequate to the challenge of modulating anxiety. In short, anxiety is useful in many ways for most individuals but, if poorly regulated, can become disabling. The dynamics of such emotional responses—duration, intensity, and recovery time—are characteristic of problems with emotion regulation that appear to mark risk for a range of social-emotional and behavioral problems.

In sum, analysis of the pathways from a basic adaptive emotion to a variety of different adaptive and maladaptive developmental outcomes is an important area of study. The concept of emotion regulation is particularly helpful in understanding these various developmental trajectories. The concept provides a way to conceptualize how emotions can both be fundamentally adaptive, serving our ability to function well in an ever-changing environment and, under certain conditions (genetic predispositions and environmental risks), lead to a range of difficulties; it is the way in which emotions are regulated that is crucial to understand in predicting current and future adjustment and maladjustment.

1 CHALLENGES IN THE SCIENTIFIC STUDY OF EMOTION REGULATION

The breadth and richness of the concept of emotion regulation has led to an enthusiastic embrace by developmental and clinical scientists but also considerable confusion and debate as to the precise meaning of the term. Too often, empirical studies equate “regulation” with positive or neutral emotional expression and “dysregulation” with relatively higher levels of expression of one or more negative emotions. That is, they equate the valence of emotion with the quality of regulation, rendering negative emotions a problematic status even though theories argue that all emotions serve adaptive functions (e.g., Barrett & Campos, 1987; Lazarus, 1991; Sroufe, 1995).

Most recognize the overly simplistic nature of such an approach, but the complexity of the concept of emotion regulation is daunting when one attempts to study it with observational methods. It is beyond the scope of this chapter to detail these challenges, but several issues have plagued scien-

tific progress, including the inherent regulatory aspects of emotions (e.g., anger organizes particular actions), whether any emotion is ever wholly unregulated, what exactly an emotion is, and how we measure emotion independently of regulatory processes (Cole et al., 2004). Emotion regulation is best understood to be a dynamic phenomenon, unfolding in a nonlinear fashion within and across multiple levels of functioning (affect, cognition, and behavior) (e.g., Campos et al., 1994; Fogel & Thelen, 1987; Saarni, Mumme, & Campos, 1998). Even at the physical level, nonlinear, dynamic qualities are observed in neurological substrates of emotional processing, in which cortical and subcortical brain regions influence each other via feedback loops and the forward and backward flow of information (Lewis, 2005; Tucker et al., 2003). That is, the process of generating changes in emotional state and the process of regulating emotional state co-occur at a physiological level such that the “emotions” we observe, in others or in ourselves, are already products of both emotion generation and emotion regulation. The precise nature of emotions, the nature of the relation between component processes (appraisal and readiness to act), and the nature of regulatory influences remains to be clarified. Such clarification will require advances in the form of increasingly sophisticated experiments and development of new technologies.

As these thorny issues are worked out scientifically, there is and will continue to be widespread use of behavioral observations to infer emotion regulation in children. Clinical practitioners, child care providers, teachers, and parents rely on their observations of children's behavior in real time to gain insight into a child's motivations and needs and to determine how to help them be effective in their self-regulation of emotions. Such behavioral methods are especially critical when studying young children, for whom it is difficult or impossible to employ nonbehavioral methods (e.g., self-report, fMRI). It is also well known that the emotional relationships and experiences of the first five years of life are crucial in the development of emotional health and competence (Denham, 1998; Kopp, 1989; Saarni, 1999; Shonkoff & Phillips, 2000; Sroufe, 1995), making this developmental period especially relevant to the study of emotion regulation and the emergence of psychopathology.

Thus, there will continue to be reliance on behavioral observations to understand young children's emotion regulation both in practice and in science. Yet to effectively and validly infer emotion regulation from the sequential flow of a young child's behavior in real-time, real-world contexts, it is essential to have clearly stated conceptual formulations and operational definitions of emotion regulation that lead to clearly specified predictions tested with methods of behavioral assessment.

The use of behavioral sequences, however, is provocative in that it risks
implying a model in which emotion and its regulation are two distinct entities that occur in a linear, temporal progression (first an emotional reaction and then an independent regulator of that emotion). As stated above, it is clear that emotion regulation is a dynamic, nonlinear phenomenon. As such, the clinician or researcher who attempts to infer emotion regulation by observing behavior in time and sequence is faced with two related problems: (1) the observer cannot easily disentangle the ebb and flow of a child's emotional responses from the array of regulatory influences that are occurring, and (2) the observed behavior exists in a stream of person-environment transactions rendering any start point of an observation somewhat arbitrary.

Thus, despite enormous advances in both behavioral techniques and affective neuroscience that will shed light on the nature of emotion and emotion regulation, we recognize a continuing need for more sophisticated ways to infer emotion regulation from a child's behavior. To this end, we conceive of emotion regulation as changes in an emotional reaction in a situational context and advocate studying those changes using converging measures, situation-behavior relations, and temporal relations between the nature of expressive behavior and strategic attempts by the child or another to regulate emotion (for further detail, see Cole et al., 2004). This includes observing changes in the intensity, duration, and valence of emotion based on behavior in situational context, making judgments about the effect of dominant emotions on the organization of disorganization of behavior, and assessing a child's anticipating and avoiding emotional reactions (Cole et al., 1994; Thompson, 1994). It is our goal to use observations of child behavior, in time and sequence, to help us to infer that a dynamic emotion regulation process has unfolded in a particular, predictable way. Finally, we advocate applying such behavioral observation methods to the assessment of both typically developing children and those whose emotional functioning has become impaired, namely children who have or are at risk for having psychopathology. As we discuss shortly, such an approach provides a more complete understanding of both basic emotional development by examining a broader range of individual differences but also permits the examination of atypical emotional development in light of typical development. From these viewpoints, we aim to articulate and empirically test specific predictions about the role of emotion regulation in the development of psychological competence and early psychopathology.

Emotion Regulation and the Early Development of Psychopathology

FROM MOMENT-TO-MOMENT EMOTION REGULATION TO STABLE, INDIVIDUALIZED PATTERNS OF ER

The observation of moment-to-moment changes in emotion in context can detail the mechanisms by which stable patterns of emotion regulation evolve. These pathways are yet not well understood and must be further delineated in order to clarify what variations in emotional functioning constitute normal variability and when and how certain variations become stable, organized dysfunctional patterns of emotion regulation. Such individualized patterns of emotion regulation develop over time as moment-to-moment experiences accumulate; even without conscious attention, certain ways of regulating emotion serve immediate needs, and, therefore, the probability that they will recur and become characteristic of the child's functioning is increased. Styles of emotion regulation emerge as individual experiences lead to organized preferences for certain emotions and certain regulatory strategies (e.g., Davidson, 2003; Gross, 1998a, b; Izard, Youngstrom, Fine, Mostow, & Trentacosta, 2006; Malatesta & Wilson, 1988; Stroufe, 1995) such that we come to describe not the behavior of the moment but the person as emotionally well-regulated or prone to emotional dysregulation. Emotion-behavior sequences in which emotions are followed by inappropriate or ineffective behaviors will become characteristic patterns of emotion regulation if they succeed in meeting short-term or secondary goals (e.g., a child throws a temper tantrum when candy is taken away, but receives comfort in its place).

Individuals who suffer from psychopathological functioning appear to develop emotion regulation patterns that involve either overregulating and/or underregulating certain emotional responses. For example, one pathway to serious misconduct is hypothesized to be the development of a pattern of underregulating anger but overregulating emotions that are often experienced as creating vulnerability, such as sadness or anxiety (Cole, Hall, & Radzioch, in press). In an effort to avoid feeling those latter feelings, a tendency to generate anger when actually feeling sad or anxious can develop (see also Cole et al., in press). This response may often be inappropriate to a given situation, for example, showing anger when one suffers a saddening loss. A child who generally becomes angry when it is more appropriate (age typical, expected in the situation, acceptable to adults) to be deeply disappointed may have a greater likelihood of behaving in aggressive or antisocial ways, even though the circumstances that trigger a strong emotional response may initially elicit sadness or anxiety.
The emotion regulation story is also not limited to the reduction of negative emotion (Cole et al., 1994). Some children show a surprising lack of expected positive emotions during enjoyable situations such as play. A child who experiences and expresses little positive emotion when it is socially appropriate to do so may be at specific risk for depression (Shankman et al., 2005). Both types of context-inappropriate emotion—the presence of unexpected emotions or the lack of expected emotions—are thought to reflect clinical risk depending on the specific nature of under- or overregulation (e.g., Buss, Davidson, Kalin, & Goldsmith, 2004; Zahn-Waxler et al., 1994).

**LINKS BETWEEN OBSERVED BEHAVIOR, PATTERNS OF EMOTION REGULATION, AND CLINICAL DISORDER**

Our developmental psychopathology orientation leads us to predict child outcomes from individualized patterns of emotion regulation. That is, we are keenly interested in how a child’s efforts to regulate emotion (i.e., achieve goals for well-being) devolve into chronic psychological distress and functional impairment (Cicchetti, Ganiban, & Barnett, 1991; Maughan & Cicchetti, 2002). Theory suggests (Calkins, 1994; Kopp, 1989) and evidence indicates (e.g., Blair, Denham, Kochanoff, & Whipple, 2004; Cole, 1986; Denham et al., 2003; Fabes & Eisenberg, 1992; Stansbury & Sigman, 2000) that between the ages of 3 and 5 years, children acquire the ability to self-regulate emotions and that individual differences in the quality and style of emotion regulation distinguish the typically developing child from children with emerging behavioral and emotional disorders (Cole, Zahn-Waxler, & Smith, 1996; Gilliom, Shaw, Beck, Schonberg, & Lukon, 2002; Silk, Shaw, Forbes, Lane, & Kovacs, 2006).

These growing capacities are strongly linked to earlier and concurrent efforts by parents to bolster and redirect children’s independent attempts at emotional self-regulation (Berlin & Cassidy, 2003; Cole, Tett, & Zahn-Waxler, 2003; Stansbury & Zimmerman, 1999). Children at risk for psychopathology may show a reduced capacity to benefit from caregiver attempts. Indeed, children may show escalation of negative emotions rather than the expected decreases. Yet, there remains insufficient empirical evidence to document the specific nature of emotional dysregulation, what differentiates early emotional dysregulation that represents a transient, developmental phase from that which signals risk, and the precise mechanisms by which emerging patterns of emotion regulation lead to specific clinically significant outcomes.

To illustrate, we present a case of a 4-year-old boy who was referred for services and diagnosed with major depressive disorder. The description has been written to protect the anonymity of the child and his family. The case was selected because it typified a class of early childhood psychopathology that is, unfortunately, common in our practices. In our presentation, we highlight several stylized patterns of emotion regulation that characterize the child’s functioning and provide hypotheses for why preschool age children with clinical depression should differ from typically developing children of this age and from children with different clinical presentations (e.g., attention deficit disorder). The description is based on parental observations of the child’s behavior at home, teacher observations of the child’s behavior at preschool, and the clinic staff’s observations of the child’s behavior in the clinic. To our way of thinking, the case portrays a pattern of emotional dysregulation that is characteristic of and specific to childhood depression. The child had frequent, prolonged episodes of irritability, dysphoria, and a loss of interest and enjoyment. However, what aspects of this child’s functioning point to difficulty with emotion regulation? They are the following:

(a) Context-inappropriate emotion, namely anger and sadness in situations most children enjoy
(b) Emotion-behavior sequences in which emotional responses are followed by inappropriate rather than appropriate, acceptable behavior
(c) Episodes of negative emotions that are longer and more intense in which age-appropriate self-regulatory strategies (e.g., distraction, making bids for help) are not deployed or, when deployed, they fail to reduce or resolve distress
(d) Difficulty recovering from negative emotion even when responsible, sensitive adults use appropriate caregiving strategies, including increases in negative emotions to efforts that should lead to decreases.

**A CLINICAL EXAMPLE**

Clinical cases provide rich material for forming hypotheses about the development of specific emotion regulation difficulties. In the last section of this chapter, we tie together aspects of emotion regulation that appear to distinguish typical and atypical functioning and the examples provided in the case study. Together they offer testable hypotheses about how depressed preschoolers should differ from typically developing 4-year-olds.

Andrew’s mother tearfully called the clinic, expressing helplessness and deep concerns about her 4-year-old son’s unmanageable and aggressive...
behavior. She and her husband felt they could not control their son’s behavior. Andrew opposed their attempts to direct, correct, and influence his behavior. When they made an attempt to direct him, he not only failed to comply with their instructions but became intensely angry and hostilely refused to do as they wished. In addition, he had frequent and intense conflicts with his 3-year-old sister such that they feared he might harm her.

There was converging evidence from different observers that Andrew not only had frequent episodes of opposition and conflict but that his behavior appeared to be fueled by persistent irritability and intense emotional reactivity, even in response to what could be regarded as minor frustrations or interpersonal disagreement. Moreover, the descriptions were noteworthy in that it was evident that Andrew’s anger did not organize his behavior into effective problem-solving. Rather, once angry, he grew increasingly agitated and became unruly or aggressive. During his most escalated outbursts, he would become reckless and destructive, throwing or breaking household objects within reach, even his own toys and belongings.

As described thus far, Andrew’s behavior is consistent with that of children whose behavior meets criteria for oppositional defiant disorder. Additional observations, however, led to considering the likelihood that Andrew was experiencing major depression. Notably, his verbalizations during angry outbursts often included statements that family members hated him and that he himself wished he were dead. Further, when his angry and agitated subsided, the boy became tearful and withdrawn for extended periods, i.e., hours and even days. Efforts to soothe, help, and cheer him were met with renewed anger and agitation. In addition, he no longer appeared to enjoy activities that he once did, and he showed waning interest in any play and family activities.

In the clinic, Andrew was quiet and reserved. He complied with the therapist’s requests but never initiated conversation or play. In fact, he showed no interest in the play materials. He made very little eye contact and no attempt, even nonverbally, to engage the therapist. With a skilled clinician, most young children eventually begin to explore play materials and warm up to the clinician who is kind and friendly. Andrew continued to avoid interaction and activity. For example, in a task where he was asked to complete stories, his narratives were brief and unelaborated although it was known from parent and teacher reports that he was skilled verbally. His teacher described Andrew as generally unhappy, difficult to engage in enjoyable activities, and easily upset by events that most children found to be minor irritations. His play at school was typically solitary, lacking much joy or pleasure, and his peer relations were fraught with conflict because he was so easily frustrated by their behavior.

**Context-inappropriate emotion**

It is generally easy for adults to predict the emotional responses of 4-year-olds to the situations they encounter. Emotional reactions that occur in contexts that do not typically elicit those reactions may be indicative of clinical risk (e.g., Buss et al., 2004; Zahn-Waxler et al., 1994). For example, children typically enjoy game-like laboratory procedures such as story-telling and interacting with puppets, but children who are at clinical risk will often show a lack of enjoyment or even a negative emotion in a situation that typically would not elicit fear or anger. The case illustration suggests that a depressed preschooler is less likely to enjoy activities that are typically fun, inviting, and interesting.

**Emotion leads to inappropriate action**

Anger in a typically developing 4-year-old child most often leads to instrumental efforts to achieve a desired goal. Those efforts fall along a continuum of social appropriateness from negotiating and arguing to whining, crying, and tantrums (Potegal, Kosorok, & Davidson, 2003). Often, however, 4-year-olds’ understanding of rules and their desire to preserve their relationships facilitate their ability to deploy strategies to either inhibit inappropriate behavior or give up their protests (Kopp, 1989). When they are tired or hungry or unwell, they may be less likely to deploy strategies and may become more intensely upset, requiring adult efforts for resolving the distress. Those adult efforts are typically effective, if not immediately. In our lab, we have unpublished data that shows that the typically developing 4-year-old who becomes frustrated trying to overcome an obstacle to a goal tends to express mild frustration (e.g., pressed lips, furrowed brows, vocal expressions of exasperation and sighs) that are immediately followed by persistence or attempts at alternative problem-solving. The case description in contrast reveals a child whose anger reliably has a disorganizing rather than organizing effect on his behavior. Specifically, Andrew’s anger and distress repeatedly undermined interactions with his environment, manifesting in conflictual and aggressive encounters and destructive behaviors.

**Relative lack of effective self-regulatory strategies**

The average 4-year-old can manage ordinary frustrations and disappointments associated with peers and siblings (e.g., Fantuzzo, Sekino, & Cohen,
of the parents’ desperation is that their attempts to support their child seem to exacerbate rather than decrease the child’s negative emotion. Although it is beyond the scope of the chapter to describe the socialization of emotion regulation and the family dynamics of the case, it is often the case that ordinarily effective strategic attempts to reduce a child’s distress are more often ineffective with children who are developing early psychopathology.

CONCLUSIONS

Emotion regulation is an appealing construct because it allows us to examine how basic adaptive processes contribute to the development of psychological competence and health but also understand how these processes can play such a poignant role in the development of psychopathology. There are, however, a number of challenges to studying emotion regulation. Because it is a complex phenomenon, it is difficult to generate adequate behavioral methods that test significant individual differences in emotion regulation. As a result, many empirical studies have tended to conflate emotion with emotion regulation (e.g., interpret higher scores on negative emotion as evidence of poor emotion regulation), such that one could only conclude that negative emotions are undesirable when they are adaptive processes that have evolved and endured as a key part of human functioning. Advances in theory and method may resolve some of the thorny definitional and methodological issues that confront emotion regulation researchers, but for many researchers—and practitioners—who work with children, behavioral observations will continue to play an important role in our drawing conclusions about individual patterns of emotion regulation and dysregulation. An important feature of behavioral assessment of emotion regulation is that it (a) lends itself to use in research with children who may not be able to participate in other methods (e.g., fMRI, highly controlled experimental designs) and (b) offers a translational bridge between scientific evidence and practical use by teachers, parents, and clinicians. Ideally, behavioral studies of emotion regulation will not only shed light on the developmental trajectories by which emotion influences both adaptive and maladaptive outcomes but will do so in a way that allows such research to be readily adapted to practical assessment strategies in real-world contexts.

In this chapter, we attempt to portray the real-world difficulties that children can present to illustrate how it is not emotion per se but difficulty regulating emotion that compromises psychological health. Elsewhere we have described the qualities of emotional functioning that are

Ineffectiveness of appropriate regulatory efforts by caregivers

There is evidence, from infancy through the preschool age years, that sensitive efforts to redirect and soothe a young child’s distress are related to the quality of the child’s self-regulation (Berlin & Cassidy, 2003; Calkins, Smith, Gill, & Johnson, 1998; Cole et al., 2003; Diener & Mangelsdorf, 1999; Stansbury & Zimmerman, 1999). That is, typically, when children cannot deploy an effective strategy to modulate their distress, caregivers such as parents, other adult family members, and child care providers attempt to reduce the child’s distress by helping the child achieve the goal, teaching the child how to cope with the situation, comforting the child, or instructing the child to stop or do something else. Ordinarily, these parenting strategies are effective in reducing the child’s distress and, although the developmental mechanisms are not well known, it is clear that parenting plays a role in promoting healthy emotion regulation in children. It is also clear that children differ in their temperamental predispositions and that this influences what parenting strategies are most effective in helping them deal with their emotions (Dennis, 2006; Kennedy, Rubin, Hastings, & Maisel, 2004). However, in most cases, adults find ways to tailor their efforts to reduce child distress and teach coping strategies that are successful. In the case illustration, we see that one aspect
associated with being an emotionally well-regulated person (Cole et al., 1994) and the transactional pathways by which risk and stress influence the nature of individual patterns of emotion regulation (Chaplin & Cole, 2003). In this chapter, we highlight four specific dimensions of emotion regulation that can be inferred from behavioral observations, showing the qualities of regulation that distinguish children at clear clinical risk from children who appear to be developing normally. The contrasts provide a set of concepts and suggest methods of measurement that can be used to test hypotheses about individual differences in emotion regulation, using a case of a young child with a major depressive disorder to illustrate the contrast. This approach is consistent with a developmental psychopathology perspective because it incorporates multiple levels of analysis (affective, cognitive, behavioral, and contextual); conceptualizes how normal developmental processes can lead to both adaptive and maladaptive outcomes, and addresses the interplay of risk and resilience in the development of psychopathology.

In brief, the case study illustrates the general point that children whose developing emotion regulation patterns reflect psychological risk are more likely:

(a) to evidence emotions that are not typical in a given context (e.g., failing to enjoy activities that most children enjoy or getting angry when most children would be sad),
(b) to behave inappropriately, rather than within the bounds of acceptability to parents, teachers, and/or society (e.g., be aggressive rather than assertive when angry, become disruptive and hostile when sad or anxious),
(c) to have fewer effective and appropriate strategies for regulating emotion (e.g., less capacity to shift attention away from a problem that cannot be solved appropriately), and
(d) to have difficulty recovering from negative emotion even when responsible, sensitive adults use appropriate caregiving strategies.

This list of observable emotion regulation risk factors was not intended to be exhaustive; rather, it provides an example of how hypotheses concerning emotion regulation can tap several important factors in the development and maintenance of psychopathology. Our clinical case example focused on stable individual differences in emotion regulation that may reflect risk for major depressive disorder, including the context-inappropriate overregulation of sadness and happiness, and, following angry outbursts, experiences of sadness that were intense, long-lasting, and slow to rebound. In addition, Andrew's regulatory attempts were often ineffective or inappropriate, and he did not seem able to benefit even from his parents' competent attempts to help him manage his distress.

This approach, which characterizes multiple domains of emotion regulation in relation to distinct disorders, has the potential to move the understanding of mental health and illness forward if it is grounded in empirical evidence and if it proceeds in light of clinical practice. For example, future research can develop and refine hypotheses by examining which aspects of emotion regulation are "active ingredients" in creating risk or resilience for a range of disorders; these patterns then can be compared between typically developing children and clinical samples. Such a program of research could readily inform the development of more targeted and effective treatments; treatments that frame psychopathology in terms of normal emotional processes that have become disorganized, and that serve to enhance emotion regulatory strengths and ameliorate emotion regulatory risks.

REFERENCES


---

**Emotion Information Processing and Affect Regulation: Specificity Matters!**

**Pierre Philippot, Aurore Neumann, and Nathalie Vrielynck**

For a long time, psychotherapy models have neglected emotion, considering it as the by-product of unconscious conflicts or of irrational beliefs, or as a too subjective notion to be considered by a truly scientific approach to psychotherapy. Yet, most people seeking psychotherapeutic help suffer from emotion they cannot regulate (Peper & Vauth, this volume). This truism has lately impacted on recent conceptions of psychotherapy, and emotion deregulation is now considered as a key feature in most psychopathological disorders (Greenberg & Vandekerckhove, this volume). For instance, Barlow (Barlow, Allen, & Choate, 2004; Moses & Barlow, 2006) has proposed a new unified treatment for a large scope of psychopathological disorders that is based on emotion science. According to Barlow, the common ground of many psychopathological conditions is that some emotions are perceived as uncontrollable and/or intolerable. People are then attempting to suppress and avoid these emotions. However, as one cannot avoid an internal state such as emotion, suppression and avoidance coping strategies are doomed to failure and result in increased distressing emotion, feeding forward the sense of uncontrollability and intolerability. A vicious circle is thus initiated that precipitates, and ultimately maintains, emotional distress.

In this perspective, a central concern for clinical intervention is the development of the ability to regulate such distressing emotions, rather than attempting to avoid or suppress them. The present chapter is based on the premise that emotion regulation is partly determined by how emotional