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Taming the Tempest in the Teapot

Emotion Regulation in Toddlers

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The toddler years can be viewed as a period of major achievement, and significant limitations, in managing emotions. A parent witnessing a 2-year-old's temper tantrum is painfully aware that the child has much to learn about emotional self-control and the strategies involved in anticipating, regulating, and enlisting emotional expressions into competent social functioning. That parent is likely to agree with the popular culture's characterization of this period as the "terrible twos." But the same 2-year-old is significantly more capable of emotional self-regulation than when she was a newborn, having mastered (but inconsistently applying) simple strategies such as attentional redirection, comfort seeking, self-soothing, and withdrawal to manage her feelings. Developing capacities for emotion regulation at this age are also shaping young children's social tendencies, including cooperative behavior with peers and compliance with adults. In many respects, therefore, the toddler years are an important transitional period from the dependence of the infant on others for emotion management to the more competently self-regulatory capacities of the preschooler.

This chapter is concerned with the development of emotion regulation between the ages of 1 and 3 years. Because emotion regulation is a complex and multifaceted developmental process, we begin by defining emotion regulation and the implications of this conceptualization for how emotion management occurs and its effects. We outline the major features of this developmen-

tal process and profile the importance of emotion regulation for competent social and personality functioning, even in very young children. In the next section, we consider the development of emotion regulation in toddlerhood, particularly the contributions of temperamental individuality, neurobiological growth, and cognitive development. We also highlight the importance of caregiving influences for the direct and indirect ways that parents guide the growth of emotion regulation in the early years. In doing so, we argue that although emotion regulation is typically viewed as if it was a single, coherent developmental phenomenon, emotional self-control is actually based on a network of loosely-allied developmental processes arising from within and outside the child. This makes the growth of emotion regulation an integrative developmental process, but one that is challenging to study. In the final section, we discuss future directions of research on emotion regulation in toddlers.

WHAT IS EMOTION REGULATION? WHY IS IT IMPORTANT?

It is easy to see emotion regulation in an 18-month-old who grasps a special blanket or stuffed toy to help calm himself or who turns to a child-care teacher to be picked up when distressed. But does emotion regulation occur when parents provide soothing during a painful inoculation, or when a toddler's crying during peer conflict increases when the teacher arrives, or when a 3-year-old is coached by parents on how to calm down and go to sleep the night before her birthday? Defining emotion regulation relies on basic conceptualizations of emotion and the goals and functions for managing them. Our definition of emotion regulation addresses these issues:

Emotion regulation consists of the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals. (Thompson, 1994, pp. 27-28)

Incorporated within this definition are several assumptions about emotion and its management.

First, emotion regulation targets positive as well as negative emotions and can include diminishing, heightening, or simply maintaining current levels of emotional arousal. Viewed in this manner, emotion regulation usually alters the *dynamics* of emotion rather than changing its valence. In other words, emotion regulation commonly alters the intensity, escalation (i.e., latency and rise time), or duration of an emotional response, or speeds its recovery, or reduces or enhances the lability or range of emotional responding in particular situations, depending on the individual's emotional goals in that situation (Thompson, 1990). Children who are emotionally well regulated are capable of altering how long or how deeply they feel as they do, or can manage fluctu-

ations in their emotions rather than directly changing negative feelings in happiness. Positive and negative emotions are each the targets of emotion regulatory efforts. Even young children learn, for example, how to blunt their exuberance when necessary in formal social situations, or how to accentuate feelings of sadness to elicit nurturance.

Second, consistent with a functionalist approach to emotion, strategies of emotion regulation are rarely inherently optimal or maladaptive. Rather, the efficacy of emotion regulation strategies must be evaluated in the context of the individual's goals for the situation. This functionalist orientation is especially important for developmental analysis because a young child's goals for managing emotions may be very different from those of an adult. When a toddler cries petulantly in the supermarket after being denied candy but ceases immediately after the parent accedes, does this reflect poor emotion self-regulation (as the parent may intuitively assume) or strategic use of emotion to accomplish a desired goal? In these and similar instances, young children can be emotional tacticians in ways that reflect capable, not deficient, capacities for emotion management, even though their emotional behavior appears unregulated—because it is undesirable—to adults. A functionalist approach to emotion regulation is also important for understanding individual differences in emotionality in the early years. Temperamental individuality means that young children experience different thresholds for the arousal of distress, anxiety, anger, and other negative emotions in everyday situations, and their behavior in those situations (such as social withdrawal from peers) must be interpreted in the context of their efforts to manage aversive feelings that other children may not share. One young child's withdrawal in the presence of gregarious peers may reflect the goal of managing the anxiety of this social encounter (even though doing so diminishes the opportunity for sociability), while another child engages in cooperative social play. Each child's behavior reflects emotionally regulatory efforts.

Third, emotion regulation arises not only from developing *self*-regulatory capacities but also from the management of emotions by other people. Although this is most apparent early in life when young infants depend on caregivers for controlling their arousal, the social management of emotion is a lifelong phenomenon, with adults relying on others for comfort, emotion coaching, and a sympathetic ear. Social influences are thus an important feature of developmental growth in emotion regulation by which capacities for emotion management are socialized, cultural values are appropriated, and gender differences in emotionality are fostered (Thompson & Meyer, 2007).

Finally, modifying emotional reactions is the central feature of emotion regulation, but it is not the only important process. Consistent with a functionalist orientation, young children's developing capacities for *emotional self-monitoring* and for *evaluating* their feelings in light of personal and social standards for emotional behavior are also core features of emotion management (Saarni, 1999). For this reason, emotion regulation emerges in concert with children's developing understanding of emotion and its meaning. During

the toddler years, for example, young children begin to comprehend the subjectivity of emotional experience and how emotions are related to other mental events like satisfied or frustrated desires (Thompson & Lagattuta, 2006). Toddlers are also beginning to talk about their feelings with others, and from these conversations they learn further about the causes and consequences of emotion. These developing conceptual and linguistic capacities contribute significantly to the growth of emotion regulation because they enable young children to better understand why they feel as they do, the social contexts warranting emotional self-control, and how to manage their emotions.

Taken together, these elements of our definition of emotion regulation highlight the surprisingly multifaceted contributions to developing capacities for emotion self-control. It underscores how emerging strategies of emotion management are deeply influenced by social experience and culture and unfold with psychological understanding, language, and emotional self-awareness. These influences also contribute to young children's developing capacities to manage their emotional *displays* in social situations, although this is not the same as emotion regulation. Emotion regulation is focused on managing emotional arousal, whereas display rules can be enlisted without changing one's feelings at all (e.g., expressing delight in a gift that one does not like). This is developmentally important because skills for managing emotional displays do not typically emerge until late in the preschool years, while capacities for emotion regulation begin to develop much earlier (Thompson & Lagattuta, 2006).

The development of emotion regulation extends into early adulthood as individuals acquire more psychologically sophisticated, contextually sensitive means of achieving emotional self-efficacy (i.e., feeling the way one wishes to feel) (Saarni, 1999). Throughout this period, and especially during infancy and childhood, the growth of emotion regulation is characterized by several developmental progressions (for reviews, see Eisenberg & Morris, 2002; Fox & Calkins, 2003; Kopp, 1989; Thompson, 1990, 1994), including:

- Growth from regulation by other people to increasingly self-initiated emotion regulation, as children assume growing responsibility for managing their own feelings.
- Increasing breadth, sophistication, and flexibility in the use of emotion regulatory strategies: Children become more capable of using strategies in contextually-appropriate ways, of substituting effective for ineffective strategies, and of using multiple strategies as needed for managing their feelings.
- Increasing use of emotion-specific regulatory strategies (e.g., managing fear but not anger through encouraging self-talk), although some regulatory strategies are applied generally (e.g., withdrawal from situations that arouse negative affect).
- Emerging complexity in the social and personal goals underlying emotion regulation, based on growth in emotional and social understanding, as children learn to increasingly regulate their feelings to manage

- The emergence and growing stability of individual differences in emotion regulation goals, strategies, and general style, as individuals become emotion suppressors, avoiders, or expressors or adopt other emotional regulatory styles, as personality develops and consolidates.
- Enlistment into emotion regulation of other developing capabilities, such as attentional control, language, and strategic functioning.

Toddlerhood is at the beginning of most of these important developmental progressions.

The Significance of Early Emerging Emotion Regulatory Skills

The study of emotion regulation in toddlers is important, therefore, because this period is when many foundational developments in capacities for emotional self-management have their beginnings. Another reason is that individual differences in managing emotions in toddlers are associated with social competence, emotional well-being, and even risk for affectively related psychological disorders. With respect to social behavior with peers, for example, one research group reported that 2-year-olds who had difficulty managing their frustration in laboratory tasks were found to be less cooperative and more conflictual in interactions with other children (Calkins, Gill, Johnson, & Smith, 1999). Other researchers have reported that children who were more successful in managing emotions in stressful circumstances at age 3 also showed better preschool adjustment (Shields et al., 2001) and higher levels of cooperativeness and self-control in school at age 6 (Gilliom, Shaw, Beck, Schonberg, & Lukon, 2002).

Early emotion regulation is also predictive of cooperation with caregivers. Feldman and Klein (2003) reported that 2-year-olds who showed better emotion regulation during a standardized assessment were more cooperative during a clean-up task with their mothers (Calkins, Smith, Gill, & Johnson, 1998, did not find this association, however, using a somewhat different assessment of emotion regulation). In a longitudinal study, Stifter, Spinrad, and Braungart-Rieker (1999) reported that infants' emotion regulatory behaviors at 5 and 10 months predicted children's compliance at 30 months. Furthermore, emotion regulatory ability moderated the relations between temperamental negative reactivity and later compliant behavior: Infants with a highly reactive temperament were more defiant and noncompliant at 30 months only when they also had poor emotion regulation skills. By 18 months, however, differences in emotion regulation had a somewhat different association with subsequent compliance: Toddlers who were low in *both* temperamental reactivity and regulation exhibited the greatest subsequent non-

compliance. Taken together, early-emerging differences in emotion regulation appear to be predictive of later capacities to cooperate with caregivers, with low emotion regulation foreshadowing noncompliance.

More broadly, early differences in emotion regulation may also predict young children's risk for psychological problems. The longitudinal research program of Shaw and his colleagues has shown that behaviors reflecting poor emotion regulation in infancy and toddlerhood (e.g., persistent fussiness, non-compliance, and aggression) predict later internalizing and externalizing problems in the preschool and childhood years (Shaw, Bell, & Gilliom, 2000; Shaw, Keenan, Vondra, Delliquadri, & Giovannelli, 1997; see also Keenan & Shaw, 2003). Based on these findings, his research team has concluded that the early origins of later psychopathology can be found in the combination of toddlers' affective vulnerability and aversive parenting, which has led them to the design of early screening and intervention approaches for families with very young children (Shaw, Dishion, Supplee, Gardner, & Arnds, 2006). In a similar vein, Calkins and Dedmon (2000) reported that 2-year-olds who had received high Child Behavior Checklist (CBCL) scores for externalizing behavior were found, in laboratory assessments, to exhibit significantly more frequent behaviors reflecting emotion dysregulation (such as venting distress, heightened negative affect, and distractibility) compared to children with low externalizing scores.

Taken together, these studies suggest that individual differences in emotion regulation during the toddler years are important for later social competence and psychological functioning, and that attention to early-developing capacities for managing feelings is important. However, the literature on these topics remains underdeveloped. Beyond studies of predictive correlates, further research is needed to elucidate the developmental processes by which early emotion regulatory differences foreshadow later psychological functioning. As we shall see, for example, early differences in emotion regulation are also associated with temperamental individuality, parenting practices and the quality of parent-child relationships, each of which is also predictive of later social competence, cooperation, and psychological risk. It is possible, therefore, that differences in emotion regulation are part of the constellation of psychosocial outcomes that emerge from early parenting and temperament influences. The manner in which these antecedent influences interact in shaping later developmental outcomes, and the extent to which emotion regulation is a central mediator or moderator of their long-term effects, requires the design of future longitudinal research that can examine these developmental processes in concert. The value of clarifying these associations is reflected in the findings of a recent study from the NICHD Early Child Care Research Network (2004), which indicated that emotional dysregulation in mother-child interaction in 24- and 36-month-olds predicted children's later social and cognitive competencies, even after accounting for early maternal, relational, and family characteristics.

Studying Emotion Regulation in the Toddler Years

The importance of studying early emotion regulation, combined with the complexities of defining this phenomenon, makes research on the development of emotion regulation challenging (Cole, Martin, & Dennis, 2004; Thompson & Meyer, 2007). This is especially true for infants and toddlers, whose behavioral reactions to emotion elicitors are multidetermined and who cannot provide self-reports explaining their actions and their causes. Consequently, most studies of early emotion regulation rely on observations of behaviors presumed to reflect self-regulatory efforts, such as the child's gaze aversion, self-comforting, proximity seeking to mother, or other behaviors when negative emotion elicitors occur. In longitudinal research, these behavioral differences are then related to later social or emotional outcomes.

Besides the interpretive difficulties noted previously (i.e., that early differences in emotion regulation and later socioemotional outcomes may each be associated with common origins, such as temperament or parenting practices), there are other interpretive challenges to this research. First, researchers rarely independently validate that the behaviors they index as reflecting emotion self-regulation truly function in this manner. This is important because behaviors such as proximity seeking and gaze aversion are multidetermined. A child's orientation toward or away from the emotion elicitor can serve emotion regulatory purposes in some functional contexts but not others, for example, and these contexts are rarely distinguished and validated *a priori*. Second, differences in emotional arousal and emotion regulation are often confounded conceptually and behaviorally, with the result that their association may derive from their overlapping measurement rather than reflecting an empirical connection. Indeed, some researchers (such as Campos, Frankel, & Camras, 2004) argue that it is difficult if not impossible to conceptually distinguish emotional arousal from emotion regulation because of their common influences and assessment. The same problem with overlapping measurement is often also true of studies of the association between emotion regulation and its correlates (e.g., parenting practices), in which both emotion regulation and the correlate are studied in the same emotion-eliciting circumstances (such as mother-child interaction).

Third, developmental researchers are often interested in identifying stable individual differences in self-regulation that reflect emergent personality organization. But especially with young children, the influence of the situational context and functional goals related to emotion regulation make cross-contextual consistency the exception rather than the rule (Calkins et al., 1999; Grolnick, Bridges, & Connell, 1996). In studies with infants and toddlers, researchers are often studying situationally specific regulatory processes reflecting local rather than generalizable tendencies. The same is also likely to be true of efforts to distinguish children who are optimal or poor self-regulators across emotional, behavioral, attentional, cognitive, physiological, and other developmental domains (Calkins et al., 1998; but see Kochanska, Murray, &

Harlan, 2000). In short, because self-regulatory capabilities are only beginning to emerge in the early years, individual differences in emotion regulation are often situationally determined and are not necessarily stable over time or reflecting emergent personality qualities.

In response to these challenges, Cole and her colleagues (2004) have proposed a number of alternative research approaches to studying the development of emotion regulation. These include assessing emotion independently of emotion regulatory processes (sometimes including microanalytic sequential analyses to examine their mutual influence), using multiple convergent measures of emotion regulation, and examining emotion self-regulation in contrasting situations with different expected emotional demands. These suggestions are valuable, and they underscore that considerable thoughtfulness, creativity, and hard work are required to study the complex unfolding of emotion self-management in the early years. Attention to issues of construct validation, the child's goals in the situation, and clarity of assessment are each also necessary. This requires studying emotion regulation in laboratory or naturalistic circumstances permitting clear inferences of the child's emotional goals for the situation, and a focus on behaviors that are directly associated with managing emotion in these particular situations.

THE DEVELOPMENT OF EMOTION REGULATION IN THE TODDLER YEARS

Consistent with its multifaceted quality, the development of emotion regulation between 1 and 3 years of age arises from physiological maturation, cognitive development, and relational influences. In particular, processes of brain maturation, conceptual growth in the child's understanding of emotion and self, temperamental individuality, and parenting practices each contribute to the growth of toddlers' capacities for emotion management.

Neurobiological Growth

Emotions are biologically basic but neurobiologically complex, entailing activation of multiple brain regions and neurohormonal processes (Fox & Calkins, 2003). Not surprisingly, the development of emotion regulation is also neurobiologically complex, involving the progressive maturation of excitatory systems and inhibitory processes in the brain and nervous system that have varying maturational timetables. The maturation of the hypothalamic-pituitary-adrenocortical (HPAC) axis, for example, is strongly associated with emotional behavior and extends through adolescence, but there are important declines in systemic lability during the first year that are influenced, in part, by caregiver responsiveness (Gunnar & Vasquez, 2006). At the same time, parasympathetic activity also matures during the early years to assume an increasingly important role in arousal regulation (Porges, Doussard-Roosevelt, &

Maiti, 1994). It is for these reasons that the reactive, all-or-none quality of the newborn's arousal becomes more graded, controllable, and environmentally sensitive before the end of the first year.

The neurobiological constituents of developing emotion regulation also involve regions of the prefrontal cortex, one of the most slowly maturing regions of the human brain governing a range of functions associated with working memory, planning, strategic functioning, and emotion regulation. Not surprisingly, multiple prefrontal regions are relevant to the strategic management of emotions, including the dorsolateral prefrontal cortex, orbitofrontal cortex, and the anterior cingulate cortex (Diamond, 2002; LeDoux, 1996; Posner & Rothbart, 2000). In various ways, the maturation of these regions enables developing capabilities for emotion regulation through maturing capacities for attentional control and redirection, the inhibition of impulsive responses and the substitution of reflective functioning, the enlistment of working memory into emotional processing, and other abilities. Although the prolonged neurobiological maturation of these areas helps to explain why emotion regulation has a very extended developmental timetable, the rudimentary early emergence of prefrontal capacities helps to explain developmental changes in emotionality in the first year (e.g., declines in unexplained fussiness and growing emotional responsiveness to external stimulation at 2–4 months and emotional response inhibition at 9–10 months) as well as providing a foundation for the achievements in emotion regulation in toddlerhood discussed in this chapter (see Thompson, 1994). Developing abilities to enlist attentional processes into emotional self-control, to inhibit immediate emotional reactions in favor of more constructive or socially appropriate responses, and to enlist prior knowledge networks into emotional responding each depend on the maturation of these regions of the prefrontal cortex.

Taken together, one of the reasons that the early years witness such remarkable advances in emotion self-management is because the neurobiological constituents of this capacity are maturing rapidly, although they still have a long way to go. These foundations make the toddler an emotive creature of considerably greater potential capacity for emotional self-control than the infant and also more capable of responding constructively to the incentives for emotion regulation from caregivers.

Conceptual Development in Understanding Emotion and the Self

Another reason that the toddler years are a period of such significant growth in emotion regulation is that young children are rapidly expanding their understanding of emotion. As noted earlier, developing capacities for emotion regulation are founded on a toddler's growing understanding of the causes and consequences of emotion and of strategies for emotion management (Thompson & Lagattuta, 2006). By age 2, for example, young children can be overheard making spontaneous references to emotions, the causes of emotion,

and even emotion regulatory efforts (e.g., "I scared of the shark. Close my eyes" at 28 months—Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986; see also Bartsch & Wellman, 1995; Wellman, Harris, Banerjee, & Sinclair, 1995). These early references to emotion reveal that even at this early age, toddlers appreciate the subjectivity of emotional experience, its referentiality (i.e., that people don't just feel, but they feel *about* something), the associations between particular emotions and specific situations that commonly elicit them, and the connections between emotions and other psychological states, such as perception and desires. By age 3, children have further associated emotions with beliefs and expectations about events (such as the surprise a visitor feels after seeing giraffes on a farm; Wellman & Banerjee, 1991). Although it will be quite some time before they acquire a psychologically sophisticated conception of emotion, toddlers are aware that emotion can be managed by fleeing, removing, restricting perception of, or ignoring emotionally arousing events based on their recognition of the connections between emotion and perception. They are also aware of the value of self-comforting and of seeking the assistance of caregivers for managing feelings (Thompson, 1990). Interestingly, toddlers' awareness of the association between emotions and (satisfied or unfulfilled) desires may actually *undermine* their emotional regulatory efforts when it causes them to become fixated on getting what they want as necessary to feeling better.

Emotion regulation is also affected by the growth of self-awareness. The period between ages 2 and 3 witnesses the emergence of representational self-awareness in toddlers' verbal self-referential behavior (e.g., "me big!"), verbal labeling of internal experiences such as emotions, assertions of competence and responsibility as autonomous agents, refusing assistance and insisting on "do it myself," growing sensitivity to evaluative standards and the emergence of conscience, assertions of ownership, and categorizing the self by gender and in other ways (see Thompson, 2006, for a review). Their more complex self-awareness is accompanied by the emergence of self-referential emotions during the second and third years as toddlers increasingly exhibit pride in their accomplishments (calling attention to their feats), guilt in their misbehavior (often accompanied by reparative behavior), shame when behavior reflects negatively on the self, and embarrassment when effusively praised (Lewis, 2000). Taken together, young children are beginning to regard themselves in more multidimensional and evaluative ways as they increasingly perceive themselves as objects of the attention and thought of others. Their emotional experiences increasingly incorporate their consciousness of how they are perceived and evaluated by others, which likely contributes to their motivation to learn how to manage their feelings, especially in the presence of others who matter to them. Emotion regulation in toddlers is thus motivated by their efforts to look good in the eyes of others, and by their need to manage feelings of embarrassment, guilt, and shame as well as other compelling feelings.

Finally, the most central conceptual advance of the toddler years is the growth of language, which permits young children access to others' thoughts

and the capacity to share their thoughts with another. As we shall see later, the beginnings of parent-child conversation during the toddler years provides significant opportunities for young children to learn about emotions and the self and to acquire strategies of emotion management from their caregivers.

Temperament

Toddlers' temperamental individuality may be associated with the development of emotion regulation in at least three ways. First, certain temperamental qualities—particularly thresholds for the arousal of negative emotions—contribute to the intensity and persistence of emotionality that requires management. Some children simply face different challenges in regulating their emotions than do others because of their temperament. Second, other temperamental qualities, such as inhibition or effortful control, are directly associated with a young child's proneness to exert self-control in emotionally arousing situations. This is consistent with the view that a major feature of temperamental individuality is self-regulation (Rothbart & Bates, 1998). Finally, temperament may interact with caregiving influences to shape emotion regulation through the interaction of the child's needs for emotional support and the assistance provided by an adult. Because of their temperamental qualities, some children require greater assistance in emotion regulation than do other children, and they respond to the caregiver's initiatives in particular ways.

Studies have shown, in general, that toddlers who exhibit higher levels of negative arousal in situations designed to induce frustration or distress also enlist fewer effective strategies for managing their feelings and instead act in ways that tend to prolong or intensify their negative emotions (e.g., Buss & Goldsmith, 1998; Calkins & Johnson, 1998; Grolnick et al., 1996). As noted earlier, however, the concurrent assessment of emotion and emotion regulation presents interpretive difficulties: Is children's higher negative arousal a result of their use of less effective self-regulatory strategies, or are children's behavioral strategies and affective arousal coincident but functionally unrelated? More informative are studies showing that assessments of young children's temperamental reactivity are associated with independent observations of emotion regulation (Calkins & Dedmon, 2000; Calkins et al., 1999; NICHD Early Child Care Research Network, 2004). In one study, for example, maternal reports of the toddler's temperamental negative reactivity (high anger, low soothability) were associated with observations of ineffective emotion-related behaviors in frustration tasks, such as children's aggressive venting and focus on the distressing object, and less use of distraction and orienting toward mother (Calkins et al., 1999). Likewise, toddlers who are behaviorally inhibited, or who are high in temperamental fearfulness, tend to use different strategies for managing their arousal in stressful situations relative to toddlers who are low in fearful inhibition. In their encounters with a stranger, for example, infants and toddlers rated as temperamentally wary by their mothers averted gaze and avoided the stranger more than their temperamentally bolder

counterparts (Mangelsdorf, Shapiro, & Marzolf, 1995), and Parritz (1996) found that wary temperament was associated with toddlers' greater self-comforting, proximity seeking, and whiny/demanding vocalizations to the mother.

Young children have other temperamental qualities that are more directly associated with emotion regulation. In light of the importance of distraction, gaze avoidance, and caregiver orientation to early emotion regulation, it is not surprising to find that individual differences in attentional self-control are associated with emotion regulation in young children (Belsky, Friedman, & Hsieh, 2001). Temperamental effortful control is also associated with individual differences in behavioral and emotional self-regulation in young children. *Effortful control* refers to one's capacity to inhibit a dominant response (such as an emotional reaction) and initiate a subdominant response according to situational demands (Rothbart & Bates, 1998). Toddlers who are high on effortful control exhibit greater capacities for emotional self-management and behavioral self-control in both contemporaneous and later assessments (Kochanska, Murray, & Coy, 1997; Kochanska et al., 2000). Such findings suggest that some children are temperamentally better equipped to exert self-control in emotion, attention, conduct, and other aspects of behavior.

Another way that temperament may be influential in the early development of emotion regulation is in how it interacts with caregiving influences. Consistent with the concept of "goodness of fit" between temperamental qualities and environmental supports or demands, researchers have found that certain parenting characteristics have different consequences for children who differ in temperament. In a study of the responses of 18-month-olds to moderate stressors, Nachmias and her colleagues reported that the interaction of toddlers' inhibited temperament with an insecure parent-child attachment relationship predicted elevations in postsession cortisol levels (Nachmias, Gunnar, Mangelsdorf, Parritz, & Buss, 1996). Only children who were both insecurely attached and highly inhibited experienced cortisol elevations; for inhibited toddlers in secure relationships, the mother's presence helped to buffer the physiological effects of challenging events, and uninhibited toddlers functioned well regardless of the security of attachment.

Temperament may be important as a moderator of the association between parenting and coping, and also as an influence on parents' perceptions of young children's emotional needs. Caregivers with temperamentally inhibited or difficult toddlers are likely to expend special effort to manage children's negative arousal, and as we shall see, their efforts may support or undermine children's developing self-regulatory capacities (Kennedy, Rubin, Hastings, & Maisel, 2004). Much more research is needed to explore how parental perceptions of children's temperamental qualities influence their emotional socialization efforts and, in this manner, developing emotion regulation.

Taken together, these studies indicate that temperamental qualities are an important influence on the development of emotion regulation capacities in toddlers, and that future studies must take into consideration the direct and

indirect ways that temperament is relevant. Moreover, there are also suggestions that temperament may moderate the effects of parenting practices on toddler's emotion management, although more research on this topic is needed.

Parenting Influences and the Family Emotional Climate

In the study by Nachmias and colleagues (1996) described previously, toddlers' physiological regulation during stress was influenced by the broader security of the parent-child relationship and also by specific parenting practices. Postsession cortisol elevations were higher when mothers encouraged their offspring to approach the fear-provoking stimuli, and the mothers of inhibited toddlers were especially likely to do so (Nachmias et al., 1996). Consistent with these findings, research on the influence of parenting on the development of emotion regulation indicates that there are at least two ways that parents guide the growth of emotional self-control in young children (Thompson & Meyer, 2007). First, they do so through specific practices, such as how they respond supportively or critically to the emotions of offspring, directly intervene to manage toddlers' emotions, model emotion or emotion regulation at home, or socialize emotional development in other ways. Second, parents influence developing emotion regulation through the broader quality of the parent-child relationship that provides a resource of support, or insecurity, that influences toddlers' capacities to manage their feelings.

How parents respond in emotionally arousing situations significantly influences the emotion regulation of young children, as indicated by the Nachmias study. Other research shows that independent assessments of parenting practices are also associated with young children's emotion regulation. Feldman and Klein (2003) reported, for example, that parental warm control when eliciting the child's compliance and maternal sensitivity during free play were each associated with 24-month-olds' emotion regulation during a cognitive assessment (see also NICHD Early Child Care Research Network, 2004, for similar findings). Calkins and Johnson (1998) found that 18-month-olds who became more distressed during frustration tasks had mothers who were independently observed to be more interfering when interacting with their offspring, but the mother's positive guidance was associated with the child's constructive coping with frustration (see also Calkins et al., 1998). In a longitudinal study, Gilliom and colleagues found that maternal use of warm control in a teaching task with sons at age 1½ was associated with boys' constructive use of distraction in a frustration task at age 3½. Moreover, although maternal reports of difficult temperament at the earlier age did not predict later emotion regulatory strategies, there was an interaction of temperament and maternal control such that the children's temperamental difficulty did not predict later problems in emotion self-regulation when their mothers used warm control at the earlier age. In general, toddlers function better when their mothers are emotionally available to them during difficult challenges than

when mothers are present but unengaged (Diener & Mangelsdorf, 1999). However, maternal strategies for directly managing children's emotions decline in frequency over the toddler period, suggesting a gradual transition to the child's more autonomous regulation of emotion (Grolnick, Kurowski, McMenemy, Rivkin, & Bridges, 1998; Spinrad, Stifter, Donelan-McCall, & Turner, 2004).

Taken together, these studies suggest that when caregivers provide sensitive support, especially during stressful challenges, their offspring develop more constructive approaches to managing emotions. This may occur as parents intervene to keep the toddler's distress manageable, which enables offspring to acquire and practice skills of emotional self-control. Supportive parental responding also contributes to the development of social expectations that adults will be emotionally helpful, and children's beliefs that their feelings are manageable. Moreover, when parents respond helpfully and supportively, it contributes to toddlers' beliefs that their feelings are valued and legitimate, by contrast with circumstances in which parents are denigrating, punitive, or dismissive, or when the child's negative emotions elicit the parent's personal distress (see Denham, 1998; Eisenberg, Cumberland, & Spinrad, 1998, for reviews). In the latter circumstances, young children may perceive their feelings as worthless, unimportant, or potentially dangerous. A toddler who is always told that "big boys (girls) don't cry" may struggle to manage feelings of sadness with this emotion judgment as a continuing influence.

There are many ways that parents sensitively help toddlers to regulate their feelings (Thompson, 1990, 1994). They distract the child from potentially frightening or distressing events, assist in solving problems that children find frustrating, and strive to alter the child's interpretation of negatively arousing circumstances (e.g., "It's just a game"). They also coach adaptive ways of reacting emotionally to difficult situations—sometimes as alternatives to the child's venting or another initially maladaptive response—that facilitate emotion regulation by enabling the child's feelings to be expressed with more constructive results. This can involve the common parental maxim to toddlers—"use words to say how you feel"—as well as enlisting an adult's assistance or problem solving rather than simply dissolving in loud wails. Sensitive parents also enlist social referencing to provide reassurance in challenging situations or caution in potentially dangerous circumstances (Klennert, Campos, Sorce, Emde, & Svejda, 1983). Finally, parents also seek to manage the feelings of young offspring by proactively structuring children's experiences to make emotional demands predictable and manageable. They do this by creating daily routines (such as scheduling naps and meals) that accord with their knowledge of children's temperamental qualities and tolerance for stimulation, choosing child-care arrangements that are congenial to children's needs and capabilities and striving in other ways to create emotionally manageable daily routines. There has been little detailed study, however, of these parental practices by which a young child's emotional life is socialized and which cre-

ate the context for the growth of emotion regulatory skills, and more research is needed.

Another way that sensitive parents contribute to the growth of constructive emotion regulation skills is through parent-child conversation (Thompson, 2006; Thompson, Laible, & Ontai, 2003). Although toddlers are not capable of being active conversationalists, their rapidly developing conceptual and linguistic skills and their interest in understanding their feelings (and those of others) combine, making them receptive partners in conversations concerning emotion and its management. In two studies, the frequency, complexity, and causal orientation of emotion-related conversations between mothers and their 3-year-olds predicted the child's emotion understanding at age 6 (Dunn, Brown, & Beardsall, 1991; Laible, 2004). These conversations are also likely to guide children's conceptions of emotion regulation. In a provocative ethnographic study, Miller and Sperry (1987) described the socialization of anger regulation and aggression by the mothers of three 2½-year-old girls growing up in a lower-income neighborhood in South Baltimore. Consistent with the need for assertiveness and self-defense in this environment, the mothers sought to "toughen" their young daughters by coaching, as well as modeling, reinforcing, and rehearsing specific strategies of anger expression and self-control that were adaptive to their community setting. As a consequence, their daughters developed a rich repertoire of expressive modes for conveying anger but were also capable of regulating its arousal and expression consistently with the rules of the subculture. Further research into how parents socialize emotion regulation in conversational contexts is warranted, especially because parents commonly coach offspring about the need to manage their feelings and often suggest specific strategies for doing so (Miller & Green, 1985).

These parental influences occur within the context of the broader emotional climate of the family (Dunsmore & Halberstadt, 1997). When toddlers must cope with frequent, intense negative emotion from other family members, particularly when it is directed to them, these experiences can overwhelm their capacities for emotion management. Moreover, in aversive family emotional climates young children are exposed to salient models of emotion dysregulation as well as experiences that are likely to shape children's normative expectations for how people typically behave emotionally and their affective schemas (e.g., emotions viewed as threatening, irrational, and/or uncontrollable). A large research literature indicates that an emotionally positive family climate is associated with children's adjustment and enhanced self-regulatory capacities, and an emotionally negative family climate is associated with more negative and mixed outcomes (Halberstadt, Crisp, & Eaton, 1999; Halberstadt & Eaton, 2002). These associations are stronger for infants and toddlers compared with older children, suggesting their particular sensitivity to the family emotional climate. This is consistent with longitudinal research indicating that as early as the child's second year, aversive family experiences are an important predictor of the development of clinically relevant conduct prob-

lems (Shaw et al., 2000). Differences in early family experiences are clearly relevant to the emergence of toddlers' capacities to manage their feelings constructively.

Security of Attachment

Parent-child relationships are the central feature of early family experiences because the impact of parental practices, parent-child conversation, and the family emotional climate is based on the relational context in which they occur. According to Cassidy (1994) and Thompson (1994; Thompson et al., 2003), differences in the security of parent-child attachment may be especially significant for the growth of emotion regulation. According to these theorists, the sensitivity of parental care and the trust inherent in parent-child conversation enable secure children to become more emotionally self-aware and to develop a more flexible capacity to manage their emotions appropriate to circumstances. By contrast, insecure children are more prone to emotional dysregulation, especially in stressful circumstances, that may be manifested in heightened, unmodulated levels of negative emotionality or, alternatively, in suppressing the expression of negative arousal and relying on nonsocial means to regulate emotion.

Even in early childhood, differences in the security of attachment appear to be associated with emergent emotion regulation capacities. In a longitudinal study over the first 3 years, Kochanska (2001) reported that over time, insecurely attached children exhibited progressively greater fear and/or anger, and diminished joy, in standardized assessments compared with secure children. Goldberg and her colleagues reported that even by age 1, the mothers of secure infants commented about both positive and negative emotions when interacting with them, while the mothers of insecurely attached infants either remarked rarely about the infant's feelings or commented primarily about negative emotions (Goldberg, MacKay-Soroka, & Rochester, 1994). By early childhood, securely attached preschoolers talk more about emotions in everyday conversations with their mothers, and their mothers are more richly elaborative in their discussions of emotion with them, which may help to explain why secure children are also more advanced in emotion understanding as early as age 3 (for reviews, see Thompson, 2006; Thompson et al., 2003; see also Laible & Thompson, 1998; Raikes & Thompson, 2006).

Although there has been relatively little research focused specifically on emotion regulation, there is evidence that children in secure relationships are better at managing negative emotions beginning early in life (see, e.g., Diener, Mangelsdorf, McHale, & Frosch, 2002; NICHD Early Child Care Research Network, 2004). In the Nachmias study, securely attached toddlers exhibited more competent coping with the stressful procedures than did insecurely attached children, although not higher cortisol elevations (Nachmias et al., 1996). Gilliom and his colleagues reported that boys who were securely attached at age 1½ were observed to use more constructive anger-management

strategies at age 3½ (Gilliom et al., 2002). Secure toddlers were more likely to use distraction, ask questions about the frustration task, and wait quietly compared with insecurely attached boys.

These findings suggest that the relational context in which emotion regulation develops in the early years is important. Future research concerning parental influences on emotion regulation in toddlers should also explore whether toddlers' receptiveness to parental interventions and coaching is mediated by the broader security of the parent-child relationship (Laible & Thompson, 2007). Are children in secure relationships more responsive, for example, to parents' efforts to soothe their distress or to coach emotional regulatory strategies? Further exploration of this issue could help to elucidate how not only *what* happens but also *who* does it is important to toddlers' emotion regulation skills. Moreover, other early relationships may also be important influences on developing emotion regulation. Volling, McElwain, and Miller (2002) observed that toddler younger siblings were more likely to exhibit jealousy in triadic interactions with their mothers and older siblings when the sibling relationship was characterized by rivalry. The extent to which relational influences in the home have compounding influences on the growth of self-regulation in toddlerhood merits further attention.

SUMMARY AND CONCLUSION

There is a charming dissonance between public images of emotionally unregulated toddlers—the “terrible twos” subject to inexplicable temper tantrums—and the research account of this chapter. Although toddlers have far to go in their capacities to strategically regulate their emotions, research shows that many of the foundations of lifelong capacities for emotion management are established in the first 3 years of life. It is during this period, for example, that the neurobiological foundations of emotional reactivity become stable and cortical self-regulatory systems begin to mature. Toddlers are developing understandings of emotion, such as the associations between their feelings and psychological processes such as perception and desire, that equip them with the conceptual tools for rudimentary self-regulation of emotion. Temperament confers on the growth of emotion regulation unique individuality owing to the child's emotional reactivity and temperamental resources for self-control. The development of emotion regulation in toddlers is also profoundly influenced by caregivers. How parents respond to the emotional expressions of offspring, the emotional climate of the home, and the broader security and support of the parent-child relationship is among the important relational influences on the growth of emotional self-management in early childhood.

These multifaceted developmental influences are especially important because of emerging research evidence that toddlerhood is a period not only of emotional exuberance but also of emotional vulnerability. Research in developmental psychopathology reviewed earlier underscores that the origins of

potentially significant forms of affective psychopathology can be found in early challenges to emotion regulation before the age of 3, especially in the interaction of the toddler's temperamental vulnerability and an emotionally aversive family environment. In short, toddlerhood witnesses the emergence of individual differences in capacities for emotion regulation that, for some, may foreshadow later difficulties with affective dysregulation.

Throughout this chapter, we have identified a number of important issues for future research that derive from the developmental processes we have profiled. These include more incisive inquiry into the origins of individual differences in toddlers' capacities for emotional self-control, the extent to which these differences are moderators of the influence of early temperament and/or family climate on later adjustment, how the security of attachment may influence young children's receptivity to the emotional socialization incentives of their caregivers, and the extent to which parents' perceptions of their child's temperamental individuality alter how they try to guide emotional growth and the development of emotional regulatory capacities in offspring. Further exploration of these questions is important not only for the insights it might yield into the early development of emotion regulation but for how it can advance basic understanding of emotional development in the early years. It is important to remember, however, the conceptual and methodological challenges of research in this area. Because our understanding of emotion regulation is based on the functions that self-regulatory strategies have for enabling individuals to achieve goal-corrected changes in their current emotional condition, developmental inquiry into the growth of emotion regulation must attend to the emotion goals underlying toddlers' self-management of emotion. For young children who cannot easily tell us why they are acting as they do, this is a methodological challenge.

Toddlers have many reasons for trying to regulate their feelings, of course. They do so in order to feel better when distressed, manage fear, enhance positive well-being, affirm relationships, engage in constructive coping, comply with social rules, and for many other reasons. As Bronson (2000) has noted, it is during toddlerhood that the developmental transition from primarily extrinsic regulation of emotions to the child's self-initiated self-regulated emotional experience ensues. The manner in which this occurs—colored by temperament, guided by close relationships, enlivened by an emerging sense of self, prepared by brain maturation, structured by emerging concepts of emotion—is a fascinating developmental story worthy of further study.

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