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VIII Emotional Regulation: Its Relations to Attachment and Developmental Psychopathology

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The title of this chapter identifies three topics that have captured the attention of developmental researchers in recent years. The first — “developmental psychopathology” — is the focus of this volume series and of contemporary efforts to develop a unified view of development by integrating insights from the study of normal populations with research on at-risk and psychopathological populations (cf. Cicchetti, 1990). By advancing the view that children with varying strengths and challenges must nonetheless address common developmental issues, students of developmental psychopathology foster a uniquely integrative study of human growth that provides welcome relief from the more typical tendency to segment developmental processes or populations. The second topic — “attachment” — has dominated the field of socioemotional development for more than two decades because it, too, offers an integrative portrayal of social growth in the context of bioevolutionary processes, caregiver warmth and sensitivity, personality development, and the origins of relational expectations in infancy (cf. Bretherton, 1990). Although the claims of attachment theory are sometimes controversial (see Lamb, Thompson, Gardner, and Charnov, 1985), they have provoked renewed attention to how early social relatedness can have long-term effects on core personality processes and later relationships. The final term — “emotional regulation” — is a newer concept but has also captured the interest of developmental researchers who regard it as an important mediator between emotion and behavioral competence. In the developing capacity to manage emotional arousal, they believe, emotion becomes enlisted adaptively into the organization of behavioral processes.

There are important practical as well as theoretical benefits to exploring the connections between these provocative topics, and this chapter is devoted to offering some exploratory light on their mutual influences. The growth of emo-

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tional management is one of the signal accomplishments of early psychosocial development because of its relevance to social competence, coping with stressors, and strategic functioning, and its development has important ties to the growth of self-understanding and social cognition.¹ Individual differences in emotional regulation emerge from a variety of antecedent experiences that shape the individual's perceptions of self and other, emergent capacities for self-control, and the meaning that emotional arousal has for the person. These antecedent influences include the support (or lack of it) offered by caregivers for competent emotional management, which may early be associated with the security or insecurity of parent-child attachment. If we can better understand the diverse influences on the development of emotional regulation, and especially how skills of emotional management develop in the context of close relationships in infancy and childhood, we might offer better assistance to children whose impoverished skills at emotional self-control lead to aggressive peer interactions, impaired school performance, or other difficulties. Elucidating such questions will be aided by the study of atypical populations because many developmental disorders are characterized by affective problems and difficulties in emotional self-regulation that have organic and/or relational origins. In some cases, their difficulties with emotional management derive from the same developmental catalysts that, in more typical populations, lead to competent emotional self-regulation. Consistent with the views of developmental psychopathologists, therefore, an appreciation of the growth of emotional regulation will be enhanced by examining child populations where the need for emotional management, or their resources for coping with emotional demands, are atypical.

This chapter begins, therefore, with consideration of the concept of "emotional regulation" which, because it is the newest and least-examined of the three topics of this discussion, is also susceptible to the greatest conceptual ambiguity or misunderstanding. In discussing what emotional regulation is and how it develops, however, research concerning both normal and atypical populations will be enlisted to "unpack" this elusive concept and clarify its multidimensional constituents. How emotional regulatory skills develop in the context of close relationships will be considered next, with the insights of attachment theory enlisted to clarify certain questions and provoke others. Finally, we also consider how individual differences in emotional regulation should be interpreted in light of the situational demands and emotional goals that define why, when, and for what purposes people seek to manage their emotional experience. Doing so touches on broader questions

concerning the growth of idiosyncratic styles of emotional regulation that concern developmental researchers and clinical investigators alike.

Emotional Regulation and the Study of Emotional Development

One reason the topic of emotional regulation has recently captivated developmental researchers (see Dodge, 1989; Eisenberg & Fabes, 1992; Fox, 1994a; Garber & Dodge, 1991) is that it is an intuitively meaningful concept. In a culture that values emotional self-control and in which parents strive to manage the emotional behavior of offspring, it is easy to see why acquiring the skills of emotional regulation is an important component of emotional development. More significantly, however, scientific interest in emotional regulation fits squarely at the nexus of several emerging trends in the developmental study of emotion. We can better understand research interest in emotional regulation by appreciating these broader scientific currents.

First and foremost is research interest in functional theories of emotion after several decades in which structural views have predominated in emotions research (Thompson, 1993). By contrast with the structural portrayal of emotion as discrete, coherent constellations of physiological, subjective, and expressive activity, functional theories have tended to adopt a more open-ended view of emotions as defined in the context of the organism's ongoing transactions with the environment, especially in terms of goals and their attainment (cf. Barrett & Campos, 1987; Campos, Campos, & Barrett, 1989; Frijda, 1986). In this view, emotional arousal can have a constructive role in one's transactions with the environment, whether emotion is associated with social signaling, communication of needs, enhancement of affiliational ties, or self-defense, because of the ways emotions can foster goal-attainment. This portrayal of the adaptive and constructive side of emotional arousal is a helpful corrective to both current and traditional theories coming from personality and cognitive psychology that emphasize the disorganizing, maladaptive quality of emotional arousal, and it suggests that while emotional arousal always retains its capacity to undermine effective functioning, emotion can also become enlisted into adaptive, organized behavioral strategies from a very early age. Emotional regulation is relevant to this perspective as one important variable mediating whether emotional arousal aids or undermines effective functioning. In a sense, therefore, students of emotional development have begun to move beyond the realization that discrete emotions are biologically adaptive to the awareness that emotional responses must also be flexible (rather than stereotypical), situationally-responsive (rather than rigid), performance-enhancing (rather than over- or under-arousing), and must change quickly and effectively to changing conditions if they are to support constructive behavior in higher organisms. Emotional regulation contributes to these psychologically adaptive functions of emotion.

¹ The first author's own interest in this topic was piqued by observing his son, Scott, playing animatedly one afternoon when Scott was age five. When his father left briefly and returned to Scott's room a few minutes later, Scott had stopped playing and was sprawled disinterestedly on his bed. When asked why he had stopped playing, Scott replied, "Well, I know that mom is going to tell me to get ready for swimming in a few minutes, and I always get mad when I have to quit playing. So I thought I would stop now so I wouldn't have to get mad later."

A second current trend in emotions theory is a growing interest in the socialization of emotion. Developmental researchers have realized that through processes ranging from selective reinforcement and modeling of emotional expressions to emotion-focused discourse, socialization agents help children acquire "emotional competence," that is, the capacity to behave competently in the context of the emotional requirements of the culture (Gordon, 1989; Saarni, 1990). Moreover, socialization agents at home and beyond also help to channel emotional behavior into the broader "emotional culture" in which these individuals live by helping children to interpret their emotional experience in culture-specific ways (Gordon, 1989). As a consequence, emotional experience derives from an interaction between biologically-based emotive processes and the socialized processes by which emotional experience is monitored and interpreted in ways that are consistent with the culture. Part of this socialization process is, of course, the acquisition of strategies for regulating emotional experience and its expression consistently with cultural expectations.² In a sense, therefore, emotional regulation enables one to function emotionally in a more competent manner as defined by one's cultural setting.

Finally, a third current trend in the study of emotion is a renewed emphasis on individual differences in social and personality functioning but in a new light: with an emphasis on the central role of emotional processes in these differences. It is not just differences in the security of attachment that may be associated with a child's emotional biases and emotional regulation (Cassidy, 1994; Malatesta, 1990; Thompson, 1991), but also differences in behavioral inhibition (Fox, 1994b; Kagan, Reznick, & Snidman, 1988), peer competence (Dodge, 1991; Rubin & Rose-Krasnor, 1986), and the effects on children of conflict in the home (Cummings, Pellegrini, Notarius, & Cummings, 1989). In these and other areas, differences in emotional arousal and its regulation assume a central role in many features of social and personality functioning, either providing avenues to psychosocial competence or undermining effective functioning. A common theme to these disparate areas of study, however, is how emotional arousal comes to mean different things to different people — why, for example, anger is empowering to some people, but is disorganizing to others, and is accompanied by guilt or shame for some but a sense of vindication for others — and the helpful or dysfunctional styles of emotional regulation associated with these experiences. These differing meanings of emotional arousal are an important facet of personality development as well as of clinical study and intervention. And linked with this emphasis on individual

² It is important to note that the socialization of emotional *experience* as well as the socialization of emotional *displays* contributes to culturally-defined "emotional competence." Although the two are associated (empirically as well as conceptually), many socialization processes focus on regulating internal arousal independently of its display, such as when children are taught to feel guilty or shameful for actions regardless of whether they are public or concealed. Both experiential and expressive features of emotional competence contribute to response styles that vary cross-culturally (see Lutz, 1988; Miller & Sperry, 1987).

differences is the recognition that discrete emotion only captures a small part of the rich individual variability that exists in emotional behavior. Individuals display variations also in the intensity, persistence, modulation, lability, and onset and offset of emotional reactions that help to define emotional experience for them, and these "emotion dynamics" are often a function of the enlistment of emotional regulatory processes (Thompson, 1990).

It is not surprising, therefore, that the past few years have witnessed an enormous growth of scientific interest in emotional regulation and its developmental origins. Interest in emotional regulation is consistent with contemporary views of emotion and its role in organized behavior.

Defining "Emotional Regulation"

However, enthusiasm for the concept of emotional regulation is not necessarily accompanied by clarity in its conceptualization. Indeed, the power of the shared, intuitive understandings of emotional regulation among developmental researchers is reflected in how rarely this concept is explicitly defined by authors writing about this topic. It is important, therefore, to thoughtfully define "emotional regulation" as the basis for further thinking about its development. Doing so may require carefully considering central definitional issues that often go unnoticed. Does emotional regulation pertain exclusively to the inhibition of emotional reactions, for example, or does it include also the maintenance or enhancement of emotional behavior? Is emotional regulation primarily an issue of emotional *self-management*, or is the external management of emotion by others (such as parents) also included?

Our own definition of emotional regulation is this: *emotional 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.* Several features of this proposed definition require some elaboration.

First, consistently with Masters (1991), this definition of emotional regulation includes maintaining and enhancing emotional arousal as well as inhibiting it. In other words, people regulate emotion to heighten arousal at times, and to dampen arousal at other times, and both are significant features of emotional management. In a culture such as ours, of course, it is natural that we should regard emotional regulation primarily in terms of its capacity for reducing emotional arousal, particularly when emotions are negative. After all, most individuals do not enjoy feeling distressed, sad, or fearful, and people frequently seek to diminish these feelings. But children as well as adults sometimes strive to *accentuate* their negative affect, such as when children intensify their feelings of anger to stand up to a feared bully (see Miller and Sperry, 1987), or when children "feel sorry for themselves" by focusing on feelings of sadness or self-pity, or when adults ruminate on and enhance feelings of shame, guilt, or anger because of their motivational consequences (such as correcting wrongdoing). And, of course, children and adults often enlist strategies that heighten positive arousal, and they sometimes do so to manage negative feelings (as well as for the pleasure that positive arousal provides). Con-

sequently, developmentalists should recognize that emotional management might involve efforts to enhance emotional arousal as well as to diminish it.

Second, this definition of emotional regulation encompasses not only acquired strategies of emotional self-regulation, but also the variety of ways that emotion is regulated by others. This is because emotional experience is frequently monitored and managed by other people, especially early in life. Caregivers devote considerable effort to relieving distress and enhancing positive feelings in their young infants. As offspring mature, parents try to accomplish the same goals not only through direct intervention strategies but also by more subtle interventions, such as when parents provide reassuring emotional cues to their children in uncertain or potentially threatening circumstances, or exaggerate their own enthusiasm to enhance a child's pleasure in positive situations. Parents act in these ways not only to maintain a sense of emotional well-being in offspring, but also to channel emotional behavior into the expectations of the local emotional culture that prescribe, among other things, when and where it is appropriate to feel and express distress, anger, and other emotions (e.g., regulating public displays of anger or distress in middle-class American contexts). These extrinsic modes of emotional regulation are not witnessed exclusively in the context of parent-child relationships. Peers, including adult peers, seek to manage the emotions of others by extending a sympathetic ear or reassurance, emphasizing the consequences of neglected responsibilities, using humor in a distressing situation, and altering another's appraisals of emotionally-relevant events in other ways. In short, emotional regulation is both self-initiated and instigated by others.

Third, this definition of emotional regulation includes monitoring and evaluating emotional experience as well as modifying it. In this sense, therefore, emotional regulation entails diverse skills related to the appraisal of one's own emotional state as well as the capacity to alter emotional arousal. Appraisal may be simple or complex depending on the person and the circumstances in which emotion is aroused, and individual differences in the appraisal processes related to emotional regulation are likely to have multifaceted bases. Moreover, monitoring and evaluating current emotional experience entails consideration of the individual's goals and their accomplishment because (consistent with functionalist analysis) emotional arousal may serve diverse purposes for organized behavior. Emotion may be enlisted, for example, to strengthen (or threaten) social relationships, to enhance problem-solving, for self-defense, and for a variety of other reasons beyond simply maintaining positive feelings. Understanding individual and developmental differences in emotional regulation requires, therefore, an understanding of the goals underlying emotional behavior, and of the monitoring and evaluative processes by which emotional experience is appraised and modified. This makes the study of emotional regulation considerably more complex, especially with respect to atypical populations, because it suggests that differences in a capacity for emotional regulation may have diverse origins in how emotion is understood and evaluated as well as in how it is controlled. We shall turn again to this theme later in the chapter.

A final feature of this definition of emotional regulation is its emphasis on the

sometimes alter the discrete emotion one feels — such as experiencing guilt or shame rather than anger when unfairly accused — more often it is the *quality* of the emotion rather than its discrete character that is modified. In other words, emotional management helps to subdue (or accentuate) the *intensity* of an experienced emotion, retard (or accelerate) its *speed of onset* or *recovery*, limit (or enhance) its *persistence* over time, reduce (or increase) emotional *range* or *lability*, and affect other qualitative features of emotional responding. These dynamic features of emotional experience are the most common targets of emotional regulatory processes, partly because they can be more easily modified than discrete emotion itself, and also because regulating these dynamics of emotion often accomplishes the emotional goals motivating emotional regulatory efforts. In these circumstances, therefore, although the discrete emotion may continue to color emotional experience, it becomes managed primarily through alterations in its intensive and temporal features.

This is a provisional definition of emotional regulation, partly because it remains subject to a number of cautions. It is unclear, for example, how emotional regulation conceived here differs conceptually from related processes like defense mechanisms and display rules that have somewhat different purposes and developmental origins. Further work to clarify the inferential, interpretive, and social-cognitive constituents of mature emotional self-regulation also remains necessary. However, recognizing these interpretive cautions, and the other definitional issues outlined above, curtails the tendency to conclude that clear or consensual definitions of emotional regulation exist among developmental scientists when, in fact, they do not. Indeed, further understanding of this topic is predicated on clarity in the nature of emotional regulation and the skills it entails.

Avenues to Emotional Regulation

In considering the relationship between emotional regulation, attachment, and developmental psychopathology, it is important to understand the various routes to regulating emotion. Because emotion is a multifaceted phenomenon involving physiological arousal, neurological activation, cognitive appraisals, attentional processes, and response tendencies, there are multiple avenues by which emotion can be managed (see Thompson, 1994). Indeed, part of the developmental story is how children acquire a broader repertoire of emotional regulatory strategies that draw upon more diverse facets of emotional experience. Moreover, as earlier noted, emotional regulation itself draws upon complex appraisal and evaluative processes. Thus consideration of the diverse means by which emotion can be regulated helps underscore that the term "emotional regulation" encompasses a fairly broad array of developmental processes. Doing so also emphasizes the various ways that conditions of developmental psychopathology can influence emotional regulatory processes.

Neurophysiological Arousal and Control Processes

We begin with the neurophysiological processes by which emotional arousal is itself instigated and controlled. Although research in developmental neurophysiology has advanced considerably in recent years, an account of the subcortical and cortical systems mediating emotional arousal is substantially incomplete because of their complex interconnections and their intimate associations with other neurophysiological systems, including those governing cognitive and vegetative regulation (Fox & Fitzgerald, 1990). Moreover, our understanding of the progressive maturation of the neurophysiological systems governing organismic arousal and its modulation is limited, especially with respect to the developmental processes pertinent to behavioral and emotional self-control. However, it appears that there are several important developmental changes during the first year in both the excitatory nervous system processes by which emotional arousal is instigated, and the inhibitory processes by which arousal is modulated.

First, with respect to excitatory processes, there is increasing stability in the early months of life in the hypothalamic-pituitary-adrenocortical arousal system, which accounts for a reduction in the lability of arousal that is typical of newborn behavior (Gunnar, 1986; Stansbury and Gunnar, 1994). Accompanying this are maturational changes in parasympathetic regulation, as indexed by vagal tone (Izard, Porges, Simons, Haynes, Hyde, Parisi, & Cohen, 1991; Porges, 1991; Porges, Doussard-Roosevelt, & Maiti, 1994). As a consequence, arousal processes gradually become more graded as well as emotionally and motivationally more complex with increasing age. This not only permits greater emotional self-control by the infant (e.g., in self-soothing behaviors like nonnutritive sucking and rocking), but also aids caregivers' efforts to manage the emotions of offspring by enhancing the baby's responsiveness to extrinsic modes of emotional regulation.

Second, with respect to inhibitory processes, at least two important transitions occur in the growth of arousal modulation during the first year. By about two to four months of age, the growth of rudimentary forebrain inhibitory centers (together with allied changes in attentional processes discussed below) contribute to a number of behavioral changes in the young infant, including greater regularity and control of behavioral state, an increase in exogenous smiling and a capacity for laughter, and growing awareness and emotional responsiveness to contingent stimulation (Emde, Gaensbauer, & Harmon, 1976; Rothbart, Ziaie, & O'Boyle, 1992; Watson & Ramey, 1972). By about nine to ten months of age, furthermore, maturation of frontal lobe functioning fosters a capacity for response inhibition generally (cf. Diamond, 1988) and a growing ability to manage arousal (particularly negative emotion) and to cope with emotionally-arousing events (see Dawson, 1994; Fox, 1991, 1994b; Tucker & Frederick, 1989). The latter transition likely contributes not only to changes in emotional control but also to the growth of emotional blends and other nuanced emotional states, the enhanced speed and intensity of emotional reactions (Thompson, 1990), and the strategic use of emotional expressions to achieve intended ends (Scaife & Bruner, 1975; Stern, 1985).

In light of these developmental processes, we might expect to find significant differences in the emotional regulatory characteristics of children who differ physi-

ologically in pertinent neurological arousal and control processes. And indeed we do. The well-known studies of Kagan and his colleagues of behaviorally inhibited children provide modest support to his view that inhibited children may have a generally lower threshold of reactivity in limbic structures mediating fear and defense, and that these differences in sympathetic excitation help to account for their more cautious, wary behavioral style through early childhood (see Kagan, 1994; Kagan, Reznick, & Snidman, 1988; Kagan & Snidman, 1991). Fox and

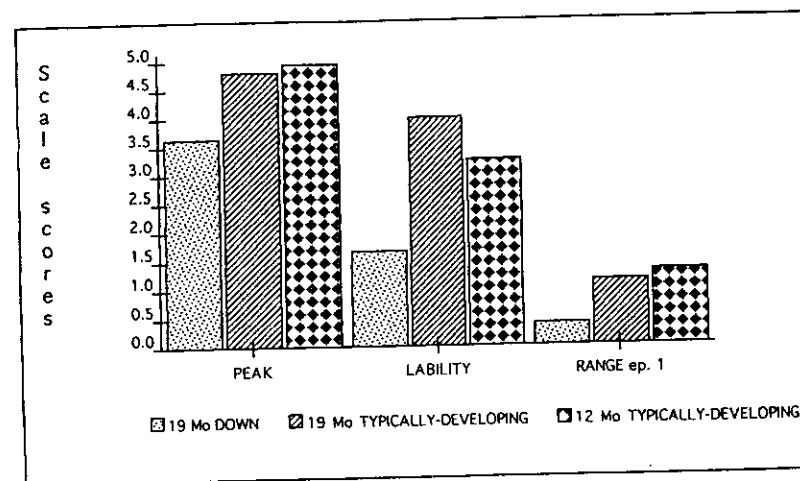


Figure 1 Comparisons between infants with Down syndrome and typically-developing infants at two ages on measures of peak distress intensity, emotional lability, and emotional range in the Strange Situation procedure (from data presented in Thompson et al., 1985)

Calkins have studied similar differences in infants and attribute their emotional regulatory style primarily to differences in parasympathetic regulation (Calkins & Fox, 1992; Fox & Calkins, 1993). In each case, it appears that there are reliable differences in emotional regulation stemming, in part, from early-emerging differences in the excitatory and inhibitory processes mediating emotional arousal.

The same conclusion applies to another group of children who show more extreme differences in arousability. Studies of infants with Down syndrome suggest that the diminished intensity of their positive and negative emotional expressions may derive, in part, from decreased activity of the sympathetic nervous system as well as delayed maturation of frontal inhibitory systems (e.g., Cicchetti & Sroufe, 1978; Emde, Katz, & Thorpe, 1978; Thompson, Cicchetti, Lamb, & Malkin, 1985). In our own research on Down syndrome infants in the Strange Situation procedure, for example, we found that these infants not only showed diminished distress intensity during episodes of maternal separation, but also other differences: their emotional reactions throughout the procedure were less labile, showed diminished range, with longer latencies to distress onset but quicker recoveries following distress compared to typically-developing infants (see Figures 1 and 2). These group differences remained regardless of whether infants with Down syndrome were

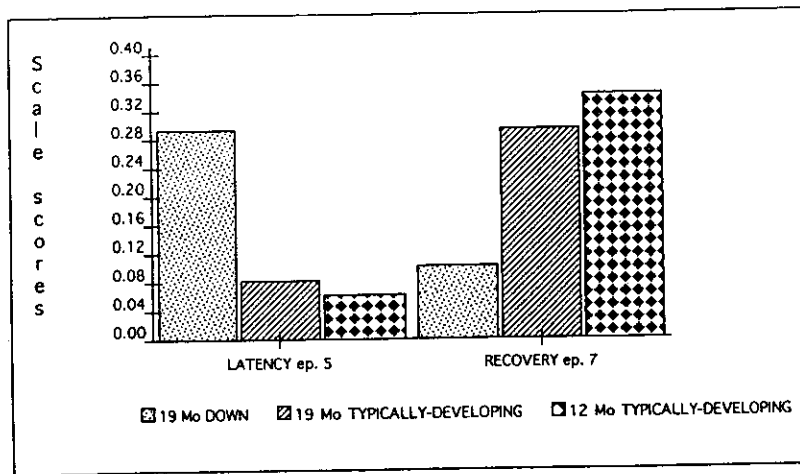


Figure 2 Comparisons between infants with Down syndrome and typically-developing infants at two ages on measures of emotional latency and recovery for selected Strange Situation episodes (from data presented in Thompson et al., 1985).

compared with typical infants who were age-matched (i.e., 19 months old) or who were more comparable in their cognitive skills (i.e., 12 months old). These differences suggest that the neurophysiological processes characterizing Down syndrome result in qualitative differences in the regulation of emotion that help to account for their more subdued emotional demeanor.

Other conditions of developmental psychopathology that impact on related neurophysiological arousal and control systems might be expected to have different effects on emotional regulatory processes. There is some evidence, for example, that some groups of high-risk low-birthweight infants have enduring emotional regulatory problems because of diverse ways that their risk status affects the growth and functioning of neurophysiological arousal and control processes (see e.g., Field, 1987; Landry, Chapieski, Richardson, Palmer, & Hall, 1990; Stiefel, Plunkett, & Meisels, 1987). In one study, for example, a group of low-birthweight premature infants with chronic respiratory illness showed greater distress and less ability to recover from their distress during the second year when observed in the Strange Situation compared to low- and moderate-risk low-birthweight premies (Stiefel et al., 1987). Such differences may arise through a combination of early neurological vulnerability together with the effects of their socioemotional regulatory problems on emerging patterns of infant-caregiver interaction that provide a foundation for emotional regulatory capacities (such as attachment security). Other researchers have speculated that some of the deficits in emotional reactivity exhibited by autistic children may arise from impairments in prefrontal control processes that regulate emotion and other executive functions (Rogers & Pennington, 1991).

In sum, therefore, it appears that the maturation of neurophysiological control processes provide a foundation for the growth of emotional regulation in the early

months of life. Impairments in these control processes, especially those in the prefrontal and frontal areas, can significantly alter emotional regulation capacities.

Attentional Processes

A second avenue to emotional regulation is the management of attentional processes. In other words, emotion can be regulated by redirecting attention toward or away from emotionally-arousing stimuli. Indeed, once infants acquire the capacity to voluntarily shift attention away from stimulus events between 3 and 6 months of age (Rothbart, Ziaie, & O'Boyle, 1992; Rothbart, Posner, & Boylan, 1990) they can begin to visually disengage from emotionally-arousing events (Gianino & Tronick, 1988), and parents can use visual distraction as a means of reducing distress in offspring. At somewhat later ages, one of the earliest articulated strategies of preschool children for regulating their own distress is to redirect attention. Bretherton and her colleagues quoted one 28-month-old, for example, as saying "I scared of the shark. Close my eyes." (Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986), and attention-based strategies for regulating arousal have been observed in 4- and 5-year-olds in the presence of adults arguing (Cummings, 1987; Cummings, Zahn-Waxler, & Radke-Yarrow, 1984). Young children also know that they can remove emotionally-arousing stimuli or leave the situation altogether (Altschuler & Ruble, 1989). At the same time, parents and other caregivers may seek to manage the arousal of children by focusing their attention on positive features of difficult or stressful experiences, or distracting the child during upsetting events, or limiting the child's awareness of potentially distressing information (Miller & Green, 1985).

In middle childhood, managing the direction of attention moves inward: grade-school children are aware of the fact that even if you cannot perceptually divorce yourself from difficult circumstances, you can regulate emotion through the *internal* redirection of attention, such as by thinking pleasant thoughts during a distressing or frightening experience, or doing something that takes your mind off difficult circumstances (Altschuler & Ruble, 1989; Band & Weisz, 1988; Harris & Lipian, 1989). Internal redirection of attention is a more effective strategy of emotional regulation because it can be used in situations when escape or avoidance of emotionally-arousing events is impossible, although it requires greater self-understanding and self-control. Nevertheless, it may be a preferred strategy because it is entirely self-controlled, by contrast with efforts to leave the situation which may be, to some extent, regulated by other people.

In the developmental psychopathology literature, there is evidence that attentional redirection may be associated with diminished emotional responsiveness to the emotional cues of others in some clinical populations. Sigman and her colleagues have noted, for example, that autistic children are especially prone to look away from other people when others are showing strong emotions like distress or fear, and this may contribute to their blunted emotional responding (Sigman, in press; Sigman, Kasari, Kwon, & Yirmiya, 1992). She suggests that the display of strong emotion by another is confusing or disturbing to the autistic child, and that

redirected attention reflects active avoidance rather than mere lack of awareness or disinterest in another's emotional display. In this respect, attentional redirection serves an emotionally regulative function, albeit at the cost of social responsiveness.

Redirecting attention for the purpose of emotional management may, however, be especially difficult for children with affective disorders like depression or anxiety that seem to entail a preoccupation with negative emotion. Children with anxiety disorders seem preoccupied, for example, with environmental cues that signal threat or danger. Moreover, they tend to construe even ambiguous or uncertain situations as threatening, contributing to their attentional focus on anxiety-provoking ruminations (Cassidy, this volume; Livingston, 1991; Miller, Boyer, & Rodolletz, 1990). Because of this, it may be very difficult for them to manage emotion by the inward direction of attention to more positive, less anxiety-ridden thoughts.

Anxiety disorders are not the only conditions of developmental psychopathology in which attentional redirection to regulate emotion is undermined by ruminations on thoughts that produce negative emotion. Indeed, one of the characteristics of adult depression is that a negative emotional reaction to an event tends to be followed by negative feelings about that emotional reaction, such as feeling guilty or self-critical about being unhappy (cf. Rehm & Carter, 1990). Some psychologists have attributed this attentional focus to self-critical self-talk by adults (e.g., Beck, 1967, 1976; Rehm, 1977), and this characteristic also seems to be true of depressed children. In the case of young children, however, it appears that a preoccupation with negative emotion may derive not just from self-critical thought but also from the behavior of caregivers (Cicchetti & Schneider-Rosen, 1986). There is some evidence that the parents of depressed children are themselves critical and demanding, especially if they are also depressed or under stress, and their criticalness may enhance a preoccupation with negative emotion in offspring as well as other sequelae (Cole & Kaslow, 1988; Cummings & Cicchetti, 1990; Miller, Birnbaum, & Durbin, 1990). For example, one observational study of early mother-child interaction reported that depressed mothers commented more negatively about their own emotions, and the emotional expressions of their offspring, when compared with nondepressed mothers (Radke-Yarrow, Belmont, Notelmann, & Bottomly, 1990).

It is not only the preoccupation with negative affect that impairs emotional regulation. In addition, this preoccupation undermines the search for strategies to manage that emotion: depressed children tend to think of avoidance or negative behaviors (like aggression) as the best ways of coping with negative affect, by contrast with the more adaptive, problem-focused strategies nominated by nondepressed children (Garber, Braafladt, & Zeman, 1991). Not surprisingly, this deficit in strategy generation mirrors shortcomings observed in depressed parents who also show deficient capacities to identify effective strategies for managing sad emotion. Like depressed children, these adults tend also to lack confidence in the efficacy of the emotional regulatory approaches they do identify (Garber et al., 1991).

This suggests that a capacity to redirect attention as a strategy of regulating emotion may be undermined not just by affective disorders like depression, but by

the broader socioemotional climate of the family itself. In other words, family members may inadvertently foster and reinforce their mutual focus on thoughts, beliefs, and attributions that underlie negative emotion. This may be true not just of family climates characterized by depression, but by conflict and argument also. Katz and Gottman (1991), for example, in their study of children from maritally stressed families, have pointed out that the recurrent experience of parental conflict can result in a hypersensitivity to such conflict in offspring. In a sense, children's alertness to cues of impending arguments at home causes them to maintain vigilance for such cues and to overrespond when they occur, in a manner that undermines their capacities to cope with the emotional arousal that marital conflict naturally produces in offspring. Maintaining sensitivity to cues of anger and conflict makes it difficult to redirect attention away from negative affect even in the best of circumstances, and certainly when anticipated conflict finally occurs. Even though young children often try to turn away from the sight and sounds of adults arguing (as noted by Cummings [1987]), their hypersensitivity to conflict in troubled families may undermine such attention-redirecting efforts.

Other ecologies beyond the family can have similar effects on the management of emotion through attentional redirection. For children who experience debilitating test anxiety, for example, it appears that one of their problems is the prevalence of self-deprecatory thoughts and worries that heighten their arousal, interfere with their attention to cognitive tasks and thus impair their performance (Wigfield & Eccles, 1990). Here, again, the inability to redirect attention away from emotionally-arousing self-critical self-talk and toward task-specific concerns contributes to children's poor performance, and several intervention strategies are built around efforts to modify the attributional styles that children apply to test situations that can reduce self-criticism, redirect attention toward the task, and have emotionally-managing consequences. But it is important to note that classroom and school environments themselves often provide the kinds of academic feedback that enhances children's self-deprecatory attributions and directs attention to their poor performance and the anxiety it engenders (Wigfield & Eccles, 1990). Thus, in a sense, social ecologies like the family and the school can either facilitate or undermine children's efforts to manage debilitating emotional arousal through the use of attentional strategies. Often unintentionally, people in these settings either focus children's attention on negative emotionally-arousing events and cognitions, or provide avenues for attentional redirection toward more positive and potentially more constructive thoughts and beliefs.

Access to Coping Resources

A third avenue to emotional regulation is also commonly used by young children, and it consists of enhancing access to coping resources, both material and interpersonal. Just as adults turn to friends and family for advice when anxious, comfort when bereaved, and a cool head when angry, young children are aware of the benefits of eliciting nurturance from others when experiencing negative emotion (Masters, Ford, & Arend, 1983; McCoy & Masters, 1985). This is, in part,

what is meant by "secure base behavior" in infants, when confident expectations of help and support motivate infants to turn to attachment figures when they are anxious, threatened, or uncertain (Ainsworth, Blehar, Waters, & Wall, 1978). In a similar manner, young children may also turn to a favorite toy, blanket, or other security object to assist in coping with emotional demands. At older ages, friends are often sought out for their emotional support and understanding (Gottman & Mettetal, 1986), and children know that they can sometimes strategically alter their emotional expressions (such as by enhancing distress) to elicit sympathy from trusted caregivers and friends in difficult circumstances (Dunn & Brown, 1991; Saarni, 1992).

Not surprisingly, these coping resources are drastically diminished when caregivers themselves are unreliable, unavailable, or unhelpful sources of support, such as when parents are coping with major affective disorders, or abuse or neglect offspring, or are experiencing overwhelming demands from marriage or work. The evidence from studies of offspring from such families suggests that the parent's unavailability as a coping resource can have significant consequences for emotional regulation. Gaensbauer's (e.g., Gaensbauer & Sands, 1979) studies of maltreated infants and toddlers suggests, for example, that these children may exhibit a shutting-down or withdrawal of emotional responsiveness, or display inconsistency, unpredictability, or shallowness of affective communications. From a functional viewpoint, these features of emotional responding are predictable in light of a caregiving environment where emotional signals either fail to elicit a reasonably predictable helpful response or, more significantly, may elicit an aversive reaction. These parents have become, in a sense, psychologically unavailable as resources for coping with emotion, and consequently the emotional reactions of offspring tend to be either blunted or disorganized depending, in part, on whether the parent's typical response is ignoring, rejecting, or some other reaction. Other studies confirm this portrayal of the emotional responding of maltreated children as poorly regulated, sometimes manifested in angry or impulsive outbursts toward peers or teachers, and sometimes reflected in withdrawn behavior (see Aber & Cicchetti, 1984; Cicchetti, 1990; Cicchetti, Ganiban, & Barrett, 1991; Erickson, Egeland, & Pianta, 1989; Garbarino, 1989; Shields, Cicchetti, & Ryan, in press). In one telling investigation, for example, physically abused boys were observed to act more aggressively during simulated angry encounters between their mothers and another female adult when compared with a matched, low-SES nonmaltreated group (Cummings, Hennessy, Rabideau, & Cicchetti, 1994). Other studies have found that maltreated children respond more fearfully during angry adult encounters — when the adult's availability as a coping resource for the child is obviously very limited — and are hypersensitive to whether the conflict itself becomes resolved or not (Hennessy, Rabideau, Cicchetti, & Cummings, 1994).

Other studies also underscore the diverse consequences of parental behavior for young children's emotional regulation. Children from maritally conflicted homes also show the profile of emotional withdrawal and/or angry impulsiveness noted above (Grych & Fincham, 1990), and conduct disorders in children — in which lack of emotional control is one of the defining features — are often traced to parental conflict (Speltz, 1990). In the case of conduct disorders, for example,

parental discipline practices may be a significant mediator between family stress and child behavioral problems and, in the broader context of a dysfunctional neighborhood and peer culture, may undermine the resources for emotional coping that at-risk children require (McCord, 1993; Snyder, 1991). In more severe instances, lack of parental support and responsiveness can not only result in blunted emotional responding but also life-threatening disturbances with eating and digestion, such as occur with reactive attachment disorders (a.k.a. "hospitalism"), or nonorganic failure to thrive (Fraiberg, 1980; Lucas, 1991; Livingston, 1991). In each of these circumstances, the loss of (physical or psychological) access to the parent as a coping resource can undermine children's efforts to manage emotion, especially when children are young and typically depend on caregivers for emotional regulation and support. Not surprisingly, additional problems ensue when parents are not only inaccessible as coping resources, but act antagonistically toward offspring.

In this research, as in real life, children sometimes had access to support figures outside the family: a foster parent, a friend of the family, a babysitter. The literature on vulnerability and resiliency suggests, among other things, that the social support of at least one person outside the home may be an important resource for children who are coping with the emotional demands of a troubled family (Thompson, 1995). With respect to emotional regulation, we would expect that children who have reliable access to social support outside the home (such as a day-care provider, regular babysitter, teacher, etc.) might have greater success in coping with the emotions engendered by family problems, and that these potential benefits would increase with age as children mature, and can take greater initiative in relying on these outside figures. The possibility that supportive out-of-home relationships might compensate as interpersonal coping resources in the emotional support of children from troubled families remains an important topic for future research.

Interpretations of Emotionally-Arousing Events

A fourth avenue to emotional regulation concerns how emotionally-arousing information is processed. Individuals often regulate emotion through their interpretations or construals of this information. Psychoanalytic scholars have long recognized this in the defense processes that reduce anxiety and other negative affect through denial, projection, rationalization, repression, and in other ways so that construals of reality are altered for the purpose of managing emotion (Case, Hayward, Lewis, & Hurst, 1988). But there are other, simpler ways that interpretive processes are used to regulate emotional arousal. Parents commonly try to alter a child's construal of stressful but benign experiences by the cues they provide, such as when they describe procedures during a medical exam as "tickling," or by looking supportively when a shy child encounters a new person for the first time (cf. Miller & Green, 1985). Children themselves alter their own constructions of reality for emotional management purposes, such as when they reinterpret a scary story ("He didn't *really* die; he just got frightened and ran away") or by affirming "It's just a story!" (cf. Meerum Terwogt, Schene, & Harris, 1986). In a sense, then, the

interpretations one applies to emotionally-arousing events can help regulate the emotions generated by those events.

Not surprisingly, there has been considerable concern among developmental psychopathologists about how the construals of reality provided by parents can alter the emotional experience of young children. Consider again, for example, parents with depressive disorders (see Cole & Kaslow, 1988; Garber et al., 1991, and Zahn-Waxler & Kochanska, 1990 for reviews). Mothers with unipolar depression often present their children with compelling emotional demands and forceful messages affecting children's interpretations of those demands. Children of depressed caregivers are faced with a parent who manifests a great deal of sad emotion, together with irritability, helplessness, and guilt in their relationships with their children, often accompanied by marital conflict in the home. In the context of this emotional climate, moreover, depressed caregivers interact with offspring in ways that enhance children's sense of guilt and responsibility for the adult's depression. They commonly use offspring, even young children, as sounding-boards for their own despair and negative feelings, which they may sometimes blame on children themselves. Depressed parents have high expectations for the behavior of offspring, and often use guilt-induction as a discipline strategy through love withdrawal and other techniques. On top of this, children are exposed to compelling models of a negative attributional strategy: one that mingles perceptions of personal responsibility with feelings of personal helplessness. As children internalize these messages, they tend to become enmeshed in their parent's emotional struggles: they feel enhanced responsibility for the emotional disorders of their parents, and are vulnerable to the depression that their caregivers experience (Garber et al., 1991; Susman, E. J., Trickett, P. K., Ianotti, R. J., Hollenbeck, B. E., & Zahn-Waxler, C., 1985; Zahn-Waxler, Cole, & Barrett, 1991; Zahn-Waxler & Kochanska, 1990).

What does this mean for emotional regulation? On one hand, some researchers have noted considerable difficulty: depressed mothers and their offspring each tend to be less effective in managing their emotions than are nondepressed mothers and children, and each tends to lack confidence in their capacity to regulate emotion (Garber et al., 1991). In a sense, therefore, children tend to acquire the same kind of helpless interpretations of events experienced by their depressed caregivers, especially concerning their capacities for emotional regulation. Other studies have shown that these children tend to be more insecure (e.g., Zahn-Waxler, Cummings, Iannotti, & Radke-Yarrow, 1984). On the other hand, there is evidence that the offspring of mothers with unipolar depression show enhanced capacities for empathy and protectiveness as they try to provide helpful assistance to their mothers: they are commonly observed intervening prosocially and with problem-solving initiatives when their mothers are expressing depressed emotion (Garber et al., 1991; Zahn-Waxler & Kochanska, 1990). Furthermore, this style generalizes to other social partners: in one study, the young offspring of unipolar depressed mothers treated playmates with greater politeness and appeasement, and showed less negative emotion, compared with the offspring of nondepressed mothers. In other words, these children had "learned to treat others carefully" (Zahn-Waxler & Kochanska, 1990, p. 227; see also Zahn-Waxler et al., 1984).

This indicates that the consequences of maternal depression for emotional regulation can be diverse, and do not always conform to the conventional portrayal of "emotional dysregulation" that researchers often expect to find. Children who encounter strong emotional demands at home and who are led to interpret these demands in ways that enhance their sense of personal responsibility may, in fact, show enhanced management of their emotions, and this has been found to be true of some maltreated children as well (cf. Gaensbauer & Sands, 1979). Whether we consider this response adaptive (in light of the situational demands these children experience) or a reflection of "emotional overmanagement" is a conceptual challenge that raises the broader question of how best to evaluate individual differences in emotional regulation within a developmental psychopathological perspective. Such a determination requires considering the suitability of various forms of emotional management to the social circumstances to which they are applied which, in the case of certain forms of developmental psychopathology, can be unusual and demanding. It also requires evaluating the extent to which styles of emotional management that are psychologically suited to one setting are generalized to other settings, with helpful or maladaptive consequences. We shall return to this question again later in this chapter.

Encoding of Internal Emotional Cues

There is a fifth avenue to emotional regulation that also entails processing emotionally-relevant information. It concerns how people encode and interpret the internal cues of emotional arousal that they experience. In this case, emotional management does not entail altering situational appraisals (as discussed above), but rather reinterpreting the sometimes compelling feelings of rapid heart rate, shortness of breath, and other internal concomitants of emotional arousal. Sometimes a reinterpretation of these internal cues can aid in regulating emotion, such as when a speaker addressing an esteemed audience controls stage fright by regarding his nervousness as a sign of performance enhancement rather than impending dysfunction, or when students minimize test anxiety by regarding their test-related arousal as a facilitator rather than a detriment to recall. It may be true that children who can more easily enlist emotion into adaptive social functioning have learned to regard their internal cues of arousal as facilitating or empowering their actions, while children who are more easily undermined by heightened emotion perceive these internal cues of arousal as reflections of their incompetence or inadequacy. This question remains to be studied further because there is, at present, very little research on how children typically perceive the internal, emotion-related cues of physiological arousal.

What happens, however, to the encoding of these cues of internal arousal when children experience distress, anxiety, or other negative emotions regularly and intensely? There are provocative suggestions in the literature on developmental psychopathology that early exposure to chronic distress in the home may not only sensitize children to others' negative emotion, but may cause them to become overwhelmed by their own internal cues of arousal when distress occurs (cf. Katz

& Gottman, 1991; Zahn-Waxler & Kochanska, 1990). Because of their enhanced exposure to distressing family conflict and the hypervigilance it provokes, it may take relatively little actual disturbance in the family to provoke distress in offspring, perhaps because even minor cues of impending family conflict have become conditioned to internal cues of the child's emotional arousal. If this is so, these internal cues of arousal may be extremely difficult to interpret as anything other than signs of impending distress and disorganization, and thus may be difficult to adaptively regulate.

This idea is similar to the concept of "flooding" proposed by Ekman (1984), who argued that flooded emotions have several characteristics: (a) they are elicited by events that would rarely provoke this emotion in most people; (b) they perseverate or "recycle" frequently with no apparent antecedent elicitors; (c) once provoked, they occur with considerable intensity; and (d) the person cannot easily regulate this emotional experience. Ekman describes affective disorders like depression, anxiety states, and "mania" as psychopathological disorders characterized by flooded emotion, and it is possible that early experiences of recurrent and intense emotional arousal such as those described above provide early antecedents of adult psychopathology characterized by emotional flooding. In childhood, certain anxiety disorders would also be consistent with Ekman's characterization of emotional flooding, and also with the hypervigilance and conditioning of internal arousal cues discussed above (Miller, Boyer, & Rodoletz, 1990; see also Cassidy, this volume). These possibilities merit the research attention of students of emotional regulation who adopt a developmental psychopathology perspective.

Selecting Adaptive Response Alternatives

Finally, a sixth avenue to emotional regulation involves the capacity to select responses to emotionally-arousing events that have adaptive, satisfactory consequences for oneself. Adults know that feelings of anger or distress can be managed more effectively if they can be expressed in a search for solutions or a persuasive argument that can resolve the problem, rather than emotional outbursts at innocent bystanders or self-destructive behavior. Similarly, a preschooler might shout angrily at a peer who has destroyed his block tower and insist on help in reconstructing it rather than withdrawing into sobs or angrily attacking the perpetrator, and doing so can help manage the angry emotions generated by the offense. Indeed, one of the developmental catalysts for greater skill at emotional self-management is a growing repertoire of adaptive responses to emotionally-arousing situations: rather than crying, aggressing, or withdrawing, children learn to seek assistance from others, talk about their feelings, seek nurturance, confront the perpetrator, problem-solve, and use a variety of modes for expressing distress that have more predictably satisfactory consequences than do destructive reactions (cf. Kopp, 1992). In a sense, the expectation of a constructive outcome can, in itself, aid in the management of emotion because of the anticipation of beneficial results.

Selecting adaptive response alternatives for expressing emotion is actually a more difficult task than it may first appear, however, because what is "adaptive"

may depend on the demands of the situation and its interpersonal context. Turning to an adult when frustrated by a peer may be praised by preschool teachers as an alternative to aggression, but discouraged at home if parents want children to devise their own solutions, and actively disparaged in the peer culture as "tattling." Reacting with angry self-defense to a bully may be adaptive in preventing further teasing if friends are nearby who can help, but not if you are alone and likely to be pummeled! Deciding what is the best way of responding often requires a sensitive assessment of the values of social partners, the demands of the setting, and the child's own goals for the situation. Moreover, in some situations there may be relatively few response options that are likely to lead to satisfying outcomes, perhaps because most responses will have consistently undesirable results, or the most satisfying response options are beyond the capabilities of the individual. This may undermine efforts at emotional self-regulation.

It is not surprising, therefore, that developmental psychopathologists have found that children from certain clinical populations fail to carefully evaluate the consequences of alternative strategies for how they express emotion (cf. Campbell, 1990; Dodge, 1991; Dodge & Somberg, 1987; Garber et al., 1991). They tend either to respond impulsively — with quick, often intense emotional reactions that are inappropriate to the situation — or they respond immaturely, by using strategies for expressing emotion that are ineffective or dysfunctional. Both features of emotional responding characterize the behavior of children with attention-deficit hyperactivity disorder, and also certain depressed children. There are multiple reasons for these social-interactive deficits related to emotional regulation, including undermined motivation (e.g., some children don't care much about the consequences of their emotional behavior, or don't believe that their efforts to manage emotion will have much effect) and deficient knowledge (e.g., some children are unskilled social information-processors who are insensitive to the reactions of others to their behavior). However, it is also true that the social circumstances of these children sometimes do not readily provide a means of expressing negative emotion with satisfactory consequences, perhaps because parents are themselves depressed, maltreating, or under stress, or because the of the negative peer reputations that these children acquire, or for other reasons. In this sense, therefore, emotional regulation must be regarded within the context of the available response options permitted by the social context in which emotion is expressed. In some circumstances with strong emotional demands, emotional regulation is undermined by the availability of few modes for expressing emotion with satisfying outcomes. These circumstances are especially likely to be part of the life experience of children with clinical disorders, or who are reared by parents who are themselves coping with emotional problems.

Summary

Taken together, it is clear that there exist a variety of routes toward emotional regulation. Competent emotional regulation can involve any of these avenues — from managing the direction of attention to strengthening coping resources to altering construals of the situation, one's arousal, or response possibilities — taken singly or in combination. Researchers are just beginning to understand how these

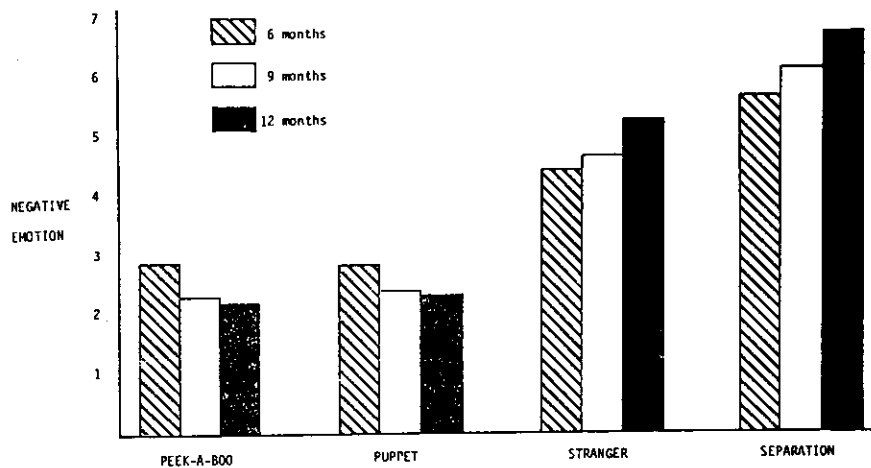


Figure 3 Age-related comparisons in the peak intensity of negative emotional responses to the four assessments. Note that lower scores on the emotion measure reflect positive vocalizations, with a score of 4 as a neutral midpoint rating (from Thompson, 1990).

capacities develop, and how they are used by developing persons to regulate their emotional arousal.

Consequently, considerable complexity attends efforts to explore developmental changes in emotional regulatory capacities that involve the confluence of multiple developmental processes. Consider, for example, another study from our laboratory concerning the growth of emotion during the second half of the first year of life (Thompson, 1990). This is a period of striking changes in the regulation of emotion owing to many influences: rapid cognitive advances that affect the baby's emotion appraisals, neurophysiological maturation in the frontal lobes related to arousal regulation, the consolidation of social expectations for familiar partners and the emergence of social referencing as a means of construing emotionally-arousing events, and the growth of self-propelled locomotion that provides new opportunities for goal-attainment and for goal-related emotions (Campos, Kermoian, & Zumbahlen, 1992). Our general expectation was that these developmental influences would, in combination, affect the regulation of emotion in each of the observational contexts in which we studied infants at 6, 9, and 12 months of age: during peek-a-boo and puppet play with the mother, a stranger-ap-

proach encounter, and a brief separation from the mother. More specifically, regardless of whether the emotion was positive or negative in valence, we anticipated that with increasing age, infants would respond quicker (that is, with decreasing latency) and with greater intensity and persistence to emotion elicitors as a consequence of these diverse influences on their regulation of emotion. This is precisely what we discovered (Figures 3 and 4). In short, the confluence of many developmental influences affecting the regulation of emotion during the last half of the first year resulted in growing "vitality" in the emotional reactions of infants, a

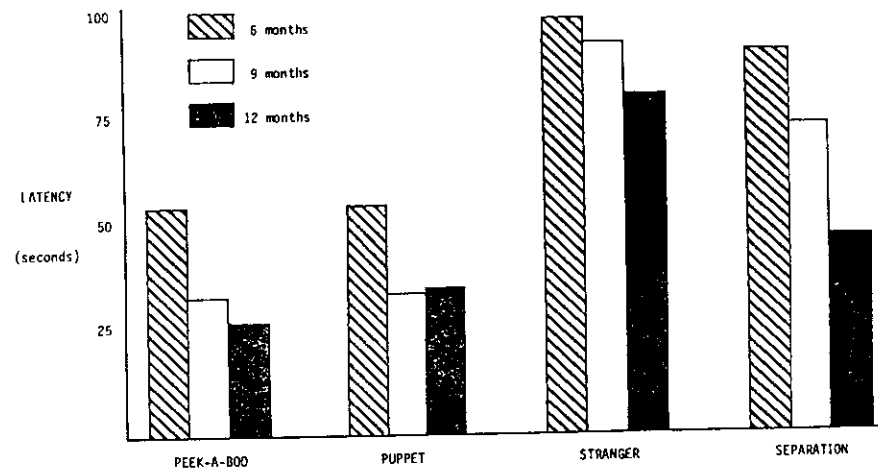


Figure 4 Age-related comparisons in the onset latency of emotional responses to the four assessments (from Thompson, 1990).

vitality that appears to assume an important role in the infant's transactions with the social world over this period (cf. Tronick, 1989). However, because these multiple catalysts to growing emotional "vitality" are developmentally concurrent and, in some respects, interrelated, it is difficult to attribute the growing intensity, speed, and persistence of emotionality over this period to one or two critical influences on the growth of emotional regulation. These influences act in concert.

At a minimum, therefore, this analysis reveals that the term "emotional regulation" is a conceptual rubric for a broad variety of cognitive and behavioral processes that likely have different developmental timetables and experiential origins. Emotional regulation is not, in other words, a unitary phenomenon. This means that difficulties may arise in emotional self-control for many different reasons. As we have seen, children may have difficulty managing their emotions because of underlying deficits in neurophysiological regulation and control, or problems in managing attentional processes related to emotional arousal, or limited access to coping resources (both interpersonal and material), or because of their interpretive constructions of emotionally-arousing situations, or how they encode their internal cues of arousal, or because of the availability (or dearth) of satisfactory response alternatives in the situation and the child's capacity to identify them.

Children vary developmentally also in their awareness of the need for emotional management in certain situations, in the breadth of their repertoire of strategies for managing their own arousal, in their capacities to appraise the success of their initial regulatory efforts (and their abilities to substitute a more successful management strategy for an unsuccessful one), and in their flexibility in adapting their strategies for managing emotion to different situations with different emotional demands. Each of these developmental processes can influence the efficacy of their skills at emotional regulation. Individual differences in emotional regulation among people of a particular age may derive from these and other causes, including differences in the goals underlying efforts to regulate emotion in particular contexts, differences in strategies of emotional management, and differences in the flexibility of self-regulatory efforts.

It seems very unlikely that either individual differences in these diverse approaches to emotional regulation or developmental changes in their emergence covary in any consistent manner, partly because each of these avenues to emotional regulation rely on diverse developmental constituents. In other words, the components of emotional regulation are multifaceted, and complex. This has important implications for our understanding of the relations between emotional regulation and attachment, and for how we evaluate individual differences in emotional regulation, to which we now turn.

Emotional Regulation and Attachment

Developing skills of emotional regulation are intimately tied to the development of close relationships. Relationships with attachment figures like parents, offspring, spouses, and close friends provide the most salient affective contexts, and some of the strongest incentives, for exercising emotional management. Moreover, attachment figures themselves often shape processes of emotional self-regulation in developing individuals. In turn, competent regulation of one's emotions enhances relations with other people. Indeed, skills of emotional management often provide a foundation for the growth of intimacy in close relationships as they provide the basis for predictability and trust. Thus the development of emotional regulation and the growth of close relationships must be regarded as concurrent, mutually influential processes.

This is seen clearly from early in life, when a major task of successful parenting is managing and guiding the emotional experience of offspring. This occurs not only through direct interventions to relieve distress, fear, and other negative emotions (cf. Gekoski, Rovee-Collier, & Carulli-Rabinowitz, 1983; Lamb & Malkin, 1986), but also through modeling and selective reinforcement of positive emotions (Malatesta-Magai, 1991), the direct induction of emotion through processes like social referencing and empathy (e.g., Stern, 1985; Thompson, 1987; Walden, 1991), verbal instruction about emotion and emotional regulatory strategies (Dunn & Brown, 1991; Miller & Sperry, 1987), and the management of a child's emotional

experience through the organization of caregiving demands and the ecology of early life (e.g., quality of out-of-home care) (Thompson, 1990). With the child's increasing age, parents manage emotion also to socialize the emotional behavior of offspring to accord with the expectations of the local "emotional culture" (Gordon, 1989; Miller & Sperry, 1987; Saarni, 1990), and they may do so partly by guiding the child's use of emotional regulatory strategies in specific situations. Parental discourse about emotion also affects the child's interpretations of emotionally-arousing situations and the coping resources that are available to them, such as by reinforcing attributional styles that enhance or inhibit certain emotions (e.g., through blaming or other guilt-inducing practices), and by modeling certain modes of emotional control. Thus close relationships not only provide a context for mastering and exercising the skills of emotional management but also, because these relationships impose emotional demands (of richly varying emotional valence) that require emotional self-control, they become important developmental laboratories for the growth of emotional self-regulation.

Close relationships also offer another contribution to the growth of emotional regulation: because attachment figures constitute valuable interpersonal resources for coping with emotion, expectations concerning their sensitivity, accessibility, warmth, and helpfulness can significantly enhance, or undermine, the capacity to manage emotional arousal. This component of the development of emotional regulation has been especially interesting to attachment researchers, who regard the parent-infant relationship as an early cornerstone for the growth of emotional regulatory skills (Bretherton, 1990; Cassidy, 1994; Malatesta, 1990; Thompson & Lamb, 1983). Based on expectations concerning the attachment figure's availability and sensitivity, in other words, infants and young children may learn to freely express their feelings to obtain assistance and support or, on the other hand, may suppress, disguise, or enhance the expression of feelings when interacting with that person. A young child can more easily cope with a distressing experience because of the anticipated understanding provided by a parent, for example, while the expectation of an uncaring or denigrating response might cause that child to restrict the expression of emotion in the presence of the parent, enhance the display of negative emotion to obtain a more helpful response, or experience other difficulties in coping with and conveying emotional reactions.

There is some evidence supporting such a view from attachment research (see Cassidy, 1994; Malatesta, 1990). Infants who are insecurely-attached at the end of the first year not only show distinctive patterns of emotional arousal during separations from and reunions with their attachment figures within the Strange Situation, but they also show different emotional regulatory styles throughout this procedure (Braungart & Stifter, 1991; Dickstein, Thompson, Estes, Malkin, & Lamb, 1984; Frodi & Thompson, 1985; Thompson, Connell, & Bridges, 1988; Thompson & Lamb, 1984). Insecure-avoidant infants, for example, not only show lower separation distress intensity coupled with a longer latency to distress onset compared to securely-attached infants, but they also tend to show more self-comforting during separations and more orientation toward toys and less toward the mother during reunions (consistently with their generally avoidant reunion behavior). These infants also less often enlist social referencing to visually check

back with the mother for reassurance and support. Insecure-resistant infants, on the other hand, not only exhibit more intense separation distress and take longer to recover than do securely-attached infants, but they show fewer self-regulatory behaviors during reunion. Attachment theorists argue that these differences in emotion and self-regulation emerge largely from antecedent caregiving experiences, with securely-attached infants having learned to rely on sensitive and responsive parental care and insecurely-attached infants responding to a history of insensitivity (leading to insecure-avoidance) or inconsistent responsiveness (contributing to an insecure-resistant attachment) (Ainsworth et al., 1978; Bretherton, 1990; Cassidy, 1994; Malatesta, 1990). Such a view is entirely consistent with this chapter's portrayal of the influence of close relationships on the development of emotional regulatory skills.

While research on infant-parent attachment thus supports the conclusion that early, close relationships can affect the baby's capacities to manage emotion during periods of emotional stress, it raises many more questions about the early growth of emotional regulation that can guide further research. First, although access to coping resources (like an attachment figure) is an important mode of emotional regulation, these studies suggest that insecurely-attached infants who expect the caregiver to be an unreliable source of emotional support may instead develop alternative modes of emotional self-regulation. This is especially likely with insecure-avoidant infants who, according to Braungart and Stifter (1991), rely more on self-comforting and toy play than on the mother for emotional coping with the demands of the Strange Situation procedure. Thus while one mode of emotional regulation (i.e., access to interpersonal coping resources) is undermined by an insecure-avoidant attachment, other alternative modes for managing emotion (e.g., redirection of attention) may be used as substitutes by these infants. If this conclusion is supported by further research, it suggests that an insecure attachment does not necessarily render young children more prone to emotional dysregulation in a global sense, but rather in specific situations in which mother is needed, and primarily when alternative modes of emotional management are unavailable or have not developed. Further research on whether, and how, insecurely-attached infants develop compensatory modes of emotional self-management would likely yield valuable insights, partly due to its relevance to other populations (including clinical groups) who may face similar challenges in early emotional regulation. As earlier noted, for example, maltreated children and children who are reared by parents with depressive disorders each experience limitations in the coping resources afforded by parents, but may develop alternative modes of managing emotional arousal that do not depend on a supportive adult partner.

Second, while attachment theory focuses properly on the infant-parent relationship, current social realities underscore the multidimensionality of the ecology of early socioemotional growth. Infants spend considerable time in out-of-home caregiving contexts, for example, in which different relationships are developed and different skills of emotional regulation may be fostered and reinforced. The emotional management skills young children develop in a child-care setting may, or may not, be consistent with those fostered at home, partly because the emotional demands for which they develop are different in each context. Consider, for ex-

ample, the importance of a secure attachment to a child-care teacher for socioemotional functioning. In one study, Howes and Hamilton (1992) noted that young children's attachments to child-care teachers varied in security just as they did with parents, and that maternal and teacher attachment security were not necessarily concordant. That is, some infants who were insecurely-attached to the mother were secure with the child-care teacher, and vice-versa. Nevertheless, both maternal and teacher attachment security contributed to the child's socioemotional competence: a secure attachment to one adult compensated, for example, for an insecure attachment to the other adult, and a secure attachment to each was associated with more optimal socioemotional behavior (Howes, Rodning, Galluzzo, & Myers, 1988). This suggests that the growth of emotional regulatory skills are likely to reflect a diverse constellation of relational influences beginning from a surprisingly early age, in which the quality of each relationship contributes independently, and interactively, to the growth of competent emotional functioning. Added complexity to this issue occurs as children mature conceptually, and begin to approach new relationships based on the expectations derived from a prior relationship history such that prior relationships influence new ones (cf. Lynch & Cicchetti, 1991; Sroufe & Fleeson, 1988; Toth & Cicchetti, 1994). Further research is needed to elucidate how different close relationships, experienced early in life, have independent as well as overlapping influences on the growth of emotional regulatory skills, and how patterns of relational compensation may foster healthy socioemotional growth.

Third, and finally, attachment theory has proposed that early patterns of emotional regulation arising from the security of attachment may have long-term consequences for later socioemotional growth. Understanding the conditions in which the security of attachment predicts later behavior, and the reasons for prediction when it occurs, is one of the hotly-debated issues within contemporary attachment theory (see, e.g., Lamb et al., 1985; Thompson, 1991). On one hand, the significant developmental changes that occur during the early years in the nature of parent-child relationships as well as in emerging strategies of emotional self-regulation should undermine a strong association between infant attachment security and later styles of emotional management. The capabilities of very young children for regulating their own emotions are rudimentary compared to those of older children, for example, and individual differences in early emotional regulation may only dimly foreshadow later competencies as more complex cognitive skills and self-understanding emerge. And as we have noted, insecurely-attached infants may develop alternative modes of emotional self-regulation, and the regulatory strategies of all developing persons are affected by a variety of relational influences that extend beyond the parent-child dyad. On the other hand, to the extent that the security of attachment reflects, and shapes, broader emergent personality processes pertinent to emotional regulation, early attachments may well underlie later styles of emotional self-management (Cassidy, 1994). Moreover, the same caregiving sensitivity and responsiveness that initially contributes to a secure attachment (and emotional regulatory competence) in infancy may, as it is maintained for offspring at later ages, also promote more effective emotional management as children mature (Thompson, 1991). Needless to say, the issue of

stability and change in later behavior and its relations to the security of attachment in infancy remains a provocative and important issue for future research inquiry.

Research on the influence of close relationships on emotional regulation, especially within attachment theory, provides a basis for concluding that skills of emotional management develop significantly in relational contexts. But because there are diverse components of emotional regulation, each affected by the variety of close relationships that individuals experience throughout the early years of life, it is more difficult to discern whether later problems with emotional regulation arise from specific relational contexts early in life. This is especially so given that infants and children may develop compensatory strategies for managing emotional arousal that accommodate to the interpersonal support that they may, or may not, experience in early relationships. This complex picture becomes further complicated by considering how, and by what criteria, developmentalists should evaluate the individual differences in emotional regulation that they observe in laboratories and in clinical practice.

Evaluating Individual Differences in Emotional Regulation

A hallmark of a developmental psychopathological perspective is its emphasis on individual differences and the remediation of deficiencies in competent functioning. A developmental psychopathology approach is well-suited to the study of emotional regulation, therefore, because scientific interest in individual differences in emotional regulation has moved this topic to the forefront of developmental study. Developmental scientists have proceeded very quickly, in other words, from a concern with the development and description of emotional regulatory processes to an interest in identifying the correlates of individual differences in emotional regulation. This is due, in part, to the practical applications of efforts to identify, evaluate, and potentially change the skills of emotional management that children acquire. To the extent, for example, that researchers and clinicians can relate problems of social competence, behavioral self-management, and even intellectual and cognitive functioning to differences in capacities for emotional self-regulation, they not only contribute new ideas about the origins of these problems, but also can begin to identify new intervention and remediation strategies.

It is important, however, that interventions are not based on a simplified portrayal of emotional regulatory problems. If a capacity for emotional regulation has diverse constituents, then emotional dysregulation can have equally multifaceted origins and diverse potential remedies. For some children, emotional dysregulation may derive from an inadequate awareness of the need to manage emotion in certain situations. For others, it may be due to a limited repertoire of regulatory skills and strategies. In many instances, emotional dysregulation may arise from the unusual emotional demands of their social settings: a troubled family, for example, or a classroom where performance feedback reinforces dysfunctional attributions for academic failure. For some children, emotional dysregulation may derive from

restricted flexibility in applying emotional regulatory skills to specific situational demands, or from lack of access to coping resources, both material and interpersonal. And for others, problems in emotional dysregulation may arise from deficient interpretations of social and emotional cues from others, or of their own internal cues of arousal. It seems very unlikely that children who have problems with emotional management are deficient in *all* these capacities, so the recognition that emotional regulation is a multifaceted developmental process also underscores the complex origins of problems in emotional self-regulation. Moreover, if their social ecologies present differing demands and resources for emotional coping, then there are diverse remedies for the problems children experience in emotional self-regulation.

But what is "emotional dysregulation"? In many respects, this question is answered by examining how researchers and clinical investigators implicitly define "good" or "effective" emotional regulation. Clinical portrayals of effective emotional regulation often include the following qualities: access to a full range of emotions that are expressed in situationally-appropriate ways, emotions that are of sufficient intensity and duration to facilitate organized and competent functioning and to accomplish one's goals, and shifts from one emotion to another that are accomplished smoothly and predictably. As a consequence, in this view, emotions can be the object of comfortable discourse and reflection, and mixed emotions can be acknowledged and integrated (cf. Cole, Michel, & O'Donnell, 1994; Gaensbauer, 1981). These descriptions of emotional regulation constitute intuitively appealing portrayals of effective emotional arousal.

Viewed in this way, effective regulation can be described as either a process or an outcome, or both. In terms of its outcomes, for example, an emotionally well-regulated individual is capable of keeping emotions under sufficient control to allow for interpersonal relatedness, and can thus offer prosocial initiatives when they are appropriate, sympathy toward others, appropriate assertiveness, and other indices of successful socioemotional functioning. Effective emotional regulation is believed to be an important component of these behaviors, and signs of "emotional dysregulation" would entail significant limitations in these capacities. On the other hand, viewed in terms of a process, effective emotional regulation involves the enlistment of strategies that permit emotional flexibility, quick reappraisals of emotionally-provoking situations, access to a broad range of emotions, and efficient goal-directedness. In this case, effective emotional regulation is defined in terms of the qualities of emotion it produces (regardless of other behavioral outcomes), and "emotional dysregulation" constitutes inflexibility, stereotypy, rigidity, and perhaps over- or underarousal in emotional responding.

These characterizations of emotional regulation and dysregulation provide a good start for scientific and clinical efforts to identify and understand individual differences in emotional regulatory capacities. Their major problem, however, is their generality: some portrayals of effective emotional regulation are so broadly conceived that they become synonymous with what a well-functioning personality looks like. In this sense, as Rutter (1991) has pointed out, we risk confusing an outcome with its hypothesized cause: to argue that individuals generally function better when they are emotionally well-regulated requires a more precise portrayal

of effective processes of emotional regulation that are distinguished from these broad outcome characteristics. Defining emotional dysregulation for research and clinical purposes probably requires narrower criteria that are not so multidetermined.

Equally importantly, broad portrayals of effective (and ineffective) emotional regulation sometimes incline clinicians and developmentalists to conceive of individual differences in emotional regulation in characterological terms — that is, to regard individuals as generally emotionally well-regulated or dysregulated people. Like the construct of “ego control” prevalent in earlier research on personality development, some portrayals seem to regard emotional regulation as an inclusive component of personality functioning with broad manifestations in diverse behavioral domains leading to positive (or negative, in the case of dysregulation) sociopersonality characteristics. The conceptualization of emotional regulation offered in this chapter, however, suggests at least three reasons for caution in adopting broad, characterological portrayals of individual differences in emotional regulation, and instead considering more integrated, situationally-specific conceptualizations of these differences in regulatory skills and tendencies.

First, as earlier noted, the skills of emotional regulation are diverse and multifaceted, and are unlikely to covary consistently for most individuals. A child who has difficulty managing attentional processes related to emotional arousal may not be similarly deficient in enhancing access to coping resources (such as turning to a sympathetic friend or teacher), and may use these resources to better manage emotionally-arousing situations. A child who cannot rely on the support of caregivers in managing emotion may nevertheless develop effective internal strategies, such as redirecting attention, altering interpretations of events, or comforting self-talk. Characterological portrayals of emotional dysregulation may cause us to miss the range of skills underlying emotional regulation, and the avenues of compensation that exist for skill deficits in specific ecological contexts.

Second, individual differences in emotional regulation are closely tied to the situational demands of a particular setting and the person's emotional goals for coping with those demands. Situational demands and goals for coping are both complexly determined features of emotional regulation. Consider, for example, a preschool child who is angry at a friend who has wronged her. Does effective emotional regulation in that situation involve retaliation, or seeking an adult's assistance, or avoiding the perpetrator, or insisting on the perpetrator's apology, or crying loudly? The answer depends on many features of the specific circumstances, such as the child's power relative to that of the wrongdoer, the values of the adults to whom the child might turn, the behavior of other children in the setting, and features of the broader cultural ecology. Defining a well-regulated emotional response depends, in other words, on the expectable responses of others in that particular situation. The answer also depends on what the child's emotional goals are, that is, the outcomes that are sought by regulating emotional arousal. In some situations, the potential goals underlying the management of emotion can be diverse. In this example, they may include reestablishing a sense of personal well-being, or restoring good relations with the perpetrator, or ensuring that the wrongdoing does not recur, or restoring esteem within the peer group. In other words,

emotional management does not necessarily involve diminishing unpleasant affect (although it may); depending on the child's goals, anger might be enhanced (to stand up to the perpetrator), modulated (to enlist the assistance of friends in self-defense), or blended (to provoke an adult's intervention through salient expressions of distress). The choice of an “optimal” regulatory strategy depends, in part, on the child's goals in relation to the situational demands. Finally, the cultural and sociocultural context of the child's actions also define optimal emotional regulation: depending on the “emotional culture” and the age of the child (among other things), it may be best for the child to express emotion clearly and forcefully, to inhibit any expression of negative emotion, or to convey displeasure in specific, readily-identifiable ways.

It is not just that determining what is a well-regulated emotional response in this situation is a difficult task, therefore, but that this determination is relative to the emotional demands of the situation, the person's emotional goals for coping within that situation, and broader sociocultural influences. Characterological portrayals of individual differences in emotional regulation cause researchers and clinicians to neglect considering the possibility that some children may be effective managers of their emotions in some situations and not in others, or that they may be effective in accomplishing certain emotional goals and not in achieving others, and that the context may limit generalizable inferences concerning that person's emotional regulatory skills in other situations.

This is especially apparent from a developmental psychopathology perspective. Consider again, for example, a young child growing up with a depressed parent facing overwhelming emotional demands in the parent-child relationship. The child's emotional self-regulatory efforts may be oriented toward accomplishing one or more of several emotional goals for coping, such as maintaining a stable feeling of well-being, avoiding further critical reactions or rejection from the parent, defending oneself against unfair accusations or unreasonable expectations, and perhaps also trying to manage the parent's affective state to protect his or her own. These are not only complex goals but they may lead in different directions where they concern the management of emotion, and if the child pursues multiple goals for emotional coping they may actually lead inconsistently in the regulation of emotion. Avoiding interaction with a denigrating parent may help to preserve feelings of well-being, for example, but it does little for self-defense and does not alter the parent's continuing emotional state (in fact, it may exacerbate the parent's animosity). Understanding how individual strategies of emotional management are shaped by the emotional demands of the situation and the child's goals for coping with these demands is a far more complex — but potentially more productive — manner of studying individual differences than is a focus on characterological differences between “well-regulated” and “dysregulated” individuals. In fact, some children may be unable to successfully negotiate the emotional demands

³ It is worth noting that there also exist differences between immediate and long-term emotional goals (cf. Masters, 1991). In other words, emotional regulatory strategies might be enlisted for achieving immediate emotional relief or for reducing long-term emotional demands, and each kind of goal may lead to different regulatory strategies to achieve

of certain settings (like the family), but they may be much more effective in managing the emotional demands of other settings (like the peer group), because of how different close relationships impose different demands, offer different support, and provide different catalysts to the growth of emotional self-regulation.³

Finally, broad characterological portrayals of individual differences in emotional regulation are potentially misleading because they may cause researchers and clinicians to look for the wrong things in evaluating these differences. A child who uses withdrawal or avoidance to cope with certain emotional demands may, in fact, be optimally regulating his or her emotional arousal in light of a certain set of emotional demands and coping goals, even though this might be a very dysfunctional approach in other contexts. Moreover, recall that the offspring of depressed mothers sometimes show cooperative, compliant behavior toward peers (cf. Zahn-Waxler & Kochanska, 1990), which may not reflect optimal emotional self-regulation but rather a very limited emotional repertoire generalized from their encounters with a depressed caregiver. It is important, therefore, to evaluate individual differences in emotional management not in terms of how well that person conforms to intuitive portrayals of a well-functioning personality, but instead in terms of their adaptation to the emotional demands of the situations in which they are studied or observed, in light of their goals for managing emotion in those situations and the sociocultural context. What is "optimal" may sometimes vary for different individuals, in different situations, and with different goals.

Children do, of course, acquire characterological styles of emotional management over time that become increasingly important facets of successful or dysfunctional aspects of their personality functioning. They do so, in part, through the generalization of strategies of emotional self-regulation that have reliably yielded satisfying outcomes in the past, that have been fostered by significant socialization agents and are concordant with individual temperament and other personality features, and that have been helpful regulators in the most emotionally salient situations requiring self-control. In this sense, the emergence of individual differences in emotional regulatory styles is itself a developmental phenomenon that grows out of the unique confluence of situational demands, emotional goals, and

different outcomes. Enlisting anger for purposes of defending oneself may have immediate emotional benefits, for example, but in the context of a troubled family or a hostile opponent this may result in abuse or rejection. Similarly, withdrawing from a feared bully may produce some immediate emotional relief but heighten the long-term risk of additional emotional demands from future teasing or bullying. As these examples suggest, the potential conflicts between immediate and long-term emotional goals are especially enhanced for many of the children who are studied by developmental psychopathologists. The suppression of emotional responses observed in some maltreated young children may contribute to blunted emotional signals that caregivers have difficulty responding to, but for these children it may accomplish the long-term goal of making the child a less likely target of abuse. Thus the dynamic tension between immediate and long-term coping goals may be another important component of our understanding of how individual differences in emotional regulation are forged from the emotional demands of the situation and the person's goals for coping with those demands.

individual personality as these change and develop over time. But it is most helpful to understand this emergence in terms of the contexts that shape and support emotional regulatory styles and their adaptive, or maladaptive, generalization to other contexts, demands, and goals to appreciate their place within personality functioning (see Richters & Cicchetti, 1993, for a somewhat similar argument with respect to child conduct disorders). Moreover, we might expect to find predictable change as well as individual stability in these styles of emotional regulation as individuals develop new skills of emotional management that are suited to the new emotional demands they encounter in the changing ecologies of their life experience. This points, of course, to the importance of regarding the development of emotional regulation in the broader context of personality development — a topic about which enticingly little is known at present!

Conclusion

Taken together, the study of individual differences in emotional regulation is certainly far more complex than it first appears, partly because it relies on a careful evaluation of the functional role of emotion in the contexts in which it is expressed. This requires, in turn, a descriptive account of the development of skills of emotional regulation — a task that has only recently begun. As researchers proceed with doing so, however, we predict that at least two things will happen. First, we will begin to see that individual differences in emotional regulation are forged from the specific circumstances in which a child is growing up, and that individual patterns of compensation and specialization will increasingly characterize our thinking about these differences. There are already enticing clues in the developmental literature (especially concerning attachment processes) that this may be true, and further elucidation of how such individual compensatory processes are related to emotional management is needed. Second, our ability to conceive of processes of emotional regulation as closely linked to the growth of self-understanding and of social cognition will grow as we increasingly regard emotional regulation as a function, in part, of the child's construction of these circumstances in which emotion is regulated. As we have seen, emotional regulatory capacities are a derivative, in part, of the child's understandings of emotion, and of self.

With respect to developmental psychopathology, we are optimistic that the developmental study of normative processes of emotional regulation proceeding hand-in-hand with the study of emotion and its management in atypical populations will yield insights to both fields. Indeed, for us, the provocative complexity of emotional regulation has been most clearly apparent from investigations of at-risk and psychopathological populations. From studies of depressed parents, for example, it is clear that a constellation of caregiving influences — including the parent's sad affect, inaccessibility as an emotional support, modeling of self-critical self-talk and debilitating attributions, and use of responsibility-enhancing discipline techniques — contribute to the at-risk status of offspring. But the conse-

quences of this home environment are manifested not just in the predictable signs of early depression and deficient emotional management that we would expect, but also in cooperative, prosocial initiatives that suggest that compensatory adaptations occur in young children with a depressed parent. We believe that similar processes of emotional adaptation in the context of close relationships occurs in typically-developing children also, and this view is supported by the findings of attachment research as well as developmental psychopathology investigations that portray families as laboratories in emotional socialization (cf. Radke-Yarrow and Zahn-Waxler, 1993). In addition, our appreciation of the alternative modes of emotional regulation that children typically develop — whether they entail attentional redirection, access to alternative sources of emotional support, choosing alternative response options, or altering construals of emotionally-pertinent information — suggest different means of intervening to assist children who experience emotional regulatory difficulties owing to psychopathology. To be sure, the problems of childhood depression, autism, anxiety disorder, conduct disorder, and maltreatment that we have surveyed in this chapter are certainly not reducible to problems of emotional management because of the complex etiologic factors associated with each disorder. But to the extent that the challenges encountered by children in each case include coping successfully with salient emotional reactions, an understanding of the normative developmental pathways that lead to emotional regulatory skills can contribute helpfully to treatment.

The studies reported in this chapter underscore, therefore, what developmental researchers and clinical investigators already know: that continued study of the development of emotional regulatory processes and their application to issues of developmental psychopathology is compelling because of the potential insights it can contribute to our understanding of the diverse facets of emotional growth. Because emotional regulation is such an important component of the meaning of emotional experience to developing individuals in typical and atypical populations, it merits a central place in the study of emotional growth.

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