1-1-2009

Infant social and emotional development: The emergence of self in a relational context

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New York, NY 10001
212-431-9800
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www.guilford.com

CHAPTER 5

Infant Social and Emotional Development

Emerging Competence in a Relational Context

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Perhaps no aspect of developmental change is more salient to parents than their young child's social and emotional behavior over the first years of life. The emergence of the first social smile is anticipated eagerly, and parents worry about the meaning of their infant's cries. Emotion and socially relevant words dominate parents' early descriptions of their young child's personality: "He's such a happy baby," "He's so shy," or "She just loves people." The fascination with development in these domains is by no means limited to parents. The study of the emotional and social experience of infants and young children has a long and rich tradition in the philosophical and empirical literatures (e.g., Aristotle, 1941; James, 1884). Although often studied as separate domains, it is clear that within the child, social and emotional developments are fundamentally intertwined. For example, as the young child's ability to differentiate emotions unfolds, there is an increasing capacity to rely on the emotional expressions of others to determine how to respond to a certain situation. Consider the glance of a 1-year-old child toward his or her mother when first meeting someone new. This new "use" of the other to navigate a social situation (often considered a social advance) is entirely dependent on the young child's ability to differentiate and respond to another's affective expression (which could be considered an emotional advance).

Changes in each of these domains across the first years of life are dramatic. The newborn infant arrives with limited capacity for self-regulation; emotion expressions are most likely reflective of biologically based signals, evolutionarily designed to engage the other in providing protection and care, and the infant still depends on the other to respond to his or her physical and emotional needs. In just a matter of months the infant's emotional experience is markedly more complex. He or she can engage others in interaction, express delight in face-to-face games, convey feelings of sadness or anger through differentiated facial expression, and strategically use his or her parents' emotional expressions to determine how to respond to a given situation. This rapid developmental progress is not limited to infancy; the toddler begins to show signs of responding empathically to others, and with increasing self-awareness shows evidence of more complex "self-conscious" emotions such as shame, embarrassment, and guilt. Earlier social interactive experiences are internalized, and the young child uses the day-to-day lived experience of

social and emotional interactions to guide responses to current interactions with others.

Across all of these developments what emerges is a move toward increasing social–emotional competence in the infant. With development the young child evidences increasing capacities for emotion regulation and coping, more complex affective expressions and understanding, and more sophisticated interactions with important others in his or her social world. In the context of facilitative environments the young child's trajectory of greater competence is accompanied by increasing feelings of self-efficacy, security, and trust.

Our understanding of infant social–emotional development is informed by both normative developmental processes as well as by development in contexts of risk. A common goal of many infant mental health interventions is to support families and young children in maintaining, returning to, or developing a trajectory of social–emotional competence. Thus we aim to provide a foundation for the chapters that follow, with an emphasis on the normative processes involved in social and emotional development and implications for infant mental health.

THEORETICAL MODELS FOR SOCIAL AND EMOTIONAL DEVELOPMENT

Several theoretical models explaining developmental process in the social and emotional domains have been suggested. The *maturational model* is perhaps the most basic, and from this perspective individual development represents an innate unfolding of preset maturational time points (Gesell & Armatruda, 1947). Higher-order capacities are seen as the result of growth of brain and physical body functioning. The developmental progression of emotional expressions, for example, may be seen as reflecting this type of "unfolding timetable."

Broader integrative models address the individual in context. Bronfenbrenner's (1979) conceptualization of the child's experience in terms of a widening series of contexts that mutually influence one another, the *ecosystem model*, emphasizes both immediate environments (e.g., parent–child interactions) that directly impinge on children's daily lived experience, as well as more distal contexts (e.g., institutions) that don't directly interact with the child but influence development indirectly (e.g., child care policies, cultural values). These contexts are likely to shape many of the aspects of infant social and emotional development.

Transactional models consider "the interplay between child and context across time, in which the state of one affects the next state of the other in a continuous dynamic process" (Sameroff, 1993, p. 4). This perspective has clear implications for social and emotional development. For example, as parents respond to their child's emotional displays, their reactions (e.g., perhaps frustration with a difficult-to-soothe infant) shape the quality of the infant's response to them (e.g., more distress as the infant reacts to parents' frustration). Both partners in the infant–parent dyad shape each other's social and emotional experience in a dynamic, ongoing fashion.

Current research in the biological domain has also underscored the complex interactions between biological (genetic) disposition and environmental contexts. A *gene–environment interaction model* emphasizes the ways in which individuals' biological propensities interact with environmental characteristics to shape the course of development. For example, parental caregiving can alter the social developmental course of children who have genetic vulnerability for shy/inhibited temperamental traits (Fox et al., 2005).

Several more specific models are relevant to a consideration of social and emotional domains. *Attachment theory* (Bowlby, 1969/1982) has contributed enormously to current conceptualizations of infant social development; the formation of attachment relationships is considered the predominant organizing force of infant and young child social development. Early interactions with care providers both promote survival and form the basis for later, more complex representations of caregivers as available and responsive. Individual differences in attachment security are evident in the ways the young child can use the attachment figure as a secure base, and these differences have implications for social and emotional development in a broadening array of contexts.

Temperament models emphasize individual differences, typically viewing young children as varying in certain characteristics that both shape their experience of the environment as well as their responses to it. Temperament models often emphasize biologically based individual differences, though current research suggests a more complex interplay with the environmental context (e.g., Fox et al., 2005). Whereas some features of temperament are less apparently related to social and emotional development (e.g., activity level), other features are inherently linked (e.g., emotionality and mood).

It is likely that the impact of a child's emotionality on social functioning depends on his or her skills at emotion regulation (Lemerise & Arsenio, 2000). Most *emotion regulation models* emphasize the young child's abilities to control, modify, and manage aspects of his or her emotional reactivity and expressivity. Individual differences in emotion regulation are often considered to be related to differences in the caregiving context (Calkins & Hill, 2007), though clearly children who vary in temperament also face different tasks in regulating their emotions (Lemerise & Arsenio, 2000; Thompson, 1990). For example, a child with a positive disposition and a high threshold for distress has a very different regulatory challenge than one who is more prone to intense and persistent negative emotions.

TRANSITIONS IN SOCIAL AND EMOTIONAL DEVELOPMENT

The first years of life involve dramatic change across multiple domains. Developments in each of these domains, however, are not evenly distributed across time. Despite some apparent underlying continuity and gradual unfolding, there are also periods of rapid change and reorganization, sometimes referred to as biobehavioral "shifts" or "transitions" (Davies, 1999; Emde & Buschsbaum, 1989). Although earlier stages involved the unfolding and emergence of certain capacities, during these periods of reorganization new capacities become integrated and dominant (Goodlin-Jones, Burnham, & Anders, 2000). We outline here several prominent developmental shifts within the social and emotional domains.

2–3 Months

Most of the newborn infant's behavior is accounted for by endogenous rhythms and internal states. Following the 2- to 3-month shift, and corresponding to rapid neurological changes, much more of infants' daily life is spent in wakefulness, and infants are more focused and better organized (Bowlby, 1969/1982). This shift has clear implications for social interactions and engagement, and it is often most readily apparent to parents in terms of their infant's emotional expressions and social responses. By 2 months, most infants have begun to display social smiles, and about 2 weeks later, there is evidence of cooing vocalizations in response to social encounters. These advances typically elicit delight in parents and other caregivers. Parents begin to experience their infant as having more responsiveness and more consistent characteristics.

7–9 Months

This period involves a rapid increase in the differential response of the infant to familiar, primary caregivers. The infant clearly discriminates between care provided by the attachment figure and that provided by less familiar others. Thus this period has been coined the "onset of focused attachment" (Emde & Buschsbaum, 1989). Infants who previously did not protest separation may now cry when the parent leaves the room. Stranger anxiety becomes prominent. Advances in memory and cognition permit more anticipation or expectation regarding social routines and interactions. For example, whereas the younger child may have laughed on the completion of an interactive game, during this period infants may laugh in anticipation of the mother's return during the peek-a-boo game (Lieberman, 1993; Saarni, 1999).

18–21 Months

This period is characterized by the emergence of self-awareness and increases in symbolic representation. Infants display more independence, and social interactions are increasingly facilitated by their emerging symbolic capacity (e.g., language). Social referencing is prominent; the child under-

stands different affective expressions in the parent and uses them to guide responses to novel situations (Feinman, Roberts, Hsieh, Sawyer, & Swanson, 1992). In addition, toddlers increasingly use affective expressions instrumentally; for example, a child may seem to smile or pout to "get her [or his] way." Infants remember past events and sequences and have formed representations based on repeated events—which in turn guide later behavior in new contexts. With increasing awareness of separateness comes corresponding increases in mood swings, secure base behavior, and sense of vulnerability (Lieberman, 1993; Mahler, Pine, & Bergman, 1994). During this time the toddler begins to display more self-conscious emotions—those that seem to require some sense of awareness of self and other, including feelings of shame, guilt, embarrassment, and empathy (Lewis, 2000).

EMOTIONAL DEVELOPMENT

From the first weeks of life emotional reactions help to organize the infant's responses to the environment and function as powerful communicative signals. Emotional processes reflect changes in physiology, cognition, and social functioning, and in turn impact each of these domains. Parents direct a great deal of activity toward helping the infant to organize emotional reactions—either by amplifying displays of desired emotions or through efforts to divert or redirect unwanted ones.

Two primary theoretical perspectives are employed in the study of emotion: *structuralist* and *functionalist* approaches. Structuralists focus on the underlying processes that constitute emotion (e.g., what are the physiological components of anger?), as well as the developmental unfolding of emotion experience (i.e., what emotions can a child experience at a given age?) and are consistent with maturational models (Izard & Malatesta, 1987). Izard and colleagues have identified a group of "primary" or "discrete" emotions—interest, joy, surprise, sadness, anger, disgust, contempt, fear, shame, guilt, and shyness—that are considered to reflect more or less universal emotion expressions and related recognition abilities. Consistent with this approach, a great deal of research has focused on developing a comprehensive taxonomy for identifying infant affective expressions, when they emerge, and how they evolve over the course of early development.

Functionalists, in contrast, emphasize the ways in which emotions serve as "processes of establishing, maintaining, or disrupting the relations between the person and the internal or external environment, when such relations are significant to the individual" (Campos, Campos, & Barrett, 1989, p. 395). Emotions, from this perspective, are defined in terms of their function—that is, what they do. In this way, emotions may regulate other psychological and behavioral processes. For example, feelings of fear in young toddlers may result in their running to a parent to seek comfort, whereas feelings of comfort may allow them to reengage in a play activity.

Although there is controversy regarding whether certain discrete emotions exist from earliest infancy as innate, universal, biologically determined phenomena, it is generally agreed that emotional development involves increasingly more complex interactions between emotional, cognitive, physiological, and social–environmental systems (Bell & Wolfe, 2004; Fogel et al., 1992). We thus begin with a description of research on the unfolding of emotion expression across the first years of life, followed by an examination of the interpersonal contexts of infant emotional development.

Development of Emotion Expression

Newborns are capable of a more limited range of discrete emotional expressions, but with development, display a broader range of emotions and grow more responsive to a wider variety of eliciting conditions. There are at least three early appearing primary emotions, that is, those evident from the earliest weeks and months of life: *distress*, *positive/joy*, and *interest* expressions. Present at birth, distress reactions differentiate over time into more refined discrete emotions, including sadness, disgust, fear, and anger (Izard & Malatesta, 1987). For example, general distress is the infant's primary response to inoculation at 2 months, but by 19 months anger is predominant (Izard, Hembree, & Huebner, 1987). Positive emotion expressions, including smiles, typically emerge by 2–3 months, with laughter often

apparent by 3–4 months. More complex affective blends also emerge over the first year of life; for example, one study of 6-month-olds revealed indicators of jealousy, indexed as diminished joy, heightened anger, and increased negative affect, when the attention of a preferred caregiver was directed to another (Hart, Carrington, Tronick, & Carroll, 2004).

With the onset of self-awareness in the second year of life many secondary or "self-conscious" emotions become evident (Lewis, 2000), including embarrassment, shame, guilt, and pride. For example, Barrett, Zahn-Waxler, and Cole (1993) observed two approaches taken by 2-year-olds after they believed that they had broken the experimenter's "favorite doll." One group of children tried to fix the situation (the "amenders"), and a second group sought to avoid the experimenter, usually by smiling with their faces averted (the "avoiders"). The researchers suggest that the amenders were demonstrating behavior consistent with feelings of guilt, whereas avoiders were presumably feeling something akin to shame.

Many social, cultural, and biological factors are likely to determine the types of reactions an individual child will have to specific emotion-evocative situations. For example, guilt may be more acceptable in many Western cultures (Walbot & Scherer, 1995), whereas shame is often perceived as more aversive and disturbing. Many collectivistic cultures, in contrast, view shame as an emotion that helps to facilitate appropriate social bonds and compliance (Cole, Tamang, & Shrestha, 2006; Kitayama, Marcus, & Matsumoto, 1995).

Infant Sensitivity to Others' Emotional Signals

Emotional expressions are critical social signals, and thus not surprisingly infants become attuned and responsive to the emotional signals of others at a very young age. By 2-months infants are capable of discriminating among distinct human expressions (e.g., Oster, 1981), including the intensity levels of some expressions. This early capacity for discrimination does not, however, imply "understanding" others' expressions; such an understanding involves a process that continues to unfold across the first several years of life. Corresponding to developments in the cognitive domain, the 8- to 9-month-old infant begins to appreciate that others' emotional messages pertain to specific objects or events. *Social referencing* describes the infant's ability to use others' expressions to help shape his or her own responses to the environment. This ability is well established by 12 months of age (Feinman, Roberts, Hsieh, Sawyer, & Swanson, 1992), but also increases in complexity over time. For example, 18-month-olds appear to engage in "emotional eavesdropping," whereby they use information from interadult emotional expressions in order to determine whether to approach an object (Repaccholi & Meltzoff, 2007).

Beyond the ability to *detect* the emotional expressions of others, infants also develop *expectations* regarding others' affective displays during social engagement. Peek-a-boo games initiated by adult caretakers tap the infant's ability to expect the adult's smiling face following a period of disengagement. Researchers have studied these expectations through the use of procedures designed to interrupt "usual" interactive contingencies. For example, the Still-Face Procedure (Tronick, 2003) is a structured, adult–infant interactive task that typically includes (1) a period of face-to-face free play; (2) a period during which the adult holds a still, emotionally unresponsive expression; and (3) a reengagement period during which the dyad returns to face-to-face play. Between 2- to 9-months-of-age infants display heightened negative affect, and corresponding physiological arousal, during the still-face phase, presumably because they recognize that this disruption in affective exchange is discrepant and undesirable (Rosenblum, McDonough, Muzik, Miller, & Sameroff, 2002; Tronick, 2006; Weinberg & Tronick, 1996).

As emotional detection and expectation abilities develop, the capacity for empathic *responding* also reveals developmental changes in the young child's sensitivity to others' emotional displays. For instance, the process of emotional "contagion" (e.g., when other infants in a day care center start to cry after one starts crying) is generally considered an infantile "preempathic" capacity (Saarni, 1999). Later in development, toddlers have been observed to display more advanced empathic responding, reflect-

ing a higher-order cognitive capacity that permits better perspective taking with others. Expressions of concern (e.g., a worried look, patting, asking "Baby okay?") or efforts to generate hypotheses about what has caused another's distress (e.g., asking "Baby owie?") suggest an emerging sensitivity to the distress of others. This growing ability for empathy is likely to have a basis in how others have responded to infants' own displays of distress. For example, abused toddlers make fewer empathic gestures but are more personally upset by, or aggressive toward, distressed peers (Main & George, 1985), whereas infants whose mothers were more responsive during the first year of life show more empathic concerned attention and fewer personal distress reactions to others at 18 months (Spinrad & Stifter, 2006).

Temperament, Genes, and Emotions in Infancy

Beyond the changes that occur across development, children differ in their emotional "makeup," and these differences are often described in terms of temperamental variations. For example, highly reactive, irritable babies are frequently described as "difficult," whereas infants more prone to positive emotions and less reactive are described as "easygoing." Although temperament includes more than emotions, emotionality is considered to be an important component. In this chapter we consider another related domain, emotion regulation, separately in a later section.

Consistent with the gene–environment interaction model, temperament has been understood as a biologically based set of behavioral tendencies that influence how an individual will approach, respond to, and interact with the larger social world (Rothbart & Bates, 1998). In defining temperament some researchers have emphasized a narrow set of dimensions, (e.g., activity level, emotionality, and socialibility; Buss & Plomin, 1984), whereas others argue for a broader array (e.g., proneness to distress and fear, soothability, attention span, persistence, and positive emotionality; Rothbart & Derryberry, 1981; Thomas & Chess, 1977). However, there is general consensus that emotional reactivity is a critical feature of temperament. *Reactivity* refers to the excitability or arousability of the individual's response system (Rothbart & Derryberry, 1981), such as how quickly the infant expresses distress in response to an unfamiliar stimulus, how intense the distress is, and how long the infant takes to recover.

Over the past several decades studies have yielded mixed evidence regarding the stability of temperamental features over time. Evidence for modest stability includes the seminal longitudinal research of Thomas and Chess (1977), who investigated several temperamental dimensions in infancy and defined groups of "easy," "difficult," and "slow-to-warm" children, with the "difficult" group (approximately 10% of infants) showing high levels of negative mood, irregularity in body functions, and slow adaptation to the environment. Subsequent longitudinal research demonstrated that those children who presented with high levels of negative emotional behaviors early in life, indexed as negative affect and aggression, had more behavior problems in middle childhood (age 5) and adolescence (ages 14–17). Yet while early childhood negative affect and aggression were significantly intercorrelated (r = .63), only those children who displayed aggression at age 3 were more aggressive in middle childhood, and in turn had more behavior problems in adolescence (Lerner, Hertzog, Hooker, Hassibi, & Tomas, 1988). Others have studied behaviorally inhibited infants (approximately 15% of a larger sample) who exhibit extreme fear and inhibition when exposed to novelty (e.g., Calkins & Fox, 1992; Kagan, Reznick, Clarke, Snidman, & García-Coll, 1984); results indicated modest stability from infancy to middle childhood (approximately 30% remained inhibited; Fox, Henderson, Rubin, Calkins, & Schmidt, 2001). Furthermore, behavioral inhibition in infancy proved to be a significant predictor of anxiety disorders, particularly social anxiety in later childhood (Kagan, Snidman, McManis, & Woodward, 2001; Schwartz, Snidman, & Kagan, 1999).

Although assessment of temperament is often based on behavioral observations, more recent studies reflect advances in biological research. Individual differences in infant temperament are currently thought to originate in genetic variations underpinning behavioral, neuroendocrine, and physiological regulatory processes (see Propper

& Moore, 2006, for review). The human genome consists of approximately 30,000 genes that code essentially all structures of the human body and also regulate functioning across these structures. Genes come in variations of size, referred to as *alleles*, and these different alleles often translate into variations in gene activity level (i.e., "gene expression"). Current research explores associations between alleles of a given gene and temperamental vulnerability.

Recently, genes coding for the activity level of two receptors in the brain—the dopamine D_4 receptor (DRD4) and the serotonin transporter receptor (5-HTTLPR)—have been identified as underlying mechanisms for some key temperamental variations, specifically, to individual differences in approach behaviors and inhibition, attention, and novelty seeking (Auerbach, Benjamin, Faroy, Geller, & Ebstein, 2001; Ebstein et al., 1998; Kluger, Siegfried, & Ebstein, 2002). For example, infants possessing the short versus long allele of the DRD4 gene are rated by their mothers as higher in negative emotionality at 2 and 12 months of age, and infants with the short allele of the serotonin transporter gene ("short" 5-HTTLPR allele) have been found to display heightened fear and behavioral inhibition (Auerbach, Faroy, Ebstein, Kahana, & Levine, 2001; Auerbach et al., 1999). Research also suggests an additive effect across DRD4 and 5-HTTLPR; infants with short alleles on both genes display more negative emotion reactivity than infants who carry only one risk allele (Auerbach, Faroy, et al., 2001; Auerbach et al., 1999).

While these risk alleles appear to play a direct role in infant temperamental variations, current research on gene–environment interactions underscores the critical influence of early social experience on gene functioning. Environmental factors can either ameliorate or potentiate genetically based temperamental risk (Caspi et al., 2003; Fox et al., 2005; Kaufman et al., 2004), and this finding holds important implications for intervention. For example, children who were 5-HTTLPR risk carriers and had experienced childhood abuse were more likely to develop depression later on, but only when their caregivers were themselves under heightened stress (Kaufman et al., 2004). Similarly, behaviorally inhibited infants who were carriers of the 5-HTTLPR risk allele were at increased risk for behavioral inhibition in middle childhood only when their caregivers reported low social support (Fox et al., 2005). Finally, a recent study found that although maternal insensitivity was associated with later externalizing behavior, this was only true in the presence of infant DRD4 genetic risk status. Insensitive parenting coupled with infant genetic vulnerability led to a sixfold increase in child aggressive behaviors in the preschool years (Bakermans-Kraneburg & van IJzendoorn, 2006).

These gene–environment interactions are consistent with a transactional perspective and have been described in the "goodness-of-fit"-model (Seifer, 2000), which argues that the consequences of temperamental vulnerability are dependent on the way the infant's temperament interacts with the demands of the specific environment. Parents who understand and sensitively respond to their children's behavior, even when the behavior is considered "difficult," may help their children learn to regulate their temperamental challenges more effectively, thus preventing later development of behavioral problems (Ghera, Hane, & Malesa, 2006; Teti & Candelaria, 2002). In contrast, parents who react to infant difficulty with harsh parenting or reduced sensitivity increase their children's risk for later maladjustment (Bates, Pettit, & Dodge, 1995; Belsky, Hsieh, & Crnic, 1998; Crockenberg, 1981).

Taken together, these findings suggest that temperamental "difficulty" does not reside within the individual alone, but is significantly shaped or modified by the environmental context. As suggested here, one important environmental influence involves the parent's ability to sensitively respond to the child's emotions as they unfold over the course of development.

Parental Responses to Infant Emotions

The impact of parenting on infant emotional development and expression has been studied from a number of different perspectives. Multiple aspects of infant emotional behavior, including expressiveness, self- and other-directed emotion regulatory behaviors, and soothability, have been linked, for example, to parents' own emotional expressiveness (e.g., Garner, 1995), awareness of emotional states (Gergely & Watson, 1996), and emo-

tional dysregulation (e.g., depression) (Field, 1994).

From early infancy parents perceive a wide array of emotions in their young children, and these attributions of emotion can have important implications, as evidenced by research on how parents' own mental health colors the appropriateness of emotions they perceive (Dix, 1991; Leerkes & Crockenberg, 2003). For example, mothers at risk for less secure attachment relationships with their infants make fewer benign, and more hostile, attributions regarding ambiguous infant facial expressions (Rosenblum, Zeanah, McDonough, & Muzik, 2004).

Across parent–infant dyads parents' emotional exchanges with their infants tend to follow meaningful patterns of interaction. Stern (1985) has written extensively about his observation of mother–infant emotional exchange, noting that the affective interactions have a dynamic "shape" to them, and that patterns of engagement vary across mother–infant dyads. Infant mental health, Stern suggests, is strongly affected by the synchrony of the interaction.

Indeed, asynchronous interaction, observed when one of the partners is not sensitively attuned and responsive to the cues of the other, has been demonstrated to negatively affect infants' early emotional development (Malatesta, Culver, Tesman, & Shepard, 1989; Tronick & Weinberg, 1997). Tronick and Cohn (1989) observed that although the coordination and synchrony of mother–infant dyads increased from 3 to 9 months, they typically spent more time in "miscoordinated" or "asynchronous" states than in synchronized matching states. These results, consistent with a mutual regulation model (Tronick, 2006), suggest that the *process* of disruption and repair may be a critical part of the developmental process. For example, Rosenblum and colleagues (2002) observed that some mothers and infants used positive affect (e.g., peek-a-boo games) to "reconnect" following the interactive disruption imposed by the Still-Face Procedure, and this was associated with indicators of more enhanced relationship security.

The process of emotional exchange has been proposed to play a central role in the infant's emerging ability to recognize and regulate his or her own emotional states (Lewis & Ramsay, 2005). Gergely and Watson (1996), for example, provide a compelling account of the role of maternal affective mirroring, suggesting that mothers' ability to accurately perceive, mentally transform, and then display a "marked" exaggerated response to the infants' emotional displays is related to the infants' own ability to internalize and understand emotional experience. Disturbances may arise when parents display a purely mirrored form of infants' distress without the accompanying "marking." For example, parents whose emotion regulation style is characterized by a tendency to overactivate emotional arousal may simply mimic their infants' emotional expression, without processing and transforming the emotion. This "pure mirroring" may escalate infants' emotional state because it fails to provide the necessary containment and assistance in coping with the experienced emotion.

With development language plays an increasingly important role in young children's understanding of emotion (Garner, 2003; Meins, Fernyhough, & Wainwright, 2003). Verbal acknowledgment of mental states, which could be considered a form of verbal mirroring, is increasingly used in place of facial mirroring to facilitate infants' emotion understanding. To illustrate, in a recent study children whose mothers used more mental-state language with them at 15 and 24 months, for example, making reference to child desire (e.g., "You *want* that rattle?") or emotion (e.g., "That *surprised* you!"), performed better on structured emotion understanding tasks (Taumoepeau & Ruffman, 2006).

Across early development, parents and caretakers are essential in helping infants express and manage their developing emotions. Through these affective exchange processes, disruption–repair sequences, and physical and verbal mirroring, infants begin to internalize emotion awareness, understanding, and early emotional self-regulation abilities.

Emotion Regulation

Child emotion regulation is increasingly recognized as a core component of social–emotional competence, functional in almost all of a child's transactions with the world (Calkins & Hill, 2007; NICHD Early Child Care Research Network, 2004). As children move into the preschool years they are

largely expected to control their emotions in the service of their own, and society's, goals (Sroufe, Egeland, Carlson, & Collins, 2005), and indicators of emotional dysregulation are often the basis of clinical referral.

Children who are well regulated (both in emotion and behavior) are better able to adapt to contextual and situational changes in the environment in a flexible and spontaneous manner, as well as to delay their reactions (e.g., exert control) when appropriate (Eisenberg et al., 2001). From a developmental neuroscience perspective, emotion, cognition, and the developing neural mechanisms of regulation are dynamically linked and work together to help the infant and young child process information and engage in emotion-regulatory action (Bell & Wolfe, 2004), a process that unfolds from infancy into the preschool years and beyond (Kopp, 1989).

Important reviews have addressed the controversial topic of how to best define and measure emotion regulation (see Cole, Martin, & Dennis, 2004). Many of these definitions, however, share a perspective that emotion regulation processes include behaviors, skills, and strategies—conscious or unconscious, effortful or automatic—that modulate, inhibit, or enhance emotional experiences and expressions (Calkins & Hill, 2007).

Although both positive and negative emotions can be regulated and used to achieve goals (e.g., smiling to enhance interactive repair, or anger to eliminate a barrier), child emotion regulation as a dynamic process is often most readily observed in contexts of challenge that afford negative emotions (Cole et al., 2004). When confronted with challenging situations, the infant or young child can utilize a variety of behavioral emotion regulation strategies to cope with heightened arousal, including distress reactions, avoidance, and self-comforting behaviors; a repertoire of available strategies that increases over time (Calkins & Hill, 2007; Kopp, 1989; Thompson, 1990). For example, in early infancy the capacity for gaze aversion and motor control allows the infant to shift attention away from a negative event (e.g., something that is overwhelming) to something more positive (e.g., a toy) and thereby modulate negative affect (Calkins, 2004; Johnson, Posner, & Rothbart, 1991; Kochanska, 2001). Parents can assist in this process through their efforts to divert the infant's attention (Crockenberg & Leerkes, 2004; Johnson et al., 1991). By the end of the first year infants are more active in their attempts to modulate distress. They are increasingly able to plan behavior and can act intentionally to signal others to assist them in modulating their affective states. During the second year of life infants move from more passive to more active methods of emotion regulation, and although caregivers continue to play an important role, toddlers are increasingly able to use specific strategies to manage different affective states.

Challenging events may elicit more or less effective regulation of the distress across infants. For example, Lewis and Ramsay (2005) observed 4- and 6-month-old infants' anger and sadness in response to situations that prevented them from achieving a desired goal. Infant displays of sadness were related to greater stress hormone reactions (i.e., cortisol production), whereas displays of anger were not, suggesting a more adaptive role of anger. Infant anger in response to goal blockage is often associated with attempts to overcome the obstacle (Lemerise & Dodge, 2000). In contrast, sadness may reflect infants' perceived lack of control over the situation, or perception of task failure, without corresponding coping to facilitate adaptive physiological regulation (Lewis & Ramsay, 2002, 2005).

The capacity for effective emotion regulation is often considered to have strong social origins, based in the early interactions between parent and infant (Calkins & Hill, 2007; Cole, Teti, & Zahn-Waxler, 2003; Kopp, 1989; Stern, 1985; Stifter, 2002; Thompson, 1990). For example, less dyadic synchrony between mothers and their 3-month-olds in the Still-Face Procedure is associated with less effective physiological regulation of the challenge task (Moore & Calkins, 2004). Among 2-year-old children negative maternal behavior is related to poor physiological regulation, less adaptive emotion regulation, and noncompliant behavior (Calkins, Smith, Gill, & Johnson, 1998). In contrast, maternal positive guidance is associated with 18-month-old toddlers' effective use of distraction and mother-oriented regulating behaviors during a frustration-inducing task (Calkins et al., 1998), and

6-month-olds show less distress when their mothers respond contingently to their efforts at self-soothing (e.g., gaze aversion; Crockenberg & Leerkes, 2004).

Ultimately, many factors, including the social environment, maturational processes, and temperament, influence emotion regulation capacities during the first years of life. Each child's capacity for effective emotional self-regulation develops within a relational context and becomes a core element of the child's self-regulation and social–emotional competence.

Infant Mental Health Implications

Given the vast number of expressive interchanges that occur between parent and infant during the first months of life (Magai, 1999), the influence of parents' emotional engagement with their infant is likely to hold significant consequences for infant emotional development. Thus, from an infant mental health standpoint, it is critical to asses the parent–infant emotional "dance" (Stern, 1985), and to observe both the process of affective synchrony as well as the process of repair following disruptions (Rosenblum, Dayton, & McDonough, 2006; Tronick, 2006).

The emotional tone of early experience provides a framework within which the infant develops his or her own affective repertoire. Thus, a parent's reduced capacity, for example, in the case of untreated depression or anxiety, to engage in emotionally positive interaction with the infant may take on an especially important role (Kogan & Carter, 1996). Although the identification and assessment of negative emotionality, or hostile-negative dyadic interactions, is often the focus of infant mental health intervention, research indicates that the *absence of positive affect* may be an even more important harbinger of problems in the emotional domain (Rosenblum et al., 2006).

Current research also underscores the importance of recognizing that the challenges of parenting are different for different groups of infants. For example, parents of temperamentally "difficult" infants face greater challenges in soothing their children, and their children appear to be more sensitive to lapses in their caregiving. Leerkes and Crockenberg (2003) suggest that mothers who are successful at calming their temperamentally difficult infants may develop higher degrees of sensitivity than either mothers with temperamentally "easy" infants, or mothers who have difficult infants but are unsuccessful at soothing. When parents view their temperamentally challenging infants as sootheable, they display higher levels of sensitive caregiving (Ghera et al., 2006). Thus helping parents to recognize these challenges as surmountable is likely to have positive impacts.

Taken together, these studies suggest that both parents and infants play an important role in the development of infant emotion regulation and social–emotional competence. In the following section we focus more fully on the social context within which these emotion regulation capacities emerge and develop.

SOCIAL DEVELOPMENT

Infants are born into complex social networks and enter the world with strong propensities for forming social–affective bonds with others. From the first primary attachment relationship to increasingly complex social relations with extended family, peers, and others, the young child is immersed in a world of social relatedness.

Social developmental milestones across the first 3 years are strongly rooted in cognitive and neurological advances, and are embedded in the broader social context. Table 5.1 provides an overview of this developmental process, highlighting central tasks, the context of these advances, and the young child's corresponding social developmental milestones. The social context of these advances progresses from primarily the parent–infant relationship to include other significant relationships, including peers, extended family, or child care relationships. The coordination of these advances initially reflects primarily parent-led sequences, but with time incorporate greater infant initiative and back-and-forth interactions. With continued development these interactive encounters reflect the establishment of goal-corrected partnerships, wherein the infant and adult negotiate their exchanges with an awareness of each other as separate, yet interdependent, selves.

TABLE 5.1. Social Developmental Tasks, Contexts, and Milestones across the First 3 Years of Life

Developmental task	Social context(s)	Coordinated behaviors	Select milestones	Ages
Regulation	Primarily the parent–infant relationship	Parent assists the infant in regulating sleep, feeding, distress, and arousal	Developing attentiveness to the social world Increasing coordination of parent–infant interactions	0–3 months
Emerging sociability	Primarily the parent–infant relationship	Parent-led system of coordinated engagement with the infant Face-to-face interaction with increasing mutual gaze Parent language and verbalization toward infant	Increased eye-to-eye contact Emergence of social smiles Social vocalizations	2–3 months
Reciprocal exchange	Parent–infant and close family relationships	Back-and-forth exchanges between infant and others	Infant increasingly responsive to social bids	3–6 months
Infant initiative	Parent–infant and close family relationships	Infant initiation of play with others, as well as an increasing ability to direct activities Infant embellishes on others' initiations	Evidence of intentionality and goal direction—the infant shows a preference for certain activities and leads attention Delight in games (e.g., peek-a-boo)	6–9 months
Onset and establishment of focused attachment	Parent–infant relationship	Parent provides secure base Infant relies on parent for comfort and protection during times of distress or perceived threat Infant explores the environment in the presence of caregiver	Stranger anxiety, separation distress Emergence of person permanence (i.e., ability to keep the parent in mind even when he or she is not present) Secure base behavior	7–18 months

Emergence of joint attention	Broader social context, including parents, family, peers, care providers	Infant displays an awareness of others' point of view Infant seeks others' facial expressions in order to understand new situations	Imitative learning Social referencing Expresses affect instrumentally or purposefully	9–12 months
Self-assertion and independent self-concept	Broader social context, including parents, family, peers, care providers	Infant has an awareness of self Infant determines and selects his or her own goals and intentions apart from parents	Mirror self-recognition Use of "no" and temper tantrums Increasing autonomy Egocentric reasoning	18–24 months
Recognition, continuity, and emergence of a goal-corrected partnership	Broader social context, including parents, family, peers, care providers	Child displays an emerging awareness that the caregiver's intentions are separate from his or her own The coordination of sequences increasingly reflects exchanges between two autonomous yet interdependent individuals	Emerging recognition of the permanence and continuity of primary relationships Increasing ability to negotiate and coordinate behavior in terms of the goals of the other Empathic responding	18–36 months
Establishing peer relationships	Siblings, peer relationships	Child engages in meaningful interaction with siblings and peers in play groups, day care environments, and other settings	Increasing interest in other children Moves from solitary to parallel play Rough-and-tumble play with peers Evidence of empathic concern regarding peer distress	18–36 months

Note. Data from Sander (1975); Sparrow, Balla, & Cicchetti (1984); and Sroufe (1989).

While attachment relationships are not the only context for infant social development (Crockenberg & Leerkes, 2000), attachment theory is a predominant model for understanding early parent–infant relationships. In the following section we therefore provide an overview of how parent–infant attachment relationships develop, moving from a discussion of universal processes to a review of individual differences in the quality of attachment relationships. We consider the caregiving context of attachment security and how early experiences serve as relational templates for later social relationships.

Infant–Parent Attachment Relationship

Attachment theory (Bowlby, 1969/1982) emphasizes the fact that human infants exist for an extended period of time in a state of dependency wherein proximity to a caretaker is essential for both physical survival and the development of psychological health (e.g., security, emotion regulation; Simpson, 1999). The primary evolutionary function of this proximity is to promote survival of the dependent infant, but with development attachment relationships evolve to include more complex functions. The infant is increasingly able to use the attachment figure as a secure base, deriving the security needed to allow for exploration of the environment when safe, and the protection and comfort needed in times of fear or distress (Sroufe & Waters, 1977).

Across diverse cultural contexts, maternal attachments are often primary, although shifting work–family balances within many (especially Western) cultures has resulted in fathers spending increasing amounts of time actively parenting their children (Hofferth, Pleck, Stueve, Bianchi, & Sayer, 2002). Relative to maternal attachments, contemporary theory and research suggest that infant–father attachments emphasize the infant's ability to explore versus the propensity to seek comfort when distressed (Grossmann et al., 2002; Paquette, 2004). Across mothers and fathers, however, attachment relationships serve as a foundation for the early establishment of affect and arousal regulation. Individual differences in the quality of these early relationships appear to have implications for the young child's emerging emotion regulation, sense of self-efficacy, and social relatedness outside the parent–child context (Sroufe et al., 2005).

Individual Differences in Attachment Relationships

Whereas from an evolutionary perspective infants are biologically driven to form attachment relationships, individual differences in the quality of these relationships have been the focus of abundant research over the past decades. Ainsworth and colleagues developed a laboratory-administered procedure, the Strange Situation Protocol (SSP), to assess individual differences in the quality of attachment relationship patterns (Ainsworth, Blehar, Waters, & Wall, 1978). Through the induction of stressful challenges the SSP provides an opportunity for observation of the process of interactive repair; challenges include exposure to an unknown environment, interaction with an unknown adult, and two separations from, and reunions with, the parent. These challenges are intended to activate the infant's attachment strategy, and the infant's behavior during this procedure is observed with special attention paid to the ways the infant uses the parent to regulate his or her emotional states following separation.

Ainsworth described three organized patterns characterizing how infants (and parents) negotiate this attachment-behavior-eliciting task: the secure, the anxious-avoidant, and the anxious-ambivalent attachment patterns (Ainsworth et al., 1978).

Infants demonstrating *secure* attachments to their caregivers were able to openly and genuinely display their emotions and use their parents to help regulate their distress. Once comforted, these infants returned to exploratory play. Their balanced and open regulatory strategy was not surprising in light of home observations that suggested these infants had mothers who were generally sensitive and tender in their caretaking interactions. The infants appeared to "trust" the parent to provide care and protection, and indeed, these mothers were contingently responsive and attuned to the expressed needs and desires of their infants.

In contrast, infants with an *anxious-avoidant* pattern behaved as if they did not need comfort from their parent at all, although physiological indicators revealed

high levels of arousal and distress. Avoidant children played independently and often seemed impervious to their parents' presence or absence. During home observations mothers of avoidantly attached infants were rejecting of infant distress. Thus the behavioral strategy shown by anxious-avoidant infants has been understood as an effort on the children's side to maintain proximity to the parents by deactivating their own displays of emotional needs (Magai, 1999).

The third pattern, *anxious-ambivalent* attachment, was characterized by a heightened activation strategy. These infants appeared desperate to have contact with their parents, but appeared unable to be soothed by the parent once reunited. Thus these infants were unable to return to exploratory play (Magai, 1999). Mothers of ambivalently attached infants were observed to be fairly inconsistent in their care, and their interactions with their infants were often not contingently based on the infants' cues. The infants' heightened emotion activation was thus understood as an effort on the children's side to keep the parents responsive and involved.

A fourth attachment pattern was later articulated by Main and Solomon (1986) and labeled *disorganized*. These children, often with histories of maltreatment, abuse, and neglect, seemed to lack a coherent, organized strategy for gaining proximity to their parents when distressed, but instead displayed bizarre or uncoordinated behaviors in response to the stressful paradigm. For example, some of these infants temporarily froze or displayed conflicted approach–avoidance behaviors toward their parents, as if expressing ambivalence and fear in their attempts to gain proximity. Because mothers of disorganized infants have been found to display both frightening and frightened behaviors (e.g., bizarre vocalizations, sudden intrusive physical movements, reacting with fear to infant behaviors; Lyons-Ruth & Jacobvitz, 1999), these infants experience an understandable conflict regarding how and whether to seek proximity and care from their attachment figure.

Early Attachment and Later Social–Emotional Competence

Longitudinal research has followed children from infancy into early adulthood and confirms that, in general, the quality of early attachment relationships holds consequences for children's later social and emotional competence, though later life events also moderate the stability of these associations (Grossmann, Grossmann, & Waters, 2005; Sroufe et al., 2005). In general, children who build a secure attachment with their caregiver early in life continue to hold a secure working model of relationships in mind and show the most optimal developmental outcomes in later years.

In contrast, children with avoidant attachment histories appear to expect rejection within the context of relationships, and research indicates reduced interpersonal competence later in life, particularly when coupled with other risk factors. These children are more vulnerable to becoming emotionally insulated, hostile, and antisocial themselves, potentially provoking adults and peers into rejecting them (Weinfield, Sroufe, Egeland, & Carlson, 1999). For example, previously avoidant children are likely to exhibit greater hostility and scapegoating of peers than their secure and ambivalent resistant counterparts (Suess, Grossmann, & Sroufe, 1992).

Children with ambivalent, resistant histories have learned to behave in an overaroused manner in an attempt to garner the emotional warmth that has been offered inconsistently. In early childhood these children are described as more hesitant in exploring novel situations, immature, and easily frustrated; more likely to be neglected by their peers (in contrast to the rejection that avoidant children face); more likely to display separation anxiety; more socially isolated and/or hostile; and less empathic to other children's displays of distress than their secure counterparts (Horvath & Weinraub, 2005; Kestenbaum, Farber, & Sroufe, 1989; Sroufe, 1983).

The most vulnerable group appears to be infants with disorganized attachment patterns. This pattern evolves in the face of a child's fear and uncertainty regarding how the parent will react, given a history of frightened or frightening responses that might include seductive enmeshment, helplessness, hostility, or abuse. Thus, not surprisingly, the outcomes of these infants are relatively poor; studies have documented a host of problematic outcomes, including

more controlling behavior in early childhood, more hostile/aggressive behavior toward peers, more externalizing and internalizing behavior problems, and developmental lags that include lower academic self-esteem and achievement (for review, see Green & Goldwyn, 2002; Lyons-Ruth & Jacobvitz, 1999).

Parental Influences on Infant Social Development

The caregiving context plays a critical role in the development of infant attachment security and early social–emotional competence. Here we consider several domains of parental influence on the infant and young child's social–emotional development, including parenting behavior, verbal engagement with the infant, and the parents' own attachment representations.

Caregiving Sensitivity

Beginning with Ainsworth's seminal home studies, maternal caregiving *sensitivity* (e.g., warmth, attunement, and acceptance) has been suggested as the primary mechanism underlying infant attachment relationships (Ainsworth et al., 1978). The role of caregiving sensitivity, particularly in response to infant distress (McElwain & Booth-Laforce, 2006), has since been confirmed across multiple studies, although later research has not demonstrated effects as strong as Ainsworth's original work (De Wolff & van IJzendoorn, 1997).

More recently, other factors have been identified that may shape the development of attachment patterns; for example, child temperament (Mangelsdorf, McHale, Diener, Goldstein, & Lehn, 2000), the broader child care context (Aviezera, Sagi-Schwartz, & Koren-Karie, 2003; Sagi, van IJzendoorn, Aviezer, & Donnell, 1994), or other aspects of caregiving such as dyadic regulation and emotional availability (Biringen, 2000; Harrist & Waugh, 2002). These and other studies confirm that many aspects of the caregiving context contribute to infant attachment outcomes.

The role that fathers play in the social development of their young children has only recently been given more attention. In general, research has failed to find an association between traditional (e.g., mother-derived) assessments of fathers' sensitivity and infant attachment (Braungart-Rieker, Garwood, Powers, & Wang, 2001; Grossmann et al., 2002; van IJzendoorn & De Wolff, 1997). However, there is evidence that other paternal behaviors, such as the ability to be emotionally supportive and challenging during play interactions, may have an important role in supporting the infant's exploration (rather than proximity seeking, as assessed in the SSP), and may therefore be more salient aspects of the father–infant relationship (Grossmann et al., 2002).

There has been a surge of interest in parents' verbal attributions of mental states to their infants, or mind-minded comments (Meins, Fernyhough, & Fradley, 2001; Meins et al., 2003). *Mind-mindedness* refers to a parent's tendency to treat the infant as an individual with a mind. For example, parents high in mind-mindedness comment on their child's interests, desires, feelings, and beliefs during interaction (e.g., "You *want* that ball, don't you?" or "Are you so *sad*?"). A parent low in mind-mindedness tends to view the child more concretely in terms of need states and behaviors, or in terms of the parent's own perspective (e.g., "You're just being fussy"). Mothers' mind-minded comments during interactions with their 6-month-old infants are correlated with behavioral sensitivity and interactive synchrony (Meins et al., 2001; Muzik & Rosenblum, 2003; Rosenblum, McDonough, Sameroff, & Muzik, 2008) and indeed, some evidence suggests that mothers' appropriate mind-minded comments may be a stronger predictor of attachment security at 1-year than maternal behavioral sensitivity (Meins et al., 2001). In addition, mind-minded comments in the first year of life have been linked to 4-year-old children's understanding of other peoples' mental states, or "theory of mind" (Meins, Fernyhough, & Johnson, 2006).

The Role of Mental Representations

Attachment theory postulates that throughout early development, daily lived experiences of interactions with the primary caregiver are stored as memory templates. These *internal working models* (Bowlby, 1982), or mental representations, incorporate both the cognitive and affective elements of early

caregiving experiences (Crittenden, 1990), and are thought to guide behaviors and expectations within other social relationships, including parents' relationships with their children. In the following section we discuss influences of parental representations, both regarding parents' representations of past relationships with their own parents and current representations of their children, on parenting behavior and infant attachment.

Parents' Representations of Their Own Early Relationship Experiences. Research on adult attachment representations has focused primarily on individuals' current state of mind with respect to their early attachment relationships, assessed via the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985). The AAI yields four main categories (autonomous, dismissive, enmeshed, and unresolved) that correspond, respectively, to the four infant attachment categories (secure, avoidant, ambivalent-resistant, and disorganized). Primary among the factors differentiating the autonomous (secure) versus nonautonomous adult attachment patterns is the ability to psychologically access and coherently articulate affectively charged thoughts and events without the need to minimize (as in the dismissing category) or distort (as in the preoccupied category) the information (Main & Goldwyn, 1984). Thus, regardless of the specific content of the childhood events being recounted (e.g., memories of abuse or neglect vs. love and support in childhood), the critical factor is how openly and coherently the adult can describe these memories in his or her narrative report of past events.

Parents' internal working models of relationships also function as emotion regulators in the relational context (Rosenblum et al., 2006; Zimmermann, 1999) and are likely to influence the degree to which parents can openly and genuinely identify and orient to their children's emotions (Cassidy, 1994). For example, mothers' AAI attachment classifications have been related to the way they conveyed emotions toward their infants while singing to them; dismissive mothers were found unable to modify their singing to adjust for infant distress (Milligan, Atkinson, Trehub, Benoit, & Poulton, 2003). Conversely, mothers with autonomous AAI classifications have been observed to be more sensitively attuned to a wider range of infant affects than nonautonomous mothers (Haft & Slade, 1989).

The power of these representations is evident from the high level of intergenerational correspondence between parental (even grandparental) representations and child security. Recent work by Dozier and colleagues (Dozier, Stovall, & Albus, 2001) illustrates the power of these effects in the context of a natural experiment, following child placement with a foster parent. After only 3 months of placement, there was significant correspondence between children's attachment security and the foster parents' AAI classifications, with rates comparable to intact mother–child dyads.

Parents' Representations of Their Children. While the AAI research confirms the influence of parents' own childhood representations for their infants' attachment security, these representations are rather distal to the parent–child relationship in the here and now. Recent attention has been paid to the more proximal role of parents' representations of their children, of parenting, and of their relationships with their children (Mayseless, 2006), and a number of interviews have been developed to tap into these representations (Aber, Slade, Berger, Bresgi, & Kaplan, 1985; George & Solomon, 1996; Zeanah & Benoit, 1995).

These more proximal representational assessments have been employed in low- and high-risk samples (Benoit, Parker, & Zeanah, 1997; Rosenblum et al., 2002), pre- and postnatally (Benoit et al., 1997; Huth Bocks, Levendosky, Theran, & Bogat, 2004), and in healthy or at-risk pediatric populations (Coolbear & Benoit, 1999). In general, parents' mental representations of their child and of parenting, both pre- and postnatally, are significantly related to their children's attachment security, at rates comparable to the AAI (Benoit et al., 1997; Huth-Bocks et al., 2004). In addition, parental representations are linked to how parents engage with their infants (Dayton, Levendosky, Davidson, & Bogat, 2007; Slade, Belsky, Aber, & Phelps, 1999; Vizziello, Antonioli, Cocci, & Invernizzi, 1993; Zeanah, Keener, Stewart, & Anders, 1985).

Despite the evidence for links between parents' representations, sensitivity, and in-

fant attachment, results of meta-analyses of these studies have identified a "transmission gap" (De Wolff & van IJzendoorn, 1997), in that parenting sensitivity explains only 23% of the association between parental and child working models. A number of explanations for this gap have been proposed, including the need to consider other contextual factors and a broader array of caregiving behaviors. At a very proximal level, for example, parent positive affect or delight (e.g., Rosenblum et al., 2002) or the quality of verbal mirroring (Meins et al., 2001) may be more important transmitters of relational security than maternal behavioral sensitivity per se.

Nonetheless, current research does suggest that parenting sensitivity is likely to play a critical, albeit less direct role than previously thought. For example, another study indicated that mothers who were not autonomous on the AAI yet had *secure* infants were more behaviorally sensitive than nonautonomous mothers with *insecure* infants (Atkinson, Goldberg, & Raval, 2005). From an intervention perspective this finding is particularly intriguing, pointing to our need to know more regarding factors that facilitate sensitive parenting in adults with insecure states of mind.

Reflective Functioning and Insightfulness

Reflective functioning is a clinically meaningful concept that refers to the individual's ability to appropriately attribute mental states and beliefs to others (Fonagy & Target, 1997). Because this capacity includes the ability to understand the motivational forces that underlie behavior, high reflective functioning helps to make infant behavior more meaningful and predictable. Reflective functioning has also been posited to be directly associated with the individuals' ability to tolerate ambivalent or painful affect without the need to minimize, distort, or split off such unwanted emotional experiences. Thus the parent who has the capacity to engage in reflective functioning is likely to respond to the child's emotional needs and reactions with openness and acceptance, which in turn foster in the child a sense that both positive and negative emotions are tolerable and can be integrated.

The capacity for reflective functioning has been coded both from parents' adult attachment narratives as well as from interviews designed to assess parents' representations of their children, and it has been related to infant attachment security (Fonagy, Steele, Moran, Steele, & Higgitt, 1991; Schechter et al., 2005; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). Relatedly, the Insightfulness Assessment (IA) is a narrative-based interview designed to assess parents' insight and empathic understanding of their children's experiences (Koren-Karie, Oppenheim, & Dolev, 2002). The IA asks parents to observe video recordings of their young child and respond to a series of questions that tap into insightfulness, such as "What do you think your child was thinking or feeling?" Responses to the IA have also been related to child attachment security and parenting sensitivity (Koren-Karie et al., 2002).

Parental reflective functioning and insightfulness are evident when parents acknowledge and tolerate complex feelings, acknowledge intergenerational or other contextual influences, display openness and complexity in representations of the child, and search for mental meaning that underlies their own and their child's behavior. Low reflective functioning is evident when parents only rarely acknowledge feelings or mental states, fail to acknowledge the influence of psychological processes on their own or others' behavior, or generate extremely stereotyped, action-versus-emotion-oriented explanations for behavior.

Extant research has underscored the importance of parental reflective functioning for children's development, particularly in the face of early parental or child adversity or hardship. For example, reflective functioning has been observed to be particularly predictive of child attachment when mothers had experienced significant childhood adversity (Fonagy, Steele, Steele, Higgitt, & Target, 1994), and thus may provide an important psychological buffer that promotes optimal child adjustment and resilience, particularly in the context of risk.

Infant Mental Health Implications

The infant mental health field has long appreciated the centrality of the parent–child relationship, and today there are an increasing number of manualized relationship-focused intervention models; evidence for the efficacy of these interventions is accumulating (Berlin, 2005; Sameroff, McDonough,

& Rosenblum, 2004). What these interventions share is a focus on the assessment and treatment of the infant in a social, relational context.

Results of a recent meta-analysis indicate that infant attachment outcomes are most improved when services are, among other things, delivered to a clearly defined risk population and when the focus is on enhancing parenting sensitivity (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003). This emphasis on sensitivity is consistent with research that suggests that outcomes for children with sensitively responsive parents, even if the parents themselves maintain a number of other risk factors, are better than for those who evidence less sensitive parenting. For example, in a large and diverse sample Belsky and Fearon (2002) observed that children with secure attachment histories whose mothers became *insensitive* during toddlerhood had lower psychosocial functioning scores at 3 years, compared to children with insecure attachment histories whose mothers were *sensitive later in development.* This finding suggests that more proximal parenting behaviors are highly predictive of child outcomes and can even overcome early insecure attachment histories.

Interventions to enhance parenting sensitivity can have important positive effects on children's social–emotional outcomes (Bakermans-Kranenburg et al., 2003), particularly for those parents and infants who are most vulnerable. For example, intervention effects may be strongest for those parents with highly temperamentally reactive infants (Klein Velderman, Bakermans-Kranenburg, & Juffer, 2006). Other comprehensive models of intervention, such as the Circle of Security attachment-based intervention, have also documented treatment efficacy and target not only parenting sensitivity but also parents' abilities to understand their children's emotional communications, parents' mental representations, and parents' capacity for reflective reasoning about child behavior (Hoffman, Marvin, & Cooper, 2006).

CONCLUSIONS

The first years of life are remarkable for the rapid transformations in both the social and emotional domains. New capacities emerge with regularity, and with the development of newly acquired skills the infant moves toward greater levels of social–emotional competence. When developmental milestones are met and supported, social–emotional competence is evident in the young child's emerging awareness and understanding of his or her own and others' emotions; capacity for empathic involvement; ability to adaptively cope with aversive emotions and challenging circumstances; open and trusting emotional communication within relationships; ability to rely on others for safety and support; and ability to explore, play, and carry forward a sense of effectance and trust (Saarni, 1999; Sroufe et al., 2005). When developmental milestones for competence in the social and emotional domains are not met, or when the developmental trajectory is set awry, later deficits in the social–emotional domains are more likely to unfold. The field of infant mental health has long recognized that social–emotional competence emerges from a dynamic developmental interplay of complex transactions across maturational, environmental, biological, and interpersonal contexts. Assessment and intervention that attend to the infant within this dynamic developmental context are central to returning the young child to, or maintaining him or her on, this powerful track toward increasing social–emotional competence.

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