

CHAPTER 2

The Development of the Person: Social Understanding, Relationships, Self, Conscience

ROSS A. THOMPSON

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What constitutes the development of a person? In moral philosophy, “personhood” is not inherent in human existence but rather is contingent on the achievement of self-awareness, moral autonomy, and other constituents of distinctly human capability. Developmental scientists offer a more nuanced answer to this question, describing how the development of personhood emerges in a continuous relational context in which infants and young children develop their earliest understandings of who they are, who others are, and how to relate to other people.

Every author of a *Handbook* chapter should have such an opportunity to write a revision—to try to portray the field more accurately, to correct mistakes and misinterpretations, and to see how far the field can advance in a few years. In the previous edition, I gratefully thanked many colleagues who were willing to contribute to my “meandering ponderings” about the issues of this chapter. I remain grateful to them because they have continued to stimulate my thinking. I am also grateful to a remarkable group of student colleagues: Rebecca Goodvin, Debbie Laible, Sara Meyer, Lenna Ontai, and Abbie Raikes.

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This chapter is concerned with early sociopersonality development. Because other chapters of this *Handbook* are devoted to temperamental individuality, the development of emotion, peer relationships, and other processes related to personality, the goal is not to comprehensively describe the emergence of early personality or to identify individual characteristics that foreshadow adult personality traits. Instead, and consistent with a developmental perspective, the goal is to describe how central facets of social and personality

They have contributed to the ideas considered here, and the chapter is dedicated to them. My deepest appreciation also to Nancy Eisenberg, whose patience and good heart made it easier to complete this project during a period of personal challenge. Although I have sought to identify major contributors to each of the topics reviewed here, the length limitations prohibited appreciative citations to all relevant and important papers. Consequently, I offer an apology to respected colleagues whose work is not explicitly noted as frequently as they merit, but whose thinking and research have been influential.

development emerge through the growth of social understanding, self-awareness, early conscience and cooperation, and the relationships that infuse these early achievements. These are some of the most important ways that make a 6-year-old a fundamentally different person from a newborn and form the foundation for individuality and social relatedness in the years to come. The development of social understanding, relationships, self, and conscience constitute the most important ways that developing individuality intersects with the social world. These topics have also provoked the most concerted research attention in the study of sociopersonality development during the past decade.

The research literatures surveyed in this chapter identify several themes about early sociopersonality development and developing persons. First, relationships are central. Indeed, this chapter is a study of relationships and their developmental influence, whether considering face-to-face interaction and the growth of social expectations, parent-child discourse and autobiographical self-awareness, the growth of a mutually cooperative orientation between parent and child, security of attachment, or children's representations of self and relational processes. This chapter reflects an emerging view that relational experience is generative of new understanding, whether of emotions, self, morality, or people's beliefs, and highlights the need for a developmental relational science of the future that focuses on relational influences across diverse developmental domains. Such a developmental relational science could integrate the most valuable perspectives offered by attachment theory, neo-Vygotskian thinking, sociolinguistic approaches to cognitive growth, and other perspectives into a thoughtful understanding of how early relational experience contributes to fundamental competencies and the emergence of individual differences in thinking, sociability, and personality development.

Second, because relational experience is important, early sociopersonality development is best understood not as socialization or constructivism but rather as the appropriation of understanding from shared activity (Rogoff, 1990). The literatures reviewed in this chapter describe how psychological development arises from the powerfully inductive capacities of the young mind interacting with the conceptual catalysts of social exchange, whether in the conflict of wills between parents and a locomoting toddler, interactions about broken toys and mishaps, or conversations about the day's events that reflect cultural values. Integrating understanding of the

constructivist mind with the influence of relationships in early sociopersonality development requires comprehending the nature of the shared activity of young children and those who care for them. This is an important research challenge because a model of appropriated understanding through shared activity can potentially further understanding of many features of early sociopersonality growth. In attachment theory, research on the shared activities and conversations of young children and their caregivers can help to clarify how specific representations of experience and self (or internal working models) develop from relational security or insecurity. In theory of mind, studies of shared experiences and discourse can elucidate some of the conceptual catalysts fostering preschoolers' understanding of people's desires, feelings, beliefs, and thoughts (Thompson, 2006a). A model of appropriated understanding from shared activity offers, more than traditional socialization or constructivist views, the opportunity to integrate social and cognitive aspects of early sociopersonality development.

Third, thinking and understanding in early childhood is a conceptual foundation for what develops afterward. Although this seems a truism, it was not long ago that characterizations of young children as egocentric, concrete, preconventional, and preconceptual made this developmental period seem discontinuous with the conceptual achievements of middle childhood and later. If early childhood establishes the foundations for the development of social cognition, moral judgment, and self-understanding of the years that follow, then relationships and other influences experienced in the early years set the context for the growth of an empathic, humanistic orientation toward others, balanced self-concept, capacities for relational intimacy, social sensitivity, and other capacities conventionally viewed as achievements of middle childhood and adolescence. Understanding how this occurs is a current and future research opportunity.

In the contemporary climate of developmental science, relational influences in the family are understood in concert with heritable influences shared by family members. Although students of early sociopersonality development have been slow to enlist genetically sensitive research designs into studies of family influences (see Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000), research on genetic and shared and non-shared environmental influences on the security of attachment and other relational variables has advanced

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understanding of the interaction of heredity and environment. Contemporary scholarship also benefits from a far less polarized view of the influences of nature and nurture than what was true only a few years ago. Heritability estimates, while important, are now recognized as being both sample- and context sensitive and having little implication for the potency of environmental influences (Committee on Integrating the Science of Early Childhood Development, 2000; Rutter, 1997). Equally important have been the contributions of developmental behavioral genetics for conceptualizing the differentiating experiences of siblings in the family (nonshared environment) and for understanding how children's characteristics are evocative of parenting practices (gene-environment correlation), both long integrated into developmental theory but now receiving renewed attention. At the same time, an expanding body of research is underscoring the importance of studying long-neglected gene-environment interactions—by which children with different heritable characteristics are affected differently by the environment—for informing developmental theory concerning family relationships (see, e.g., Ge et al., 1996, and O'Connor, Caspi, DeFries, & Plomin, 2003, for illustrations). Such studies highlight that the interaction term in the quantitative model for partitioning heritable and environmental influences on behavior may be the most important one. Molecular genetics research has the power to elucidate gene-environment interactions and the probabilistic nature of genetic effects (Rutter, Silberg, O'Connor, & Simonoff, 1999), and comparative studies highlight the influence of the environment in gene expression in studies of rats and primates (see Gunnar & Vasquez, in press, for a review). Taken together, contemporary research is affirming the wisdom of the lesson repeatedly learned by prior generations of developmental scientists: the inseparability of nature and nurture. What has advanced significantly is the technology for elucidating their interaction.

This is an exciting time for studying the development of the person because of a new appreciation of the generative influence of relational experience and respect for what young individuals bring to these relationships.

SOCIAL UNDERSTANDING

Understanding the world of people—the psychological processes that guide behavior and relationships, the na-

ture of social roles and institutions, group processes, and other social phenomena—is essential to psychological growth. At each age, social cognitive understanding contributes to social competence, interpersonal sensitivity, and an awareness of how the self relates to other individuals and groups in a complex social world. Social cognition is also central to the development of emotion understanding, moral awareness, and self understanding. Early social cognitive development creates a foundation to these achievements as young children begin to comprehend how human behavior is related to mental goals, intentions, feelings, desires, thoughts, and beliefs, and how social interaction is affected by the juxtaposition of these mental states in two or more individuals. Moreover, attachment theory and other theories of social development view early childhood as the period when individual differences in social beliefs and dispositions emerge from children's social experiences, especially in close relationships. Taken together, the study of early social cognitive development offers the opportunity to understand how young children derive their initial insights into the psychological world of people, and why children begin to create markedly different expectations for this social world. These early developmental processes color social understanding throughout life.

Developmental study of social cognition has traditionally been the stepchild of research on cognitive development, based on the assumption that the same conceptual processes organize children's thinking about the social and nonsocial worlds. Beginning with the Piagetian era, when the study of social-cognitive development began in earnest, this meant that relatively little attention was devoted to social cognition in infancy and early childhood because this period was theoretically characterized as one of egocentrism, concrete thinking, and a focus on appearances rather than underlying, invisible realities. Students of social cognitive development also inherited from Piagetian theory the constructivist model, with its emphasis on the autonomous child's induction of understanding from individual experience.

The current post-Piagetian era of cognitive developmental research has offered new opportunities to explore early social cognitive development because of a new view of the developing mind. The assumption of early childhood egocentrism has been replaced by the realization that understanding the mental world of other people, and the differences between people's mental states, is one of the early and consuming interests of infants and

young children. In their investigations of the growth of joint attention; inferences of intentionality, desires, and beliefs; theory of mind; and other conceptual processes, researchers have highlighted how remarkably early and apparently easily young children acquire insight into the psychological world and the relevance of these achievements to later social understanding.

Contemporary study of early social cognition also contributes to a more sophisticated understanding of the processes by which social understanding develops in early childhood. At a time when cognitive developmental scholars are questioning the adequacy of explanations of conceptual growth that focus solely on the inductive, constructivist mind and are exploring the social origins of psychological understanding (e.g., Carpendale & Lewis, 2004; Hobson, 2002), research into early face-to-face interaction, the impact of locomotor experience on parent-infant relations, social referencing, parental socialization of social domain understanding, and parent-child conversation contribute new insight into the developmental catalysts to early psychological understanding. By exploring these social catalysts, the ideas of social and cognitive developmentalists are usefully integrated in contemporary social cognitive research. This is especially so because inquiry into early social cognitive development can help to clarify central constructs in social developmental theories (such as the “internal working models” of attachment theory) while also providing insight into the consequences of differences in early social experiences for children’s understanding of mental states. Therefore, contemporary research on early social cognitive development is not only an instantiation of the traditional view that conceptual achievements are applied to the social and nonsocial worlds alike but also a new opportunity to explore how the scaffolding of everyday social experience provides uniquely social catalysts to the development of psychological understanding.

The study of early social cognition encompasses developments in social skills, general knowledge of the social world (including the psychological functioning of people), and person-specific social expectations. In each of these areas, infancy and early childhood is a period of significant advance.

Early Social Discriminations and Expectations

In traditional developmental theory, a fundamental conceptual challenge for the newborn is to distinguish the

internal world from the surround. From this perspective, early social cognition requires the emergence from initial symbiosis or egocentrism. But an alternative view is offered by contemporary perceptual theory (e.g., Gibson, 1995), which argues that the integrated perceptual experiences yielded by movement and activity contribute to a fundamental distinction between internal experience and surrounding stimulation from shortly after birth. According to this view, the tight synchrony of multimodal experience (e.g., integrated visual, tactile, kinesthetic, and auditory experiences) that arises from self-initiated movement is perceptually different from incoming stimulation arising from objects that are acted on or that move of themselves. Gibson and others (e.g., Neisser, 1995) have argued that, in this way, perception distinguishes self-initiated action from surrounding activity and gradually contributes to self-awareness. Indeed, Gibson goes on to argue that the development of new behavioral capabilities coincides with the perception of new affordances of objects in the surrounding world, such as how flat surfaces begin to be perceived as traversible when infants can locomote, and how people begin to be perceived as arousing and responsive when infants can interact socially. In this sense, social cognition and self-awareness each arise from the new perceptual experiences yielded by action, including social activity.

The social and inanimate worlds are potentially distinguishable early in life in several ways. People are spontaneous agents and act in a self-initiated manner, but this is not true of inanimate objects. People interact in a reciprocal, contingent, coordinated, and communicative fashion with the infant, predictably responding to the baby’s signals but responding with considerable variability. Emotion is a more salient feature of social interaction compared to most encounters with objects—including the emotions that precede social interaction and the changes in emotions that arise from interactive activity. Most important, the locus of causality for people’s behavior is intentional goal-directed mentality for which no comparable sources of causality exist for objects.

During the 1st year, infants begin to discriminate between the social and animate worlds in many of these ways (see Raikson & Poulin-Dubois, 2001). These discriminations are founded on early perceptual preferences that orient young infants toward social events. Newborns visually track facelike stimuli, reflecting the influence of dedicated subcortical neural circuits that

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affect the development of, and are later supplanted by, cortically mediated facial preferences at 2 to 3 months of age (Johnson & Morton, 1991; Mondloch et al., 1999). Newborns exhibit a visual preference for their mothers' faces based on global perceptual discriminations that will later become more refined when infants begin scanning interior facial features at 2 to 3 months of age (Pascalis, de Schonen, Morton, Deruelle, & Fabre-Grenet, 1995; Walton, Bower, & Bower, 1992). By 3 months, when infants' facial scanning has moved to the interior of faces, infants also begin to discriminate the pictures of familiar persons (Barrera & Maurer, 1981; but see Bartrip, Morton, & de Shonen, 2001, for evidence of earlier recognition ability). Newborns are also capable of recognizing the sound of the mother's voice based on prenatal auditory experience (DeCasper & Fifer, 1980; DeCasper & Spence, 1986). This may be related to newborns' preference for the sounds of human speech and, in particular, for "infant-directed speech" that is characterized by exaggerated prosody, repetition, and simple syntax (Cooper & Aslin, 1990). Infants' preference for infant-directed speech endures throughout the early months and adult vocalizations can evoke emotional responses in the infant that are consistent with the positive or negative tone of the adult voice. Infants respond positively to vocalizations signaling affirmation or warmth (with exaggerated melodic contour) and negatively to vocalizations signaling anger or prohibition (with sharp, staccato intonations; Fernald, 1985, 1996). People are, in short, uniquely compelling elements of the newborn's world: The constellation of stimulus properties they possess captivate the young infant's attention and arouse emotion, perhaps owing to the developing brain's preparedness to respond to human stimulation.

People are captivating to infants not only because of their stimulus properties but also because of their behavioral propensities. Young infants discover that people respond to their initiatives in ways that create excitement and generate positive arousal. This becomes especially apparent after 2 to 3 months of age when, with the behavioral state fluctuations of the neonatal period subsiding and longer periods of awake alertness emerging, infants and their caregivers begin to engage in episodes of face-to-face play. These episodes are typically characterized by focused social interaction without competing caregiving goals or other demands on either partner, with infant and adult facing each other in close proximity and interacting facially, vocally, tactilely, and with

behavioral gestures. Developmental scientists have been interested in episodes of face-to-face play not because of their ubiquity or universality, but rather because they constitute some of the earliest experiences of focused social interaction that contribute to the growth of social skills and the development of social expectations for familiar caregivers.

Detailed microanalyses of the course of infant and adult behavior during social interaction reveal several characteristics of face-to-face play that underscore the complexity and richness of this social experience for young infants. First, in responding contingently to the baby's socioemotional expressions, adults do not merely mimic or mirror the infant's actions. In addition, they express emotion in ways that are comparable to the baby's own but using different expressions, such as responding with a smile and a lilting voice when the baby coos. Moreover, adults also model positive expressions and differentially reinforce the baby's emotional responses. Malatesta's elegant microanalyses of maternal and infant emotional expressions during face-to-face play revealed that mothers maintained a generally positive demeanor and, while they matched the emotion of most infant emotional expressions (including joy, interest, surprise, and even sadness and anger), the baby's negative expressions (such as pain or "knit brow") were likely to be ignored or, in the case of anger, evoke the mother's surprised response (Malatesta, Culver, Tesman, & Shepard, 1989; Malatesta, Grigoryev, Lamb, Albin, & Culver, 1986). Mothers seemed committed to maintaining the baby in a positive emotional state and, over a period of weeks, maternal modeling and contingent responding to infant emotional expressions helped to account for increased rates of infant joy and interest expressions in face-to-face play. Adult contingent responsiveness is complex and often involves responses that do not match the infant's own but instead are intended to alter or guide the baby's emotional responding.

Second, although face-to-face play is commonly characterized as the establishment and maintenance of well-coordinated synchrony, with adults sensitively scaffolding their initiatives to accord with the baby's signals, it is mistaken to portray this social activity so simply. Tronick and his colleagues, based on their own microanalytic studies, have concluded that well-coordinated interactions occur only about 30% or less of the time that mothers and infants engage in face-to-face interactions, with nonsynchronous or uncoordinated exchanges occurring when infants become fussy,

mothers are distracted, or for other reasons (Gianino & Tronick, 1988; Tronick, 1989). They argue that other interactive goals—such as interactive reparation and self-regulation—accompany the goal of maintaining interactive coordination. Therefore, infants are faced with a more complex interactive activity than merely responding to a sensitively scaffolded social situation. In their earliest experiences of social play, infants are also learning that social interaction is dynamic and changing, and are acquiring the social skills of managing its dyadic course and its emotional effects. They are discovering that their social and emotional responses have effects on the adult's behavior—sometimes highly predictable effects—and that their emotions are central to the dynamics of interaction with a human partner. They are also discovering that their own emotional experience is affected not only by the initiatives of the caregiver but also by the interaction that arises from mutual responsiveness.

These experiences may help to explain why, by 2 to 3 months of age, infants respond differently to people compared to objects, directing more positive facial expressions and vocalizations to responsive people than toward interactive objects (e.g., puppets), and showing distress to nonresponsive people but rarely toward non-interactive objects (Ellsworth, Muir, & Hains, 1993; Legerstee, 1997; Legerstee, Pomerleau, Malcuit, & Feider, 1987). By 2 to 3 months of age, infants appear to expect that people will respond to them and interact with them. This conclusion is supported by studies of the “still face” effect in infants in which mothers alternate episodes of face-to-face interaction with an episode in which they look at the infant but are impassive and unresponsive. Studies of infants age 2 to 6 months show that babies reliably respond with diminished positive affect, withdrawal, self-directed behavior, and sometimes with social elicitation (e.g., brief smiles, momentarily increased vocalizing and reaching) and negative affect during the still face episode. When mothers subsequently respond normally, infants become more sociable but also remain subdued (see Adamson & Frick, 2003, for a review of this literature). The still-face effect is robust: It has been observed in response to strangers as well as to parents (Ellsworth et al., 1993; Kisilevsky et al., 1998), in comparisons of infants from Western and non-Western cultures (Kisilevsky et al., 1998), and in conditions when the adult's reasons for ceasing social interaction were systematically varied such as turning away to look at another person (Striano, 2004). This sug-

gests that the expectation that people will be responsive is not person specific and seems to be generalized to a range of interactive experiences in the early months.

The still-face procedure was originally designed to simulate the infant's interactive experience when mothers are depressed. Individual differences in maternal behavior and affect are significant influences on how infants respond socially (Adamson & Frick, 2003). Several studies have found that depressed mothers are less responsive and emotionally more negative and subdued in face-to-face play with their infants, for example, and the offspring of depressed mothers are also less responsive and emotionally less animated as early as 2 to 3 months (e.g., Cohn, Campbell, Matias, & Hopkins, 1990; Field, Healy, Goldstein, & Guthertz, 1990; Field et al., 1988). Field and her colleagues (1988) found that 3- to 6-month-old infants of depressed mothers remained more subdued and less animated when subsequently interacting with a nondepressed stranger. Dawson and colleagues did not replicate this finding with 13- to 15-month-old infants, but reported that the atypical patterns of frontal brain activity characteristic of the infants of depressed mothers during social interaction with their mothers were also apparent when these infants subsequently interacted with a nondepressed familiar adult (Dawson et al., 1999). Differences in early social experience seem to be important, therefore, for how infants interact with other partners, which may reflect the early emergence of generalized and specific social expectations. This may help to explain why early differences in infant affective and self-regulatory behavior in the still-face paradigm predict later attachment security (Braungart-Rieker, Garwood, Powers, & Wang, 2001; Cohn, Campbell, & Ross, 1992) and other psychosocial sequelae. Much more research on the origins and outcomes of individual differences in infant behavior in the still-face procedure is needed to clarify the specific social expectations it reflects. However, by 2 to 3 months of age, infants have begun to expect that people will respond positively to their initiatives, and marked differences in adult responsiveness have significant effects on the infant's social and emotional reactions that generalize to other partners.

As these studies suggest, adult responding that is contingent on the infant's initiatives contributes to the socially and emotionally engaging quality of early social interaction. By 2 to 3 months of age, infants respond with positive emotion to contingent responding but become affectively negative if the contingency is interrupted (Lewis, Alessandri, & Sullivan, 1990; Rovee-Collier,

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1989; J. Watson, 1985). Contingency in an environmental response is positively arousing perhaps because it contributes to the infant's sense of agency. Initiating actions that have a predictable effect is a salient indication that one can exert control over important outcomes, whether social or nonsocial. J. S. Watson (1995) has argued that young infants are especially sensitive to perfectly response-contingent events because these indicate self-generated outcomes (e.g., movement of a mobile contingent on the baby's leg kicking) and that such experiences contribute to self-awareness. Later, at about 2 to 3 months, he argues, infants become sensitized to imperfect response-contingent events that are more likely to be social in nature (see also Gergely & Watson, 1999). In each case, contingency is salient because of the sense of control and effectance it creates. Murray and Trevarthen (1985) showed that a small sample of 2- to 3-month-olds responded animatedly when viewing live images of their mothers talking to them through closed-circuit television but later, when the same images of their mothers were replayed (and were thus noncontingent), infants turned away in apparent disinterest or distress (see Bigelow, MacLean, & MacDonald, 1996; Hains & Muir, 1996; and Legerstee & Varghese, 2001, for partial replications and extensions; but note also Rochat, Neisser, & Marian, 1998, for a failure to replicate this effect). The contingency of face-to-face interaction thus seems important to the social and emotional potency of early social play.

There are other advances in social cognition and social skills emerging from early face-to-face play and related experiences of social interaction. First, because social play is so richly affective, infants learn about the emotional expressions of people. By 3.5 months, infants can discriminate the dynamic, multimodal expressions of different emotions enacted by their mothers and they prefer congruence between facial and vocal expressions (Kahana-Kalman & Walker-Andrews, 2001; Montague & Walker-Andrews, 2002; Walker-Andrews, 1997). This is not observed, however, in response to the emotional expressions of unfamiliar women until 5 to 7 months of age. This suggests that partner familiarity may be important to the earliest comprehension of emotional expressions and their meaning, with some evidence that infants respond in an emotionally resonant manner to the dynamic emotional expressions of their mothers by 3 months (Haviland & Lelwica, 1987). Infants as young as 5 months also react in an emotionally differential manner to positive and negative emotions conveyed through speech alone (Fernald, 1996). Regular experiences of

face-to-face play in which these emotional expressions are salient features of social communication would contribute to these forms of nascent emotion understanding. Second, social play also provides opportunities for infants to learn about the distinctive behavioral characteristics of familiar partners. Fathers play differently than mothers in face-to-face encounters with young infants, for example, and infants later show differentiated expectations for the social behavior of each parent (see M. Lamb, 1997, for a review). Finally, to the extent that in the early months, infants begin to represent others' actions as "like me" when they can also be performed by the self (Meltzoff & Gopnik, 1993), the coordination of the socioemotional initiatives of the self and a sensitive partner during early episodes of social play is likely to consolidate this nascent representational capability by 3 months of age.

Social play is not the only interactive context for the development of early social discriminations and expectations. In light of the salience of distress, the association between parental soothing and subsequent relief is likely to be meaningful and easily learned by an infant, contributing to expectations that an adult's arrival will bring distress relief (M. Lamb, 1981). In this context, differences in adult responsiveness are again likely to be important, at least to the extent that they affect developing expectations for the caregiver's arrival and soothing when infants are upset. Several research groups have found that by 6 months, distressed infants began quieting in apparent anticipation of the arrival of their mothers when they could hear the adult's approaching footsteps; infants also protested loudly if the adult approached but did not pick them up (Gekoski, Rovee-Collier, & Carulli-Rabinowitz, 1983; M. Lamb & Malkin, 1986). These studies suggest that during the initial months of the 1st year, infants are learning the association between their distress, a caregiver's approach, soothing ministrations, and subsequent comfort. Much more research is needed to understand the effects of reliable differences in the caregiver responsiveness (such as differences in the adult's efficacy in soothing the infant) on these emergent social expectations related to distress relief, especially as they are mediated by the infant's emotional tendencies.

Intentions and Inferring Intentionality

Interest in face-to-face play wanes after 7 months as infants become more mobile and interested in more active

forms of interaction. The growth of self-produced locomotion not only changes infant-parent interaction but also is, according to Campos and his colleagues, a setting event for a variety of socioemotional and conceptual advances in the child (Campos, Anderson, Barbu-Roth, Hubbard, Hertenstein, & Witherington, 2000; Campos, Kermoian, & Zumbahlen, 1992). These advances occur because locomotor experience dramatically changes the relation of the infant to the environment. Rather than merely reaching toward objects or responding to events that appear before them, infants are now capable of approaching objects and people of interest and initiating independent exploration. As a consequence, self-produced locomotion is associated with a cascade of conceptual changes related to person-environment relations (such as postural compensation to changes in peripheral optic flow perception, advances in distance perception and increased wariness of heights, and more sophisticated spatial search strategies), which include advances in referential communication, means-ends understanding, and social interaction across a distance.

The onset of locomotor experience is also associated with socioemotional changes in the infant and challenges for the family system. The infant's independent locomotion means that the child is becoming capable of wandering away from the parent, acting in a dangerous or disapproved manner, and pursuing independent goals, together with the feelings of self-efficacy of doing so. Parents respond to these changes by more vigilantly monitoring the infant's activity (and childproofing the house), using distal communicative modes (such as calling across a distance), and intervening more often with distractions, prohibitions, and sanctions and thus, at times, frustrating the infant's goal-directed efforts. The stage is set, therefore, for a significant conflict of intention between the infant and parent. Indeed, at the same time that attachment security is emerging, infant-parent relationships are being shaped by how each partner is negotiating the challenges associated with the onset of infant locomotor activity. Parental reactions to this developmental transition are likely to vary significantly. The evolution of offspring from immobile to self-propelled excites most parents, but many also find that the monitoring, intervening, and proaction required to supervise a mobile child is a significant new challenge for them, along with the conflict of wills and testing of limits that accompanies infants' responses to their efforts. A parent's capacity to remain sensitive to and sup-

portive of the infant's emergent competencies during this period contributes to maintaining parent-infant harmony just as parental coercion and frustration are likely to undermine it.

There are thus many reasons to perceive the locomotor transition as a catalyst for early socioemotional and conceptual development and for parent-infant relationships. But the social consequences of this transition have been little studied thus far. In an exploratory study, Campos and colleagues (1992) interviewed the mothers of locomotor and prelocomotor 8-month-olds and found that mothers' perceptions of the child and reports of their own activities varied significantly based on the child's locomotor status. The parents of locomotor infants indicated that they used more verbal prohibitions, had higher expectations for the child's compliance, and engaged in greater disciplinary activity than did the parents of prelocomotor infants. Parents also reported that their offspring showed greater sensitivity to the parents' location and emotional signals, and exhibited increased expressions of anger and frustration, but also showed more intense affectionate behavior.

Observational studies provide some support for these interview results. Biringen, Emde, Campos, and Appelbaum (1995) reported—in an age-held-constant observational study—that the onset of walking was accompanied by greater “testing of wills” between mothers and infants in prohibition contexts, and by diminished maternal praise of the child, although there were no differences in infant emotionality. Zumbahlen and Crawley (1996) observed a greater number of parental prohibitions directed to crawling than nonlocomotor infants, and that crawling infants showed greater anger and also more often visually checked back with the parent across a distance. In another age-held-constant observational study, Hendrix (2004) reported that the mothers of locomotor infants used “no” more often in a prohibitive context compared to mothers of prelocomotor infants, but there were no group differences in proactive discipline (such as using distractors), child compliance, or infant emotional reactions. The parents of locomotor infants also reported using a greater number of discipline practices at home. Some of these studies have also reported changes in parental behavior over time *regardless* of the child's locomotor status, such as greater childproofing of the home (Hendrix, 2004). This suggests that the anticipation of the baby's self-produced locomotion is important to parents, helping them to prepare for the physical

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maturation and behavioral competence of their young offspring and the new requirements of their parenting.

That the growth of independent locomotion during the second half of the 1st year is associated with significant changes in parent-child interaction derives, in part, from how locomotion contributes to a more agentic and goal-directed infant. The emergence of intentional, goal-oriented behavior has been a familiar characterization of the 8- to 12-month-old infant from Piaget's (1952) description of the fourth sensorimotor substage. As Campos and his colleagues (2004) have noted, locomotion spurs more sophisticated means-ends behavior because infants must maintain a specific goal in mind (such as moving toward an interesting object) while assembling the specific movements and secondary strategies necessary for achieving it. Not only are infants becoming more volitional during this transition but also, as a consequence, they are being exposed to a range of social responses that underscore the discordant intentions of others, whether they consist of parental prohibitions, verbal admonitions (conveyed in the tone of voice), cautionary facial expressions in response to social referencing, other forms of referential communication. Self-produced locomotion enhances the expression of infant volition, and also contributes to an awareness of others' intentions (Campos et al., 2000). Indeed, these may be developmentally allied achievements because of how parental interventions over conflicting goals enhance the salience of the volition of another as it contrasts with the infant's own, and motivates efforts to comprehend the difference (see also Tomasello, Carpenter, Call, Behne, & Moll, in press; Tomasello & Rakoczy, 2003).

There are many indications that by 9 to 12 months, infants begin to perceive peoples' actions as intentional and goal directed as infants interpret actions in relation to the objects to which they are directed. In a study by Woodward (1998), for example, infants were habituated to a scene of a hand reaching across a stage to grasp one of two toys. After habituation, the positions of the toys were reversed and the hand either reached to grasp the original toy in its new location (requiring a different trajectory) or a new toy in the original location (using the same reaching motion as before). Six-month-olds and 9-month-olds each looked longer to the latter trials, suggesting that infants had encoded the original action as directed to a particular toy. In this study, infants did not respond comparably when a mechanical arm rather than a human hand reached to grasp the objects, consistent

with infants' differential encoding of human and nonhuman activity. At least by 7 months of age, for example, infants distinguish the movement of people as being self-initiated whereas objects move by external force (Spelke, Phillips, & Woodward, 1995), and this may occur even earlier (Legerstee, 1994). Using a similar habituation procedure, Woodward has also shown that by 12 months, infants understand the object directedness of a person's gazing (Woodward, 2003) and pointing (Woodward & Guajardo, 2002) and have also begun to comprehend the distinction between goals and the actions enacted to achieve them (Woodward & Sommerville, 2000). Baldwin, Baird, Saylor, and Clark (2001) have likewise shown that 10- to 11-month-olds organize their perceptions of people's actions by the completion of goal-directed activity (see Baird & Baldwin, 2001).

Inferences of the intentions underlying actions like reaching, gazing, and pointing are easy for infants to comprehend because they are the same actions that often express their own intentions. By 6 months of age, infants are familiar with the sight of their own hand reaching toward an object and may be more likely, as a consequence, to interpret other object-directed reaches they observe as similarly goal oriented. Understanding the object directedness of gazing and pointing emerges later with growing comprehension of referential communication and joint attention. Moreover, when caregivers respond to the intentionality they infer in the behavior of their infant offspring, they also scaffold emergent comprehension of the intentional structure of behavior (Meins, Fernyhough, Fradley, & Tuckey, 2001; Meins et al., 2003). When mothers punctuate their verbal responses to the infant's goal-directed activity with affirmative utterances when the goal is achieved, for example, they help to parse the sequence of behavioral acts in terms that organize the perception of behavior in goal-oriented units. Caregivers who are attuned to the intentional orientation of infant behavior (or "mind-minded," according to Meins and her colleagues; see Meins et al., 2001, 2003) are especially likely to interactively scaffold early comprehension of the goal orientation of behavior in these ways.

The perception of people as subjective, intentional agents is a signal accomplishment for early social cognitive development. By the first birthday or shortly thereafter, there are further indications that infants are responding in a more sophisticated manner to the actions of people as subjective, intentional agents (see

Carpenter, Nagell, & Tomasello, 1998, Tomasello, 1995a, 1999, and Tomasello & Rakoczy, 2003 for reviews). Infants create joint attentional states with adults by looking in the direction of the adult's gaze or looking from a toy to the adult's face and back to the toy again. They not only follow an adult's gaze but also look in the direction of the adult's pointing or gesturing. They produce protodeclarative gestures (such as pointing to or holding up an object while alternating gaze between the object and the adult's face) and protoimperative gestures (such as reaching for an object while alternating gaze between the object and the adult's face), each apparently intended to alter the adult's subjective orientation and elicit a desired response. They also exhibit social referencing behavior (discussed later). To be sure, there has been some debate over whether these behaviors reflect true perceptions of intentionality rather than conditioned learning of social behavior (Moore & Corkum, 1994) or affective sharing (Baldwin & Moses, 1996). However, the intercoordinated developmental emergence of these achievements suggests that a more fundamental transition has occurred in the infant's person perception. By the first birthday, infants have begun regarding people as intentional agents with subjective viewpoints that can be altered. Later in the 1st year, further evidence of this transition emerges with the ability of 14- to 18-month-olds to imitate adults' intended rather than accidental actions (Carpenter, Akhtar, & Tomasello, 1998; Meltzoff, 1995), their enlistment of inferences concerning the intentions of adult speakers in learning new words (Baldwin, Markman, Bill, Desjardins, & Irwin, 1996; Tomasello & Barton, 1994), and their use of intention inferences in new social learning (Carpenter, Call, & Tomasello, 2002). There are many further advances in intentionality understanding after age 2. Young children have much to learn about how intentions connect to other mental states, the influences that mediate the transition from intention to action, and the nature of nonintentional action, as well as other psychological processes.

Understanding people's behavior as goal directed and intentional takes the infant a long way toward a mentalistic comprehension of human behavior, but observing rather prosaic behaviors like reaching and pointing does not provide much insight into how infants begin to understand the salient experiences of social interaction. Little is known of how a dawning appreciation of other people as subjective, intentional agents alters other features of developing social cognition and the growth of infant-

parent relationships. How much does the emergent "testing of limits" of the toddler period, for example, arise from the young child's perception of the adult's intentionality when blocking, deterring, or otherwise frustrating the child's goal-directed activity? How does a 1-year-old interpret an adult's emotional behavior in relation to objects in the framework of intentionality inferences? How does this infant regard the intentionality of the adult's emotional behavior toward herself? Are a caregiver's nurturant actions perceived by a 1-year-old as intentional and goal directed, and how is this related to emergent social expectations and the developing security of their relationship? Twelve- to fourteen-month-old infants enlist emotional demeanor and gaze direction in their inferences of the intentions of an adult actor toward toy kittens (Phillips, Wellman, & Spelke, 2002). Do toddlers derive similar intentionality judgments in their observations of everyday social behavior?

Social Referencing

Limited answers to such questions can be gleaned from the research on social referencing (Campos & Stenberg, 1981; Klinnert, Campos, Sorce, Emde, & Svejda, 1983). Social referencing describes the use of another's emotional cues to clarify the interpretation of an ambiguous or uncertain event. The enlistment of this emotional information may derive from active information seeking (such as when one adult looks to another's face to clarify the meaning of an ambiguous statement) or may capitalize on the availability of another's emotional cues in the course of affective sharing or seeking reassurance (Baldwin & Moses, 1996). In either case, the importance of social referencing is twofold. First, it indicates that by the first birthday, infants are fairly good consumers of the emotional cues of others and can enlist this information in their own responses to events. Second, social referencing inaugurates the processes by which young children vicariously acquire an understanding of events through the signals provided by others and thus appropriate socially constructed meaning systems. Both are lifelong features of social development.

The research on social referencing indicates that it has important but modest effects on infant behavior (Feinman, Roberts, Hsieh, Sawyer, & Swanson, 1992). The influence of social referencing is especially apparent when infants are uncertain how to respond, but another's emotional cues can be influential even when they are not unsure (Feinman et al., 1992; Zaratany &

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Lamb, 1985). Hertenstein and Campos (2004) have demonstrated the retention of social referencing influences for up to 1 hour in 14-month-olds, but much more research into the longer-term effects of social referencing is needed. Infant responses to uncertain situations can be influenced by facial expressions alone (e.g., Klinnert, Emde, Butterfield, & Campos, 1986; Sorce, Emde, Campos, & Klinnert, 1985; Zarbatany & Lamb, 1985), vocal cues alone (Mumme, Fernald, & Herrera, 1996), multimodal emotional cues (sometimes including gestures; e.g., Hirshberg & Svejda, 1990; Hornik, Risenhoover, & Gunnar, 1987; Walden & Ogan, 1988), and even televised images (Mumme & Fernald, 2003). In everyday situations, infants commonly have access to the unsolicited multimodal emotional cues of their caregivers as they traverse, experiment, and explore the limits of their known universe.

Consistent with the research on infants' understanding of the subjectivity of others' actions, social referencing studies have also shown that as young as 12 to 14 months of age, infants understand the object specificity of another's emotional message (Hornik et al., 1987; Repacholi, 1998; Walden & Ogan, 1988), and can use that person's referential cues, such as gaze direction, to guide the interpretation of the person's emotional expressions (Moses, Baldwin, Rosicky, & Tidball, 2001). This suggests that another's emotional message has considerable informational value for 1-year-olds because they can comprehend its referential intent. But the emotional cues of an adult also have emotional impact, and studies have shown that the adult's signals influence the infant's general emotional demeanor, especially toward the object of referential focus (Hirshberg & Svejda, 1990; Klinnert et al., 1986; Moses et al., 2001; Mumme et al., 1996; Sorce et al., 1985). These dual influences of social referencing are not inconsistent. When reading another's emotional expressions in the presence of an ambiguous event, infants are emotionally alerted by the adult's affective demeanor at the same time that they are interpreting the meaning of this demeanor for the event of shared referential focus.

Social referencing illustrates, therefore, the sensitivity of 1-year-olds to the meaning underlying an adult's emotional orientation. By the beginning of the 2nd year, 1-year-olds comprehend that another's emotional expressions can be evoked with reference to a specific object or event, and this knowledge influences their interpretation of that event. This awareness is enlisted not only in situations when infants are uncertain about

ambiguous events but also in circumstances when caregivers' emotional expressions serve to alert, caution, interest, reassure, or otherwise motivate their young offspring in relation to events of shared attention. In these circumstances, the same understanding of object specificity and referential intent enables infants to comprehend that the adult's sharp, imperative voice is with reference to the potted plant that the child is reaching toward, or that the caregiver's smiling expression provides reassurance with respect to the kitten they are stroking.

In light of these early achievements in referential understanding and emotional communication, it is somewhat surprising that there has not been exploration of further development in these processes during the 2nd and 3rd years, when a young child's interpretation of the psychological meaning of an adult's emotional expressions becomes more insightful. Studies of early language acquisition show that as early as 18 months, for example, toddlers' inferences of the intentions of adult speakers—usually gleaned from their emotional displays—provide a basis for initial word learning (e.g., Baldwin, 2000; Baldwin et al., 1996), and future research might be devoted to examining other conceptual achievements that are facilitated by early emotional communication. For example, what does it mean for a young child's perception of other people, especially other family members or peers, when they are the targets of a caregiver's emotionally referential focus? When do young children begin to comprehend that they can themselves be objects of an adult's emotional responding, and what is the impact of this awareness for early self-concept and the development of security in close relationships? Variations in emotional communication appear to be relevant to the earliest feelings of self-confidence and pride when the adult's referential focus on the child or the child's accomplishments is accompanied by emotionally affirmative cues (Stipek, 1995). Conversely, emotional communication can be enlisted by parents in conveying behavioral standards (such as looking sternly at the child who is initiating disapproved activity) and in inducing shame or guilt when these standards are violated (Emde & Buchsbaum, 1990).

The impact of social referencing experiences on the adult also merits further research attention. Informal observations of spontaneous referencing behavior in my laboratory indicate that parents are acutely aware of the social referencing of their young offspring and often deliberately pose salient emotional expressions to reassure, instill caution, and provide other socioemotional

messages. If this is true, it suggests that social referencing should be viewed as a dyadic process of referential communication through which infants and young children appropriate an understanding of events of significance to them, and caregivers facilitate that understanding through deliberate emotional cuing.

Understanding Social Events

After 18 months, a transition occurs in psychological development when young children strive to comprehend normative standards for the social world. Developmental scientists have observed this in many behavioral domains. With respect to early conscience, for example, this is the period when toddlers respond with heightened interest and concern to objects that are damaged or flawed, applying normative standards for the wholeness, appearance, and integrity of objects (Kagan, 1981, *in press*; S. Lamb, 1993). As discussed later, this subsequently becomes manifested in an intuitive morality that causes young children to regard rules as obligatory, even though children commonly violate them (Wellman & Miller, 2003). With respect to the development of self-awareness, the responses of 18-month-olds to the familiar rouge task not only reveal self-recognition before a mirror but also their evident embarrassment when detecting a spot of red on their noses (Lewis, 2000; Lewis & Brooks-Gunn, 1979). Toddlers have internalized a normative standard for their physical appearance that does not include a rouge-marked nose. One of the most important manifestations of the young child's search for normative standards at this age is in language development, where they strive to comprehend the appropriate nominal reference of the words they are acquiring at such a rapid pace (Tomasello & Rakoczy, 2003).

With respect to event representation, young children reveal further their search for normative standards. By the end of the 2nd year, they begin to create generalized scripts for familiar social experiences such as bedtime rituals, mealtimes and other regular family routines, arrivals and departures from child care, and other common events (Hudson, 1993; Nelson, 1978, 1989; Nelson & Gruendel, 1981). These scripts provide a conceptual scaffold for knowledge of general routines and for memory of specific experiences that incorporate routine events, and they constitute the young child's normative expectations for how those routines should occur in the future. Indeed, young children can be inflexible in their fidelity to scripted expectations (Hudson, 1990, de-

scribes one 2-year-old who became distressed when she was given her bath before—rather than after—dinner because she thought this meant that she would not be fed that evening). These scripts increase in complexity and scope throughout the preschool years as they become integrated into broader knowledge systems.

Studies by Nelson and her colleagues indicate that the content, organization, and structure of early event representation is shaped not only by the child's prelinguistic representation of experiences but also by the verbal structure applied to them in parent-child discourse. In the context of shared conversations, beginning as soon as children can talk about events, parents help to review, reconstruct, and consolidate young children's memory of generalized routines and specific experiences (Fivush, 1993; Hudson, 1990; Nelson, 1989, 1993a). Furthermore, parents often help children to anticipate future events, and the verbal structure they provide may help to organize the child's representation of that experience as it subsequently occurs (Nelson, 1989, 1993a). There is also evidence that the style of parental discourse is important. Parents who are more elaborative in their conversational style provide considerable background and contextual information in their shared discussion of events in the child's life. Several studies have found that the offspring of more elaborative mothers have a more complete and sophisticated representation of their past experiences (including representations of routine events) not only owing to the direct impact of parental discourse style but also because of the child's appropriation of the adult's narrative approach (Hudson, 1990; Nelson, 1993a; Reese & Fivush, 1993).

Generalized event representations, or scripts, provide a foundation for young children's understanding of social events. However, with researchers' focus on rather prosaic routines (such as restaurant visits), little is known about how young children represent everyday experiences that involve greater emotional and relational depth such as separations and reunions, bedtime routines, and distress relief. Such events are important in how young children comprehend emotion and relationships, the quality of parental nurturance, and the reliability of care. The child's direct experience of these events, as well as the verbal structure of parental discourse in subsequent conversation, are each important to how children comprehend these experiences. Further study of children's representations of these experiences may also contribute to understanding the origins of the differences in relational security and trust that underlie parent-child attachment.

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Feelings and Desires

Social referencing research is important because it illustrates the significance of emotion to the infant's behavioral regulation and to social understanding. Social referencing is important also because processes of emotional communication are ubiquitous in child-parent interaction, including the routine events that are the foundation for generalized event representations. Not surprisingly, among the most important subsequent advances in early social cognition is developing understanding of people's desires, beliefs, and feelings (Thompson & Lagattuta, 2005).

Toddlers display a remarkable comprehension of the differences between people in what they desire, contrary to the traditional portrayal of early egocentrism. In an important study, Repacholi and Gopnik (1997) presented 14- and 18-month-olds with two snacks: goldfish crackers (which the children liked) and broccoli (which the children disliked). Then the adult tasted each snack, smiling and exhibiting pleasure ("mmmm!") with one, and frowning and saying "ewww!" with the other. In the "match" condition, the adult's preferences were the same as the child's; in the "mismatch" condition, the adult preferred the broccoli and disliked the crackers. Then the adult extended her hand and said, "I want some more, can you give me more?" The 18-month-olds (but not the younger toddlers) reliably gave the adult the food she desired in both the match and mismatch conditions. By contrast, the 14-month-olds overwhelmingly gave the adult more goldfish crackers. The sensitivity to differences in desire among 18-month-olds is consistent with evidence that spontaneous verbal references to desire emerge by 18 months, and somewhat later children use contrastive statements about desire (e.g., comparing what one person wants with what another desires; Bartsch & Wellman, 1995).

By age 2, toddlers can be overheard making spontaneous verbal references to emotions, the causes of emotion, and even emotion regulatory efforts (e.g., "I scared of the shark. Close my eyes" at 28 months; Bartsch & Wellman, 1995; Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986; Brown & Dunn, 1991; Dunn, Bretherton, & Munn, 1987; Wellman, Harris, Banerjee, & Sinclair, 1995). The emergence of expressive emotion-related utterances is preceded by months of receptive comprehension of emotion-related discourse (Ridgeway, Waters, & Kuczaj, 1985). Careful analysis of the content of young children's emotion references has shown that even in their initial utterances,

children regard emotions not just as behavioral events but as subjective, psychological conditions, distinct from the situations and behaviors with which they are associated. By contrast with their descriptions of pain, for example, children as young as 2 describe emotion as referential (e.g., sad *about* something) and involving volition, consistent with their developing understanding of intentionality and referentiality. Moreover, even in these initial utterances, toddlers explicitly differentiate people's feelings, often contrasting another's emotions with their own in a nonegocentric manner (Bartsch & Wellman, 1995; Wellman et al., 1995). By age 2.5, young children comprehend better the connections between desire and emotion: People are happy when they get or see what they want and unhappy when their desires are denied (Repacholi & Gopnik, 1997; Wellman & Woolley, 1990).

It appears that early childhood witnesses the growth of young children's intuitive theories of emotion that incorporate not only the belief-desire reasoning described by theory of mind researchers but also their dawning understanding of the internal (including visceral) and external determinants of emotion, the subjectivity and referentiality of emotional experience, the outcomes of emotional arousal, and emotional regulatory processes. These intuitive theories of emotion expand markedly during the preschool years (Denham, 1998; Fabes, Eisenberg, Nyman, & Michealieu, 1991). In their efforts to comprehend the causes of emotion, preschoolers begin to conceptually map the typical situations and goal states that are associated with different feelings, such as that blocked goals elicit anger and loss is associated with sadness (Harris, 1989; Stein & Levine, 1989). This reflects their awareness that both situational and internal factors are relevant to eliciting emotion (Dunn & Hughes, 1998; Fabes et al., 1991). For example, 3-year-olds know that feelings are associated with beliefs and expectations about events such as the surprise a visitor feels after seeing giraffes on a farm (Wellman & Banerjee, 1991). Young children's understanding of the connection between emotion and thought is also revealed in their appreciation that feelings can be evoked by mental reminders of past emotionally evocative experiences. By age 5, for example, children understand that someone can feel sad when seeing a cat who reminds her of a pet who ran away (Lagattuta, Wellman, & Flavell, 1997; see also Lagattuta & Wellman, 2001). Young children are thus beginning to comprehend the personal and idiosyncratic influences on emotional responding (Dunn & Hughes, 1998).

As a consequence of these causal understandings, and perhaps also because they are more motivated to do so, young children better understand the causes of negative than positive emotions they observe in others (Dunn & Hughes, 1998; Fabes et al., 1991). Their understanding is limited, however. Young children have considerably greater difficulty understanding how emotions can be based on *false* belief, for example, and it is not until about age 6 that they appreciate that someone will feel delighted before opening a box of candy because she thinks it contains chocolates rather than the pebbles her older brother has substituted (de Rosnay & Harris, 2002; de Rosnay, Pons, Harris, & Morrell, 2004; Harris, Johnson, Hutton, Andrews, & Cooke, 1989). Moreover, consistent with the younger child's straightforward association of emotions with specific mental states, it is not until middle childhood that children begin to grasp that multiple emotions of different valence can be experienced simultaneously, and that ambivalence and emotional equivocation can occur (Harter & Buddin, 1987; Wintre & Vallance, 1994).

Young children's developing understanding of how to manage or regulate their emotions reflects these conceptions of the origins of emotional experience (see reviews by Thompson, 1990, 1994). In early childhood, preschoolers believe that emotion can be managed by fleeing, removing, restricting perception of, or ignoring emotionally arousing events, revealing an awareness of the connections between emotion, perception, and thought. Children also recognize that emotion can be managed through reassuring self-talk, seeking nurturance, ceasing to think about emotionally arousing events, distraction, or other strategies that change the mental states that contribute to emotional arousal (Harris, Guz, Lipian, & Man-Shu, 1985; Lagattuta et al., 1997). Consistent with their developing comprehension of the distinction between appearance and reality, older preschoolers also begin to understand the value of managing emotional expressions to dissemble one's feelings or protect the feelings of others, and they begin to use display rules in everyday circumstances (Banerjee, 1997; Cole, 1986). The intuitive theories of emotion that guide young children's understanding of the origins of emotions are also enlisted in their efforts to regulate emotional arousal.

Young children are highly motivated to understand emotions because their desires and feelings are compelling experiences and others' emotions are salient and significant influences on them. Although desires and emotions may seem conceptually simple (especially by

comparison with other mental states), they are actually quite challenging for young children to understand because they are invisible, multidetermined motivators of behavior. Emotions have complex internal causes and can be manifested in diverse facial, vocal, and behavioral expressions that are not reliably intercoordinated, which makes understanding the associations between desires, feelings, perceptions, beliefs, and behavior a conceptually daunting task.

Young children are assisted in developing coherent intuitive theories of emotion, however, by their conversations with adults who label, describe, and explain the causes and consequences of the emotion to them (Thompson, Laible, & Ontai, 2003). The influence of these verbal references to emotion begins early: In one study, references to feelings by mothers and older siblings when toddlers were 18 months were positively correlated with the child's emotion-related utterances at 24 months (Dunn et al., 1987). With increasing age, emotion-related discussions are integrated into conversations of recent events or current experiences, story reading, talking about upcoming events, personal storytelling, or other conversational forums. The influence of these conversations on emotion understanding derives from (a) the growth of language competence that provides a lexical foundation to shared understanding of psychological experiences that are otherwise difficult to define, comprehend, or convey to another; and (b) adult mind-mindedness that causes them to induct young children into the psychological world they inhabit whenever they talk with the child about people. Thus, whenever young children ask "why" about the feelings and behavior they observe in others, they are tutored about the mental world by adults who cannot help but do so because psychological understandings of people have become intuitive to mature thinkers. Moreover, language also enables thought about emotional experience outside of its immediate context, when young children (and often their parents) are more capable of thoughtful reflection and discussion. Indeed, language content and structure has many potentially important influences on the growth of psychological understanding in children (see Budwig, 2002, for a review of these), but the essential feature of these linguistic contributions is that they are also social.

Parent-child conversation about desires, feelings, behavior, and thought thus helps to organize psychological understanding through the lexicalization of mental and emotional life: Words categorize psychological experience in ways that provide coherence and a basis for

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shared reference and understanding. They help to make explicit the implicit knowledge that young children have intuited. When preschoolers discuss desires and feelings with an adult, they also begin to comprehend that the same event can be experienced differently by people who may feel differently about it (Levine, Stein, & Liwag, 1999). Conversational discourse enables young children to compare their own representation of an experience with that of the adult, and by comparing primary and secondary representations (the latter conveyed in shared conversation) young children are likely to derive new ways of understanding and thinking about personal experiences. More broadly, conversations about emotions provide a forum for the transmission of cultural values, causal attributions, moral evaluations, and other belief systems of the caregiver that are also part of the adult's intuitive understanding of the psychological motivators of people's behavior. As a consequence, young children learn about emotion in conversations that can link emotion to standards of conduct and social awareness. This may explain why parental conversational references to feelings are a more significant predictor of early conscience development than are parents' explicit references to rules (Laible & Thompson, 2000).

Parents who discuss emotions more frequently and with greater elaboration, therefore, have children with more accurate and richer conceptualizations of emotion (Brown & Dunn, 1996; Denham, Zoller, & Couchard, 1994; Dunn, Brown, & Beardsall, 1991; Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991; Fivush, 1993; Jenkins, Turrell, Kogushi, Lollis, & Ross, 2003; Laible, 2004a, b; Ontai & Thompson, 2002). There are many elements of elaborated, emotion-related discourse that are likely to provoke young children's emotion understanding, including the adult's descriptive statements, explanations of the causes of emotion or its consequences, linking emotion in another person to the child's experience, asking questions of children that further their understanding of emotion, and coaching children in strategies of emotion management (Ontai & Thompson, 2002). The frequency of mothers' and children's emotion references and, in particular, their talk about the causes of emotion are especially influential for the development of emotion understanding (Brown & Dunn, 1996; Dunn & Brown, 1993; Dunn, Brown, & Beardsall, 1991; see also Dunn, Brown, Slomkowski, et al., 1991), although more research on this issue is necessary. Parents and young children tend to discuss negative emotions more frequently than positive feelings because the

former are conceptually more complex and are also more troubling to the child, and thus there is a stronger inherent need to understand, regulate, and/or prevent intense negative feelings (Lagattuta & Wellman, 2002). Parents also talk about emotions differently with daughters than with sons, using more elaboration, reassurance, and a greater relational focus in their emotion-related conversations with daughters (Fivush, 1998).

Research on the influence of parent-child conversation on the early development of emotion understanding also highlights two other conclusions. First, conversations with adults are not the only important conversational catalysts to emotion understanding. Young children talk about feelings and thoughts more frequently with friends and siblings than they do with their mothers (Brown, Donelan-McCall, & Dunn, 1996), and these conversations also contribute significantly to children's developing understanding of emotion (Hughes & Dunn, 1998). Sibling interactions (especially interaction with an older sibling) offer unique contexts for the growth of emotion understanding, such as in pretend play that permits animated role taking of feelings and coping strategies (Dunn et al., 1991; Youngblade & Dunn, 1995), and sibling conflict that involves negotiating desires and needs with other family members (Dunn & Herrera, 1997; N. Howe, Patrakos, & Rinaldi, 1998). These contexts for emotion conversation among equals may be even more provocative of developing emotion understanding because young children can be more direct in conveying their own desires and emotions and their reasons for feeling these ways.

Second, by contrast with simple constructivist or socialization models of the development of knowledge, the growth of emotion understanding derives from an interaction of a child's comprehension of psychological realities with the catalysts of the adult's psychological references in shared conversation. Both the child's constructivist effort and the adult's provocation are important, and probably necessary. Young children clearly have powerful inductive capacities for comprehending psychological states in themselves and others, but to assume that children build theories about mental states independently of the scaffolding of child-parent discourse and other relational incentives may overstate either the insightfulness of the child's inductive inferences or the clarity of the observational material on which the young child relies. Considerably more research is needed, however, to understand how these discourse elements interact with the child's conceptual capabilities and other

social influences in helping children to develop more sophisticated understanding of the psychological world.

Because of this, an essential future research task is to understand the broader network of relational influences that are associated with differences in parent-child conversational discourse about emotion. It seems likely that individual differences in the richness of adult speech about psychological states would be complemented by other affective dimensions of the parent-child relationships. Securely attached children are more advanced in emotion understanding (Laible & Thompson, 1998; Ontai & Thompson, 2002; Raikes & Thompson, 2005a), for example, and the broader family emotional climate, the adult's emotional expressiveness, and other features of early emotion socialization have important influences on young children's developing emotion understanding (Denham, 1998; Raikes & Thompson, 2005a). The few studies that have assessed the importance of emotional influences in the family in relation to conversational discourse find that each are important to emotion understanding (e.g., Denham et al., 1994). Further study of this question is necessary, however, for understanding how developments in young children's conceptual comprehension of emotion are facilitated by language, elements of the family emotional climate, and their interaction.

Understanding Psychological Characteristics and Social Roles

After age 3, other significant advances occur in young children's understanding of the psychological world. Most notably, children develop a more fully representational view of the mind that incorporates an awareness that beliefs can be inconsistent with reality (Wellman, 2002; Wellman, Cross, & Watson, 2001). Young children's dawning understanding of false belief is significant not only because it reflects an awareness of the potential independence of mental events from objective reality but also because it is a gateway to the comprehension of other psychological realities such as the privacy of personal mental experience, the induction of mistaken beliefs in others, and the mind's activity independent of experience (e.g., interpretations, expectations). For these reasons, there has been a significant research literature exploring the origins of this developmental achievement that is more extensively reviewed in another chapter of this *Handbook*.

Individual differences in children's understanding of false belief are strongly correlated with differences in

emotion understanding (Cutting & Dunn, 1999; de Rosnay et al., 2004; Hughes & Dunn, 1998). Both capacities rely on an awareness of the subjectivity of psychological states: People can share the same experience but be psychologically affected in different ways, thus the potential privacy of psychological experience. However, the association between emotion understanding and false belief awareness may also derive from their common association with differences in language ability, family background, or children's experiences in family relationships (Cutting & Dunn, 1999; Ruffman, Slade, Rowlandson, Rumsey, & Garnham, 2003). As with the research on conversational discourse and emotion understanding, for example, many studies have found that children's conversations with parents and peers about mental and emotional themes predict later differences in false belief understanding (Bartsch & Wellman, 1995; Brown et al., 1996; Dunn, Brown, & Beardsall, 1991; Dunn, Brown, Slomkowski, et al., 1991; Hughes & Dunn, 1998; Ruffman, Slade, & Crowe, 2002; Ruffman et al., 2003; Sabbagh & Callanan, 1998; Welch-Ross, 1995; see generally Astington & Baird, 2005). Sabbagh and Callanan (1998) found that when 3- to 5-year-old offspring initiated conversational references to the mind by implicitly contrasting different mental states or saying "I don't know," their parents often responded by highlighting the representational aspects of mental states, which commonly elicited further explicit mental state talk from their children. Other researchers have also found that parents' mental state causal language (Dunn, Brown, Slomkowski, et al., 1991) and explicit mental state discourse are especially important to the development of false belief understanding in children (e.g., Ruffman et al., 2002). A recent training study with 3-year-olds showed that only training conditions involving language improved children's subsequent performance on false belief tasks, and that language conditions involving both perspective-shifting discourse (i.e., discussing mental deception using deceptive objects, such as a pen that looks like a flower) and syntactic prompts (e.g., sentential complements such as "*Peter knows that Mommy's home*") were each independently effective (Lohmann & Tomasello, 2003).

These findings are consistent with the general view that adult discourse about phenomena that interest young children is influential in conceptual growth, especially when the phenomena are otherwise elusive or difficult for children to comprehend. Harris (in press; Harris & Koenig, 2005) has argued that children accept

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the testimony, or claims, of adults on a wide range of issues of importance to them, from understanding the shape of the earth and other natural phenomena, to the association between mind and brain and other psychological phenomena, to the nature of God, the afterlife, and other metaphysical phenomena. Children early develop understanding of these phenomena based on their acceptance of the truthfulness of what they are told but cannot independently confirm, he argues, and this knowledge is readily integrated into knowledge systems based on personal experience. Young children are not passive recipients of this knowledge, of course, because their inquiries about animals, people's beliefs, or God provoke the conversations that inform them, and as they attempt to juxtapose their current conceptions with what they learn, children's comments, queries, and objections further guide the discussion. Research on the early growth of social and emotional understanding, and of mental states, is consistent with this view.

Recent studies indicate that individual differences in mental state understanding have surprisingly early origins. Wellman, Phillips, Dunphy-Lelii, and LaLonde (2004) reported that 14-month-olds who showed greater sensitivity to intentional human activity in a habituation procedure (see Phillips et al., 2002, and described earlier) were more proficient on a battery of theory of mind tasks at age 4. The source of the continuity over several years was unexplained, but relational influences may be pertinent. Meins and her colleagues (2002) found that 6-month-olds whose mothers commented on their actions in ways that reflected awareness of the baby's intentions, goals, or other psychological states (i.e., "mind-mindedness") were more advanced on false belief assessments at age 4. Ruffman, Perner, and Parkin (1999) noted that preschoolers' false belief understanding was even predicted by mothers' use of disciplinary procedures that involved asking the child to reflect on the victim's feelings. These findings suggest that individual differences in social cognitive development across the early years are related to the quality of early relational experience in ways that merit further study. Thus, the preschooler's inductive reasoning about psychological experiences in others has developmental antecedents from early in life.

The developmental outcomes of these differences in social cognitive competence are potentially important. Dunn, Denham, and their colleagues have found that individual differences in false belief understanding and emotion understanding each predict young children's

social competence in friendship with peers in contemporaneous and longitudinal assessments (Brown et al., 1996; Denham et al., 2003; Denham, Caverly, et al., 2002; Dunn, 1995; Dunn, Cutting, & Demetriou, 2000; see also Cutting & Dunn, 2002; Schultz, Izard, & Ackerman, 2000). Understanding the features of parent-child interaction and later conversation that contribute to these differences in psychological understanding—especially in the broader context of the emotional climate of the family—can contribute to a better grasp of the influences that contribute to the growth of interpersonal sensitivity in early childhood.

As with the research on conversation and emotion understanding, the contexts and partners with whom young children share their understandings of the mind are also important. Children commonly discuss their own feelings and mental states in conversations with their mothers, but when talking with peers or siblings *both* children share their views about mutual interests or concerns in positive, cooperative contexts (Brown et al., 1996; Dunn, 1999) or in negotiation or dispute resolution (Howe et al., 1998). False belief understanding was predicted, in one study, by mental state discourse between siblings and friends involving contrastives (i.e., differentiating one person's preferences from another's), activity suggestions involving mental terms (e.g., "*I think I'm gonna . . .*"), and assertions involving mental referents (Brown et al., 1996). In their encounters with peers and siblings, therefore, young children are likely to encounter discrepancies between their own mental states and those of another, and differences between another's descriptions of reality and the reality that the child knows.

Understanding false belief is complemented by other advances in psychological understanding in the late preschool years. By ages 5 and 6, for example, young children begin to perceive others in terms of psychological motives and traits and can predict future behavior on the basis of the traits they infer, including differences in ability (Heyman, Ge, & Giles, 2003; Heyman & Gelman, 1999, 2000; Yuill & Pearson, 1998). They have much to learn about traits as psychological entities, however, and this is revealed in their optimism concerning the controllability and changeability of traits in others that is also reflected in self-perception, as discussed later in this chapter (see Lockhart, Chang, & Story, 2002). By age 3 or 4, as discussed later, young children distinguish behavioral violations that are moral from those that are social conventional, regarding moral

violations as more serious due, in part, to their harm to others (Smetana, 1981, 1997; Smetana & Braeges, 1990). In making this distinction, they are tutored by their mothers who justify moral rules because of their interpersonal consequences (Smetana, Kochanska, & Chuang, 2000). Mother-child conversations also contribute to young children's essentialist thinking about gender differences (Gelman, Taylor, & Nguyen, 2004). Finally, older preschoolers also begin to consider fairness issues in relation to ingroup-outgroup relations, particularly associated with gender exclusion, although major advances in their comprehension of social roles and group processes awaits middle childhood (Killen, Pisacane, Lee-Kim, & Ardile-Rey, 2001; Theimer, Killen, & Stanger, 2001).

Summary

At least three conclusions emerge from these literatures that point to future directions in research on early social cognition.

First, social experiences are uniquely generative of new understanding of people and the psychological world. Early infant-caregiver interactions contribute fundamentally to the development of generalized social expectations and specific expectations for the behavior of familiar partners. Emotional exchanges in infant-parent interaction contribute to the multimodal discrimination of emotional signals and later, in the context of social referencing, understanding of the referentiality of emotional cues. Changes in parent-child interaction associated with the growth of self-produced locomotion may help to foster developing perceptions of the intentionality and subjectivity of other people. Comprehension of everyday social events is aided by the organization and structure provided by adult discourse about these events. Emotion understanding is fostered not only by everyday emotional interactions between young children and their caregivers but also by parent-child and peer conversations that embed insight into the psychological world—people's desires, feelings, intentions, and thoughts—into discussions of everyday experiences. The semantics and structure of such conversations also usher young children into a broader appreciation of how mental events can be shared or divergent, beliefs can be accurate or inaccurate, and psychological experience can be hidden or disclosed. As parents naturally treat their offspring as psychological beings from infancy, commenting on their intentions and

feelings, punctuating their activity with nonverbal affirmations of goal achievement, and talking with them about the psychological world they inhabit, they induct the child into the world of the mind through their testimony. Contrary to a long tradition of social cognitive research, social cognition is not only the generalization of intellectual skills that children have independently constructed but also the unique developmental catalysts embedded into the everyday experience of social interaction from early in life.

Second, individual differences in social experience are important for differences in early social understanding. Differences in infants' experience in face-to-face interaction (such as when mothers are depressed) affect how they respond to the social overtures of other partners and may have more generalized influences on social expectations. Differences in early parental sensitivity and "mind-mindedness" during the 1st year may be important for how young children begin to comprehend the nature of others' intentions as they are gradually constructing a theory of mind. Differences in the content, richness, and structure of parent-child conversations are important for individual differences in the growth of emotion understanding, comprehension of false belief, and other elements of psychological understanding that are predictive of important dimensions of socioemotional competence in the preschool years and beyond. Although the tenor of research on developing social cognition (particularly theory of mind) has little attended to individual differences in these developmental processes and their implications, recent research shows how important early social influences are for the emergence of differences in social expectations, dispositions, and beliefs in the early years. Further study along these lines is warranted.

Third, integrating understanding of early social cognitive development from cognitivist perspectives and social viewpoints is important to theories of socioper-sonality development, especially those that emphasize the representational dimensions of early relational experience. The developmental account of early psychological understanding is the account on which a theory of the development of "internal working models" derived from early attachments, for example, should be based. More generally, such an integrative approach to further research on early social cognition is likely to contribute added insight to the growth of sociability and the understanding of mind by highlighting how the powerful inductive capacities of the young child's thinking

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juxtapose with the incentives of social experience to yield conceptions of the psychological world that are rich, informed, and individualized (Dunn, 1996; Harris, 1997, 1999).

RELATIONSHIPS

Young children develop in an environment of relationships.¹ Their experiences over time with people who know them well, and whose characteristics and tendencies children begin to comprehend, are core influences on early conceptual and sociopersonality development (Committee on Integrating the Science of Early Childhood Development, 2000). This theme runs across the literatures surveyed in this chapter and in many other developmental formulations. These include the viewpoints of neo-Vygotskian theorists and other students of cognitive growth, discussed in the previous section, who emphasize relational influences on the construction of early thinking and understanding (e.g., Nelson, 1996; Rogoff, 1990). They include research on parent-infant interaction, parent-child relationships, and inquiry into the influence of sibling relationships, peers, and other social partners discussed elsewhere in this *Handbook* (e.g., Dunn, 1993, 2004). They include the work on social networks and social support that highlights how relationships are developmental catalysts and avenues for enhanced knowledge and information, skill acquisition, and emotional support through their stress buffering, scaffolding of new competencies, social exchange, and other influences from an early age (e.g., Cochran, Larner, Riley, Gunnarsson, & Henderson, 1990; Thompson, 1995; Thompson, Flood, & Goodvin, 2005). Current work in developmental psychopathology also emphasizes the centrality of close relationships to the constellation of risk and protective factors that predict the emergence of child pathology or psychological well-being (Cicchetti & Cohen, 1995; Cicchetti, Toth, & Lynch, 1995). Indeed, it is time for developmental scientists to begin integrating these multifaceted perspectives into a coherent developmental relational science.

Relational processes have been extensively studied in early development. In parent-child interaction, these processes include the caregiver's warmth, sensitivity, and contingent responding, the scaffolding of shared ac-

tivity, the emotional climate of the home, the verbal richness of family interaction, incentives for exploratory competence, expectations for mature behavior, imitative learning, conceptual catalysts in parent-child conversational discourse, parent's flexibility and adaptability, the use of proactive discipline, processes of negotiation and bargaining between parent and child, family routines and rituals, the effects of physical punishment, the child's construals of the adult's behavior, and the dyad's attachment security, shared positive affect, emotional synchrony, and mutual responsiveness (Baumrind, 1973, 1996; Grusec & Goodnow, 1994; Grusec, Goodnow, & Kuczynski, 2000; for general reviews, consult Laible & Thompson, in press; Maccoby & Martin, 1983; see also Parke & Buriel, Chapter 8; Saarni et al., Chapter 5, this *Handbook*, this volume).

The outcomes of these multifaceted relational influences on social and personality development are equally diverse and include the development of social skills, social expectations, emotion regulation, behavioral self-control, relational schemas, self-confidence, trust in others, social and emotional understanding, conscience development, and the enhancement or deterioration of emotional well-being and psychological competence.

The relational influences of parents, siblings, child-care providers, peers, teachers, extended kin, and others contribute to these important developmental outcomes.

At the center of this relational network is the parent-child relationship, which is important because its influences are unique, comprehensive, ubiquitous, and potentially enduring. Ever since Freud's (1940) famous dictum that the infant-mother relationship is "unique, without parallel, established unalterably for a whole lifetime as the first and strongest love-object and as the prototype of all later love-relations" (p. 45), developmental theorists have in concert emphasized this relationship as the foundation of personality growth. In now-classic formulations, developmentalists like Baumrind (1978, 1989) and Hoffman (1983, 2000) integrated multiple dimensions of warmth, authority, responsiveness, and demand into parenting patterns that were significantly predictive of the competence and adjustment of offspring. More recent perspectives have emphasized the direct and indirect effects of family members on each other (Belsky, 1981), transactional models of family influences extended over time (Sameroff & Chandler, 1975), the embeddedness of family processes in larger social, cultural, and economic systems (Bronfenbrenner, 1979), and the significance of children's constructions of experience in their interactions with

¹I am indebted to my colleagues on the National Scientific Council on the Developing Child for helping me to develop this concept for the Council's working paper, which can be found at www.developingchild.net.

family members (Grusec & Goodnow, 1994; Rogoff, 1990). Each of these perspectives provides significant continuing catalysts to new thinking about early sociopersonality development in family relationships.

For more than 3 decades, developmental thinking about parent-child relationships has also been guided by attachment theory (Ainsworth, 1973; Bowlby, 1969/1982, 1973, 1980). It is not difficult to account for its influence. Attachment theory explores some of the most compelling questions about early sociopersonality development and its later consequences. How significant are early experiences (especially in intimate relationships) for psychosocial growth? What processes guide continuity and change in personality characteristics throughout life? How are childhood experiences of care linked to later social relatedness? In what ways do early experiences in relationships contribute to psychological vulnerability and strength? Such questions are central to developmental theory, and the creation and validation of the Strange Situation and other assessment procedures has enabled developmental scientists to investigate these questions with growing sophistication and scope. Several decades of research on child-parent attachment have yielded provisional answers to these central questions of developmental theory, and have yielded more questions to ponder.

This section is concerned with theory and research on early parent-child attachment, not because attachment theory is the only important theoretical approach to understanding early relational influences, but because the breadth of its theoretical scope and the body of empirical literature it has produced are uniquely generative of new ideas concerning the impact of early parent-child relationships on sociopersonality development. The continuing vitality of attachment theory will derive, however, from its inclusion of other conceptual and empirical approaches to early relational influences. A number of recent, authoritative reviews of research in attachment (Cassidy & Shaver, 1999; Colin, 1996) reflect the breadth of developmental, personality, and clinical research directions inspired by attachment formulations. The following review focuses on the early development of child-parent attachment and its enduring influence.

Attachment and its Development

Attachment can be defined as an enduring affectional tie that unites one person to another over time and across space (Ainsworth, 1973). Attachment figures are a source of security that permit confident exploration and

mastery, a safe haven in stress or danger, and who contribute to self-regulation in difficult or anxious circumstances. Sustained separation from the attachment figure is a source of stress and disruption. Parents are typically the first and primary attachment figures for infants, but other reliable, enduring caregivers can also become attachment figures such as grandparents, stepparents, or sometimes child-care providers. In light of typical conditions of infant care in the United States and elsewhere, multiple attachment relationships are normative, although the development of such relationships is based not on the adult's role or responsibilities but rather on the nature of the child's expectations for that person's behavior from past experience. Given the functions of attachment figures in early childhood development, occasional babysitters, older peers, and teachers are unlikely to be attachment figures and, at later ages, close friends and romantic partners may assume attachment-like functions but are not attachment figures in the same sense (compare Ainsworth, 1989 with Hazen & Shaver, 1994).

Attachment theory offers multilevel explanations for why attachments develop in infancy. On a developmental level, attachment emerges from the variety of social cognitive advances that enable infants to develop individualized expectations for the partner's behavior that help to define the affective quality of their relationship. These advances, discussed in the preceding section, include:

- The recognition of the partner's face, voice, and other features
- The growth of expectations for the partner's behavior (especially related to distress relief and pleasure in sociability) that contribute to an affective preference for that person
- A developing awareness of the partner as a person (with subjective, mental states, and an intentional stance toward the infant) with whom a relationship gradually develops

These and other conceptual achievements contribute to the consolidation of initial attachment relationships by the first birthday.

Attachment relationships continue to develop after the first birthday as the child becomes psychologically more sophisticated and can regard the partner and the relationship in more complex ways (Ainsworth, 1990; Crittenden, 2000). In early childhood, for example, young children increasingly rely on mental representations of the partner's characteristics, especially his or

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her physical and psychological accessibility when children are stressed. Children also acquire, as earlier noted, enhanced capacities for understanding the mental and emotional perspectives of the partner, comprehending and accommodating to the partner's goals and interests, and communicating more effectively their own needs and concerns (Harris, 1997). This development of attachment was described by Bowlby (1969/1982, 1973) as the "goal-corrected partnership." In later years, this partnership becomes more complex, mutual, and dynamic as the children mature psychologically. In middle childhood, children understand relationships to be based on psychological sharing between partners, enduring despite conflict, and children begin to explicitly conceptualize relational processes for the first time while seeking psychological support as well as physical proximity to their attachment figures (Raikes & Thompson, 2005b). They may also begin deriving security from the broader network of family relationships they share as well as specific parent-child relationships (Davies & Cummings, 1994; Davies & Forman, 2002). In adolescence, attachment relationships are transformed by a young person's efforts to clarify and differentiate self from others, reflect on complex abstract realities (such as the nature of human relationships), and develop capacities for emotional reflection and self-regulation (Allen & Land, 1999). Attachment relationships develop, in short, with the child's developing psychological sophistication.

On an ethological or evolutionary level, attachments are believed to have evolved to promote infant survival (and inclusive fitness) by maintaining the protective proximity of adults, especially in conditions of alarm or danger. Seeking physical closeness to a caregiver helped to ensure (in the environment of evolutionary adaptedness) that infants were protected and were not lost or abandoned, and that they would also be nurtured and could learn from the adult behavior they observed until they reached maturity.

Complementary biologically based motivational systems fostering nurturance in adults are also believed to have arisen from this evolutionary legacy (Thompson et al., 2005). But the inclusive fitness considerations of the mother are more complicated than those of the infant because maternal energy, time, and other resources must be divided between the needs of several offspring and the mother herself, including her survival and future reproductive potential. From a biological perspective, maternal solicitude is contingent on many factors,

including the number of siblings, environmental resources (e.g., food, social support), the adult's health and age, and the age, health, and other characteristics of the child (Blurton-Jones, 1993; Clutton-Brock, 1991; Hrdy, 1999). In some circumstances, maternal withdrawal or psychological abandonment may be associated with an inability to invest adequate nurturance in offspring. This is consistent with the report of Valenzuela (1990, 1997) that 93% of a sample of chronically undernourished, low-income toddlers were insecurely attached (compared with 50% of a comparison sample of adequately nourished, low-income toddlers) and that their mothers were significantly less sensitive than the mothers of adequately nourished toddlers during observations with the child. It is also consistent, unfortunately, with high rates of infanticide in circumstances and cultures characterized by resource deprivation and other obstacles to adequate early care (Hrdy, 1999). In more typical conditions, there is likely to be greater maternal investment but also significant differences between the mother's willingness to invest in a child (through nurturance and attention) and the child's demands for further investment, such as when weaning conflicts occur (Bateson, 1994; Trivers, 1985). In these circumstances, the mother's insensitivity and rejection are as biologically adaptive for her as are the child's efforts to entice greater nurturance adaptive for the child. Parental solicitude is, in short, a biologically contingent phenomenon, with maternal insensitivity and child-parent conflict not only normative but also biologically adaptive at times in light of the different fitness considerations of each partner.

In addition to developmental and ethological perspectives, Bowlby's (1969/1982, 1973, 1980) theory included two other levels of explanation for the development of attachment relationships that contribute to the conceptual richness of attachment theory. First, he borrowed concepts from cybernetic control systems theory to explain the flexible organization of specific attachment behaviors into a behavioral system characterized by continuous goal-correctedness, hierarchical organization, and the functional interrelations among specific behaviors. Thus, attachment develops as a behavioral system when the child has psychologically matured sufficiently that the functional goals underlying the system (e.g., protective proximity to a caregiver) can organize specific attachment behaviors (e.g., reaching, locomotion to the adult, or crying). This functionalist approach to behavioral organization has been an impor-

tant contribution to assessing attachment in the Strange Situation and other procedures. Second, Bowlby's developmental theory was also significantly influenced by his psychoanalytic orientation. His concept of the "internal working model" of self and attachment figure, arising from early relational experience and coloring later relationships, is similar to central features of object relations theory. In addition, his formulations concerning unconscious defensive processes in children, the influence of inconsistent mental representations arising from different experiences of care, and the importance of the therapist as an attachment figure all derive from his orientation as a psychoanalytic therapist. These influences contribute to the depth of attachment formulations although, like many concepts deriving from the psychoanalytic tradition, their heuristic power is accompanied by some conceptual ambiguity and difficulty in assessment.

Differences in Attachment Security

Attachment theory is important as a normative theory of the development of early relationships, but the majority of research attention has been devoted to individual differences in the security of attachment and their broader influence. The characterization of these differences in terms of security is consistent with Bowlby's ethological view of the protective functions of attachment relationships, and with Ainsworth's observations of the importance of maternal sensitivity to the infant's emotional well-being. Moreover, the concept of security is also consistent with other well-known characterizations of early psychosocial growth (especially the Eriksonian concept of "basic trust versus mistrust" in infancy) and recasts the meaning of infant behaviors earlier described as "dependent" in a more positive, psychologically constructive light. Although attachment as a species-typical phenomenon has biological origins, individual differences in the security of attachment do not appear to have strong genetic foundations. Three recent studies—two large twin studies of infants (Bokhorst et al., 2003) and preschool children (O'Connor & Croft, 2001) and the third a study of the concordance of foster infants' attachment security with the foster mothers' attachment states of mind (Dozier, Stovall, Albus, & Bates, 2001)—together suggest that nongenetic processes are predominant in the development of secure or insecure attachments. Evidence for the influence of both shared environment (environmental influences that make sib-

lings similar) and nonshared environment (influences that make siblings different) was stronger than evidence for genetic influences in explaining differences in attachment security.

Attachment theory portrays individual differences in the security of attachment as the outcome of variations in maternal sensitivity to the infant during the 1st year. Moreover, differences in attachment security are believed to influence emergent features of social, emotional, and personality development in the years that follow. But in this general formulation there are a number of specific issues related to the interpretation of differences in the security of attachment and their broader significance. The following four receive particular attention here: (1) the concept of security as definitional of the child-parent relationship, (2) the developmental transition from security as relationship specific to security as a personal attribute, (3) the integration of multiple relational experiences into attachment security, and (4) the association between the security of attachment and psychological development.

First, to what extent is the security of attachment definitive of the parent-child relationship? Are there important features of this relationship that are outside the scope of attachment? Bowlby believed that even in infancy attachment is only one of several dimensions of the parent-child relationship and is supplemented by their complementary roles in feeding, play, instruction, and other activities that are guided by other behavioral systems. The parent's skill as a playmate or teacher does not necessarily have consequences for the attachment system. Moreover, there exists a rich literature describing other features of parent-infant relationships that underscore the importance of parental teaching and guidance, the intellectual richness of the home environment, and the adult's sensitivity and responsiveness in fostering the child's conceptual and language development (see Dunn, 1993, and Bornstein, 2002, for reviews). Despite this, few researchers have sought to study the development of parent-child relationships more inclusively, such as by exploring how the emergence of attachment security intersects with other relational influences. This would be a valuable goal in light of recent evidence that the security of attachment moderates the influence on the child of parenting practices such as discipline approach (Kochanska, Aksan, Knaack, & Rhines, 2004) and maternal conversational discourse (Thompson et al., 2003). In addition, understanding the developing dynamics of parent-infant

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relationships may provide added insight into the origins of attachment security. As earlier described, at the same time that the security of attachment is emerging during the 1st year, the quality of the parent-child relationship is also being influenced by the growth of self-produced locomotion and the conflict of wills that occurs as infants become more agentic and goal directed. How parents manage conflict with the child may be important, along with sensitive responsiveness in other contexts, to the development of security in offspring.

Second, attachment theorists agree that with growing maturity, attachment security becomes increasingly an attribute of the person, rather than of a specific relationship. In infancy and early childhood, we typically think of children as secure or insecure with respect to a specific caregiver; in adolescence and adulthood, we commonly think of secure or insecure persons. But how and why does this developmental transition occur? Investigating this theoretically crucial question is impaired, to some extent, by assessment procedures: Measures of attachment security for older persons have predominantly incorporated the assumption that attachment styles or states of mind are characteristic of the person, and researchers have rarely considered whether adolescents or adults also maintain relationship-specific forms of security or insecurity with particular partners. Yet, when the findings of studies using different procedures for assessing attachment security are compared, there is evidence for *both* security as a relationship-specific quality and security as a personal attribute in studies of children in middle childhood and adolescence (see Raikes & Thompson, 2005b, and contributors to Kerns & Richardson, 2005). This suggests that security as a personal attribute may develop over an extended period as personality development becomes influenced by the representational systems inspired by multiple attachment relationships throughout childhood and youth. But these findings also raise another question. Is it possible that both relationship-specific and person-specific features of attachment security coexist in the attachment-related representational systems that exist in adulthood?

Third, how are multiple attachment relationships developmentally influential (Thompson, 2005)? Attachment theorists agree that in infancy and at later ages, attachments commonly develop with more than one caregiver, and the security of these relationships is independent of the others. How do the expectations arising from multiple attachments become integrated into coherent ways of relating to others, representing relationships, and self-understanding? Do children acquire

multiple, perhaps somewhat inconsistent, representations of self and relationships if their security varies with different attachment partners? Or are these representations integrated or harmonized in some way? Over the years, there have been different ways of responding to this issue. Attachment relationships are believed by some to be hierarchical in influence (with mother-child attachments primary), while others believe that attachment security affects psychosocial growth in a domain-specific fashion (such that maternal attachments influence different aspects of sociopersonality development than do relationships with fathers or child-care providers; see, e.g., Main & Weston, 1981; Oppenheim, Sagi, & Lamb, 1988). At present, however, neither empirical evidence nor theory offers a clarified picture.

Fourth, why should attachment security be related to other features of psychological development? Thoughtful theoretical attention to this question should guide research into the sequelae of early attachment security and enable researchers to interpret expected and unexpected associations between attachment and later behavior. Attachment researchers have been guided, however, by a broad expectation that secure attachment predicts more positive social and personality functioning. Empirically, this has resulted in a large research literature in which attachment has been studied in relation to a dizzying variety of later outcomes, including cognitive and language development; frustration tolerance; self-recognition; behavior problems; relations with peers, friends, and siblings; interactions with unfamiliar adults; exploration and play; competence in preschool and kindergarten classrooms; curiosity; ego resiliency; and math achievement (see Thompson, 1999, and following). As Belsky and Cassidy (1994) asked, one might wonder if there is anything to which attachment security is *not* related.

Why has there been a search for so many diverse sequelae of attachment security? One reason is that attachment theory provides a conceptual umbrella for broad and narrow constructions of the developmental impact of attachment relationships. The most narrow view, and the one that is best supported by empirical evidence, is that security of attachment should predict the child's later trust and confidence in the attachment figure and other close relational partners. Waters, Kondo-Ikemura, Posada, and Richters (1991) have broadened this view with their argument that because attachment security indexes the continuing harmony of the parent-child relationship, a variety of socialization outcomes should result from attachment security related to identification,

imitation, learning, cooperation and compliance, and prosocial motivation. A yet broader perspective is that attachment security should foreshadow cognitive competence, exploratory skill, and communication style through its effects on the child's self-confidence, initiative, and other broader personality processes, together with the support afforded by continuing sensitive parenting. Weinfield, Sroufe, Egeland, and Carlson (1999) have further proposed that attachment influences later development as it affects (a) neurodevelopment, (b) affect regulation, (c) behavioral regulation and relational synchrony, and (d) early representations (e.g., the internal working models proposed by Bowlby and discussed later). Although they argue that attachment relationships should be most strongly predictive of sequelae-like psychological adjustment, interpersonal competence, and self-understanding, it is easy to see how a much wider variety of outcomes can be encompassed in the four sources of influence they describe. Adding further complexity is the view (now current in evolutionary biology and behavioral ecology) that different attachment patterns are each evolved behavioral strategies that are adapted to different conditions of environmental resources and parental solicitude (see Chisholm, 1999). Whether attachment patterns predict adaptive or maladaptive later behavior depends, in part, on whether the environmental conditions characterizing early development endure or change over the child's life.

Whether conceptualized in a developmental or evolutionary framework, theoretical clarity concerning the association between attachment security and psychological development is essential. When attachment researchers are unclear or disagree over the hypotheses that can be reasonably derived from the theory, it is difficult to determine whether empirical findings confirm, disconfirm, or do not directly address theoretical claims at all. As a consequence, both convergent and discriminate validities are obscured. Moreover, theoretical precision is necessary to guide expectations for whether the association of attachment with other psychological developments will be strong or weak, direct or mediated, moderated by other variables, or nonexistent. Once expectations are clear, then unexpected relations between attachment security and other variables can be examined more incisively (e.g., by exploring for mediating variables). The need for theoretical clarity is perhaps the most important challenge facing attachment theory and research in the next decade of its development (Thompson & Raikes, 2003). Attempting to bootstrap theory development on the findings of empirical re-

search conceived under the umbrella of many different conceptions of attachment outcomes risks both theoretical obscurantism and holding attachment theory accountable for formulations it should not and perhaps cannot embrace (Sroufe, 1988).

Security of Attachment in the Strange Situation

The Strange Situation has been an empirical and a conceptual anchor for attachment research because of the careful validation work of Ainsworth and her followers (see Ainsworth, Blehar, Waters, & Wall, 1978, for procedural and coding details). By linking detailed longitudinal observations of the secure-base behavior of infants at home with patterns of attachment in the Strange Situation, Ainsworth demonstrated that a straightforward 20-minute laboratory procedure could capture important and reliable dimensions of relational security in infancy. As evidence accumulated for the moderate stability and predictive validity of attachment classifications derived from the Strange Situation, a large body of research was generated to explore the origins, correlates, and sequelae of individual differences in attachment using this procedure. To be sure, the reliance on a single attachment assessment had disadvantages: The identity of the security of attachment construct with Strange Situation behavior made it impossible to examine how prior experiences might affect Strange Situation behavior independently of attachment security (Lamb, Thompson, Gardner, & Charnov, 1985). But the reliance on a single procedure also enabled researchers to integrate a wide variety of research findings because each used the same assessment. The Strange Situation has also had broader significance for attachment research. Attachment assessments for older children and adults are often validated by showing that they yield classifications that are longitudinally consistent with earlier Strange Situation classifications, and attachment researchers still rely on adaptations of the threefold (later fourfold) Strange Situation classification categories when they are studying attachment in older children, adolescents, or adults.

The strategy of the Strange Situation is to create conditions of moderately escalating stress to activate the attachment behavioral system of 1-year-olds. Based on the infant's behavior throughout the procedure, but especially during reunions with the partner after brief separation episodes, an attachment classification is assigned. Infants who are considered securely attached (Group B) organize their behavior around the caregiver

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as a secure base throughout the procedure and show fairly unequivocal pleasure at the adult's return. Infants who are insecure-avoidant (Group A) show relatively little secure-base behavior and exhibit avoidance of the partner during reunions either by failing to greet or delaying in greeting the adult. Infants who are insecure-resistant (Group C) also show little secure-base behavior during preseparation episodes (during which they remain preoccupied with the adult) and mingle their efforts to achieve proximity to the caregiver during reunions with angry resistance. Although these dual insecure groups are different in their behavioral characteristics, understanding the distinctive origins and sequelae of these groups has been hindered by the longstanding tendency of researchers to combine avoidant and resistant classifications in their analysis, together with the enlistment of sample sizes that are too small to permit reliable comparisons between these groups.

Although these three groups constituted the extent of the classification options for Strange Situation research for many years, a new insecure classification category emerged in the late 1980s as the result of difficulties in appropriately characterizing the attachment behavior of certain infants, especially those in at-risk conditions. Main and Solomon (1986, 1990) created the classification of disorganized/disoriented (Group D) to describe infants who, for a time, appear to *lack* an organized, coherent strategy for interacting with the caregiver in the Strange Situation. This can be manifested in many ways, most notably in contradictory behavior (e.g., strong avoidance combined with strong contact-seeking), but also in undirected, incomplete, or interrupted movements, inexplicable freezing or stilling, stereotyped or other anomalous postures, apparent fear of the adult, and other indications of disorganization or disorientation. These behaviors can be fleeting and initially difficult to detect, although with training and experience reliable assignment of the D classification can be accomplished. In a sense, infants in the D classification are distinct from those in both the secure classification (group B)—because infants are distinctly insecure—and from the two insecure (groups A and C) classifications, because infants are disorganized rather than exhibiting an organized (albeit insecure) behavioral strategy. Even so, classification as D is often accompanied by a secondary assignment to one of the three organized attachment groups reflecting a “best fitting” alternative classification. Although the D classification originated in efforts to describe the attachment behavior

of infants who had been maltreated, were growing up in difficult family conditions, or were otherwise at risk for later problems, infants in the disorganized/disoriented group are often found in nonclinical middle-class samples, although in widely varying rates, with one meta-analytic estimate that 15% of the infants from middle-class samples are classified in the D group (van Ijzendoorn, Schuengel, & Bakermans-Kranenberg, 1999). By contrast, roughly 25% of the infants in lower-income samples are in the D group, with much higher proportions in some clinical samples. In low-risk, middle-class samples the secondary classification for D-group infants is predominantly secure, while in higher-risk samples the secondary classification is more commonly insecure (Lyons-Ruth & Jacobvitz, 1999; Lyons-Ruth, Repacholi, McLeod, & Silva, 1991).

Why do infants become disorganized or disoriented in the Strange Situation? In a return to Bowlby's clinical interests in the enduring effects of early trauma, Main and her colleagues (Main & Hesse, 1990; Main & Solomon, 1990) have argued that infant disorganization develops in response to the frightening or frightened behavior of the caregiver, which can occur when the adult has an unresolved personal history of traumatic or frightening experiences, especially when memories of these experiences are evoked by current circumstances (e.g., domestic violence). When caregivers act this way, it puts the infant in the terrible paradox of fearing the person from whom they must also find comfort in stress, and disorganized behavior can be the result. In support of this view, the incidence of infant disorganized attachment is much higher in samples characterized by sociodemographic risk, especially child maltreatment (in which the parent necessarily acts in a frightening manner). However, parental depression or marital discord is not necessarily associated with increased frequency of infant disorganization, suggesting that the conditions of family risk that are most generative of the D classification are those that most directly imperil infant-parent relationships and the child's emotional well-being (e.g., Barnett, Ganiban, & Cicchetti, 1999; Carlson, 1998; see Lyons-Ruth & Jacobvitz, 1999, and van Ijzendoorn et al., 1999 for reviews). There is also a significant association between parental classification as “unresolved/disorganized” in the Adult Attachment Interview and infant disorganized/disoriented attachment, which is important because of the belief that this adult state of mind reflects continued difficulty over past experiences of trauma or loss

(Hesse, 1999; van Ijzendoorn, 1995).² The more important question, however, is whether the parent's stresses and attachment state of mind are manifested in frightening or frightened conduct in the presence of the infant. The few studies that have directly addressed this question have revealed a modest but inconsistent association between maternal frightening behavior and attachment disorganization in infants, often depending on the form of disorganization the infant exhibits (Lyons-Ruth, Bronfman, & Parsons, 1999; Schuengel, Bakermans-Kranenburg, & van Ijzendoorn, 1999). This suggests that further research is necessary to fully elucidate the origins of infant disorganized/disoriented attachment in the infant-caregiver relationship.

The D classification in infancy is distinguished from the other attachment classifications because it is not an organized strategy. But surprisingly, when attachment security is assessed in separation-reunion procedures in preschoolers, the manifestations of disorganization for most children appear to be highly organized in the form of controlling strategies for managing and regulating mother-child interaction (Moss, Bureau, Cyr, Mongeau, & St.-Laurent, 2004; Teti, 1999). A variety of controlling (group D) subgroups in preschoolers, including controlling-caregiving and controlling-punitive strategies, reflect different behavioral and affective approaches to the caregiver. Because these categories for classifying disorganization in preschoolers were derived

inductively from two small longitudinal follow-up studies of infants earlier deemed disorganized/disoriented (Main & Cassidy, 1988, $N = 12$; Wartner, Grossmann, Fremmer-Bombik, & Suess, 1994, $N = 13$), there is no clear theoretical explanation for why children who are so distinctly *disorganized* in infancy should become preschoolers who are so organized that they seek to control the caregiver's behavior. The extent to which this reflects sequelae of disorganized attachment, changes in parent-child interaction, psychological development in the child, or the influence of other variables is still being explored. This developmental transition remains an empirical and conceptual challenge for attachment theory and research and, together with the need for a better understanding of the origins of infant disorganization, suggests the urgent need for further prospective longitudinal research on these issues.

Taken together, in typical, nonclinical middle-class samples, approximately 62% of infants are deemed secure, 15% avoidant, 9 to 10% resistant, and the remaining 15% disorganized. The proportion of insecure and disorganized groups is larger in lower-income samples, clinical groups, and families at sociodemographic risk (van Ijzendoorn et al., 1999). Multiple classification subgroups associated with each category reflect considerable variation on each classification theme, but little research has been devoted to understanding these differences. There have also been challenges to the suitability of the Strange Situation as an attachment assessment for infants with distinct experiential backgrounds, such as those with substantial experience in child care, which highlight the importance of understanding the backgrounds of infants in the Strange Situation when interpreting their responses to the separation episodes and encounters with a stranger (Clarke-Stewart, Goossens, & Alhusen, 2001).

Attachment researchers have long recognized the analytic limitations of a categorical outcome measure like attachment classification and, over the years, have proposed modifications or adaptations of the classification system to permit continuous scores (e.g., Gardner, Lamb, Thompson, & Sagi, 1986; M. Lamb et al., 1985; Richters, Waters, & Vaughn, 1988) or dimensional approaches to assessing attachment security (e.g., Waters & Deane, 1985). More recently, Fraley and Spieker (2003) have proposed that attachments are fundamentally ordered along two continua (proximity-seeking versus avoidance and high versus low anger/resistance) and have urged attachment researchers to use

²Although findings such as these are commonly interpreted as supporting the predictive validity of the Adult Attachment Interview (AAI), they should be interpreted cautiously because the AAI was developed explicitly to predict infant attachment classifications. The AAI was developed from a sample of interview responses of parents for whom the attachment classifications of their infant offspring from Strange Situation assessments conducted several years earlier were known (Hesse, 1999). The AAI coding and classification system were developed by searching for commonalities in the interview responses of parents whose infants shared the same attachment classification. This helps to explain why AAI classifications so closely parallel infant Strange Situation classifications and why many researchers have reported a correspondence between parental AAI groups and their infants' Strange Situation classifications. Predicting infant attachment status was what the AAI was originally created to accomplish. But documentation of the predictive validity of the AAI in this manner is not the same thing as if the adult attachment assessment had been developed completely independently of knowledge of the attachment security of offspring.

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a dimensional rather than a taxonomic approach to studying differences in attachment security. Although the use of multiple continua can have important advantages in attachment research, the Fraley and Spieker analysis is limited because they excluded infants in the D classification, rendering their conclusions of limited applicability in light of growing interest in infant disorganization. More generally, a dimensional strategy would require far more than two continua to capture the richness of the organizational approach to attachment assessment and its sequelae, and it requires further research to determine whether a dimensional approach can do so without undermining many of the other advantages of this approach.

Other Behavioral Assessments of Attachment Security

As children mature, attachment assessments must also change to accommodate the child's developing behavioral sophistication. Two other behavioral assessments of attachment security have been developed for preschoolers (representational assessments are discussed later in the section on internal working models). Each has presented attachment researchers with the challenge of mapping heterotypic continuity in attachment security: How can age-appropriate manifestations of a secure attachment be identified that capture the same attachment construct as is assessed in the infant Strange Situation (see Solomon & George, 1999)?

One approach is the Cassidy and Marvin (1992) procedure for preschoolers (i.e., 3- to 5-year-olds), based on an earlier approach by Main and Cassidy (1988) for 6-year-olds, which focuses on reunions with the parent after one or more separations. Preschool attachment classification categories closely parallel those of the Strange Situation. A similar separation-reunion procedure by Crittenden (1992, 1994; see also Crittenden, 2000) uses somewhat different classification categories for older children, including secure, insecure-defended, insecure-coercive, and other insecure groups. Each approach borrows the strategy of the Strange Situation that preschoolers' attachment organization is activated by the stress of separations from the caregiver, and sometimes separation episodes are lengthened to better ensure that this occurs for older children. Although they are similar, the two approaches differ from each other, and from the Strange Situation coding procedures, in how secure behavior is indexed. The Cassidy-

Marvin procedure focuses on body position, affect, speech, gaze, and physical proximity and contact, whereas Crittenden's classification procedure also encompasses affect regulation and open communication with the parent. The Cassidy-Marvin procedure is widely used, and individual differences in security assessed in this procedure are modestly but reliably associated with prior measures of maternal sensitivity and responsiveness and are also modestly associated with infant Strange Situation classifications³ (Barnett, Kidwell, & Leung, 1998; Moss, Bureau, Cyr, Mongeau, & St.-Laurent, 2004; Moss, Cyr, Bureau, Tarabuley, & Dubois-Comtois, 2004; National Institute of Child Health and Human Development Early Child Care Research Network, 2001; Stevenson-Hinde & Shouldice, 1995). But by contrast with their careful attention to the standardized use of the Strange Situation with infants, attachment researchers have tended to modify the procedure and scoring conventions of the Cassidy-Marvin procedure in different studies, sometimes using the Strange Situation, sometimes extending the separation episodes and eliminating episodes with the stranger, and sometimes including other assessments in the midst of the procedure (e.g., Stevenson-Hinde & Shouldice, 1995; Moss, Bureau, Cyr, Mongeau, & St.-Laurent, 2004; National Institute of Child Health and Human Development Early Child Care Research Network, 2001). This makes it difficult to know how comparable

³It is important to note that the classification of preschool attachment behavior in the Cassidy and Marvin (1992) and Main and Cassidy (1992) assessments is based on procedures created explicitly to identify early childhood correlates of infant attachment classifications. In a procedure resembling the development of the Adult Attachment Interview, Main and Cassidy (1988) created the preschool attachment categories in an iterative process involving samples of young children for whom their attachment classifications in infancy were known throughout measurement development. By searching for commonalities in the preschool separation-reunion behavior of children who, as infants, shared the same attachment classification, the close parallel between infant Strange Situation and preschool attachment classifications was ensured. However, this approach makes the consistency between infant and preschool classifications less impressive than if preschool classifications had been derived independently, and because it is based on inductive rather than deductive procedures, this approach to measurement development also creates theoretical challenges (e.g., explaining why infants who are deemed disorganized become highly strategic, controlling preschoolers).

the findings are from the different variations of the procedure and how far the validity evidence can extend to significant alterations of the Strange Situation.

A different strategy for assessing attachment security in preschoolers is the Attachment Q-Sort (AQS; Waters & Deane, 1985). Based on extensive home observations, a well-trained observer or the mother sorts 90 descriptive statements into nine groups based on how accurately each statement describes the child. This distribution is then correlated with a criterion sort to yield a correlation coefficient that is the child's security score. The AQS seeks to describe secure base behavior at home rather than provoking attachment behavior in the laboratory, based on an effort to directly assess the secure base behavior that is, to some attachment theorists, the gold standard of any attachment assessment (Waters & Cummings, 2000). Consequently, children are observed under a variety of conditions, but inevitably less often in circumstances that deliberately heighten the activation of attachment behavior. The criteria for secure attachment are thus broader than for Strange Situation-based procedures. In addition to secure base behavior, for example, items that are high in the security criterion sort include:

- "Child follows mother's suggestions readily, even when they are clearly suggestions rather than orders."
- "Child uses mother's facial expressions as a good source of information when something looks risky or threatening."
- "Child recognizes when mother is upset. Becomes quiet or upset himself. Tries to comfort her."
- "Child is strongly attracted to new activities and new toys."

By incorporating into the security criterion sort many of the hypothesized correlates of attachment security (such as the child's obedience, social referencing, empathy, and exploratory interest) the AQS enlists a much broader operationalization of attachment security that is perhaps better suited to a home observational measure, in contrast with the more narrow focus on secure base behavior of the laboratory separation-reunion procedures. The AQS is also an assessment of security alone; there are no consistent procedures for distinguishing secure from insecure attachments on the continuous security score, nor does the procedure yield differentiated forms of insecurity such as those provided by assessments based on the Strange Situation.

The AQS is suitable for use with children from 1 to 5 years of age.

A meta-analysis of research using the AQS by van Ijzendoorn, Vereijken, Bakermans-Kranenburg, and Riksen-Walraven (2004) showed that the average security score for nonclinical samples was .32, with an average score of .21 in clinical samples. With a theoretical range of security scores (like correlation coefficients) from -1.00 to $+1.00$, this is consistent with Strange Situation evidence that most infants are secure, but that there is variability in security. They also reported that AQS security scores were moderately associated with security assessed in the Strange Situation (combined effect size .23) and with measures of maternal sensitivity (effect size .31), but were also negatively associated with assessments of temperamental reactivity (effect size .27), conclusions that are consistent with narrative reviews of this literature (e.g., Thompson, 1998). These findings were consistent for security scores derived from observers and from maternal report, although van Ijzendoorn and his colleagues (2004) concluded that research findings better support the validity of observer sorts. Their conclusion is consistent with the greater likelihood of report bias from mothers, but Teti and McGourty (1996) have delineated procedures designed to minimize this influence, and maternal sorts may be more valid with the training and supervision they suggest (the meta-analysis did not distinguish maternal-report studies employing the Teti and McGourty procedures from those that did not).

Do these behavioral assessments capture the same attachment construct that is assessed in the infant Strange Situation procedure? The careful design of these measures, their predicted associations with differences in maternal sensitivity, and their modest associations with infant Strange Situation classifications each suggest that their shared variance indexes a consistent attachment construct. However, differences in external correlates (such as temperament), operationalizations of security, and measurement strategy each indicate that these assessments capture significant sources of independent variance as well. This is perhaps inevitable in light of the challenges of mapping heterotypic continuity in behavior during a period of rapid developmental change. But this means that attachment theorists are wise to be cautious in generalizing findings across research studies using different measures of the security of attachment. As one illustration, a recent report from the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care found different

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associations between mother- and caregiver-reported child behavior problems at age 3 and attachment assessments at 15 months (using the Strange Situation), 24 months (using the AQS), and 36 months (using the Cassidy-Marvin procedure), and there was very modest consistency in security and disorganization scores derived from these attachment assessments at each age (McCartney, Owen, Booth, Clarke-Stewart, & Vandell, 2004). As we shall see, the interpretive cautions of generalizing across attachment assessments are also required when generalizing to representational measures of attachment in early childhood and later years.

Origins of Attachment Security

To attachment theorists, the caregiver's sensitivity to the infant is the adult's core contribution to the development of a secure attachment. Sensitivity is a broad conceptual rubric for the quality of adult caregiving that has diverse consequences for offspring, and it can have different meanings in different theoretical traditions. In Vygotskian theory, for example, sensitivity entails the careful scaffolding of shared activity to foster conceptual growth within the child's readiness for new challenges (Rogoff, 1990), while a learning theorist would emphasize the construction of environmental contingencies that foster adaptive behavior. To attachment theorists, sensitivity consists of a constellation of response attributes that includes attention to the infant's signals, accurate interpretation of their meaning, and appropriate and prompt responsiveness to promote the infant's trust in the caregiver (Ainsworth, 1973; Ainsworth et al., 1978). Empirically, sensitivity tends to be operationalized in ways that also include caregiver warmth, cooperation, interactional synchrony, and other related processes (Belsky, 1999; De Wolff & van Ijzendoorn, 1997; Thompson, 1998). Bowlby himself characterized sensitivity as "respect for the child."

A 1997 meta-analysis by De Wolff and van Ijzendoorn on the association between maternal sensitivity and infant attachment security concluded that there is a modest but reliable association (combined effect size .22) between sensitivity and security (De Wolff & van Ijzendoorn, 1997), which is consistent with the results of several other reviews of this literature (Belsky, 1999; Thompson, 1998) and with findings from the large, longitudinal NICHD Study of Early Child Care (NICHD Early Child Care Research Network, 1997, 2001). This is true whether the infant Strange Situation, the AQS,

or the Cassidy-Marvin procedure is used to assess attachment. Paternal sensitivity is also reliably associated with security of attachment, but more weakly than for mothers (van Ijzendoorn & De Wolff, 1997), and sensitivity is also a predictor of security with nonparental caregivers (Howes, 1999). A meta-analytic review of the results of intervention studies designed to improve maternal sensitivity concluded that carefully designed interventions could be effective in increasing sensitive responsiveness, especially when they were relatively short, behaviorally focused programs. Moreover, these interventions also had a small but significant effect in enhancing the security of attachment, supporting the causal role of maternal sensitivity in fostering attachment security (Bakermans-Kranenburg, van Ijzendoorn, & Juffer, 2003). Parental sensitivity is an important and reliable but modest predictor of the security of attachment.

De Wolff and van Ijzendoorn (1997) concluded that other dimensions of parenting are also important in fostering security, and suggested that researchers look to the contexts of parent-child interaction for clues about these influences. Attachment researchers have responded to their suggestion. Not surprisingly, they have found that the caregiver's psychological attributes are predictive of attachment security. In the NICHD Study of Early Child Care, for example, the mothers of securely attached infants were higher than mothers of insecure infants on a composite of measures of psychological adjustment that indexed depression, neuroticism, and anxiety (each reverse scored), sociability, extraversion, and other variables (NICHD Early Child Care Research Network, 1997). Attachment researchers have also explored other psychological resources of the mother that might foster secure attachment. Meins has reported that maternal "mind-mindedness," which describes mothers' tendencies to impute mental and psychological states to their infant offspring, is associated with sensitive responding and predicts attachment security in 1-year-olds (Meins et al., 2001, 2003). In a similar vein, Oppenheim and his colleagues explored differences in maternal "insightfulness" into the infant's internal experiences and motives and found that mothers deemed positively insightful were rated as more sensitive during mother-infant play sessions, and their offspring were more likely to be securely attached in the Strange Situation (Koren-Karie, Oppenheim, Dolev, Sher, & Etzion-Carasso, 2002; Oppenheim & Koren-Karie, 2002). Both mind-mindedness and insightfulness assessments explained

variance in infant security beyond the effects of maternal sensitivity.

Such studies are helpful in bridging the “transmission gap” highlighted by van Ijzendoorn (1995) in his meta-analytic review of studies associating adult attachment representations, parental responsiveness, and infant attachment security. His review focused on the adult representations of early childhood care, including recollections of feeling loved and secure and perceptions of the feelings and motives of caregivers, which are characterized as attachment “states of mind” and are assessed in the Adult Attachment Interview (see Hesse, 1999, for a review of this literature). Reviewing an extensive body of research, van Ijzendoorn (1995) concluded that these adult attachment representations are significantly associated with independent measures of parental responsiveness (combined effect size .34), with adults in the autonomous (secure) group responding more sensitively to their offspring than adults in the insecure, preoccupied, and dismissing groups. Furthermore, adult attachment representations are also strongly associated with the attachment classifications of infant offspring in the Strange Situation, even when adult attachment was assessed prenatally (combined effect sizes .31 to .48). Autonomous adults tend to have children who are securely attached, and adults in the preoccupied and dismissing groups have offspring who are more likely to be insecure.⁴ Thus, one important contribution to the security of attachment are caregivers’ personal representations of the care they received as young children and its influence on the sensitivity of care they provide to their own offspring. As van Ijzendoorn (1995) pointed out, however, a substantial proportion of the association between adult attachment representations and infant attachment security is *not* explained by differences in parental sensitivity, and he suggested that this “transmission gap” warranted further exploration by attachment researchers. What other influences do adult attachment representations have on the development of security in offspring that are not mediated by sensitive care? Studies of maternal mind-mindedness and insightfulness may provide one response to this question (see Meins, 1999).

Beyond the mother-infant dyad, the amount and quality of child care has not been found to be a significant influence on the security of infant-mother attachment, according to the NICHD Study of Early Child Care, al-

though there was some evidence that when maternal sensitivity was low, greater amounts of child care and/or poorer quality care increased the risk of insecure attachment (NICHD Early Child Care Research Network, 1997, 2001). In other cultural settings where the quality of child care is very poor, there is evidence that child care can have a directly adverse impact on infant-mother attachment as well as interacting with maternal insensitivity (Sagi, Koren-Karie, Gini, Ziv, & Joels, 2002).

The quality of the marital relationship has also been found to predict attachment security in several studies, with mothers who report greater marital satisfaction and harmony having infants with more secure attachments, although this association is not found consistently across the research literature (e.g., Belsky & Isabella, 1988; Howes & Markman, 1989; Owen & Cox, 1997; see Belsky, 1999). Marital conflict is likely to have direct and indirect implications for the security of attachment. Maritally conflicted couples may have greater difficulty maintaining sensitivity to infant signals and needs in the midst of their own emotional turmoil. Owen and Cox (1997) also found that marital conflict and sensitive responding each made independent contributions to attachment security, such that conflict was negatively related to attachment security even among young children whose mothers or fathers remained sensitive when interacting with them. The negative emotional climate of the home may be one influence that can account for the impact of marital conflict independently of parental sensitivity: Young children may be made anxious by parental arguing and conflict even when each parent is a sensitive caregiver.

This conclusion is consistent with Cummings and Davies’ (1994; Davies & Cummings, 1994) portrayal of how young children’s security is affected not just by their relationships with each parent but also by their emotional experience in the family system as a whole. Their “emotional security hypothesis” argues that marital conflict can threaten young children’s security in the family and can provoke distress, motivate children’s efforts to regulate conflict, and instill hostile representations of family life—qualities that resemble insecure attachment (see Davies & Forman, 2002; Davies, Harold, Goeke-Morey, & Cummings, 2002). Security may, in short, be a function not just of the child-parent relationship but of children’s experience of the broader family emotional climate. Understanding the direct and indirect influences of the family environment, especially as it is affected by marital conflict, domestic violence, and

⁴See note 3, p. 50.

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other negative family experiences, is particularly significant in light of the relatively weak association between measures of parental sensitivity and infant disorganized attachment (van Ijzendoorn et al., 1999). Family influences that are related to angry and frightening parental conduct may, independently of sensitivity, be important to the genesis of infant disorganization and possibly also other forms of attachment insecurity.

Insecure attachment is more frequent in lower-income and socioeconomically stressed samples owing, in part, to the greater incidence of stresses within and around the family that can affect parental sensitivity and the security of attachment (Barnett et al., 1999; van Ijzendoorn et al., 1999; Vondra, Shaw, Swearingen, Cohen, & Owens, 2001). Furthermore, De Wolff and van Ijzendoorn (1997) noted in their meta-analysis that the socioeconomic status of the family is also a significant moderator of the influence of sensitivity on attachment. Thus, there is a weaker association between maternal sensitivity and attachment security in lower-income than middle-income families. A study by Raikes and Thompson (2004c) explored this further by showing, in a sample of low-income Early Head Start families, that while the impact of economic risks (associated with poverty) on attachment security was mediated by its effects on maternal responsiveness, the effects of emotional risks (such as domestic violence, alcohol or drug abuse) had direct effects on the security of attachment that were unmediated by maternal behavior. These risk factors, which altered the broader emotional climate of the family, were associated with lower attachment security independently of variations in maternal sensitivity. Emotional risk factors also moderated the association between maternal behavior and child security such that maternal responsiveness was less strongly associated with attachment security in families with many emotional risks. In short, in homes with many stresses and risk factors, sensitive responsiveness is less likely to shape the security of attachment and the difficulties of family life are likely to have a greater direct impact on the child's sense of security. Further research of this kind, especially research that distinguishes different kinds of risk, is essential to understand better the effects of family stresses and buffers on the security of attachment in socioeconomically stressed and middle-income families as a way of better comprehending the influences on attachment beyond parental sensitivity.

Taken together, the literature on the origins of attachment security not only highlights new directions for

further research but also compels a reconceptualization of the nature of parental sensitivity in a manner that is consistent with De Wolff and van Ijzendoorn's (1997) call for attention to context. Attachment researchers have tended to portray differences in sensitivity as characterological and traitlike, deriving from the enduring legacy of childhood experiences captured in the Adult Attachment Interview. But contemporary approaches to parenting also emphasize the situationally adaptive, flexible nature of caregiving (Grusec & Goodnow, 1994; Grusec et al., 2000; Kuczynski, Marshall, & Schell, 1997). Parents approach their children with consistent values and goals, but their parenting is also affected by the child's immediate behavior, situational and long-term goals, the constraints of the circumstances, and the behavior of other people (such as a spouse or sibling). Their parenting is adapted to characteristics of the child but also of the family, marital relationship, and circumstances as well as the parent's relational history. Such a view is consistent with the conclusions of a meta-analysis by Holden and Miller (1999) on the stability of parenting across time, children, and situations. They found that although child-rearing practices are fairly consistent across different children and over time, parents are much less consistent in their behavior across situations, and they suggested that developmentalists must increasingly view parenting practices as both enduring (rooted in adult values, goals, and beliefs concerning child care) and different (adapting to situational demands and children's immediate needs). The same is likely to be true of the variations in parental sensitivity that contribute to attachment security.

Viewed in this light, variations in parental sensitivity may not be uniformly influential on attachment security, but rather in particular contexts and circumstances relevant to developing security. For example, sensitivity may be an important influence when it is exhibited in the contexts most relevant to attachment—when the child is distressed or alarmed—than during nonstressful episodes of play, teaching, or feeding (Thompson, 1997). The sensitivity with which caregivers manage conflicts of will with their offspring may also be important in light of the growth of parent-child limit testing when children become locomotor, as earlier noted. Sensitivity may be influential in relationships when the parent can be a reliable, protective haven of support, in contrast to conditions in which marital conflict, neighborhood violence, or poor child care impose emotional threats that a sensitive parent cannot buffer. Moreover,

sensitivity may be especially influential when sensitive care is maintained over time as a continuing source of emotional support for adaptive functioning (Belsky & Pasco Fearon, 2002a, 2002b). In these situations, sensitivity is developmentally important because the conditions of care make sensitivity more salient to the infant.

This suggests that the baby's construal of the adult's responsiveness is also an important part of the context influencing the impact of sensitive care on developing attachment security. As Watson (1979) noted, the contingency perception that forms the basis for an awareness of sensitive responding is affected by the base rates of both the child's behavior and the adult's response: Infants who are temperamentally fussy may, for example, have a more difficult time detecting a caregiver's responsiveness to their cries than infants who are temperamentally more pacific (Thompson, 1986). But research on the association between infant temperament and attachment security has yielded a fairly consistent conclusion in studies using the Strange Situation procedure: There is not a reliable, direct association between temperament and attachment security (see Thompson, 1998, and Vaughn & Bost, 1999 for reviews). There is also no reliable association between temperament and the infant disorganized/disoriented classification (van Ijzendoorn et al., 1999). However, research using the Attachment Q-Sort has shown that infants who are temperamentally more negatively reactive and difficult are likely have low security scores (van Ijzendoorn et al., 2004; Vaughn & Bost, 1999), which probably arises from the manner in which attachment security is operationalized in the AQS. Taken together, the research literature does not support the view that attachment security derives from antecedent differences in infant temperament.

This desirably straightforward conclusion is, in some senses, unfortunate because it has caused researchers to fail to explore further a number of indirect associations between temperament and attachment (see Thompson, Connell, & Bridges, 1988). Mangelsdorf, Gunnar, Kestenbaum, Lang, and Andreas (1990) reported that patterns of maternal care had different consequences for the development of security when infants who were high or low in temperamental proneness-to-distress were distinguished. Nachmias, Gunnar, Mangelsdorf, Parritz, and Buss (1996) reported that toddlers who are behaviorally inhibited may especially benefit from a secure attachment relationship when coping with stressful challenges. Taken together, these findings suggest that temperament may interact with maternal caregiving in the

development of attachment security and in the sequelae of attachment in ways that merit further exploration.

Finally, an important influence on the development of attachment security is culture. Cultural practices influence normative conditions of early childhood care, and cultural beliefs and values shape the characteristics that parents value and seek to foster in offspring. Theory and research on attachment has, from the beginning, grown within the conceptual tension of recognizing the importance of culture to the development of attachment while also appreciating the evolutionarily adaptive, species-typical process shaping attachment in humans and other animals. Understanding attachment as a universal developmental phenomenon shaped by cultural influences continues to be one way that research on attachment remains sensitive to context.

This conceptual tension was initially manifested in efforts by researchers in several Western and non-Western nations to use the Strange Situation to determine whether infants in their societies exhibited the same patterns of security and insecurity that were initially identified in the United States. The findings of this research literature, including studies in Israel, Japan, China, Africa, Chile, Sweden, Great Britain, and the Netherlands, yielded several conclusions (see Thompson, 1998, and van Ijzendoorn & Sagi, 1999, for reviews). First, when the Strange Situation is used inappropriately (e.g., allowing separation episodes to endure despite heightened infant distress) or inconsistently with normative child-rearing practices, infant behavior in the procedure does not necessarily reflect attachment security. Infants living on Israeli kibbutzim who rarely encountered strangers and children in Japanese homes who had rarely been separated from their mothers responded with unusual distress in the Strange Situation because the procedure entailed experiences with strangers and separation that were more atypical for their background than for infants living in the United States. This is important because the Strange Situation was designed to be a *moderately* stressful assessment based on the experiences of typically developing children in the United States, and when the procedure is highly stressful it is unlikely to yield a valid assessment of attachment security. These findings underscore the significance of ensuring that assessments of attachment are based on a thoughtful appreciation of the typical conditions of early childhood care for the samples under study.

Second, especially when these considerations are taken into account, studies from a wide variety of

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nationalities indicate that infants develop attachments to their parents and other caregivers. Moreover, with a few exceptions (e.g., Grossmann, Grossmann, Huber, & Wartner, 1981), the most common attachment classification in nonstressed, nonclinical samples is secure. Attachment is indeed a universal phenomenon and, although infants may manifest security through distal, proximal, or contact-seeking behaviors, most infants appear to be securely attached. Furthermore, researchers who examined parental perceptions of desirable child behavior found that in most countries, parents endorse a profile of behavior that is consistent with that of securely attached children, although parents from different countries often differ in their reasons for this preference, their preferred manifestations of security, and their evaluations of various patterns of insecurity (Harwood, Miller, & Irizarry, 1995; Posada et al., 1995). It appears that secure attachment is both broadly desirable and normative. Third, when multiple studies were conducted within a single national group (such as in Japan, Israel, Germany, and the United States), they indicated that there is often considerable variability in patterns of attachment *within* nationalities. This within-national variability suggests that cultures are not homogeneous in how they influence the development of attachment security, and the values and practices shared within any nationality are significantly adapted to local conditions (e.g., rural versus urban, kibbutz versus city, or middle-income versus lower-income).

Finally, cultural research on the security of attachment indicates that there is somewhat less consistency across national samples in how the quality of care contributes to attachment security, and in the outcomes of a secure or insecure attachment (Thompson, 1998; van Ijzendoorn & Sagi, 1999). These are the ways in which cultural differences in child care and values concerning children are most likely to be influential. None of a battery of measures of parental attitudes and behavior and parent-child interaction obtained throughout the 1st year succeeded, for example, in discriminating infants who were securely attached from insecure in Sweden (M. Lamb et al., 1985). Likewise, in a study of Israeli infants raised in the kibbutz, Oppenheim, Sagi, and Lamb (1988) found that attachment security to mother or father had no association with measures of later socioperceptual development. To be sure, the association between parental sensitivity and security of attachment is only of moderate strength in U.S. samples, as noted earlier, and research concerning the sequelae of attach-

ment security in the United States has yielded a mixed pattern of findings as well. But there is also considerably greater diversity in cross-national findings concerning the origins of attachment security and its outcomes.

Based on these considerations related to attachment research in Japan, Rothbaum, Weisz, Pott, Miyake, and Morelli (2000) have questioned the universal applicability of three core claims of attachment theory: (1) caregiver sensitivity leads to secure attachment, (2) secure attachment leads to later social competence, and (3) children who are securely attached use the caregiver as a secure base for exploration. They argue that these conclusions reflect Western beliefs about the nature of the child and of infant-parent relationships and thus cannot properly be generalized to non-Western cultures (see also Rothbaum, Pott, Azuma, Miyake, & Weisz, 2000). The answer, according to Rothbaum and his colleagues (2000), is to develop unique, indigenous theories and methods of studying parent-child attachment relationships. Indeed, given the amount of variability in attachment observed within nationalities, their recommendation might be extended to the creation of context-specific attachment research for different subgroups within cultural settings.

By contrast, the conclusions yielded by research on attachment and culture suggest a less extreme solution. Hypotheses concerning the origins and outcomes of attachment security derived from attachment theory should be evaluated with attention to the cultural contexts of child care and the values guiding parent-child interaction in specific groups. This includes constant attention to the validation of measures derived from studies of children in the United States for use with non-Western groups and, when necessary, the creation of new assessments. To evaluate whether parental sensitivity predicts attachment security in non-Western contexts, for example, it is important to develop culturally appropriate assessments of sensitivity. Theoretical predictions concerning attachment outcomes must also be evaluated with regard to the contexts and values of early care. Indeed, even the documentation that secure attachment is normative in different nationalities is not necessarily evidence that the Strange Situation procedure is valid until convergent evidence (such as confirming an association between the child's attachment behavior at home with secure behavior in the Strange Situation) is obtained. However, the existing research literature suggests that rather than abandoning the theory and methods of contemporary attachment research, these tools

may continue to be useful as they are adapted to work in specific cultures and settings in which child-parent relationships develop. If such inquiry can be conducted in a culturally sensitive manner, it might be a preferable alternative to the generation of a collection of indigenous attachment methods and theories and would also inform the development of attachment theory.

Indeed, further studies on attachment and culture can usefully enable research into the origins of attachment security to become more context sensitive whether or not it is used to evaluate the generality of attachment theory. Sagi, van Ijzendoorn, Aviezer, Donnell, and Mayseless (1994), for example, compared the attachment security of Israeli infants in two kibbutz arrangements: (1) a "familist" arrangement in which infants returned home for the night after spending the day in group care, and (2) a "traditional" arrangement entailing communal sleeping conditions involving supervision by professional caretakers. From attachment theory they predicted and subsequently confirmed that infants in the latter group would be more insecurely attached to their mothers because of the inconsistent responsiveness of the professional caretakers and their mothers' inaccessibility to them at night. In another kibbutz study, Oppenheim and colleagues (1988) found that the security of attachment of young children to their *metaplot* (communal caretakers) predicted which children were later more empathic, purposive, dominant, achievement oriented, and independent, even though mother-child attachment security did not predict these dimensions of later psychosocial competence. The importance of the child-*metaplot* attachment relationship to these outcome measures (which were assessed in the context of communal care) may have heightened the influence of these attachments to context-relevant psychosocial skills. In each case, research on attachment in a different cultural setting permitted researchers to test hypotheses that could not be readily evaluated in the United States. These are examples of how further studies of attachment and culture can contribute to a greater understanding of the ways that context influences the early development of security in close relationships.

Consistency and Change in the Security of Attachment

The current era of attachment research emerged out of a desolate period in which researchers had difficulty devising reliable measures of infant-parent interaction and,

as a result, could not identify stable, meaningful individual differences in interactive quality (Masters & Wellman, 1974). One of the first studies of the stability of attachment classifications contributed to the validation of the Strange Situation by showing that when evaluated within the organizational perspective of Ainsworth's coding system, individual differences in infant-parent attachment could be highly stable over a 6-month period (Waters, 1978). This finding was consistent with the theoretical tradition shaping attachment theory (derived from psychoanalytic theory) that early parent-child relationships would be a consistent, formative influence on sociopersonality development. Thus, the development of a reliable methodology and the discovery that individual differences in relationship quality could be stable over time contributed to the enthusiasm initially generated for attachment theory and research.

Since that time, however, there have been many studies of the stability of attachment security, none of them confirming the initial expectation that attachments are highly consistent over time. Table 2.1 summarizes studies examining the stability of early attachment classifications. Studies were included in this table when the Strange Situation was used on each occasion because these studies provide the most valid window into the consistency of attachment relationships over time (studies using different attachment measures on each occasion, by contrast, confound change in attachment with measurement differences, and the Strange Situation is the best-validated attachment assessment). The table shows that the proportion of infants who retain the same attachment classification on each occasion varies widely, from under 50% to nearly 100%, over periods of only 6 to 8 months.

Similar conclusions are yielded from studies using other behavioral measures of attachment over longer intervals. Symons, Clark, Isaksen, and Marshall (1998) reported a correlation of .44 between observer-sorted AQS assessments of 44 children at ages 2 and 5; and Moss, Cyr, Bureau, Tarabulsky, and Dubois-Comtois (2004) reported that 67% of their sample of 120 children retained consistent classifications when assessed in the Cassidy-Marvin procedure at age 3 to 4 and the closely related Main and Cassidy (1988) procedure at age 5 to 6. The first longitudinal studies comparing infant Strange Situation classifications with mid- to late-adolescent Adult Attachment Interview states of mind have yielded mixed results: Two studies (Hamilton, 2000; Waters, Merrick, Treboux, Crowell,

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TABLE 2.1 Stability of Attachment Classifications in the Strange Situation

Study	Age at <i>N</i>	Overall Time 1	Time 2	Stability
Middle-Class Samples				
Belsky et al. (1996) ^a				
–Pennsylvania State mothers	124	12	18	52
–Pennsylvania State fathers	120	13	20	46
–Pittsburgh mothers	90	12	18	46
Easterbrooks (1989) ^b		13	20	
–Mothers	60			58
–Fathers	60			56
Frodi, Grolnick, and Bridges (1985)	38	12	20	66
Jacobsen et al. (1997)	32	12	18	50
Main and Weston (1981)		12	20	
–Mothers	15			73
–Fathers	15			87
Owen et al. (1984)		12	20	
–Mothers	59			78
–Fathers	53			62
Takahashi (1985, 1990)	48	12	23	60
Thompson et al. (1982)	43	12.5	19.5	53
Waters (1978)	50	12	18	96
Lower-Income Samples				
Barnett et al. (1999)		12	18	
–Maltreated subsample	18			66
–Nonmaltreated subsample	21			62
Lyons-Ruth et al. (1991)	46	12	18	30
Minnesota Study of Parents and Children ^c		12	18	
Vaughn et al. (1979)	100			62
Egeland and Sroufe (1981)				
–Maltreating subsample	25			48
Excellent care subsample	32			81
Egeland and Farber (1984)	189			60
Schneider-Rosen et al. (1985)		12	18	
–Maltreated		12	42	
–Nonmaltreated	17			76
Vondra et al. (2001)	195	12	18	45

Notes: Age is in months. Overall stability of attachment classification is expressed as the proportion of the sample maintaining the same classification at each age.

^aPennsylvania State samples included exclusively firstborn sons. Pittsburgh sample was recruited for a study of postpartum depression; depression was unrelated to attachment classification or its stability over time.

^bSample was equally divided between full-term and low-birthweight preterm infants. Term status was unrelated to attachment classification or to its stability. Strange Situation assessments with mothers and fathers were separated by approximately 1 month.

^cStability estimates from these studies are based on overlapping subsamples.

& Albersheim, 2000) found that nearly two-thirds of the sample obtained the same attachment classification in infancy and adolescence, whereas three studies (Lewis, Feiring, & Rosenthal, 2000; Weinfield et al., 2000; Zimmermann & Grossmann, 1997) found no continuity. Other evidence also indicates that consistency in attachment classification over time should not neces-

sarily be anticipated. Dozier and colleagues (2001) found that by only a few months after their foster care placements, infants' attachment security had already begun to be predictable by knowledge of the foster mothers' attachment states of mind at a level comparable to that found in biological mother-child dyads. There is, in short, no normative stability to attachment

relationships from the early years.⁵ Attachment relationships sometimes stay the same, but sometimes they change (Thompson, 2000).

This conclusion does not threaten the validity of the Strange Situation because of the extensive external validity for the procedure. However, because it conflicts with certain theoretical expectations, it requires explanation. Are the changes that occur in attachment security random or systematic, perhaps even lawful? Serious attention to this issue is important not just for theoretical reasons. Understanding the causes of continuity and change in attachment security could be relevant to identifying protective factors for the maintenance of security in the lives of some children and catalysts to security in the lives of others whose early experiences have been relationally insecure.

One suggestion offered by these studies is that secure attachments tend to be more stable than insecure ones (see Thompson, 1998). Bowlby (1969/1982) explained this in terms of the self-perpetuating mutual satisfactions that the caregiver and infant derive from a secure relationship. However, the handful of stability studies enlisting the D classification suggest that infant disorganization/disorientation may also be more stable than the organized, insecure classifications, perhaps because of the extremity and consistency of the antecedent caregiving conditions giving rise to disorganized attachment (van Ijzendoorn et al., 1979). Therefore, there can be catalysts to relational consistency of both positive and negative kinds, although this clearly merits greater research attention.

Attachment researchers have hypothesized that attachment relationships are more likely to change when stresses alter familiar patterns of parent-child interaction, and there is some evidence in support of this view. Vaughn, Egeland, Sroufe, and Waters (1979) found that the mothers of infants who shifted from securely attached at 12 months to insecurely attached at 18 months reported significantly higher amounts of life stress compared with the mothers of infants who maintained secure attachment at each age. These findings are consistent with the association between stressful events and height-

ened attachment insecurity in the socioeconomically stressed samples earlier described. In longer-term studies, the frequency of negative life events between attachment assessments is associated with changes in the security of attachment from infancy to adulthood, especially shifts toward insecure adult attachment representations (Hamilton, 2000; Lewis et al., 2000; Waters, Weinfield, & Hamilton, 2000; Weinfield et al., 2000; see also Beckwith, Cohen, & Hamilton, 1999). These events include parental divorce or serious illness, parental loss, child maltreatment, and other intervening events of significance and severity, although some of them (particularly divorce) are experienced by a high proportion of children in countries like the United States.

Stresses may not be the only influences provoking changes in attachment. Thompson, Lamb, and Estes (1982) found with a middle-class sample that comparatively nonstressful changes in parent-infant interaction, such as those resulting from the mother's return to work and the onset of nonmaternal care, were associated with changes in attachment security. These life events were associated with changes from insecurity to security and the reverse. Thus, change and stress can alter familiar patterns of parent-child interaction and, as a consequence, the security of attachment, with stress promoting a change toward insecurity. This may help to explain why the proportion of stable attachment relationships in middle-class samples is not strikingly higher than those for lower-income samples (Table 2.1), and why studies with samples that were specifically selected to exclude such influences reported higher consistency in attachment relationships over time (e.g., Main & Weston, 1981). Owen, Easterbrooks, Chase-Lansdale, and Goldberg (1984) did not find an association between changes in attachment and shifts in maternal employment, however, although the latter were associated with changes in the security of infant-*father* attachments.

A somewhat more refined hypothesis is that changes in the quality or sensitivity of caregiving—which may result from changing or stressful life conditions—are associated with change in attachment security. Frodi, Grolnick, and Bridges (1985) found no associations between the stability of attachment and intervening life events or child care patterns, but reported associations with the sensitivity of maternal care. Infants who were either consistently secure or became secure from 12 to 20 months had mothers who were more sensitive and less controlling at 12 months. A similar conclusion derives from the NICHD Study of Early Child Care, which found that changes in

⁵Although Fraley (2002) concluded from a meta-analysis review of many of these studies that there is moderate stability of attachment security across the first 19 years of life, his analysis focused exclusively on the secure-insecure distinction and thus ignored important changes that occur between the insecure classifications, which tend to be more unstable over time than the secure group.

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maternal sensitivity were significantly associated with changes in attachment security from 15 months (assessed via the Strange Situation) to 36 months (assessed via the Cassidy-Marvin procedure; NICHD Early Child Care Research Network, 2001). Only 46% of the sample maintained the same attachment classification over time, with low or decreasing maternal sensitivity in home observations from 24 to 36 months predicting which infants would change from secure to insecure, and higher sensitivity over this period predicting which infants would change from insecure to secure (but see Belsky, Campbell, Cohn, and Moore, 1996, for a failure to find similar differences). Thus, changes in the security of attachment may be associated with changes in the sensitivity of parental care, which is consistent with attachment theory.

Changes in the sensitivity of care can derive from many influences. In a study using the AQS, Teti, Sakin, Kucera, Corns, and Das Eiden (1996) found that the attachment security of firstborn preschoolers decreased following the birth of a new sibling. The children whose security scores dropped most dramatically had mothers with significantly higher scores on depression, anxiety, and/or hostility compared with the mothers of children who maintained high security scores. In this study, furthermore, firstborns' security scores were also predicted by measures of the mothers' marital harmony and affective involvement with the firstborn. Thus, the impact of the secondborn's birth on the security of mother-firstborn attachment was moderated by the mother's capacities to cope successfully with the new birth, which was itself predicted not only by her personality style but also by the support she received from her partner. It seems likely that similar processes of coping and adjustment would mediate the impact of family events on the sensitivity of parental care and the consistency of child-parent attachments over time. When caregivers can cope adaptively with changing life circumstances and negative events, sometimes with the assistance of others, they are more likely to maintain familiar patterns of interaction and consistent attachment relationships over time.

Taken together, these studies collectively portray the continuity of attachment security as a relational process that is influenced both by the quality of care in infancy and the subsequent quality of care after infancy. Such a view is consistent with Bowlby's claim that attachment patterns are a product both of personal history and current circumstances. It suggests that rather than early experience launching children on highly predictable developmental pathways, or psychological growth deriving

from current experience alone (Fraley, 2002), relational history and current experience each exert important influences on a child's psychosocial functioning.

But further exploration of the determinants of stability and change in attachment security is essential for several reasons. First, far greater understanding of the conditions that are associated with relational changes, and why they are influential, is needed. The pattern of findings thus far suggests that different kinds of influences are associated with changes from security to insecurity compared to the reverse, but these are confounded with the broader socioeconomic circumstances of the family and thus require further study. Second, the association between negative life events and change in attachment is moderate but not strong, suggesting that other influences are also relevant and perhaps preeminent in altering prior relational patterns (Thompson, 2000; Waters, Weinfield, & Hamilton, 2000). These could include the coping capacities of the parent (as noted earlier) or the child, as suggested by the emotional security hypothesis of Davies and Cummings (1994). Other potential influences include the availability of other attachment partners who provide greater relational stability to the child, the child's personal construals of the caregiver's behavior that could moderate the impact of stressful events on the child's expectations for care, and temperamental qualities that may alter a child's vulnerability or resiliency to the personal impact of negative life events. Each of these hypotheses merits further empirical exploration, and few have yet been studied. Third, our understanding is especially impoverished with respect to the influences that can cause formerly insecure children to become secure, despite the relevance of this to preventive and interventive efforts. Although parent-child therapeutic interventions informed by attachment theory have been shown to benefit young children growing up in at-risk circumstances (e.g., Cicchetti, Toth, & Rogosch, 1999), little is known about the ordinary conditions that can provoke transitions to secure attachment in nontherapeutic contexts. Further study of this issue can have potential importance for fostering more positive early parent-child relationships and to the study of early childhood mental health.

Early Attachment and Subsequent Psychological Development

If the consistency of attachment relationships is due to an interaction of early sensitive care and subsequent ex-

perience, then this should also be true of the sequelae of attachment security: The extent to which attachment predicts later sociability, behavior problems, or other outcomes should depend on both early security and the child's subsequent experiences, particularly of sensitive care. Belsky and Pasco Fearon (2002a) confirmed this expectation from attachment theory using data from the NICHD Study of Early Child Care. Analyzing Strange Situation classifications at 15 months and subsequent measures of maternal sensitivity at 24 months, they reported that the children who obtained the highest scores on a broad range of social and cognitive measures at 36 months were those who were securely attached and who subsequently experienced sensitive care. Those performing most poorly at 36 months were insecurely attached in infancy and experienced later insensitive care. Interestingly, of the two intermediate groups, children who were initially insecurely attached but subsequently experienced sensitive care scored higher on all outcome measures than children who were initially secure but later experienced insensitive care. Similar findings have been reported by other attachment researchers (e.g., Easterbrooks & Goldberg, 1990; Egeland, Kalkoske, Gottesman, & Erickson, 1990; Erikson, Sroufe, & Egeland, 1985; Sroufe, Egeland, & Kreutzer, 1990). Belsky and Pasco Fearon (2002a) also found that maternal-report measures of life stress, depression, social support, and family resources at 24 months helped to explain why some securely attached infants subsequently experienced insensitive care, and why some initially insecure infants later experienced sensitive maternal care. In each case, maternal insensitivity was positively associated with the number of negative life events and lack of support that mothers experienced when children were age 2. In a corollary report from the same NICHD study, Belsky and Pasco Fearon (2002b) reported that a cumulative measure of contextual risk during the child's first 3 years moderated some of the associations between early attachment and later behavior.

In another reanalysis of the NICHD Study of Early Child Care, Raikes and Thompson (2005d) expanded on these findings. They examined the association between multiple early assessments of attachment security (at 15, 24, and 36 months) and later measures of parent-child relationship quality with children's social-cognitive functioning at 54 months and first grade. They found that *both* concurrent parenting quality and early attachment security were associated with social-cognitive outcomes, and that children with insecure attachment histories

were more sensitive to the effects of parenting quality later in life than children with secure attachment histories. Moreover, attachment security at 24 and 36 months (when children's mental representations are maturing) but not at 15 months was predictive of later social cognition, and security at multiple ages was more predictive than a secure attachment at only one assessment. It was, in short, cumulative relational experience that predicted children's social-cognitive functioning at school entry, which included assessments of children's attributions for peer behavior, their ability to generate appropriate responses to social problems, and self-perceived loneliness.

These findings, taken together, indicate that early security interacts with the quality of subsequent experience (particularly maternal care and broader life stresses) in predicting developmental outcomes. Indeed, these findings suggest that later caregiving may be at least as important as early security in predicting later behavior. Unfortunately, most of the research on the outcomes of early attachment is insensitive to these developmentally interactive influences. Although virtually all attachment theorists agree that the consequences of a secure or insecure attachment arise from an interaction between early security and the continuing quality of parental care, most studies are designed in a simple pre-post manner in which security in an antecedent assessment is associated with a later behavioral outcome. This makes it impossible to determine whether early security is linked to later behavior because caregivers have remained consistently supportive (or unsupportive) over time, or even whether the child's attachment has remained consistently secure or insecure. If either is true, then predictive relations between attachment and later behavior may be better attributed to the continuing influences of parental sensitivity or attachment security. Moreover, few studies are designed to enable an assessment of possible moderators of the association between early security and its hypothesized outcomes, which include not only the sensitivity of parental care and family stress but also other features of parental behavior that can facilitate or impede later developmental outcomes. Thus, research on the predictive relations between attachment and later behavior is often agnostic concerning its causes (Thompson, 1999).

This is unfortunate because attachment theory is ready to move beyond simple pre-post research to a more incisive exploration of the conditions underlying continuity and change in psychological growth. It is as

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important today to understand *why* early security is (or is not) related to later psychological functioning as it is to establish a predictive relation. In this regard, theory development must proceed in tandem with more sophisticated research designs to enable the examination of more complex, interactive predictive models than the simple expectation that early security predicts later psychosocial functioning.

Guided by a general expectation that a secure attachment predicts better later functioning, as noted earlier, researchers have studied a wide range of hypothesized outcomes. It is important, however, to distinguish different outcome domains in assessing the importance of attachment security for psychological development. This is because a secure attachment might be expected to have stronger, more enduring, and more direct associations with sequelae that are more specifically related to issues of relational trust and security than to outcomes that are not.

The most direct result of a secure attachment would be for the *parent-child relationship*: An early secure attachment should predict more positive subsequent parent-child interaction. This expectation is confirmed in short-term follow-up studies during the 2nd year in which securely attached children showed greater enthusiasm, compliance, and positive affect (and less frustration and aggression) during shared tasks with their mothers (e.g., Frankel & Bates, 1990; Matas, Arend, & Sroufe, 1978; Slade, 1987). Secure infants tend to maintain more harmonious relations with their mothers in the 2nd year. However, in each of these studies, the mothers of securely attached infants were themselves more sensitive and helpful toward offspring in follow-up assessments, and thus supported the positive behavior of their children. It is more appropriate, therefore, to conclude that securely attached *dyads* tend to maintain interactive harmony in the 2nd year. This continuity in parent-child harmony provides significant benefits for child socialization and personality development for securely attached children (Waters et al., 1991). However, the beneficial effects of a secure attachment in infancy may wane over time. Researchers have not found longer-term associations between security in infancy and parent-child interaction at ages 3 (Youngblade & Belsky, 1992) and 5 (van Ijzendoorn, van der Veer, & van Vliet-Visser, 1987), even though long-term associations have sometimes been demonstrated, as noted earlier, between attachment measures at different ages. This is consistent with the findings of studies concerning the stability of attachment classifications, which indicate, as noted ear-

lier, that relationships may remain consistent or change after infancy. Consequently, although attachment security in infancy may inaugurate short-term consistency in the harmony of parent-child relations, the evidence concerning long-term continuity is mixed, with continuity likely depending on important mediating conditions in the ecology of family life.

What about the benefits of attachment security for children's experience of *other close relationships*? A meta-analysis by Schneider, Atkinson, and Tardif (2001) found a modest association between parent-child attachment and children's peer relationships (combined effect size .20) and confirmed that this association is stronger for studies of children's close friendships (effect size .24) than for relationships with other peers (effect size .14), which is consistent with other reviews of this literature (Thompson, 1998, 1999). Strange Situation, AQS, and representational attachment assessments for older children were used in the studies reviewed in this meta-analysis, and findings for each were consistent with these conclusions. Schneider and colleagues also concluded that this association is stronger for peer relations in middle childhood and adolescence than in early childhood and suggested that this derives from the consolidation and sophistication of representational processes related to friendship in older children. However, this conclusion integrates studies involving long-term prediction from infant attachment with studies in which attachment and peer relations were each assessed in childhood or adolescence, and thus the meaning of this association is not entirely clear from this meta-analysis.

Other studies support the conclusion that attachment security is more strongly associated with children's functioning in close relationships. In the Minnesota Study of Risk and Adaptation (see Sroufe, Egeland, Carlson, & Collins, 2005), for example, infants who were securely attached were later less dependent on their preschool teachers and functioned better in the preschool setting (Sroufe, 1983). Bost, Vaughn, Washington, Cielinski, and Bradbard (1998) found that secure preschoolers (assessed via observer AQS scores) had more extensive and supportive social networks and were also higher on sociometric assessments of peer competence (see Booth, Rubin, & Rose-Krasnor, 1998, and DeMulder, Denham, Schmidt, & Mitchell, 2000, for similar results). Anan and Barnett (1999) also found (in a sample of lower-income African American 6.5-year-olds) that secure attachment (assessed 2 years earlier) was associated with children's perceptions of greater social support, and social support mediated the associa-

tion between secure attachment and lower scores on externalizing and internalizing problems. To be sure, there is evidence that securely attached infants are also more sociable with unfamiliar adults during the 2nd or 3rd year (e.g., Main & Weston, 1981; Thompson & Lamb, 1983), which may derive from the generalization of the social skills that secure infants acquire with their mothers. However, mothers were present during stranger sociability assessments in these studies, and each study in which concurrent maternal behavior was evaluated yielded differences indicating that the mothers of secure children were more supportive and child centered with their offspring. Thus, differences in stranger sociability may be a dyadic phenomenon. Differences in more intimate relationships appear, by contrast, to be a function of the capacity of securely attached children to create more positive relationships.

Attachment researchers have also studied the associations between relational security and *personality development*. The Minnesota Study of Risk and Adaptation, a uniquely comprehensive, prospective longitudinal study of children and families in poverty, has focused extensively on the association between attachment and personality within the organizational perspective of attachment theory and Sroufe's portrayal of the "continuity of adaptation" of age-related developmental challenges. In this study, children were recruited with their families in infancy and followed through age 28, with personality characteristics assessed regularly through behavioral observations, interviews, observer ratings, semiprojective instruments, and self-reports. Sroufe and his colleagues found significant continuities between early attachment security (assessed in the Strange Situation at 12 and 18 months) and personality dimensions throughout childhood and adolescence, including associations between secure attachment and measures of emotional health, self-esteem, agency and self-confidence, positive affect, ego resiliency, and social competence in interactions with peers, teachers, camp counselors, romantic partners, and others (see Sroufe et al., 2005, for a comprehensive report, which also includes a list of citations to specific research reports and a comprehensive list of measures). Moreover, consistent with the emphasis on both developmental history and current experience, Sroufe and his colleagues found that the prediction of these and other personality features was enhanced when (a) early attachment measures were supplemented by other indicators of the quality of early care, (b) there was consideration of continuity in the quality of care between infancy and later ages, and (c)

early measures were supplemented by more contemporaneous assessments of relational functioning and/or personality, especially when long-term prediction was involved (e.g., Carlson, Sroufe, & Egeland, 2004). Taken together, this study yielded impressive evidence of the predictable organization of personality and behavioral functioning from childhood to early adulthood as a function of the interactive effects of early caregiving, subsequent experiences, and relational influences. Although some of the findings of this project have not been replicated by others (e.g., Easterbrooks & Goldberg, 1990; Frankel & Bates, 1990), the study offers an important portrayal of the place of attachment security in the multifactorial construction of personality development (Thompson, in press).

Security of attachment as a protective or risk factor to the development of *psychopathology* has also been the focus of research inquiry. In the Minnesota study, insecure-resistant attachment in infancy predicted anxiety disorders in adolescence, but there were few other associations between the organized insecure classifications and later psychopathology (Sroufe et al., 2005). In another at-risk sample, Lyons-Ruth, Easterbrooks, and Cibelli (1997) reported that avoidant attachment in the Strange Situation was associated with teacher-report internalizing symptomatology indexed by the Child Behavior Checklist (CBCL) at age 7, although there was no association with teacher-reported anxiety or behavior problems at age 5 (Lyons-Ruth, Alpern, & Repacholi, 1993). A number of studies have failed to discern a reliable association between early organized insecurity in the Strange Situation and the development of behavioral problems, especially in middle-class samples (e.g., Bates & Bayles, 1988; Erickson et al., 1985; Fagot & Kavanagh, 1990). However, analyses from the NICHD Study of Early Child Care found that insecurity at 24 months (on the AQS) predicted maternal and caregiver CBCL ratings at age 3 of internalizing and externalizing behavior problems, and insecurity at 36 months (using the Cassidy-Marvin procedure) predicted internalizing problems on the same assessments (McCartney et al., 2004). Thus, research evidence concerning the association between organized insecure attachment and the development of behavior problems in childhood is quite mixed. There is some evidence that this association is stronger in lower-income families, which are subject to other risk factors for child problems, than in middle-class homes, but the research evidence is inconclusive.

Further attention to the clinical implications of attachment security has accompanied the creation of the

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disorganized/disoriented (group D) classification. Children in this group may be at risk for the development of later clinical problems, especially when they are in stressed or lower-income families. In the Minnesota study, infants who were classified D in the Strange Situation later obtained significantly higher scores on a global index of psychopathology and, in particular, of dissociative symptomatology in adolescence (Sroufe et al., 2005; see also Carlson, 1998). Lyons-Ruth and her colleagues (1995, 1997) reported that disorganized attachment in the Strange Situation was associated with teacher-reported externalizing symptoms on the CBCL at age 7, and with teacher-reported hostility at age 5 (see also Shaw, Owens, Vondra, Keenan, & Winslow, 1996, for similar findings using the Strange Situation with a low-income sample, and Moss, Parent, et al., 1996, and Moss, Bureau, et al., 2004, for comparable findings using the Cassidy-Marvin procedure with older children from middle-class families).⁶ Shaw, Keenan, Vondra, Delliquadri, and Giovanelli (1997) and Moss, Bureau, and colleagues (2004) also reported higher scores for D children on internalizing symptomatology, and Moss, Cyr, and Dubois-Comtois (2004) have found contemporaneous associations between disorganized attachment and behavior problems in school-age children, with the different D subgroups predicting externalizing and internalizing problems. However, in a somewhat discordant report, McCartney and colleagues (2004), analyzing data from the NICHD Study of Early Child Care, found no reliable associations between disorganized attachment in the Strange Situation (at 15 months) or the Cassidy-Marvin procedure (at 36 months) and mother- or caregiver-reported behavior problems at age 3.

These mixed findings suggest that further examination of the association between insecure attachment and the development of behavior problems is warranted. In doing so, two interpretive cautions should be noted. First, since the origins of infant attachment disorganization are based in the same risk factors that also contribute to later psychopathology (such as maternal psychosocial problems and depression, family stress, and other factors), it

is unsurprising that in studies that have included these additional risks in predictive models, both disorganized attachment and other family risks combine to predict later child psychopathology (e.g., Carlson, 1998; Lyons-Ruth et al., 1993; Shaw et al., 1997). This is one of the reasons that the association between attachment insecurity and later behavior problems tends to be stronger in socioeconomically distressed families, but it also suggests that the sequelae of insecurity derive, in part, from continuity in the risk factors that initially contributed to attachment insecurity earlier in the child's life. Second, it should be clear that insecure attachment—even disorganized attachment—is not an index of psychopathology but only a risk factor. These findings show that although insecurity increases the chances of later behavior problems, the prediction of child psychopathology should be viewed in the context of multifactorial models involving early caregiving influences, continuing family adversity, ineffective parenting, and atypical child characteristics (Greenberg, 1999).

Indeed, the same conclusion is true of the other sequelae of the security of attachment. Because each of these hypothesized outcomes is multidetermined, attachment security is likely to explain a significant but small proportion of variance in each, with the amount of variance declining over time as other developmental influences emerge. This is one reason why future studies that include multiple predictors of later outcomes will be more informative in situating the security of attachment in the constellation of other influences that predict later parent-child relationships, social competence, personality, and risk for psychopathology. Furthermore, the large majority of research studies on the outcomes of attachment security focus on child-mother attachment relationships, even though attachment theorists recognize that children develop meaningful relationships with fathers and other attachment partners. It seems likely that studies incorporating the influence of multiple attachment relationships will have greater predictive power than those focusing on the child-mother relationships alone, but few studies have considered the roles of fathers and other caregivers.

What can we conclude, therefore, about the association between early attachment and later psychological development? Early security clearly makes a difference for the child's future in concert with other family influences. It inaugurates a more harmonious mother-child relationship that provides continuing benefits for the young child's receptivity to mothers' socialization incentives. It is associated with more positive personality

⁶These findings are consistent with a meta-analytic review by van Ijzendoorn and colleagues (1997) who reported that there is a moderately strong association between disorganized/disoriented attachment and externalizing behavior (combined effect size .29), but the extraordinary heterogeneity of the samples and the assessments of disorganization for the 12 studies they summarized makes the meaning of this conclusion uncertain.

characteristics and greater social competence, especially in other close relationships with peers and adults. Attachment security is also a protective factor in the development of psychological well-being, with insecure attachment—especially disorganized insecurity—a risk factor for the development of behavioral problems. A secure attachment alone is not necessarily a strong predictor of long-term outcomes but, in concert with continuing supportive care, it meaningfully improves the odds for positive psychological growth. What is less clear is why these outcomes emerge. Attachment security is likely to be associated with more positive social skills, self-regulatory capacities, modes of social and emotional understanding, motivational processes, social expectations, causal attributions, and self-referential beliefs that contribute to the benefits of a secure attachment and the challenges of an insecure one. Attachment security is also likely to be associated with continuing parental sensitivity that provides ongoing support for healthy psychological growth. But thus far, researchers have yet to incisively explore the psychological processes underlying the association between early attachment security and its later psychological outcomes. This constitutes a central agenda for future attachment research.

A recent study by Denham, Blair, Schmidt, and DeMulder (2002) provides an example of the kind of research that would advance this understanding. In this study, multiple measures of attachment security (including observer AQS) were assessed when children were age 3, along with multiple measures of emotional (in)competence, including assessments of emotion understanding, regulation, and anger expression. Children were later studied in their kindergarten classrooms to assess peer competence through sociometric ratings and teacher-rated social competence measures. Latent variable path-analytic procedures were used to confirm two avenues from preschool attachment security to kindergarten social competence: (1) a direct pathway and (2) an indirect path through emotional competence (see also Denham et al., 2001). As we shall see, there is considerable research elucidating how securely attached children develop skills of emotion understanding through the more open conversation shared with their mothers, and this research suggests that skills in emotional competence may be one means by which the social skills of secure children are enhanced. To Denham and colleagues, the mediating influence of emotional competence illustrates one of several facets of the internal working models generated by the security of attachment.

Internal Working Models

One of Bowlby's most heuristically powerful formulations is the view that attachment security influences psychological growth through children's developing mental representations, or *internal working models* (IWMs), of the social world. Internal working models are based on young children's expectations for the behavior of their attachment figures that develop into broader representations of themselves, their attachment figures, interpretations of their relational experiences, and decision rules about how to interact with others. These working models also become interpretive filters through which children (and adults) reconstruct their understanding of new experiences and relationships in ways that are consistent with past experiences and expectations, sometimes enlisting unconscious defensive processes in doing so. As a consequence, children choose new partners and behave with them in ways that are consistent with, and thus help to confirm, the expectations created from earlier attachment relationships. In this manner, IWMs constitute the bridge between the infant's experience of sensitive or insensitive care and the development of beliefs and expectations that affect subsequent experience in close relationships (Bretherton & Munholland, 1999). Furthermore, young children are believed to internalize conceptions of themselves from early relational experience that are incorporated into developing IWMs and that also constitute a perceptual lens for experiences that affect self-concept and other developing self-referential beliefs. In this manner, secure or insecure attachments shape the organization of personality through the influence of mental working models arising from attachment security.

This is a valuable way of thinking about socioemotional development that is representational, integrative, affectively oriented, and relationally based. Its breadth, however, poses some conceptual challenges for attachment theory. Grossmann (1999) has pointed out that at least two formulations of IWMs can be found in Bowlby's theory. One conceptualizes IWMs in a manner resembling the dynamic unconscious by which relational experience is interpreted through the perceptual-affective schemas of infancy; these prelinguistic models have enduring influence but remain largely inaccessible to conscious reflection. The other conceptualizes IWMs as resembling other, conscious representational models like scripts and schemas that evolve developmentally and can be consciously accessed. These are different formulations and have different implications for theory and assessment. Perhaps as a consequence, basic questions concerning how

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IWMs develop, how their development is affected by other facets of conceptual growth, and changes in IWMs over time remain unclear in attachment theory (Thompson & Raikes, 2003). Another problem is the explanatory breadth that IWMs can assume. As Hinde (1988) noted, "in the very power of such a model lies a trap: it can too easily explain anything" (p. 378), a concern shared by other developmental scientists (Belsky & Cassidy, 1994; Rutter & O'Connor, 1999). Over the years, as attachment security has been studied in relation to a widening array of developmental outcomes, the concept of internal working models has been enlisted to account for unexpected as well as hypothesized associations, giving credence to Belsky and Cassidy's (1994) concern that IWMs would constitute a "catch-all, post hoc explanation" for such research findings. The inclusiveness of the IWM construct has expanded with every new empirical finding that is "explained" with reference to it.

This has also presented a considerable challenge for efforts to assess children's mental working models derived from attachment relationships. Attachment researchers have created a variety of assessments of children's mental representations of relational experience, many of them based on semiprojective narrative approaches that involve children's responses to doll-play materials, story-completion probes, evocative pictures, and other materials (see Solomon & George, 1999, and Stevenson-Hinde & Verschueren, 2002, for reviews of these methods). These procedures rely on the assumption that in responding to materials that are designed to evoke attachment-related issues, children will project onto the materials their own feelings and beliefs associated with their attachment experiences. Surprisingly, no procedures have been developed to directly assess children's expectations for the behavior of their attachment figures in familiar situations or their scripts for social interaction with their attachment figures.

Considerable thoughtful creativity has been devoted to semiprojective measurement development, but Solomon and George (1999) have chastised the "frontier mentality" of researchers who have produced these representational assessments with inadequate attention to their validation, especially by comparison to the careful validation of behavioral measures of attachment security. This may be due to the challenges inherent in such validation efforts. The coherence, emotional themes, and resolution of young children's narrative responses to semiprojective assessments are likely affected not only by the representations of relationships that researchers

hope to assess but also by other influences on narrative content and quality that derive from children's linguistic skills and verbal fluency, parent-child discourse, social desirability influences, culture, and ethnicity. There are also developmental considerations related to validation because the coherence of young children's story-completion discourse probably means something different compared to coherence in an adolescent's or adult's response to Adult Attachment Interview (AAI) probes. Attachment researchers have generally sought to validate representational measures of attachment security by establishing predictive or contemporaneous associations with behavioral attachment measures, even though security assessed by narrative coherence and emotional openness is not the same thing as security assessed by secure base behavior. But the important task of elucidating the meaning of differences in narrative responses to semiprojective probes and their association with parent-child interaction at home remains to be accomplished (Raikes & Thompson, 2005b; Waters & Cummings, 2000).

There have been at least two recent efforts to contribute greater theoretical clarity to the IWM construct in ways that have implications for assessment. Bretherton (1990, 1991; Bretherton & Munholland, 1999) has described mental working models in terms of the formulations of script theory and constructive memory and emphasized the openness of communication between parent and child as a significant developmental influence on the construction of working models in early childhood. More generally, she describes IWMs as a system of hierarchically organized representational systems that involve different levels of generalizability and are relevant to various broader belief systems, suggesting that elements of IWMs can be studied in the context of other conceptual achievements of the childhood years.

Building on this view, Thompson (1998, 2000) has proposed a developmental account that associates the growth of IWMs with other developing mental processes that encode, represent, interpret, and remember social experiences.⁷ Drawing on literatures concerning the de-

⁷In a related view, Spangler and Delius (2003) have proposed that IWMs should be portrayed as a "theory of attachment" (or, perhaps, a "theory of relationships") involving coherently integrated knowledge of relational processes and causal influences that generate specific predictions and expectations for relational experience. Such a view, drawn from theory-theory of young children's intuitive beliefs about mind, physics, and biological kinds (Wellman, 2002), also offers considerable potential utility in clarifying the IWM construct.

velopment of implicit memory, event representation, autobiographical memory, theory of mind, and other features of social understanding, he portrays the growth of IWMs as building on and integrating these allied conceptual achievements that concern, like IWMs do, understanding of people and social events, self-understanding, and interpretations of relational experience. In this developmental view, IWMs change considerably with age, especially during periods of significant representational advance (such as the transition to symbolic representational capacities in early childhood, and the emergence of abstract thought in adolescence) when earlier representational systems become reorganized (see also Ainsworth, 1989; Crittenden, 2000). Thompson also argues that IWMs may have greatest influence on other aspects of sociopersonality growth during the developmental periods when these capabilities are maturing most significantly. The working models associated with a secure attachment may influence emotion understanding most strongly in early childhood, for example, when children's conceptions of others' feelings begin to become consolidated. Finally, in this view, IWMs are shaped not only by the child's direct experience of close relationships but also by the secondary representations of experience mediated by language through parent-child conversation. Consistent with literatures reviewed elsewhere in this chapter, he argues, language provides young children with considerable insight into others' feelings, thoughts, knowledge, and motives and are likely to significantly influence developing IWMs as they shape children's emergent conceptions of emotion, intention, and mind (see Thompson et al., 2003).

These newer portrayals of the development of mental working models emphasize the associations between IWMs and other conceptual systems and suggest that rather than trying to study working models directly through semiprojective procedures and other avenues, attachment researchers might equally fruitfully glean an understanding of their developmental influence by studying the representational correlates of differences in attachment security. By understanding how secure and insecure attachments are associated with differences in emotion understanding, self-awareness, and other characteristics, it might be possible to identify the influence of working models. There is now emerging an empirical literature documenting how the security of attachment is associated with representations of self, others, and relationships.

Belsky, Spritz, and Crnic (1996) hypothesized that differential processing of schema-consistent information, owing to the influence of IWMs, would cause securely attached children to remember positive events more accurately than insecure children. In a study in which 3-year-olds' delayed recognition memory for positive and negative events during a previously viewed puppet show was assessed, this expectation was confirmed. A recent study using data from the NICHD Study of Early Child Care also showed attachment-related differences in attentional processes, with disorganized children showing especially poor attentional performance (Pasco Fearon & Belsky, 2004). The conclusion that children with different attachment histories differentially attend to and remember emotionally related events merits further investigation because of its relevance to understanding the influence of the mental representations associated with attachment history and its broader implications for understanding attachment functioning.

Attachment security should be associated with children's conceptions of relationships, and one study has confirmed this to be true of peer relationships. Cassidy, Kirsh, Scolton, and Parke (1996) examined the associations between attachment security and children's sensitivity to the feelings of peers and attributions concerning peer motivations in response to hypothetical stories involving negative actions with ambiguous intent. Although attachment security from infant Strange Situation assessments did not confirm the expectation that securely attached 4-year-olds would be more likely to attribute benign motives to story characters, this expectation was confirmed when attachment security and peer measures were obtained contemporaneously in kindergarteners and first graders. Moreover, these representations of peer relationships in the older children were found to mediate the association between attachment security and peer sociometric status. Consistent with the findings of Denham and colleagues (2002) described earlier, representations of the feelings and intentions of other children helped to account for the greater social competence of secure children. As noted earlier, furthermore, Raikes and Thompson (2005d) found that attachment history (especially in concert with subsequent supportive parenting) predicted children's attributions for peer behavior and social problem solving at 54 months and first grade, especially when children were securely attached on multiple early assessments.

Several studies have found that securely attached children are more competent in emotion understanding

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in contemporaneous associations using the AQS (Laible & Thompson, 1998; Ontai & Thompson, 2002) and in predictive associations from infant Strange Situation classifications (Steele, Steele, Croft, & Fonagy, 1999) or early childhood AQS (Raikes & Thompson, 2005a; see also de Rosnay & Harris, 2002). These studies also indicate that securely attached children are especially proficient at understanding negative emotions and mixed feelings, which are each conceptually more complex than positive emotions. Why does this occur? There is some indication that secure children acquire this understanding because of how they talk about emotion with their mothers. Ontai and Thompson (2002) found that attachment security interacted with elaborative maternal discourse in predicting emotion understanding: More secure 5-year-olds whose mothers had earlier used a more descriptively rich, elaborative style of conversation about emotion with them (in storybook reading and discussions of past events) were more advanced in positive emotion understanding (see also Laible, 2004b, for similar findings). Because the mothers of securely attached children have been found to be generally more elaborative in their style of conversation with offspring (Farrant & Reese, 2000; Laible, 2004b; Laible & Thompson, 2000; see Reese, 2002, for a review), these findings offer support for the view from attachment theory that secure dyads share a more “open, fluid communication” style that enables discussion of feelings (particularly mixed or negative emotions) and the child’s greater comprehension of them (Bretherton, 1990). One of the benefits of more open shared communication between mother and child—in which mothers provide more detailed information concerning emotions and other psychological experiences—is that young children can share troubled or confusing feelings with their caregivers and obtain an understanding response. This research thus suggests important associations between mother-child discourse style, the development of IWMs and of emotion understanding, and attachment security, consistent with the earlier review of research concerning the growth of emotion understanding in preschoolers. Indeed, Raikes and Thompson (2005a) found that the quality of mother-child conversations about emotion mediated the association between attachment security and emotion understanding in 3-year-olds. The influence of maternal discourse also suggests one way that the intergenerational transmission of attachment security and related representations might occur.

Similar influences may also account for the association between attachment and conscience development. A secure attachment is associated with conscience development (Laible & Thompson, 2000) but, as discussed later, attachment security is especially influential for children who are temperamentally relatively fearless, for whom the emotional incentives of the mother-child relationship motivate moral compliance (Kochanska, 1991, 1995). Attachment security also interacts with mother-child discourse style in shaping early conscience development, with mothers who more richly and elaboratively discuss the feelings of other people contributing most to young children’s internalization of moral values (Laible & Thompson, 2000). As noted in a later section, this conclusion is consistent with Hoffman’s (1983, 2000) classic formulations concerning the nature of parental communication contributing to moral internalization. Further evidence of how attachment interacts with other parental influences derives from the findings of Kochanska and colleagues (2004) of how attachment security interacts with parental discipline practices on the growth of conscience. In their longitudinal analysis, they found that for securely attached children, the parent’s use of responsiveness and gentle discipline predicted later conscience, but for insecure children there was no such association. These findings suggest that the security of attachment moderates the influence of other relational influences on early socialization. With respect to conscience, for example, the adult’s disciplinary practices may have differential emotional impact depending on the broader relationship shared by parent and child.

Attachment theory argues that the IWMs deriving from a secure or insecure attachment influence self-concept, particularly conceptions of the self as loved and loveable. In a study of contemporaneous associations between attachment and multiple measures of self-understanding, Cassidy (1988) found that securely attached 6-year-olds described themselves in generally positive terms but were capable of admitting that they were imperfect. Insecurely attached children either revealed a more negative self-image or resisted admitting flaws. Clark and Symons (2000) found stronger contemporaneous associations between attachment security and two assessments of self-concept at age 5 than predictive associations with attachment at age 2, but the associations depended on the measure of self-concept. Goodvin, Meyer, Thompson, and Hayes (2005) also found that securely attached preschoolers viewed themselves more

positively and self-concept was more stable over time than for insecure children, while maternal emotional difficulties (depression and parenting stress) predicted children's negative self-perceptions. In problem-solving tasks, insecurely attached preschoolers expressed greater frustration and inability and asked for help sooner and in unnecessary circumstances (Colman & Thompson, 2002). These findings suggest that attachment security and developing self-concept are associated, and warrant further exploration of the mediating processes by which this occurs.

Finally, attachment theory does not make strong predictions concerning the benefits of a secure attachment for understanding others' thoughts and beliefs and, perhaps as a consequence, there is mixed evidence for the association between attachment security and theory of mind. Meins et al. (2002) found no association between early attachment and children's later performance on theory of mind tasks, but Symons and Clark (2000) found a contemporaneous association between attachment and theory of mind in 5-year-olds. In light of the variety of assessments of theory of mind in preschoolers and the direct and indirect avenues by which attachment relationships might be influential in its development, further reflection is warranted on whether and why an association between these constructs might exist.

Taken together, the research on the representational correlates of attachment security contributes to an appreciation of why the mental models associated with secure or insecure attachments are so conceptually exciting for developmental analysis. The conclusions of these studies suggest:

- Mental representations of peer intentions, emotional inferences, and other psychological processes mediate between attachment security and its behavioral outcomes, such as social competence.
- Differences in processes of parent-child discourse may interact with the broader security of the parent-child relationship to shape young children's developing emotion understanding and, quite likely, conscience development, and possibly contribute to the intergenerational transmission of expectations and beliefs associated with the security of attachment.
- Attachment security and its allied representations may moderate the influence of other parental practices, such as discipline approaches, on children's

conscience development and possibly other behavioral outcomes.

- A child's relational history may also sensitize or blunt attention to other features of social experience in ways suggested by the findings of Belsky and his colleagues.
- For many domains of psychological development, such as theory of mind, greater reflection on the role of attachment security is needed.

Further research on the representational correlates of the security of attachment may contribute to understanding how multiple attachment relationships become enfolded into the development of secure or insecure persons by adolescence or early adulthood. It is noteworthy that most of the research reviewed here has not sought to directly assess internal working models, but rather has sought to comprehend their functioning through more specific analyses of the associations between attachment and conceptions of peer relationships, emotion understanding, self-concept, and other psychological processes associated with the mental models derived from attachment relationships. In so doing, we derive a portrayal of working models as rapidly developing processes that mediate between attachment security and its behavioral outcomes, interacting with other relational influences between parents and offspring, and sensitizing awareness of social processes.

Summary

Despite its controversial status in developmental psychology (Thompson, 2005), attachment theory remains uniquely generative because of how it integrates ideas concerning the effects of early relational experience on socioemotional and personality development, constructivist views on the growth of social relatedness, the development of representations concerning relationships and self, and the relevance of these for the growth of psychological well-being and psychopathology. Its future potential for remaining a central view of early personality development depends on the capacities of attachment theorists and researchers to update Bowlby's provocative formulations with the thinking of contemporary developmental science and the yield of their own empirical studies. The findings of the studies reviewed in this section suggest that there remains considerable

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potential for the generation of new ideas within the attachment framework.

CONSCIENCE

Conscience development is concerned with how children construct and act consistently with generalizable, internal standards of conduct. It is closely tied to moral judgment, but the growth of conscience also encompasses the affective, temperamental, and relational influences that, together with moral judgment, shape moral conduct. The study of conscience thus provides a window into how emotional, cognitive, and relational influences intersect to guide young children's developing views of themselves in relation to others and the broader values of the social world (Kochanska & Thompson, 1997; Thompson, Meyer, & McGinley, 2006).

Not surprisingly, contemporary research on conscience has emerged in the shadow of moral development theory. Traditional approaches to moral development, such as learning theory and the cognitive-developmental views of Piaget and Kohlberg, have portrayed morality in early childhood as distinct from that of older children and adolescents because of the younger child's egocentric, preconventional moral orientation. By contrast with older children who are concerned with maintaining harmonious social relations, and adolescents who are viewed as ethical, humanistic moralists, young children are portrayed as authoritarian, utilitarian moralists who are guided by rewards, punishment, and obedience. But new research, together with new understandings of young children's conceptual skills and relational experiences, have contributed to a new view of early conscience and of the importance of early childhood to the development of mature morality. It is now becoming clear that conscience in early childhood shares much in common with the morality of later years because of preschoolers' sensitivity to the feelings of others and the relational incentives for cooperation. Parental influences encompass far more than sanctions and reinforcements and include maintaining a relationship of mutual responsiveness and trust, enlisting conversational catalysts for moral understanding, and proactive efforts that foster cooperation and compliance in young children. Early childhood is increasingly viewed as providing a foundation for the morality of values, humanistic regard, and relationships of later years.

Intuitive Morality of Early Childhood

In early childhood, the conceptual foundations of moral development become established. Young children are not egocentric but rather, as earlier noted, are intensely interested in the desires, intentions, feelings, and thoughts of other people. Their sensitivity to others' reactions contributes to their anticipation of and responsiveness to disapproval and, later, to a dawning understanding of normative standards of appearance and behavior late in the 2nd year. As noted earlier, by 18 to 19 months of age, young children begin to respond with heightened interest and concern to objects that are damaged or flawed (Kagan, 1981, in press; S. Lamb, 1993). Kagan (1981) has interpreted this phenomenon as an emergent moral sense, based on caregivers' reactions to damaged objects and the young child's emergent sensitivity to standards. Consistent with this view, Kochanska, Casey, and Fukumoto (1995) found that older children (26- to 41-month-olds) who responded with greater concern to flawed objects also showed greater distress to rigged mishaps for which they believed they were responsible. These studies suggest that young children internalize normative standards for appearance and integrity based, in part, on their observations of how adults respond to violations of these standards in everyday experience (such as cleaning or discarding soiled toys). This is at the same time that toddlers begin to respond with embarrassment and concern to a spot of rouge on their noses, reflecting their awareness of normative standards for personal appearance (Lewis, 2000; Lewis & Brooks-Gunn, 1979).

Young children also appropriate behavioral standards and distinguish between different domains of behavioral obligation (see Turiel, Chapter 13, this *Handbook*, this volume). Much as adults do, 3- and 4-year-olds distinguish between moral and social-conventional standards, viewing moral violations as more serious and less revocable owing, in part, to their harm to others (Smetana, 1981, 1997; Smetana & Braeges, 1990). In complex social situations, such as gender exclusion in peer play, preschoolers prioritize equal treatment over convention in their consideration for fairness by age 5 (Killen et al., 2001; Theimer et al., 2001). By age 4, furthermore, individual differences in emotion understanding and knowledge of mental states (i.e., theory of mind) predict differences in children's moral judgments in friendship relations (Dunn, Cutting, & Demetriou, 2000; see also Dunn, Brown, & Maguire, 1995). Thus, young children

develop an intuitive morality that arises from the socialization efforts of caregivers in tandem with their own sensitivity to the feelings and thoughts of others and their developing grasp of normative standards of appearance and behavior.

Young children's focus on normative standards is unsurprising in light of their search for other constancies in everyday experience. This is one reason why they acquire such an early grasp of obligation in moral, conventional, and prudential concerns. As Harris and Nunez (1996) have shown, even 3-year-olds are highly skilled in understanding how a prescriptive rule applies to different circumstances (e.g., "Mom says if Cathy rides her bike she should put her helmet on"), even though they are not as skilled at applying a similar descriptive, but not prescriptive, maxim (e.g., "When Cathy rides her bike, she always wears her helmet"). In a provocative analysis, Wellman and Miller (2003) have proposed that just as 3-year-olds have difficulty conceptualizing beliefs that are discordant with reality, so also they have difficulty understanding obligation that is discordant with behavior, so they are prone to assert that rules cannot be broken and obligations must necessarily be fulfilled. Behavioral obligations describe normative reality in the eyes of young children, according to Wellman and Miller, and violations are special sources of concern. This concern with what is obligatory and normative, which is similar to the moral absolutism observed in young children long ago by Piaget (1965), is consistent with young children's interest in objects that are flawed and mirror appearances that are rouge marked, and suggests that an important conceptual foundation for early conscience development is young children's attunement to the normative standards and behavioral expectations that are part of their developing representations of what they might typically expect in everyday experience.

Young children's developing representations of normative and behavioral standards are conceptually salient because they are likely to be embedded in broader prototypical knowledge structures by which children represent everyday experiences (Hudson, 1993; Nelson, 1978). Many of the moral, conventional, and prudential standards conveyed to young children are related to routine events and are repeatedly confirmed in these contexts, whether consisting of prohibitions about making "messes" and breaking things, self-control with respect to waiting, sharing, aggression, and eating, withdrawing from touching dangerous objects, self-care, or participation in family routines (Gralinski & Kopp,

1993; Smetana et al., 2000). Caregivers distinguish between different obligatory domains in their discussion of expectations with young children, justifying moral rules for their interpersonal consequences, for example, and prudential rules by safety concerns (Smetana, 1997; Smetana et al., 2000). Thus, preschoolers' understanding of *how things are done* includes standards for *how one should act* in these and other everyday situations, and this may help to explain young children's inflexibility with the application of behavioral expectations just as they are rigid in their beliefs about how common routines are conducted. Expectations for how a person acts may become regarded as normative and obligatory just as are expectations for how others will act in these prototypical situations.

Ironically, the normative absolutism of the young child's thinking about obligation does not necessarily translate into behavioral compliance, as every parent knows. This arises, in part, because many moral situations involve frustrating present desires in favor of broader (often future) goals, which is a conceptual challenge for young children (Lagattuta, 2005). It is also challenging to comprehend the feelings and interests of multiple participants in interpersonal conflict, especially when self-interest is involved. As Arsenio and his colleagues have shown, for example, young children perceive victimizers as feeling positively about their misconduct, partly because children focus on the satisfaction of the victimizer's desires rather than the victim's distress (Arsenio & Lover, 1999). These studies highlight that even with their sensitivity to others' feelings, comprehending simultaneously the emotional perspectives of multiple people is still difficult for young children. Thus, the young intuitive moralist's deontic understanding does not readily translate into moral compliance. The result is everyday experience with the disapproval of caregivers and the feelings of guilt that may result.

Moral Emotion

Moral emotion also emerges early, and contributes to the incentives for moral compliance because of its relevance to the self and relationships. As earlier noted, the development of self-understanding occurs in concert with the emergence of self-referent emotions that are elicited in everyday situations in which adults make salient attributions of responsibility for achievement or wrongdoing. With respect to guilt and shame, parental

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responses to a young child's misbehavior typically make explicit the behavioral values the child has violated, and it is remarkable how early children begin to respond with these emotions (Barrett, 1998; Lewis, 2000; Thompson et al., in press). Kochanska, Gross, Lin, and Nichols (2002) observed children's affective and behavioral responses at 22, 33, and 45 months to experimental situations involving rigged mishaps for which children believed they were responsible. Young children exhibited concern and distress at each age, and individual differences in these responses were stable over time and were modestly predictive of a battery of conscience assessments at 56 months. Moreover, children who displayed more of these behaviors at each age were found to be temperamentally more fearful, and their mothers used less power assertion in discipline encounters. These developmental findings are consistent with maternal reports concerning the development of guilt in offspring, which also report significant growth in the affective and behavioral manifestations of guilt over this period (Kochanska, DeVet, Goldman, Murray, & Putnam, 1994; Stipek, Gralinski, & Kopp, 1990; Zahn-Waxler & Robinson, 1995; see Eisenberg, Fabes, & Spinrad, Chapter 11, this *Handbook*, this volume). At the same time that young children are becoming aware of normative and behavioral expectations, they are also becoming prone to self-referent moral emotions that can significantly motivate compliance.

Temperamental individuality is an important mediator of children's experience of the affective discomfort and anxiety associated with wrongdoing. In a theoretical analysis, Kochanska (1993) proposed that conscience development may assume two developmental pathways: (1) through the motivation to avoid the emotional discomfort associated with wrongdoing, and (2) through the motivation to maintain good relations with caregivers by exercising behavioral self-control. She proposed that a child's temperamental profile is influential in determining which developmental pathway predominantly contributes to the growth of conscience. This view was subsequently elaborated in two studies showing that for temperamentally fearful young children, conscience was predicted by maternal control strategies that deemphasized power and instead enlisted nonassertive guidance and "gentle discipline." These children are naturally prone to fear and anxiety after wrongdoing, Kochanska reasoned, and thus nonpunitive discipline that enlists the child's preexisting worry without creating overwhelming distress is likely to con-

tribute best to moral internalization. By contrast, for children who were temperamentally relatively fearless, conscience was instead best predicted by the security of attachment and maternal warm responsiveness. For these children, the relational incentives of the mother-child relationship better motivated moral internalization and helped to consolidate a positive, mutually responsive parent-child relationship (Kochanska, 1991, 1995; see Kochanska, 1997a, and Kochanska et al., 2002, however, for somewhat different findings). These findings suggest that temperament may influence conscience development because it mediates children's emotional experience of parenting practices in response to wrongdoing.

Temperament may be related to conscience development in other ways. Young children who are high on effortful (or inhibitory) control are more capable of exercising self-restraint to comply or desist, and research by Kochanska and her colleagues suggests that these children are also higher on measures of conscience in both contemporaneous and longitudinal assessments (e.g., Kochanska, 1993; Kochanska, Murray, & Coy, 1997). Kochanska and her colleagues (1994) also reported that preschool girls who were higher on temperamental reactivity obtained higher scores on a maternal report measure of the child's guilt, consistent with the view that reactive children would be more sensitive to disapproval and criticism.

The temperament research underscores that there are alternative avenues to conscience development because young children are not morally cooperative for the same reasons. For some, cooperation springs from broader capacities for self-control; for others, maintaining good relations with caregivers (and the threats to relational harmony arising from misbehavior) is central; for still others, moral cooperation derives from efforts to avoid the fear and anxiety that arises from disapproval. This suggests that the moral socialization efforts of parents must be adapted to the child's temperamental profile and other characteristics. Furthermore, this literature suggests that not only moral resources but also moral vulnerabilities inhere in these temperamental profiles. Temperamentally fearful children may be vulnerable to becoming guilt-prone and morally inflexible as a result; temperamentally fearless children may misbehave when they can escape detection or avoid worry about the caregiver's loss of love. Because moral emotions are such powerful motivators of moral compliance, the influences of temperament on the emotional tendencies and

self-regulatory capacities that underlie moral conduct are potentially important for healthy and unhealthy forms of moral motivation.

There is yet another emotional resource for conscience development that emphasizes the prosocial over the prohibitive side of morality. Empathy begins to emerge during the 2nd year and continues to unfold with growth in emotion understanding in early childhood (Zahn-Waxler, 2000; Zahn-Waxler & Radke-Yarrow, 1990; Zahn-Waxler & Robinson, 1995). To be sure, the sight and sound of another person's distress, fear, or anger is a motivationally complex and stressful event for young children. It may lead to sympathetic feelings and prosocial initiatives, but young children may also ignore, laugh at, or aggress toward another in distress, or seek comfort for themselves because of threats to their own emotional security and limited social understanding. This is one reason why it is important to index empathy in young children as an affective response rather than as an instrumental (i.e., prosocial) behavior. However, when adults can assist the child in understanding the emotions they are witnessing in another, especially by clarifying causality and responsibility, raw empathic arousal can become enlisted into prosocial initiatives toward another person, and into guilt when the child is the perpetrator of another's distress (Zahn-Waxler & Radke-Yarrow, 1990; Zahn-Waxler & Robinson, 1995). Moreover, as children mature throughout the preschool years, their vicarious emotional responding becomes increasingly predictive of prosocial behavior (Eisenberg & Fabes, 1998; see also Eisenberg & Fabes 1995; Miller, Eisenberg, Fabes, & Shell, 1996). Viewed in this light, empathy alone may not reliably elicit moral responding in young children, but instead is a setting condition from which prosocial initiatives may arise. Equally important, empathy is one of the emotional catalysts for young children developing a moral awareness in which the feelings and needs of other people are central.

Relational Influences

Fortunately, young children are not alone in their efforts to comply and cooperate. Parents and other caregivers contribute in many ways to the development of conscience. Beginning in infancy, when animated facial and vocal expressions of emotion are used by parents to warn or deter a locomoting child from a dangerous or disapproved activity, social referencing is enlisted to instill certain behaviors with emotional meaning and an-

ticipated disapproval (Campos et al., 1999; Emde & Buchsbaum, 1990). Later, as the distal warning becomes remembered, behavioral compliance arises from the toddler "referencing the absent parent" in memory (Emde, Biringen, Clyman, & Oppenheim, 1991; Emde & Buchsbaum, 1990). Parents intervene to remove the child from disapproved conduct and sanction disobedience, but they also proactively avoid discipline encounters by distracting attention, providing anticipatory guidance or alternative activities, or other diversionary tactics (Holden & West, 1989). There is also considerable direct instruction of young children about moral, conventional, and prudential rules of conduct by parents who strive to enlist children's cooperation (Smetana et al., 2000). Beyond these, at least three other facets of the parent-child relationship contribute significantly to conscience development in the preschool years: (1) the overall warmth and cooperativeness of the parent-child relationship, (2) child management strategies used by parents in discipline encounters, and (3) broader conversational discourse between parents and offspring that incorporates morally relevant themes.

The warmth and cooperativeness of the parent-child relationship is important, especially early in life, because conscience development is part of a child's broader induction into a relational system of reciprocity characterized by mutual obligations (Kochanska, 1997b; Waters, Kondo-Ikemura, Posada, & Richters, 1991). The human consequences of personal conduct become experienced directly for the first time in a parent-child relationship, and thus the quality of that relationship, especially its mutual responsiveness, helps to orient a young child's moral sensitivity to humanistic concerns and heighten the child's receptiveness to the parent's socialization initiatives. In several studies in which the mutual responsiveness of parents with young children was assessed during extended home observations, Kochanska and her colleagues found that dyadic differences in this relational quality predicted measures of the child's conscience development both contemporaneously and longitudinally (e.g., Kochanska, 1997b; Kochanska, Forman, & Coy, 1999; Kochanska & Murray, 2000; see also Laible & Thompson, 2000). Related research has helped to explain why. Mothers in mutually responsive relationships use less power assertion with offspring and they are more empathic, as are their children in response to maternal simulations of distress (Kochanska, 1997b; Kochanska et al., 1999). In a behavior genetic study, Deater-Deckard and O'Connor (2000)

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concluded that dyadic mutually responsive orientation exemplifies an evocative gene-environment correlation in the parent-child relationship, which is consistent with the temperament research reviewed earlier.

Another index of relational quality is the security of attachment, and, as earlier noted, there is research evidence that a secure attachment is positively associated with cooperation and conscience development (e.g., Kochanska, 1995; Laible & Thompson, 2000). Interestingly, neither research group has reported a significant association between measures of attachment security and mutually responsive orientation between parent and child, despite their apparent conceptual overlap. Taken together, these studies underscore the importance of a harmonious relationship of positive mutuality between parent and child as a foundation for the growth of conscience and for cooperative conduct in young children.

A second feature of the parent-child relationship that contributes to conscience development is how the parent responds when young children misbehave. The discipline encounter has been the focus of extensive study for many years, and research findings with toddlers and preschoolers are consistent with those of older children in concluding that interventions that are coercive and power assertive elicit not only children's situational compliance but also young children's frustration and occasionally defiance. However, discipline that emphasizes reasoning and provides justification for compliance is more likely to foster internalized values in young children, even though children may also assert their autonomy through bargaining and negotiation (Crockenberg & Litman, 1990; Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987; Laible & Thompson, 2002). This is likely to be one reason why, over the course of the preschool years, parents increasingly rely on verbal strategies over physical interventions for enlisting children's compliance (Dunn & Munn, 1987; Kuczynski et al., 1987).

Parental explanations, justifications, and reasoning may be especially important for young children who, in the context of heated emotions over misbehavior, may not immediately comprehend what is wrong or who is culpable. In their intervention, most parents provide a cognitive structure that explicitly links their response to the standards the parent has previously conveyed ("You know better than to hit your sister!"), invokes salient attributions of responsibility ("Why did you hit her?"), identifies consequences for another ("Look, she's crying!"), and often directly induces the self-

referent evaluation and affect ("Bad boy! You should be ashamed of yourself!"). In doing so, the parent not only explicitly denotes causal associations between the child's behavior, consequences for another, the parent's response, and the experience of moral affect but also may provide an interpretation of the event that is different from the child's own. To the extent to which this is clearly communicated and understood by young children, this experience can be conceptually provocative to young children who are otherwise striving to understand others' beliefs, feelings, motives, and their associations with the child's own. Furthermore, parental explanations and reasoning in the discipline encounter also introduce young offspring to cultural and moral interpretations of the child's behavior. As Miller and her colleagues have shown, for example, mothers in the United States tend to attribute child misconduct to spunk or mischievousness, but Chinese and Chinese-American mothers emphasize much more the shame inherent in misbehavior, each consistent with their cultural values (Miller, Fung, & Mintz, 1996; Miller, Wiley, Fung, & Liang, 1997).

This straightforward and rationalist account of the effects of discipline in early conscience is complicated, however, in several ways (Grusec & Goodnow, 1994; Grusec, Goodnow, & Kuczynski, 2000). First, multiple parental goals are likely to compete in how parents respond to any discipline encounter. In many circumstances, a priority on moral tutelage must vie with other goals, including effecting immediate child compliance, enabling children to responsibly choose among behavioral alternatives, enhancing parent-child communication and understanding, allowing children to assert themselves, and other worthwhile aims (Hastings & Grusec, 1998; Holden & Miller, 1999). The reasons for the child's misbehavior, the child's characteristics (such as temperament), and situational constraints (e.g., public versus private setting) are among the important influences on the goals that parents choose to pursue during conflict with the child, and this helps to explain why parents are not necessarily consistent in their parenting practices across different situations (Holden & Miller, 1999). The clarity of the parent's moral message is thus likely to be obscured by the alternative socialization goals that are also being pursued, or by the parent's effort to integrate inconsistent goals (e.g., values transmission while enabling child autonomy).

Second, not only what the parent says but the broader relational context influences conscience development. A

clear explanation warranting compliance is likely to have different meaning to a child who shares a warm and supportive relationship with the caregiver compared to a child who has experienced considerable prior conflict or distrust in that person. The view that children in warm, secure relationships may be more responsive to parental discipline practices than children in insecure relationships was recently tested by Kochanska et al. (2004), who assessed attachment security at 14 months, parental disciplinary practices at 14 to 45 months, and conscience at 56 months. For securely attached children, there was a significant positive longitudinal association between parental gentle discipline/ responsiveness and later conscience; for insecure children, there was no such association. The expectation that specific parental practices have differential consequences based on the broader tenor of the parent-child relationship is consistent with other studies of the effects of parent-child conversational discourse on conscience development (Thompson et al., 2003; see following), and suggests that adult explanations may "sound differently" to children who share different kinds of relationships with them.

Third, young children are participants in the process of values appropriation. They interpret what they are told in the discipline encounter in light of their own perceptions of fairness, the emotional effects of the parent's behavior (e.g., threats to security or a sense of autonomy), and the relevance and consistency of the parental message with what else they know (Grusec & Goodnow, 1994; Kuczynski et al., 1997). The importance of children's constructions of parental values is consistent with the literature on temperament and conscience discussed earlier and with the studies highlighting the mediating influence of the parent-child relationship on discipline effects. Furthermore, parental attitudes and discipline practices vary in relation to the outcome expectancies of parents—parents intervene based, in part, on how they anticipate the child will react to their intended intervention (Holden, Miller, & Harris, 1999; Holden, Thompson, Zambarano, & Marshall, 1997). Thus, a child's construal of the discipline encounter is important not only for its effects on conscience development but also for how it influences the child's behavioral response which, in turn, affects future parental conduct. Studies such as these are important for reaffirming the importance of bidirectional and transactional models of early moral socialization, by contrast with traditional portrayals of values internalization.

Fourth, although conflict is conceptually provocative and contributes to values clarification, conflict between a young child and a parent is also threatening to young children, and the emotion generated by the discipline encounter may undermine the child's comprehension and processing of the parent's moral message. This is consistent with Hoffman's (1983, 2000) classic formulation of the discipline encounter, but it emphasizes how much the difference in power between participants in conflict can make a full and accurate comprehension of the message from an authority difficult. As noted by Thompson (1998), from a depth of processing memory model it is likely that a young child's coherent processing and understanding of the parent's message will be undermined by the heightened arousal created by the discipline encounter, even when parents are careful to use discipline approaches that do not unduly heighten the child's discomfort. This is especially likely if the young child's cognitive resources are also being mobilized for negotiation or bargaining (Crockenberg & Litman, 1990; Kuczynski et al., 1987).

This is one reason that students of conscience development have focused on a third feature of the parent-child relationship that is associated with conscience development: conversations that occur outside the discipline encounter. These conversations may be planned or spontaneous and their topics may concern (a) events in the past, such as the child's prior misbehavior or admirable conduct; (b) a shared experience in the future, such as going to a public setting where good behavior is necessary; (c) immediate events, such as a sibling's temper tantrum; (d) storybook reading; (e) pretend play; or (f) other shared experiences. In these contexts, even when parents are not explicitly intending these conversations to be a means of transmitting moral lessons, the judgments, values, inferences, assumptions, and other interpretations that parents naturally incorporate into these conversations make them potentially potent forums for early moral understanding and conscience development. Equally important, the young child's cognitive resources are more likely to be focused on understanding and responding to the parent's message with less competing emotional arousal than in the discipline encounter.

Variations in the content and style of parental discourse in conversation influence early conscience development. Laible and Thompson (2000) recorded conversations between parents and their 4-year-olds about past incidents in which the child had either

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misbehaved or behaved appropriately. Mothers who more frequently referred to the feelings of other people had children who were more advanced on measures of conscience, but maternal references to rules and the consequences of breaking them from the same conversations were unrelated to conscience. These findings were replicated in a prospective longitudinal study in which maternal references to feelings (but not references to rules and moral evaluations) during conflict with the child at 30 months predicted the child's conscience development 6 months later (Laible & Thompson, 2002). In another study, 2- to 3-year-old children whose mothers used reasoning and humanistic concerns in resolving conflict with them were more advanced in measures of moral understanding in follow-up assessments in kindergarten and first grade (Dunn et al., 1995). These findings suggest that one of the most important features of parent-child conversations on morally relevant themes is how they sensitize young children to the human dimensions of misbehavior and good conduct, helping children to comprehend the effects of their actions on how people feel. In a sense, these conversations put a human face on morality.

Just as in the discipline encounter, the warmth, emotional tone, and constructiveness of the parent's demeanor can be as important as what is said to the child. When they were in conflict with their young offspring, mothers who took the initiative to resolve conflict, using justifications to explain and clarify their expectations, and who managed to avoid aggravating and exacerbating tension (such as through threats or teasing) had young children who were more advanced on measures of conscience development at age 3 (Laible, 2004a; Laible & Thompson, 2002; see also Dunn et al., 1995 described earlier). By contrast, mothers who were conversationally "power assertive" when recounting the child's misbehavior in the recent past—conveying a critical or negative attitude, feelings of disappointment or anger, or involving reproach or punishment—had preschool children who obtained lower scores on measures of "moral cognition" assessed via children's story-completion responses to moral dilemmas (Kochanska, Aksan, & Nichols, 2003). As Hoffman (1983, 2000) has long argued, power assertion in the discipline encounter heightens children's anxiety and defensiveness and undermines retention of the parent's moral message, and it is likely that the same occurs in conversations about moral issues outside of discipline. Conversely, just as the well-documented effects of in-

ductive discipline on moral internalization occur when the adult combines warmth with a rational explanation that reduces threat to the child, similar influences occur in conversations outside of the discipline encounter as well. These conclusions also suggest that conscience development in young children is influenced by parent-child discourse in a manner similar to how older children are affected (Thompson et al., 2003).

Finally, just as the broader affective quality of the parent-child relationship is an important mediator of the effects of discipline in young children (Kochanska et al., 2004), the same is true of the effects of parent-child conversational discourse. Mothers' references to people's feelings interacts with the shared warmth of the parent-child relationship in its association with conscience development (Laible & Thompson, 2000; Thompson et al., 2003). Thus, broader relational quality combines with specific features of parent-child discourse to shape young children's conscience development.

Summary

The dissonance between the portrayal of conscience development emerging from these studies and traditional portrayals of the self-interested, pre-conventional, ego-centric young child is an incentive to expanding understanding of the intuitive morality of early childhood and its developmental influences. These studies make it apparent that young children are acquiring moral orientations that are simpler, but fundamentally similar to, those of older children and adolescents, and therefore the experiences and influences of early childhood may provide an essential foundation for moral development at later ages. Viewed in this light, young children's conceptual growth, developing emotional understanding, and relational experiences may provide essential cornerstones for the later emergence of the internal, humanistic, self-committed morality of older children. Young children clearly are not "pre-moral" in any serious sense.

The study of conscience development has also offered developmentalists new questions and interesting methodologies with which to explore them. Beyond longitudinal studies that integrate the morality of early childhood with the better-studied moral reasoning of middle childhood, greater exploration of how young children conceptualize moral obligations would contribute to understanding how they perceive themselves as moral actors and (in Kochanska's evocative phrase) "moral selves." The relational catalysts to conscience

development also merit further exploration, especially in efforts to integrate understanding of parental practices in conversation, discipline, and other interactive situations that contribute to the development of moral awareness in young children. Given the growing evidence that conscience emerges not primarily from the prohibitive morality of parental discipline but from the incentives provided by a harmonious, mutually cooperative parent-child relationship, a portrayal of early moral growth that underscores children's appropriation of values from shared activity in the family may be more appropriate than the traditional internalization formulation. By underscoring the multifaceted shared contexts in which early conscience develops, such an approach highlights how parents and children mutually create the moral environment they share as a family.

SELF

The development of self-awareness provides a window into the psychological growth of the child. Over the course of a few years, young children acquire capacities to engage with others intersubjectively, visually recognize their mirror images, attribute behavioral and psychological qualities to themselves, create autobiographical accounts, and situate themselves temporally as individuals with continuity into the past and future. With each developmental advance the child becomes a more complex, multidimensional *self* while also becoming more insightfully self-aware. Advances in self-awareness also transform young children's social interactions. They make children more psychologically self-conscious social actors who also possess greater insight into others. Like emotional development, the growth of self in early childhood involves the progressive elaboration of biologically basic capacities in ways that integrate the influences of conceptual growth, relational processes, and the child's own constructions of experience. These features of the development of self have stimulated considerable recent research into this topic, although important questions remain to be addressed.

Developmentally Emergent Dimensions of Self

It is common to describe the 2nd year as when *the self* emerges, but enduring aspects of self-awareness have developmentally earlier origins. Both Gibson (1995) and Neisser (1995) argue that the earliest forms of prerepre-

sentational self-awareness arise from the integrated perceptual experiences deriving from movement and activity beginning soon after birth. The synchronous multimodal perceptual experience arising from self-produced activity fundamentally distinguishes the perceiver from objects (and people) acted on or that move around the infant. Neisser's portrayal of this "ecological self" addresses the traditional assumption that infants are born adualistic (i.e., incapable of differentiating the external from the internal world) by noting that perceptual experience itself distinguishes subjective from surround—in Gibson's (1995) evocative words, "to perceive the world is to coperceive oneself" (p. 6). Indeed, in this Gibsonian view, subsequent developmental changes in the perception of affordances in the environment also entail developmental changes in self-awareness (e.g., awareness of emergent capabilities) such as in how flat, extended surfaces afford walking to a 15-month-old toddler but not a 6-month-old. Moreover, these integrated perceptual experiences provide avenues for other, more complex forms of self-awareness to develop. By 5 months, the integration of kinesthetic and visual experience during movement enables a primitive kind of featural self-recognition: Infants can distinguish videos of their own leg movements from those of another infant (Bahrck & Watson, 1985; Rochat & Morgan, 1995). The initial organization and integration of experience around an implicit frame of reference thus constitutes one of the earliest forms of self-awareness.

Another is the experience of agency. As earlier noted, very young infants respond to contingency and by 2 to 3 months they respond with positive affect to contingent responding but become affectively negative if the contingency is interrupted (Lewis et al., 1990; Rovee-Collier, 1989; Watson, 1985). Initiating actions that have a predictable impact on objects and people, and the positive affect that results from the awareness of control, are together likely to be highly salient experiences contributing to self-awareness early in infancy. Early social interaction taps into the young infant's contingency awareness, which contributes to the delight of face-to-face play, and variability in caregiver responsiveness, such as the subdued responding of depressed mothers, consequently has a significant impact on infant affect and sociability. Taken together, therefore, the earliest forms of prerepresentational self-awareness are perceptual, affective, and agentic in quality, contributing to the emergence of initial *existential self-awareness*, and the foundation of James's (1890) "I-self."

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By the final months of the 1st year, infants are not only agentic but also volitional. In their goal-directed efforts, as Piaget noted, infants can substitute an alternative means for one that has been frustrated and act strategically to accomplish their intentions. This inaugurates, according to Tomasello (1995b, 1999; Tomasello & Rakoczy, 2003), a conceptual advance in which infants begin to perceive others also as intentional actors. As earlier discussed, this is manifested in a variety of behaviors that reflect the infant's awareness that other people have subjectivity that can be understood and intentions that can be influenced, including joint attention, social referencing, imitative learning, and the emergence of intentional communicative efforts (Carpenter, Nagell, & Tomasello, 1998). Moreover, by the end of the 1st year, the infant's experience of goal directedness often conflicts with others' goals and intentions (of which every parent of a locomotor infant is aware), contributing to the self-awareness that derives from conflicts between his or her own goals and those of another. As a result, social interaction involves the infant's goal directedness combined with a dawning awareness that subjective, intentional states are at the root of others' behavior. According to Tomasello (1995b), it is not only the development of a new intersubjective capacity that inaugurates an advance in self-awareness but also the infant's growing realization that the self can be the object of another's attention, intention, and emotional response. Just as infants enlist another's emotional evaluation of objects and events in social referencing, they also become sensitive to the adult's emotional demeanor when attention is focused on themselves, and variability in the caregiver's warmth, emotional tone, and sensitivity become increasingly important at this time. This awareness sets the stage for the growth of self-referent emotions, like embarrassment, and self-referential evaluative emotions, like pride, guilt, and shame, later in the 2nd year. The end of the 1st year witnesses, therefore, the emergence of the *intersubjective self*.

When do infants begin to exhibit *featural self-recognition*—the ability to recognize their physical features? This is commonly taken as the central index of self-awareness, but as noted earlier, recognition that one's features and actions are familiar can mean different things at different ages. Legerstee, Anderson, and Schaffer (1998) found that 8-month-old infants could discriminate static and dynamic video images of their faces from those of peers (5-month-olds could discrimi-

nate only dynamic images), and infants of both ages could also discriminate the sound of their nondistressed vocalizations from those of other infants. Prior experience with vocal play and mirror images could contribute to these discriminations, with the strong integration of visual-kinesthetic and auditory-kinesthetic perceptual experience during these activities marking them as self-initiated (see Bahrick, Moss, & Fadil, 1996, for findings with younger infants). But these results do not necessarily imply that infants are recognizing themselves in these facial and vocal displays. By 18 months, however, after their noses have been surreptitiously marked with a spot of rouge, toddlers reliably show mark-directed behavior when placed before a mirror (Lewis & Brooks-Gunn, 1979). Featural self-recognition is based on the contingency between movement and motion in the mirror, but this behavior also reflects additional psychological achievements: Young children exhibit self-referent emotions like embarrassment at this age (Lewis, 2000), becoming aware of standards for appearance and behavior that also evoke special attention to soiled toys or faces (Kagan, 1981; S. Lamb, 1993). Consequently, toddlers' responses to the classic rouge task entails more complex influences than mere featural self-recognition, and its psychological meaning incorporates greater self-awareness and the application of standards for normative appearance (i.e., my nose is not ordinarily red). Mirror self-recognition at 18 months builds on the achievements of intersubjective self-awareness at age 1 to consolidate the beginning of objective self-awareness in young children, or James's (1890) "me-self."

In light of the development of the "me-self," it is unsurprising that late in the 2nd year and early in the third, toddlers exhibit emerging indications of other representational forms of self-awareness. These include increased verbal self-referential behavior (e.g., "me big!"); Bates, 1990) and verbal labeling of internal experiences (such as emotions; Bretherton et al., 1986), assertions of competence and responsibility as autonomous agents (such as in self-monitoring, refusing assistance, and insisting on "do it myself"; Bullock & Lutkenhaus, 1988, 1990; Stipek, Galinski, & Kopp, 1990), growing sensitivity to evaluative standards and the emergence of conscience (Thompson, Meyer, & McGinley, 2006), assertions of ownership (Fasig, 2000), the emergence of self-control (Kopp & Wyer, 1994), categorizing the self by gender and in other ways, and young children's growing interest in how their behavior is regarded by others (Emde & Buchsbaum, 1990; Stipek, Recchia, & Mc-

Clintic, 1992). The more complex self-representations of early childhood are reflected also in the emergence of self-referential emotions during the 2nd and 3rd years. By the end of the 2nd year and increasingly in the third, the simple joy of success becomes accompanied by looking and smiling to an adult and calling attention to the feat; the simple sadness of failure becomes accompanied either by avoidance of eye contact with the adult and turning away or by reparative activity and confession; and in response to conspicuous attention toddlers increasingly respond with smiling, gaze aversion, and self-touching (Barrett, 1998; Barrett, Zahn-Waxler, & Cole, 1993; Kochanska et al., 2002; Lewis, 2000; Stipek, 1995; Stipek et al., 1992).

Taken together, young children are beginning to regard themselves in more multidimensional and evaluative ways early in the 3rd year as they increasingly perceive themselves as objects of the attention and thought of others. This is part of the legacy of the intersubjectivity that emerges by the first birthday, and the greater sensitivity to the evaluations of others arising from developing psychological understanding and intersubjective awareness as featural self-recognition is attained. Moreover, during the 2nd year, developing capacities for receptive language clarify not only the child's status as the object of others' evaluations but also lexicalizes these evaluations as they are conveyed through language. Young children not only appropriate others' evaluations of themselves but also the evaluative standards they use as part of children's effort to comprehend constancies and expectations for everyday experience. These processes contribute to the emergence of the *conceptual self* (the "cognitive self" of Howe & Courage, 1993, 1997) that will continue to evolve in sophistication and scope in the years that follow.

Somewhat later, in the 4th and 5th years, young children begin to perceive themselves in more explicitly characterological terms at about the same time that they begin to perceive others in terms of psychological traits (Marsh, Ellis, & Craven, 2002; Measelle, Ablow, Cowan, & Cowan, 1998). To be sure, young children often rely on concrete, observable features and action tendencies in their spontaneous self-descriptions but they can also use psychological trait terms provided by other people appropriately as personality self-descriptions (e.g., "I am naughty sometimes, but good with adults"; Eder, 1989, 1990). Although young children's use of trait terms like *good* and *naughty* lacks the rich meaning inherent in how older people use these con-

cepts, these self-descriptions are like personality traits in that they show stability over time, are similar to how others (such as their mothers and teachers) describe them, and show convergent validity when correlated with external measures of the same characteristics (Eder & Mangelsdorf, 1997; Goodvin et al., 2005; Marsh et al., 2002; Measelle et al., 1998). Even a preschooler's use of a concrete feature, such as describing his- or herself as a girl or boy, is accompanied by a basic understanding of the psychological attributes and stereotypes associated with being male or female (Ruble & Martin, Chapter 14, this *Handbook*, this volume). To be sure, young children's personality self-descriptions show greater stability and convergent validity with increasing age, consistent with growth in children's understanding of personality characteristics more generally (Marsh, Craven, & Debus, 1998). Moreover, young children tend to be unduly optimistic about the modifiability of individual traits, particularly the stability of positive qualities and the changeability of negative ones. Current research confirms, however, the emergence of the conceptual self in early childhood and of psychological self-descriptors in the child's self-concept.

Another important advance in self-awareness occurs when young children can perceive themselves in a temporal context. Comprehending how past experiences can influence the present self, and the ability to anticipate the self in future contexts, are significant advances in self-awareness because of their relevance to strategic planning, delay of gratification, moral compliance, performance evaluation, autobiographical memory, and self-understanding. These advances depend on a capacity to perceive an identity between the present self and the self that existed in the past and that will exist in the future. The realization that it is the same "I" in each temporal context distinguishes this kind of self-awareness from earlier-developing capacities to evoke expectations from past events, recall specific past experiences, or anticipate future events (Moore & Lemmon, 2001). Povinelli (1995, 2001) has shown that temporal self-awareness begins to emerge at about 4 years of age. In experimental procedures that are analogous to the mirror self-recognition tasks, young children were videotaped playing with an experimenter who surreptitiously (but on film) placed a large sticker on the child's head. When they later watched themselves on the videotapes, most 4-year-olds located and removed the sticker that was still on their heads. By contrast, younger 3-year-olds recognized themselves in the videos but most

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did not touch the stickers on their heads, apparently unable to associate the event on film with their current condition (Povinelli, Landau, & Perilloux, 1996; Povinelli & Simon, 1998; see also Povinelli, Landry, Theall, Clark, & Castille, 1999 for similar results using different procedures).

The growth of the *temporal self* by age 4, as indexed by the delayed self-recognition task, is believed to be associated with at least two interrelated conceptual achievements: (1) a dawning awareness of the representational nature of knowledge (also relevant to theory of mind development) and (2) the ability to reason in a causal temporal-spatial manner (Povinelli, 2001; Welch-Ross, 2001). Together they contribute to the child's realization that knowledge is subjective and personal, knowledge will vary even though the self remains constant, and current experience and knowledge are affected by past influences on the self. There has not, however, been definitive empirical examination of these ideas. Performance on the delayed self-recognition task is positively correlated with delay of gratification in preschoolers (Lemmon & Moore, 2001) and with some aspects of autobiographical memory, although not with performance on theory of mind tasks (Welch-Ross, 2001; Zelazo, Sommerville, & Nichols, 1999). Much more research clearly is needed.

Self-Regulation

Accompanying these multifaceted changes in self-awareness is growth in the young child's capacities for self-management. According to Kopp's (1982; Kopp & Wyer, 1994) well-known formulation, the preschool years witness significant advances in behavioral self-control because of growth in children's capacities for remembering, representing, and generalizing behavioral standards, conceiving the self as an autonomous and responsible agent, altering behavior in response to remembered standards, and (somewhat later) engaging in a more continuous and self-generated monitoring of compliance with these standards. Kopp regards the 2nd and 3rd years as central to the development of self-control. The more mature and autonomous skills of self-regulation are an achievement of the 4th year.

This formulation has been expanded in recent years with new appreciation of the temperamental, neurobiological, and caregiving contributions to the growth of self-regulation (see Eisenberg, 2002, for a review related to emotion regulation). Temperament theorists, most notably Rothbart (1989), have long recognized that

temperamental qualities index the self-regulatory and reactive qualities of behavioral style (see Rothbart & Bates, Chapter 3, this *Handbook*, this volume). Differences in temperamental effortful control best reflect this feature of individuality, which have been found to emerge early in childhood and to be associated with better emotion regulation, conscience development, and other adaptive qualities (Kochanska, 1993; Kochanska, Murray, & Coy, 1997; Kochanska, Murray, & Harlan, 2000). Although neurobiological studies of the development of self-regulation are still limited with children, it is apparent that the growth of self-control is associated with maturation of multiple regions of the prefrontal cortex that are associated with emotional, attentional, cognitive, and behavioral self-control (Johnson, 1997). Finally, an extensive body of empirical literature documents the association between self-regulatory competence in early childhood and sensitive, supportive maternal care and the association between parental overcontrol, punitiveness, and negative affect and children's behavioral dysregulation (see Eisenberg, 2002; Fox & Calkins, 2003).

These advances help to account for expanding research interest in the development of self-regulation, but this remains an extraordinarily difficult area of study. Research into emotion regulation illustrates why (see Cole, Martin, & Dennis, 2004, and commentaries that follow; also Eisenberg & Spinrad, 2004). Emotional regulatory processes can be automatic or effortful, but distinguishing these is important to understanding their developmental course. The processes of and influences on emotion regulation are often indistinguishable from those affecting emotional arousal, leading to uncertainty over whether regulatory processes can be independently identified and studied. Moreover, emotion regulation can arise from external sources (such as the efforts of caregivers) as well as self-initiated efforts, and, although each manages emotion, extrinsic and intrinsic regulatory efforts entail different influences and developmental course (Thompson & Meyer, in press). This means that a child can display moderate levels of emotional arousal appropriate to the situation, but this can arise because of (a) the child's temperamental effortful control; (b) the coaching, support, and incentives of caregivers; (c) the fact that this child was not highly aroused in the circumstances (owing to temperament, prior experience, or other factors); and/or (d) the child's enlistment of emotional self-regulatory strategies. Distinguishing these influences on emotionality is a conceptual and empirical challenge. Finally, individual

differences in emotion regulation must be studied functionally to comprehend their relevance to broader differences in emotional or social competence (Thompson, 1994). Young children may develop strategies of emotion regulation that are adaptive in some social contexts but maladaptive in others, and individual differences in attentional, behavioral, cognitive, and emotional self-regulation may have common bases but also different developmental pathways.

Taken together, these challenges do not mitigate the value of studying the development of self-regulation and the origins and consequences of individual differences in self-control. But they do indicate that considerably greater conceptual and empirical clarification of the nature of self-regulation—and its attentional, emotional, cognitive, and behavioral components—is needed to guide future inquiry.

Development of Autobiographical Memory

Autobiographical memory can be defined as explicit memory of past events that is organized around the significance of these events for the self. The growth of autobiographical memory during the preschool years reflects advances in self-awareness but also other developing capacities, including the developing representation of events in memory, social influences on the reconstruction and recall of past experiences, conceptual skills related to the representation of knowledge, and the influence of language in the construction of memory and its reporting (Reese, 2002). Because of its complexity, there has been considerable debate among developmental scientists concerning the nature of autobiographical memory and its developmental influences, accompanied by significantly expanded research attention to this phenomenon.

One influential view has been offered by Howe and Courage (1993, 1997), who have proposed that autobiographical memory emerges late in the 2nd year after the development of the “cognitive self,” a knowledge structure that organizes memories of personal experiences. The development of the cognitive self is, according to these theorists, revealed at 18 months by the visual self-recognition of toddlers in the mirror-rouge task and by other indicators of self-awareness at this time. Howe and Courage argue that evidence for autobiographical memory during this period can be found in research showing that personal events can be recalled by infants and young children several weeks or months after their occurrence, and the recall of these children, although re-

liant on carefully designed nonverbal responses or the interrogatory assistance of questioners, is generally coherent and accurate (Howe & Courage, 1997; see generally Bauer 2002a, 2002b). In their view, once toddlers have become capable of representing themselves physically and conceptually by the end of the 2nd year, personal memories become mnemonically tagged as autobiographical.

Most other developmentalists portray the emergence of autobiographical memory at a later age, however, owing in part to a stronger distinction between episodic and autobiographical memory (see Fivush, 2001). In their view, autobiographical memory is distinctive because it incorporates an awareness of the personal, present significance of the past event. To Welch-Ross (1995, 2001), the social metacognitive skills essential to the development of autobiographical memory concern knowledge representation—understanding how knowledge is connected to unique experiences in the personal past—together with a personal, subjective stance to remembered events, and the ability to reason about causal connections between events across time. Perner (2001; Perner & Ruffman, 1995) likewise implicates metacognitive skills, especially the capacity to comprehend autobiographical memories as personal “reexperiences” of, and thus deriving from, past events directly experienced. Nelson and Fivush (2004; see also Nelson, 1993b, 1996; Fivush, 2001) portray autobiographical memory as a distinct memory system that builds on the development of a sense of self, theory of mind, knowledge representations, and an awareness of the temporal connections between past and present events. They also emphasize the influence of narrative discourse between the child and a caregiver during reminiscence as the means by which many of these conceptual foundations of autobiographical memory are fostered in early childhood.

The conclusion of these theorists that autobiographical memory emerges at age 3.5 or 4 is easy to reconcile with research findings that most adults do not remember personal events from earlier than about age 3.5 (the end of “childhood amnesia”) and to integrate with other developing conceptual achievements of early childhood, including theory of mind, self-understanding, and comprehension of psychological causality. In one empirical test of alternative theoretical views, Harley and Reese (1999) assessed 19-month-olds’ self-recognition in the mirror-rouge task along with maternal reminiscing style in conversation with the child. They found that each variable uniquely predicted children’s later memory skill: children who developed featural self-recognition

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earlier and the offspring of mothers with an elaborative reminiscing style were each more proficient in recalling personal experiences. However, subsequent analyses revealed that by age 2, the effects of early self-recognition ability on subsequent autobiographical recall were mediated by maternal reminiscing style (Reese, 2002). Thus, it seems that the emergence of the cognitive self in early childhood is an important contributor to the development of autobiographical memory, but especially in juxtaposition with social influences on the construction of memory.

Regardless of their theoretical bent concerning age of onset, many developmental theorists agree that the growth of autobiographical memory entails social influences as well as conceptual achievements. Nelson and Fivush (2004) argue, in particular, that the content and structure of narrative discourse with an adult about shared experiences provides essential catalysts to the representation of autobiographical events and the development of self. These conceptual catalysts through narrative include: (a) helping young children understand the personal significance of remembered events, sometimes with reference to prior experiences; (b) enabling young children to conceptualize their experience in a temporal-causal framework in which past events relate to present experience; (c) contributing to children's comprehension of the distinctiveness of their subjective remembrance, partly as it compares (and conflicts) with the adult's own recollection; and (d) helping to structure and reorganize the child's direct representation of the experience into a form that is more memorable and can be shared. By scaffolding a young child's memory through narrative, adults foster the temporal understanding, sense of self, subjective orientation, and other metacognitive skills relevant to autobiographical memory (Nelson & Fivush, 2004). Similar views have been offered by Miller (1994; Miller, Wiley, Fung, & Liang, 1997; Wiley, Rose, Burger, & Miller, 1998), who has emphasized how cultural and subcultural beliefs about the self become appropriated by young children through the content of narrative discourse—or "personal storytelling"—with family members.

Autobiographical memory is thus not an individual recollection but rather a shared construction. This is especially true early in childhood when direct representations of experience are likely to be somewhat disorganized and incomplete, and when the adult narrative can provide the structure and interpretive framework that establishes the significance of personal events to the child and makes them more memorable. Consider,

for example, the following brief conversation between a 21-month-old and his mother about conflict over breakfast cereal earlier in the morning (from Dunn & Brown, 1991, p. 97):

Child: Eat my Weetabix. Eat my Weetabix. Crying.
Mother: Crying, weren't you? We had quite a battle.
 "One more mouthful, Michael." And what did you do? You spat it out!
Child: (pretends to cry)

In the mother's elaborated representation of their shared experience, she provides her son with a temporal sequence of events leading to his emotional reaction (which was the source of his conversational prompt), emphasizing the significance of the event for him, and at the same time conveying a representation of the event that was likely to be quite different from his own. In doing so, she not only enlisted his direct representation into a narrative structure for verbal sharing but also sequenced essential features of their shared experience in a manner that made the episode more memorable. She also contributed to his developing self-awareness by clarifying that although they shared this experience, their viewpoints were different and thus the understanding they derived from it was different (and thus that knowledge is subjective). The mother provided, in short, a memorable narrative structure and lessons in understanding and self. Although it is uncertain how much this shared retelling would, at 21 months, contribute to the development of an autobiographical memory, the mother's scaffolding of her son's representations of events over time would be likely to contribute to memories that are autobiographical in nature.

Consistent with this view, longitudinal research shows that mothers with a more elaborative narrative style (i.e., richly descriptive and evaluative, providing background and contextual information and eliciting information from the child) have children who themselves are later found to engage in more detailed, richer reminiscing and provide more extensive autobiographical accounts compared to the offspring of mothers with a less elaborative narrative style (Farrant & Reese, 2000; Haden, Haine, & Fivush, 1997; Harley & Reese, 1999; Reese, Haden, & Fivush, 1993; see Reese, 2002 for a review). Individual differences in maternal narrative style are consistent across the preschool years (Farrant & Reese, 2000; Reese et al., 1993) and across siblings (Haden, 1998), although child characteristics (such as age and gender) also influence maternal elaborativeness

(Reese, 2002). One study found that in a socioeconomically disadvantaged sample, mothers who were trained to use an elaborative style in conversation with their 3.5-year-olds were found to use more contextual questions and open-ended prompts a year later. By age 5.5, their children themselves were more elaborative in their narrative style (Peterson, Jesso, & McCabe, 1999). Taken together, these findings suggest that the detail and richness of young children's autobiographical memories are significantly influenced by the quality of reminiscing they share with their caregivers, and that conceptions of self may also be conceptually elaborated in these conversational contexts. This conclusion is consistent with those of earlier discussions in this chapter concerning the influence of conversational catalysts on the development of emotion understanding, theory of mind, and other aspects of psychological understanding.

In the context of shared reminiscing, young children are likely to appropriate not only organized personal memories and a narrative style but also much more. Reconsider the earlier conversation between Michael and his mother over Weetabix and notice the other lessons provided by the adult in her representation of the morning's confrontation. The mother instructed her son about emotion and morality: In her portrayal, crying is associated with misbehavior and defiance (not with having to eat horrible breakfast cereal, which may have been her son's initial representation). She provided lessons about the self: Good boys cooperate, but Michael was uncooperative and that is why he cried. There were also lessons about relationships, which, according to his mother, are harmonious when sons are cooperative with their mothers' requests but are disrupted by filial defiance (rather than by maternal insistence). In short, the mother interpreted the morning's events in her framework of assumptions, causal attributions, beliefs, and values. These beliefs constitute part of the context of mother-child reminiscing and, although it is unclear how many of these lessons are likely to be internalized at age 2, they are likely to have a significant influence on young children's developing conceptions of emotion, morality, self, and relationships as such conversations become part of the landscape of parent-child interaction during the preschool years (Thompson et al., 2003).

Adults incorporate certain values into their shared conversations with young children because they are cultural members who nonconsciously embrace cultural beliefs about the self, relationships, and morality. In an observational study, Miller and her colleagues showed, for example, how the "personal storytelling" of Chinese

and American mothers portrayed the child's experience consistently with the broader values of their cultures. Chinese and Chinese-American mothers used storytelling with their children to convey moralistic themes, with an emphasis on the shame inherent in misconduct, while American mothers used storytelling for its entertainment value, emphasizing instead the child's spunk or mischievousness over misconduct (Miller, Potts, Fung, Hoogstra, & Mintz, 1990; Miller et al., 1996, 1997). Wang, Leichtman, and Davies (2000) noted that American mothers co-constructed reminiscences with their preschool offspring that emphasized the child's personal predilections and opinions, while Chinese mothers focused on moral rules and behavioral standards (see also Mullen & Yi, 1995). The influence of these conversational foci is reflected in the self-descriptions and autobiographical accounts of Asian and American young children. American children have been found to be more self-focused, use more internal state language and evaluations, and provide more detail about specific past events, by contrast with the greater emphasis on social roles and relationships and daily routines of Asian children (Han, Leichtman, & Wang, 1998; Wang, 2004). These findings suggest that the shared construction of autobiographical narrative, and the self-understanding that relates to it, is one way that cultural values concerning the self, relationships, and morality are conveyed intergenerationally (Fivush, 2004).

Young children do not merely appropriate the representations of personal experience interpreted by their caregivers: They are active construers of their own direct experiences. Although the language and the narrative structure offered by the adult are extremely important influences in shaping children's personal representations through conversation (partly owing to how language articulates and clarifies internal psychological realities), as children develop competencies in representing, interpreting, and remembering personal experience they are likely to object to parental constructions of their experience that are dissonant with their own. Levine, Stein, and Liwag (1999) showed that parents and young children commonly disagree about the child's feelings and experiences during shared events, often when adults make assumptions about the child's goals that are incorrect, and that disagreements occur most frequently for negative emotions. Disagreements between parents and offspring also commonly arise when adults omit from their narrative crucial aspects of the experience that figure prominently in children's own recollections. Little is known, however, about how

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children respond to such discrepancies in parent-child conversation, and this is a topic meriting further inquiry because of its relevance to children's comprehension of the personal, subjective nature of knowledge as well as to attachment theorists' views about the origins of the relational origins of defensive exclusion.

Summary

The conclusion that the early development of self derives from an interaction of the child's construals of personal experience and the adult's scaffolding of personal understanding confers on this topic unique research opportunities and challenges. Contrary to other forms of psychological understanding, children have special expertise concerning their characteristics, experiences, and self-knowledge that will increasingly vie with the adult's interpretations as children mature and acquire more robust, internally consistent self-referent beliefs. Yet, because of their psychological sophistication, caregivers are also uniquely insightful about the feelings, motivations, and individuality of the children they care for. Moreover, they begin to shape young children's self-awareness from an early age, beginning with the emotional signals they convey concerning the child's activities, to their appraisals of the child's successes and failures, to the construction of autobiographical memory in conversations about everyday events. Yet, there are elements of the child's experiences—and construals of that experience—that are always private and inaccessible to the adult, in part because they cannot easily be conveyed. Somehow, in the context of the shared activity of a young child, who is both expert and novice in self-understanding, and an adult, who has limited but sophisticated insight into the child's characteristics, self-understanding is jointly constructed. Understanding this developmental process is an important and valuable challenge for future research.

CONCLUSION

Often the most innovative thinking in developmental science is integrative. A field that commonly parcels the developmental process into separable domains or periods benefits from efforts to integrate insight from studies of cognitive and social functioning, or across stages of growth, or between typically and atypically develop-

ing populations. This is certainly true of the study of early sociopersonality development. The most notable reflection of this integrative potential is in the study of early social cognition, where the developmentally downward extension of theory of mind research touches on the long-standing interests of social developmentalists in the expectations and self-awareness deriving from social interaction in infancy. Research on conscience development likewise integrates understanding of emotion, temperament, cognition, and parenting in new ways of conceptualizing the interaction of child and adult in the appropriation of moral standards. Attachment theory and research benefits from the integration of research on event representation, autobiographical memory, and parent-child narrative in theoretical conceptions of the internal working models associated with security. The broader science of developing relationships is also increasingly integrating biological perspectives into understanding of the nature and consequences of early family relationships.

In these and other domains of early sociopersonality growth, development arises from the interaction of a young child, equipped with a powerfully inductive mind, and people with whom the child is in continuous relationship. Relational partners are conceptual catalysts because of the ubiquity of their shared experiences with the young child; their intimate knowledge of the child's characteristics, individuality, and developmental needs; and the opportunities they enlist to stimulate behavioral and conceptual growth (often without awareness of doing so) in interactive activities. Throughout this review of research on early social understanding, conscience, and development of self, the importance of parents, peers, siblings, and other relational partners is continuously apparent.

For this reason, the developmental model that seems most useful in comprehending early sociopersonality development is not socialization (which emphasizes the child as the recipient of understanding) or constructivism (which emphasizes the independently inductive mind), but rather a model of the appropriation of understanding through shared activity (Rogoff, 1990). This neo-Vygotskian formulation emphasizes the shared creation of knowledge through the interaction of the child with a partner in the everyday activities highlighted in this review, such as social interaction, relief of distress, conflict of wills, and shared conversation. Such a theoretical orientation enables an integration of the profound insights into the developing mind provided by

cognitive-developmental scholars with the exquisite studies of early social interaction offered by students of sociopersonality development and has the potential of generating new insights into early development. The value of such an orientation has been highlighted throughout this review, from research describing the association of maternal “mind-mindedness” with the development of psychological understanding, to research on attachment security as a mediator of the influence of parental discipline practices on moral internalization, to studies of the influence of parent-child conversation on the development of autobiographical memory. In each case, conceptual growth arises from the generative influence of social experience on a young mind that is powerfully prepared to glean new understanding from that experience.

Bridging the conceptual perspectives of cognitive and sociopersonality research is a significant advance for future research, just as are efforts to bridge biological and social perspectives to relationships, and to bridge understanding of typical and atypical developmental processes. Each is important because in the end, the continuing vitality of research in this area derives from our success in reassembling the developing child: one who thinks, feels, and relates, who is both biological and social, who maintains continuity across time while dramatic developmental changes occur, and who is in relationship with multiple partners in diverse social ecologies. Our capacities as research scientists to see the developing child as a coherent, integrated being underlies our capacities to imagine the developmental process for all of its complexity, scope, and vitality.

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