

contagion, especially negative of emotions, in the caregiver–infant dyad (Waters, West, & Mendes, 2014).

Infants reduce their uncertainty and begin to appraise their world in the context of the emotional responses of their caregivers. You can probably imagine the wide range of objects and situations that can be evaluated through this mechanism. Foods, toys, people, animals, sounds, plants, and objects of all sorts can be discerned as positive and approachable or negative and a cause for wariness. Depending on the cultural outlook, infants in different societies will begin to categorize their experiences differently based in part on these early appraisals derived from social referencing.

FURTHER REFLECTION: Explain how infants and caregivers use emotional communication to create meaning. Give some examples that reflect positive and negative emotion states.

The Psychosocial Crisis: Trust Versus Mistrust

OBJECTIVE 7 Explain the psychosocial crisis of trust versus mistrust; the central process through which the crisis is resolved, mutuality with the caregiver; the prime adaptive ego quality of hope; and the core pathology of withdrawal.

At each stage of life, the psychosocial crisis is expressed as a struggle between the positive and negative poles of a critical dimension. In infancy, the specific nature of the crisis—trust versus mistrust—focuses on the fundamental nature of an infant's sense of connection to the social world.

Trust

In adult relationships, **trust** refers to an appraisal of the availability, dependability, and sensitivity of another person. Trust emerges in the course of a relationship as one person discovers those traits in another person. As the level of trust grows, the partners may take some risks by disclosing information or feelings that may lead to rejection. Relationships that endure through periods of risk grow in feelings of trust. However, trust is more than a summary of the past: It is a faith that the relationship will survive in an unpredictable future. This faith begins in infancy. A trusting relationship links confidence about the past with faith about the future.

For infants, trust is an emotion—a positive state of confidence that their needs will be met and that they are valued. Trust is inferred from the infant's increasing capacity to delay gratification and from the warmth and delight that are evident in interactions with family members. This sense expands from trust of the immediate figures in the social environment to trust in the supportiveness and responsiveness of the broader social and physical world. Infants also learn to trust their sensory systems as they process stimulation from the environment. Thus, the sense of trust extends to learning to trust oneself.

The sense of basic trust is related but not identical to Bowlby's concept of attachment. Attachment refers to the behavioral system that ensures safety and security for the infant. Over time, the internal representation of the attachment relationship generalizes

to other relationships, especially where issues of intimacy and protection are relevant. Trust is a broader, more abstract concept. It not only refers to the infant–caregiver relationship but also includes the orientation of the infant to the wider social network of trustable and caring others. As such, it establishes the work of trustable and caring others. As such, it establishes the infant's first model or way of thinking about social integration. Trust becomes a basic orientation toward the self and others; it conveys a belief that “I am safe and loved; I can extend my self toward others and count on them to be dependable and caring.”

Infants establish an assessment of the central social figures in their world as trustable or untrustable; they also achieve a sense of their own value and trustworthiness. Over time, a basic sense of trust expands to a general sense of optimism about how one expects to be treated by others and about one's ability to cope with life's challenges. Trust is an integrating force that helps synthesize emotions, cognitions, and actions under conditions of uncertainty, allowing the person to pursue goals with a belief that things will work out well.

Given the key role of trust in forming and sustaining human social bonds, it makes sense to think that there is a biological basis for trusting in interpersonal interactions. Recent research has identified the role of **oxytocin** in the neuroscience of trust. Oxytocin, a hormone that plays a key role in social attachment, produces a general sense of calm relaxation, reducing wariness and increasing approach behavior (Baumgartner et al., 2008).

It is likely that positive social interactions stimulate the production of oxytocin. When a person perceives a combination of certain interpersonal cues such as facial expressions, especially smiling and laughter, rhythmic gestures, and tone of voice in a specific context, oxytocin is released. The release of oxytocin then triggers a set of neural networks that reduces wariness and fear of others and increases willingness to trust the other person (Damasio, 2005; Kirsch et al., 2005; Mayo Clinic, 2014).

Mistrust

During infancy, experiences of **mistrust** can arise from at least three sources: infant wariness, lack of confidence in the caregiver, and doubt in one's own loveliness. First, wariness, one of the earliest infant emotions, is linked initially to at least two infant reflexes, the startle response in reaction to loud noises and the Moro reflex in response to sudden loss of support (see Table 5.2). All infants are prewired neurologically to be alert to certain environmental dangers. Infants are able to use sensory information, especially the ability to interpret facial expressions and the ability to differentiate auditory cues, to assess interpersonal anger or threat. By 6 months of age, most infants show evidence of stranger anxiety, another indication of normal capacities for wariness. Two of the caregiver's functions are to minimize the infant's exposure to stimuli that evoke these responses and to comfort and reassure the infant after exposure to threatening stimuli.

Second, babies can lack confidence in the good intentions of others. Most parents contribute to experiences of mistrust because they inevitably make some mistakes in responding to their infant's signs of distress, particularly when the baby is young. They may first try the bottle, and, if the crying continues, they may change the diaper, give water, move the baby to another room, or put the baby to bed—trying a variety of things until something works.



Molly can't get her mother's attention. Her mother is worn out and unable to make any appropriate response to Molly's distress. Over time, this inability to evoke a parent's caring response can generate mistrust.

Over time, however, sensitive caregivers learn to interpret their child's signals correctly and respond appropriately, thereby fostering the infant's sense of trust in the environment.

Some caregivers are unable to identify their infant's needs or frequently respond inappropriately to them. Others are indifferent or unusually harsh. Under conditions of maltreatment, seeds of doubt may grow about the trustworthiness of the environment. Abused infants become especially sensitive to cues that suggest hostility or anger in their environment, and are more likely to fixate on those cues, even when the threat has passed (Pollak, 2008).

Infants are not only aware of threats expressed toward them but are also sensitive to expressions of anger or hostility among other members of the household. Infants are attuned to angry, negative interactions that, at some level, threaten their security. Under conditions of interpersonal conflict, infants may try to intervene by crying or by sidling up to one of the adults; or they may try to escape by crawling away. Chronic exposure to interpersonal conflict creates a level of insecurity in the child who may feel that needs cannot be met when the adults in the family, especially attachment figures, are engaged in angry interactions with each other (Davies & Woitach, 2008).

Third, babies experience the power of their own rage. In some children, self-regulatory abilities are poorly developed, which leads to frequent outbursts of negativity and frustration. They may learn to doubt their own loveliness as they encounter the intensity of their own capacity for anger.

Feelings of doubt or anxiety about the bond of trust are more common than may have been expected. About one third of American infant-mother pairs who have been systematically observed show evidence of an insecure attachment. Cross-cultural research provides further evidence that a significant proportion of infants have difficulty deriving emotional comfort or security from their caregivers (Mesman, van IJzendoorn, & Sagi-Schwartz, 2016; Posada et al., 1995; van IJzendoorn & Kroonenberg, 1988).

In addition to the mistrust that emerges in the context of inconsistent, unresponsive, or harsh caregiving, there are cases in

which the mother-infant relationship is disrupted. This can happen in conditions of war, parental imprisonment, parental death due to disease or accident, or lengthy hospitalization. In all these situations, an infant is at risk for experiencing a strong sense of mistrust.

Mistrust may manifest itself in the infant by withdrawal from interaction and by symptoms of depression and grief, which include sobbing, lack of emotion, lethargy, and loss of appetite. It may also be revealed later on in development in the expressions of interpersonal distress observed in the angry, anxious, and resistant behaviors of children with insecure attachments or in the inability to form close, satisfying relationships with others as adolescents and adults. Mistrust may provide a foundation for the emergence of a negative scheme about the self—a scheme that is elaborated over time by defining the self with a cluster of closely related, negative attributes such as cautiousness, nervousness, or

introversion (Malle & Horowitz, 1995).

All infants experience some aspects of mistrust, either as a result of mismatches between their needs and the caregiving strategies they receive or as a product of their own difficulties in modulating strong feelings of wariness or anger. Just as there is a neurobiological basis for trust in the production of oxytocin, another brain-stimulating chemical, vasopressin may cause suspicion and trigger social anxiety or aggression (Neumann & Landgraf, 2012). The resolution of the crisis in the direction of trust reflects a biopsychological achievement in which infants are able to minimize their wariness of the environment and regulate their own anxiety.

Over the life span, the sense of trust is transformed and provides an operating principle that guides a person's daily life and relationships with others. The sense of trust is essential for the maintenance of complex organizations and communities. Parents trust schools to educate their children; consumers trust manufacturers to produce safe products; banks trust customers to pay back their loans. The nature of social life is built on hopefulness about positive transactions that will take place in an uncertain future (Cook, Levi, & Hardin, 2009). Among older adults who have a strong sense of trust, many of life's disappointments and complexities are minimized by a growing religious faith. Their basic sense of trust evolves into a powerful belief in a great source of goodness and love in the universe, a force that can transcend the pain of daily tragedies and give integrity and meaning to their dying as well as to their living (Erikson et al., 1986).

The Central Process for Resolving the Crisis: Mutuality with the Caregiver

To resolve the crisis of trust versus mistrust, an infant must establish **mutuality with a caregiver**. Mutuality is a characteristic of a relationship. Initially it is built on the consistency with which the caregiver responds appropriately to the infant's needs. The caregiver

comes to appreciate the variety of an infant's needs, and the infant learns to expect that personal needs will be met. Within families, the establishment of mutuality differs with each child, depending on infant characteristics and parental responses (Deater-Deckard & O'Connor, 2000).

An infant and a caregiver learn to regulate the amount of time that passes between the expression of a need and its satisfaction. Bell and Ainsworth (1972) observed mothers' responses to infant crying during the first year of life. Over the course of the year, the infants' crying decreased, and the mothers tended to respond more quickly to their cries. This finding suggests a process of mutual adaptation by mothers and infants. Some mothers came quickly and ignored few cries. Other mothers waited a long time and ignored much of the crying. The longer mothers delayed in responding to their infants' cries, the more crying the infants did in later months. Babies whose mothers responded promptly in the first 6 months of life cried less often in the second 6 months. The results of this early research have been supported in many studies of parent–infant interactions. Infants learn to cope with the demands and variations of adult/family interactions, and adults provide the socialization environment that helps to support an infant's emotional appraisals and self-control (Thompson, 2014).

Coordination, Mismatch, and Repair of Interactions

The study of mutuality with the caregiver has focused in some detail on patterns and rhythms of social interaction, especially coordination between the infant and caregivers (Tronick, 2003). Infants are striving to make meaning of their social situation. They do not have language, so they use all the sensory, motor and cognitive resources available to gather information about how to behave, how to sustain and end interactions, and how to get what they need. For example, infants use social referencing to decide if they should approach or avoid an object or another person (Stenberg, 2013).

Infants form expectations for social interactions based in part on their observations of contingencies. They come to recognize that the behavior of one participant in an interaction is predictable based on the behavior of the other. Eventually these observations of contingent interactions become integrated into coordinated patterns of mutuality. For example, in a study of mother–infant vocal interactions, from 4 to 10 months of age, vocalizations became increasingly coordinated. At 4 months, infants were most likely to vocalize at the same time as their mothers vocalized, not when the mothers paused in their vocalizations. In contrast, mothers were more likely to vocalize when the infants were silent, demonstrating the more typical pattern of turn-taking in conversation. However, over time, there were fewer instances of co-vocalization by the infants, and more instances of turn-taking. This research indicates a period of continued development from 4 months and beyond when coordination in vocal interactions will likely show additional evidence of mutual coregulation (Harder Lange, Hansen, Væver, & Køppe, 2015).

Adult caregivers are also learning to read their infant's signals and to provide appropriate care. Some caregivers are better at this than others. Depressed mothers, for example, have been shown to be less expressive and less responsive to their babies

than nondepressed mothers (Field, Diego, & Hernandez-Reif, 2009). In the context of thousands of small daily interactions, it is common that the intentions and meanings of the partners are at odds—the infant shifts his or her attention, the caregiver misinterprets the infant's signals, the interaction lasts too long or is over too quickly. These early interactions are often recognized as being mismatched, and there is some attempt at repair. The work of creating mutuality of communication is characterized as a process of coordination, mismatch, and repair (Tronick & Beeghly, 2011).

Coordination refers to two related characteristics of interaction: matching and synchrony. **Matching** means that the infant and the caregiver are involved in similar behaviors or states at the same time. They may be playing together with an object, cooing and smiling at each other, or fussing and angry at each other. **Synchrony** means that the infant and caregiver move fluidly from one state to the next. When infants are paying attention to their caregivers, the caregivers attempt to stimulate them. As babies withdraw attention, the caregivers learn to reduce stimulation and wait until the infants are ready to engage again. Normally, caregiver–infant interactions are typically mismatched (Tronick, 2009). In fact, matched interactions appear to become mismatched rather quickly. Babies are developing rapidly. Their efforts to understand their situation and their changing sensory, emotional, cognitive, and motor abilities all work to bring new intentions and new meaning to social interactions. Caregivers' past experiences in trying to meet their infants' needs do not always adequately inform how to meet the new, changing nature of their infant's behaviors. However, periods of **mismatch** are usually followed by **communication repairs**. As a result, it is not surprising that infants and caregivers continue to experience this "dance" of coordination, mismatch, and repair.

Why is caregiver–infant communication so frequently disrupted? The explanation may lie partly in the infant's inability to sustain coordinated attention with the caregiver, partly in a rapid shift of need states, and partly in the inability of adults to sustain long periods of nonverbal communication. The moments of coordination become a prototype for the positive feelings of connection that people enjoy in social relationships. Long before infants can use language to convey their feelings or needs, they experience the satisfaction of social connection through these cycles of communication. As a caregiver and baby move into renewed moments of coordination, their sense of pleasure increases, leaving a memory of such moments to guide future conversations (Goleman, 2006). Moments of **repair** that follow mismatch are also evidence that interactions that were not well coordinated can be rectified. This leads to hopefulness about the potential in future interactions and persistence even in the face of interactions that seem to veer off course.

At a biological level, what appears to occur through experiences of coordination, mismatch, and repair is the establishment of a neurochemical pattern: Networks of synapses are established; oxytocin is released; pleasurable feelings ensue; and the amygdala is impacted, resulting in reduced arousal and a greater sense of calm. Over time, as a product of experiences of receiving sustained, sensitive caregiving, the infant's complex neurological social capacity for trust is strengthened. Even though the brain

is prewired to recognize and respond to certain types of social stimulation, actual caregiving experiences establish more or less likely patterns of social engagement. Infants who experience disrupted, harsh, withdrawn, or neglectful care do not develop the same underlying neurochemical structures for patterns of social behavior as do babies whose caregivers are psychologically available and warm. As they grow older, these children may experience a wide range of problems in social behavior, emotional development, and cognitive development, especially in areas of language and communication competence.

Establishing a Functional Rhythm in the Family

The match or mismatch between an infant's rhythms and the family's rhythms is an important factor in the overall adjustment of a family to a new baby. Some babies are quite predictable; the timing of their sleeping, eating, playtime, and even fussy periods follows a clear pattern. Other babies are much less regular. All babies are changing rapidly during the first 24 months of life, so daily patterns are bound to change, and families must make frequent adjustments in order to continue to meet the infant's needs.

In American culture, by the end of the first year of life, babies are typically expected to modify their schedule of needs so that they sleep when the rest of the family sleeps, play when the rest of the family is awake, and eat three or at most four times a day, generally when the other family members eat. During the second year of life, the demands of parenting change. Babies become more mobile and have new capacities to initiate activities. Their attention span increases, they have new requirements for stimulation, and they have new areas of wariness and resistance—things they don't want to do (like take a nap) or people they don't want to be with (like a certain babysitter). These and other changes require adaptation on the part of parents in order to sustain the mutuality that has been achieved or to rectify problems in attachment and trust that may now be evident. The stable features in mutual relationships are the caregiver's effort to be responsive to the child's changing capacities and needs, and the child's ongoing monitoring of and responsiveness to the caregiver's cues.

Parents with Psychological Problems

The importance of reciprocal interactions in building trust and hope during infancy is highlighted by studies of parents with psychological problems. Sensitivity to an infant's emotional states, the ability to respond appropriately to an infant's needs, and the quality of common, daily interactions can all be impaired by family risk factors. As an example, research has compared interactions between depressed and nondepressed mothers and their infants. Interactions between the depressed mothers and their infants appear to be stressful and mutually unsatisfying (Field, Hernandez-Reif, & Diego, 2006). Depressed mothers have been observed to be unresponsive, emotionally unavailable, and unable to sustain smooth communication with their babies. Compared with nondepressed mothers and their infants, depressed mothers have fewer positive matched states with their babies, and it takes them longer

to repair those mismatched states (Reck et al., 2011). Depressed mothers are less likely to show animated, positive facial expressions. Typical efforts at fostering an infant's emotional regulation, commonly observed in nondepressed mothers—such as introducing stimulating toys and games, touching and talking, and the efforts at reducing arousal through appropriate soothing and comforting—are not as common in depressed mothers. For their part, the infants of depressed mothers have few expressions of interest, show more sad and angry expressions, show less ability to match a happy face with a happy vocal expression, and are less able to regulate their emotions (Bornstein, Arteberry, Mash, & Manian, 2011).

The Prime Adaptive Ego Quality and the Core Pathology

Hope

Erikson (1982) theorized that the positive resolution of the psychosocial crisis of trust versus mistrust leads to the adaptive ego quality of **hope**. As you will recall from chapter 3, the prime adaptive ego qualities shape a person's outlook on life in the direction of greater openness to experience and information, greater capacity to identify a variety of pathways to achieve one's goals, more willingness to assert the self and to express one's wishes and views, and a positive approach to the formation of close relationships. Even in the face of difficulties and stressful life events, these qualities contribute to higher levels of functioning and well-being.

As the first of the prime adaptive ego qualities, hope pervades the entire life story. It is a global cognitive orientation that one's goals and dreams can be attained and that events will turn out for the best. As Erikson described it, "Hope bestows on the anticipated future a sense of leeway inviting expectant leaps, either in preparatory imagination or in small initiating actions. And such daring must count on basic trust in the sense of a trustfulness that must be, literally and figuratively, nourished by maternal care and—when endangered by all-too-desperate discomfort—must be restored by competent consolation" (1982, p. 60).

Hopefulness combines the ability to think of one or more paths to achieve a goal with a belief in one's ability to move along that pathway toward the goal (Snyder, Cheavens, & Sympson, 1997). The roots of hopefulness lie in the infant's understanding of the self as a causal agent. Each time a baby takes an action to achieve an outcome, the sense of hope grows. When babies encounter obstacles or barriers to their goals, sensitive caregivers find ways to remove the obstacles or lead them along a new path toward the goal. The infant's sense of the self as a causal agent combined with the caregiver's sensitivity create the context for the emergence of hope.

Research with adults shows that people who have a hopeful, optimistic outlook about the future have different achievement beliefs and emotional reactions in response to actual achievement than do people who have a pessimistic outlook (Seligman, 2011). People who have higher levels of hopefulness undertake a larger number of goals across life areas and select tasks that are more difficult thus leading to higher overall levels of performance (Snyder, 2002). Hopefulness is essential for behavior change in

that it combines a desire to achieve new goals and a belief that one will be able to find successful paths toward those goals. Feelings of hope help people deal with difficult challenges, including coping with their own serious injury or illness, parenting children with developmental disabilities, or facing the end of life (Einav, Levi, & Margalit, 2012; Sullivan, 2003).

Within the psychosocial framework, hope provides the platform from which very young children take certain leaps of faith. When an infant overcomes doubts and hesitancy in taking a first independent step, you see the dividend of hope. When a toddler clammers over the bars of her crib and drops several inches to the floor, you see the dividend of hope. As a parent, when you give your adolescent the keys to the car, you see the dividend of hope. Without hope, neither the individual nor the society could bear the weight of uncertainty in our changing world. With hope, individuals can envision a better society and come together in actions to reach the collective good (Braithwaite, 2004).

Withdrawal

As a core pathology, **withdrawal** refers to a general orientation of wariness toward people and objects. This is especially disturbing because, during infancy, healthy development is a pattern of outward motion, extension, and increasing engagement with the social and physical worlds. Infants typically reach and grasp, crawl, stand, and walk. They explore through gazing, mouthing, and manipulating objects. Their behavior is typically characterized by interest in novelty, joy in learning, and frustration at encountering barriers to goal achievement. Over the first year, babies become increasingly connected to significant figures in their social world, following them about, devising strategies to engage them in interaction, and looking to them for consolation when they are distressed.

Infants who are characterized by withdrawal may show evidence of passivity, lethargy, and neutral or negative affect. They are not readily engaged in social interaction and do not show the signs of self-directed exploration that are typical of most healthy infants. Withdrawal may have some of its roots in genetically determined temperamental characteristics. Some babies have a very low threshold for pain. They are highly sensitive to sensory stimulation and recoil from the kinds of handling that other babies find comforting or pleasurable. Some babies are more passive than others, requiring little in the way of stimulation and showing less evidence of exploratory behavior than active babies.

One of the earliest descriptions of withdrawal in infancy was provided by Rene Spitz's (1945, 1946) analysis of children who had been institutionalized before 1 year of age. The babies who suffered the most had been placed in a foundling home in which eight babies were cared for by one nurse. These babies went through a phase of initial rage, followed by a period of physical and emotional withdrawal. They lay passively in their cribs, showing limited motor exploration and little emotionality. Furthermore, they rarely smiled or showed excitement. The babies' babbling and language were extremely delayed. They deteriorated physically. Their measured developmental level dropped substantially over a year's time. These babies suffered from a combination

of a loss of their attachment figure, a lack of meaningful social interaction, and an absence of appropriate sensory stimulation—all of which produced what Spitz called *anaclitic depression*.

Not all instances of withdrawal are as severe as the anaclitic depression syndrome. However, a growing literature focuses on the links between disrupted mother–infant interaction, violent parental interactions, and infant social withdrawal (Crockenberg, Leerkes, & Kekka, 2007; Gerhold et al., 2002). Temperamental factors including behavioral inhibition and a low threshold for sensory stimulation, an anxious-avoidant attachment, and a lack of contingent, responsive caregiving can combine to produce mistrust and the formation of the core pathology of withdrawal. Social withdrawal can become such a severe social deficit that it interferes with adaptive functioning and requires clinical treatment (Calkins & Fox, 2002).

FURTHER REFLECTION: *Explain the connection between trust and hope; between mistrust and withdrawal. How are these concepts related?*

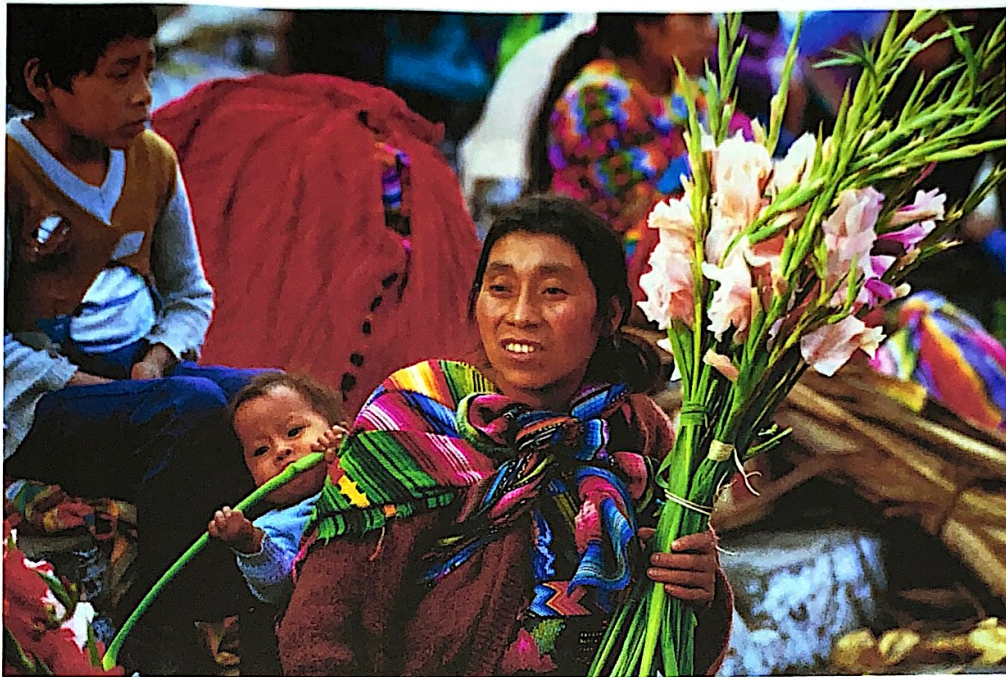
How might the sense of trust and the ego strength of hope play a role in the enactment of later life roles such as friend, teacher, supervisor, parent, or political leader?

Applied Topic: The Role of Parents

OBJECTIVE 8 Evaluate the critical role of parents and caregivers during infancy, with special attention to issues of safety and nutrition; optimizing cognitive, social, and emotional development; and the role of parents and caregivers as advocates for their infants.

In this chapter, we have portrayed infants as active, adaptive, and eager to master the environment. At the same time, the immaturity of human infants at birth necessitates a long period of dependence on adults. The few instinctive behaviors of human infants in comparison with the infants of other species are compensated for by their enormous capacity to learn. For this potential to be realized, infants must rely on their parents to maintain their health, provide stimulation, and protect them from danger. During the period of dependence, infants become entwined in complex social systems and develop strong emotional bonds with their caregivers. The quality of these early relationships provides infants with mental representations that guide their later development of friendships, intimacy, and relationships with their own children.

Infancy, just like pregnancy and childbirth, is culturally constructed. The content of experience and the way the period of infancy is viewed depend on cultural traditions, beliefs, and technologies. Some of the ways that culture defines infancy include the infant's sleeping arrangements, the choice of clothing, the choice of the infant's name and the naming process, the selection of foods, and access to nursing from mothers and other lactating women. Parents transmit the culture through their care, and by enacting certain rituals and practices, they introduce and integrate their infant into the cultural community.



Oliver Berry/The Image Bank/Getty Images

Infancy is culturally constructed. Cora rises early each morning, ties her infant to her back, and walks to the market to sell flowers. She expects her baby to be calm and quiet while she earns her living.

The **Human Development and Diversity** box Sensitive Care in Two Cultures provides a contrast between features of sensitive care for U.S. mothers and Colombian mothers.

Five aspects of the parental role promote optimal development in infancy: ensuring safety and providing adequate nutrition; fostering socioemotional and cognitive development; coordinating the roles of father and mother; acting as **advocates** with other societal systems; and connecting with other sources of social support.

Safety and Nutrition

Safety

One of the central responsibilities parents face is to protect infants from environmental dangers. The nature of home and neighborhood influences the kinds of dangers to which infants are exposed and the kinds of practices that families and cultures invent to protect their children. In addition to physical risks, some dangers are linked to superstitions, religious beliefs, and matters of the spirit world. In many parts of the world, parents take special precautions to prevent their infants from coming under the influence of an evil eye. The eye gaze may be viewed as a vehicle through which a person may deliberately or inadvertently transmit harmful feelings of jealousy, revenge, or unbridled pride (Galt, 1991). The presence of dangers or risks in the environment usually elicits some effort to restrict a child's movement. Swaddling, carrying the baby in a sling, or placing the baby in a playpen are examples. Because of concern about dangers, caregivers may invoke certain prohibitions, such as telling the child, "No, don't touch that," or pulling the child away from something dangerous. As infants become

more mobile in the second half of their first year, the need to monitor and limit exploratory activities increases. Depending on the cultural values concerning independent exploration, caregivers may heighten their restrictions and prohibitions or they may try to modify the environment to permit safe, unrestricted exploration.

Certain childrearing practices arise from a desire to protect young children from known dangers. For example, Robert LeVine (1977) described the practice of many African cultures of carrying infants 18 months and older on the back, even though they were able to walk around. This practice was used to prevent toddlers from getting burned on the open cooking fires at an age when they were mobile enough to walk or stumble into the fire and yet not old enough to know how to inhibit their movements. Other hazards, such as falling off steep cliffs or into lakes, rivers, or wells, prompted this same carrying behavior.

In industrialized countries, infants may face different types of hazards, such as electrical outlets, steep stairs, and open containers of insecticides, cleaning agents, and other poisons. Lead is a known neurotoxin. Lead poisoning has an especially negative impact on infants and young children, resulting in life-long cognitive and behavioral impairments. Lead can leach into drinking water from lead-based plumbing and contaminated water sources, a condition that is particularly dangerous for infants whose formula is made with water from the tap (Hanna-Attisha, LaCance, Sadler, & Schnepf, 2016).

Some families protect babies from danger by putting gates at a doorway or the top of a stairway, or by placing an infant in a crib or playpen to restrict exploration. In other homes, the strategy is to *baby proof* the home by

Infant's signals, accessibility in the face of competing demands, and acceptance or the positive emotional tone of mother–infant interactions. Second, some features of parenting are observed across cultures but not always related to attachment security in every culture. Third, some features of parenting may be culturally or contextually specific and, while important for early socialization, may not be specifically relevant for the formation of a secure attachment.

Critical Thinking Questions

1. Based on this study, list the basic features that are essential for sensitive caregiving across both cultures.
2. Evaluate whether the differences in caregiving between the U.S. and Colombian samples fit with characterizations of these cultures as more individualistic or collectivistic.
3. The research has captured a few features of caregiving that are distinct between the U.S. and Colombian cultures. Discuss the implications of these differences for infant socialization and subsequent socialization.
4. Evaluate the strengths and weaknesses of the Q-sort methodology for assessing features of the caregiving environment. Design another approach that might be used to capture cultural differences in caregiving.

removing as many known dangers as possible so that the baby has maximum freedom for exploration. These two different strategies reflect different values concerning childrearing—both with the same goal of providing maximum safety and protection from danger. In the former, parents try to preserve their adult environment. Children must modify their behavior in order to fit into the home. In the latter, parents modify the environment to accommodate the baby's developmental needs. For more information about child safety, you may want to visit the website of the U.S. Consumer Product Safety Commission section on safety for kids and babies. This agency publishes reports on recalls, statistics on injuries and deaths, as well as guidelines for child safety and toy safety.

Nutrition

In addition to protecting children from dangers and preventing injuries, parents are responsible for providing an age-appropriate diet that supports the infant's changing nutritional needs. An estimated 30 percent of children under the age of 5 in developing countries suffer from malnutrition, which is known to result in stunted growth as well as disruptions in brain structures associated with cognitive and behavioral development (Venables & Raine, 2016). Infant nutrition and health are significantly associated with childhood and adult intelligence (Kanazawa, 2015).

The American Academy of Pediatrics recommends exclusive breastfeeding for the first 6 months of life (American Academy of Pediatrics, 2012; 2016). Human milk is sufficient to provide the baby's nutritional needs. In addition, breastfeeding is associated with many health benefits including reduced risk of ear infections, fewer respiratory infections, fewer infections that inflame the intestines, lower risk of chronic diseases such as asthma and diabetes, reduced risk of childhood obesity, and lower risk of sudden infant death syndrome. Newborns may nurse every 2 to 4 hours; by 4 months of age, babies may nurse 4 to 6 times in 24 hours. If the baby is breastfeeding, mothers have to be careful about how their own diet and medications might affect their breast milk. If they are using formula, they have to be careful about the water quality that is used. In some areas of the world, poor water quality makes the use of powdered formula a serious health risk for infants.

The transition to solid foods, sometime around 4 to 6 months, leads to both safety and dietary concerns. Babies need to be strong enough to hold their heads up and to sit with some support so they do not choke on solid foods. Typically, parents are instructed to introduce some type of iron-fortified rice cereal mixed with breast milk or formula as the first solid food. New foods are introduced one at a time, giving the baby a few days to become accustomed to the new taste, watching for signs that the baby is able to digest the new food, and also ensuring that the baby is not allergic to the food. Most resources on pediatric nutrition advise against giving infants honey, which can cause botulism.

Safety concerns related to food include: avoid foods that are likely to cause choking like nuts, raisins, or large pieces of meat; avoid giving bottles with milk, juice, or sweetened beverages, which can cause tooth decay, at bedtime; avoid feeding the baby from the jar in order to prevent bacteria from the baby's saliva from contaminating unused portions of the food; and avoid keeping opened jars of baby food (Foodsafety.gov, 2016).

Many first-time parents are unsure about how to provide adequate, safe nutrition for their babies. This is a source of some anxiety because it is an area in which the infant so obviously depends on caring adults for health, safety, and survival. Many excellent resources are available to inform parents about infant nutrition, including online resources such as the Mayo Clinic and the MedLine Plus of the National Institutes of Health. The WIC (Women, Infants, and Children) program provides federal grants to states to make supplemental foods, health care referrals, and nutrition education available for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age 5 who are found to be at nutritional risk (USDA, 2016).

Fostering Socioemotional and Cognitive Development

Another component of the parents' role during infancy is the promotion of socioemotional and cognitive development. Much of the behavior that appears to be important in the development of strong emotional bonds between infants and parents is also

central to fostering intellectual growth. Three features of parenting quality have been found to support optimal development, including children's language, literacy, cognition, autonomy, self-efficacy, and school readiness. They are (1) parenting sensitivity, (2) cognitive stimulation, and (3) warmth (Lugo-Gil & Tamis-LeMonda, 2008). As was discussed earlier, parenting sensitivity refers to the way parents respond to their infant's distress, emotional expressions, interests, and abilities, effectively balancing the infant's needs for comfort and reassurance with the infant's needs for autonomy and self-control. Cognitive stimulation refers to parents' efforts to teach their child, to enrich the child's language and cognitive development, and to provide an interesting, age-appropriate environment. Warmth refers to the parents' expressions of affection, admiration, and respect for their child.

Parents foster both emotional and intellectual growth by structuring the stimulus environment to suit the infant's developmental level (Bornstein, 2012). Part of the parents' function is to initiate interactions and not just respond to their infants' demands for attention. Parents need to create what they perceive to be a suitable environment—one that allows a variety of experiences, a reasonable amount of challenge, and adequate opportunities to experience success. Furthermore, parents should be attuned to their infant's developing skills and alter the environment appropriately. As their children mature, parents must provide more complex stimuli, more opportunities for autonomy, and more encouragement for tolerating frustration. By providing experiences that are attuned to the infant's level of cognitive functioning, parents are also supporting emotional satisfaction, confidence, and joy.

Parents use a variety of methods to help their infants regulate their emotions. Through physical and verbal play, they increase the baby's arousal and orient the baby toward objects in the environment. Through soothing and comforting, they help their infants regain a calm state after distress. As babies mature, parents increase their use of language to guide behavior and provide new problem-solving strategies. Infants are constantly watching their parents, observing their emotional reactions as well as their novel behaviors. As a negative example, we have discussed how infants of depressed mothers become passive and inhibited in their reactions to the environment as they observe their mothers' passive or angry depressive symptoms. Another example is the influence of harsh parenting or maltreatment on infants' emotional negativity,

especially fearfulness and anxiety, and problems in emotional regulation.

U.S. parents of infants have made enormous expenditures for special toys, music, videos, and infant stimulation programs intended to foster intellectual development. A desire to provide resources to promote infant stimulation in the period from birth to 3 years of age in order to ensure optimal cognitive growth is probably important. However, in their desire to support optimal development, parents need to be wary of fads and hypes that make it seem as if some specific form of stimulation is essential for their baby's growth. In an international study of caregiving practices, Bornstein and colleagues identified six basic caregiving practices that are associated with optimal psychosocial development in the first 12 months of infancy: read books to the baby; tell the baby stories; name objects, count, and/or draw with the baby; play with the baby; sing songs with the baby; and take the baby outside (Bornstein, Putnick, Lansford, Deater-Deckard, & Bradley, 2015). These practices, which are observed in a range of 38 low- and middle-income countries, highlight the value of face-to-face processes that promote infant attention, emphasize a positive emotional tone, and engage the infant in the objects and resources of their near environment.

Parents and other sensitive caregivers are the most valuable sensory and emotional assets a baby can have. Rhythmic interactions, positive tone, comfort and soothing care under conditions of distress, and playful, relaxed interactions that allow babies to initiate as well as to follow are among the most valuable forms of stimulation for promoting social, emotional, and cognitive growth in infancy.

Fathers' and Mothers' Parental Behaviors

Do fathers and mothers differ in how they enact the parent role with infants? Babies form strong attachments to their fathers as well as to their mothers. Fathers may be just as involved in and sensitive to their babies' needs as mothers. However, the daily interactions between mothers and their babies and those between fathers and their babies are distinct. In a national time use survey, mothers and fathers who had children under the age of 6 were compared, based on their employment status (Table 5.9). Regardless of their employment status, mothers spend more time each day on the care of their young children than fathers. The

Table 5.9 Average Hours per Day Spent with Children under Age 6 by Mothers and Fathers by Employment Status

Activity	Married Mothers			Married Fathers	
	Employed Full Time	Employed Part Time	Not Employed	Employed Full Time	Not Employed
Overall caring for and helping children	1.29	1.73	2.47	.87	1.46
Physical care	.55	.67	.95	.27	.41
Education-related activities	.11	.17	.29	.07	.15
Reading	.04	.06	.07	.03	.04
Playing/doing hobbies	.25	.33	.60	.29	.41

Source: Bureau of Labor Statistics (2016). American Time Use Survey, 2009-2013, Table A6.

difference is especially notable in the time spent on physical care, where mothers spend almost twice as much time as fathers (U.S. Bureau of Labor Statistics, 2016). Fathers, who spend less time overall with their babies, tend to focus more on play—especially physical play. They use their strength and physical activity as resources as they interact with their babies. When mothers play with their babies, the play tends to be with words or with toys, as opposed to rough-and-tumble activity (Laflamme et al., 2002).

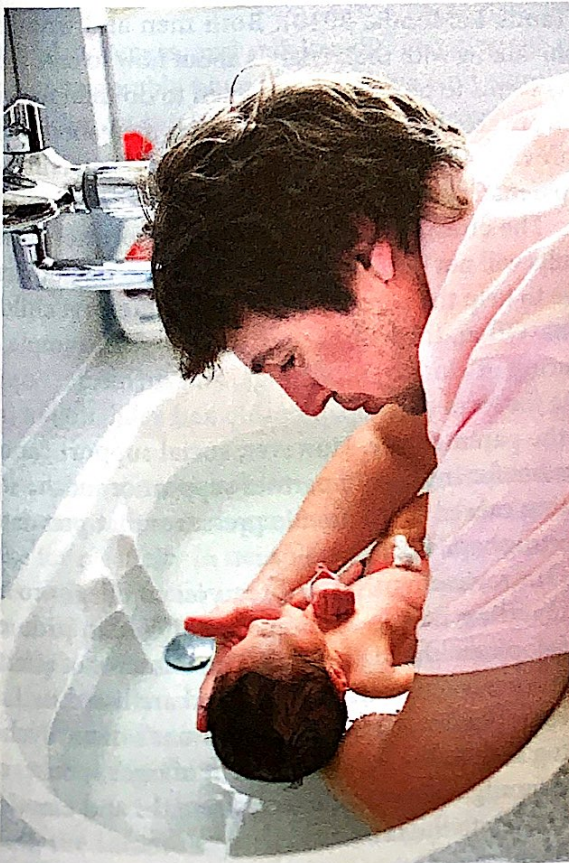
Cameron, a stay-at-home father of two daughters (an infant and a two-year-old), speaks about how he thinks fathers are different from mothers: “I find I am very playful with the girls. I become the play structure you know. I will have them sitting on me. We’ll sing ‘the people on the bus’ and *I’m the bus!* I’m the slide.’ I don’t think I’ve ever really seen my wife do that. I will do it for hours at a time throughout the day. They are climbing all over me all day long” (Doucet, 2009, pp. 86–87).

The experience of parenting results in changes in the brain, particularly neural regions that are associated with parental motivation. Fathers form mental representations of their infants that stabilize from the prenatal period through the first months of an infant’s life. When presented with images of their young infants, a network of brain regions are activated, accompanied by the release of hormones that are associated with parental sensitivity and reciprocity (Kim et al., 2014; Kuo, Carp, Light, & Grewen, 2012; Vreeswijk et al., 2014).

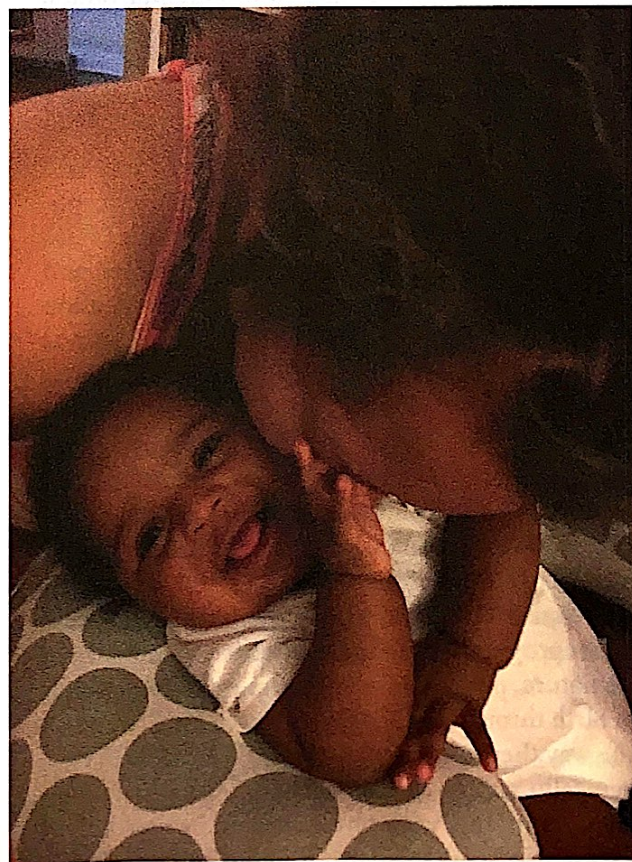
Both fathers and mothers have strategies for soothing their infants. However, the quality of interaction between fathers and

infants depends on the context. When mothers are present, for example, fathers interact less with their babies. When fathers are alone with their babies, they are more engaged and sensitive play companions. Men who are not overly stressed at work, have strong positive identification with their own fathers, and are in satisfying, harmonious marriages, achieve greater levels of intersubjectivity with their babies. Fathers who are in relationships that they describe as very satisfying are also observed to engage in more responsive, sensitive interactions with their infants (Barnett, Deng, Mills-Koonce, Willoughby, & Cox, 2008). What is more, when fathers are actively engaged in parenting, their involvement contributes to a mother’s confidence. Women whose husbands share in the care and comfort of their infants are better able to cope with their infants’ distress (Dayton, Walsh, Oh, & Volling, 2015).

Even fathers who are not married to their baby’s mother seem to be involved in the baby’s life in the early months after birth. Many of these fathers, especially those who are cohabiting or are romantically involved with the mother but live apart from her, provide direct and indirect support, want their name on the child’s birth certificate, and say they want to help in the child’s care. Unfortunately, this level of involvement often does not persist into the child’s toddlerhood or early childhood. As the relationship between the parents dissolves, the father’s involvement with his child also diminishes. By the time the child is 5 years old, only half of the non-resident fathers had seen their child in the past month (Fragile Families and Child Welfare Study, 2016).



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Courtesy of Philip Newman

Despite the gender stereotypes it is clear that fathers can be gentle and soothing with their infants, and mothers can enjoy moments of silly tickling and play.

The quality of the relationship between the parents is vital for an infant's well-being. When adults are in constant conflict or when there is physical violence, loud yelling, or emotional abuse between the partners, infants suffer. In these families, infants may be at risk for direct abuse and/or neglect, but they may also be at risk simply through exposure to inter-parental aggression. As a result, infants may experience anxiety, disruption of executive functions, and problems with emotional regulation, which are associated with a range of mental health problems. The link between parental dysfunction and child outcomes will be explored further in subsequent chapters.

Parents as Advocates

In addition to providing care themselves, more and more parents are responsible for arranging supplemental care for their infants. As a result, parents become advocates for their child. Parents must review the child care services available to them and select a setting that will meet their infant's needs and accommodate their work requirements and economic resources. Family day care, in-home babysitting, and center-based care are three common alternatives.

To function as advocates for their children, parents may have to engage in an unfamiliar kind of thinking. They may even feel unqualified to make the kinds of judgments required. For example, parents must evaluate the competence and motivation of the adults who will care for their child. They must estimate how successful these caregivers will be in meeting their child's needs for security and stimulation. And they must consider the degree to which alternative caregivers reflect their own parental values, beliefs, and strategies.

Even when pressures to continue a caregiving arrangement are very strong, parents must be able to assess its impact on their children. They must judge whether their children are in the kind of responsive, stimulating environment that will enhance their development. In the best situations, alternative care settings actually complement a parent–infant relationship. In the worst settings, infants may be neglected and abused. It is essential for parents to maintain communication with the alternative caregivers, assess the quality of the care, and intervene promptly when necessary to ensure their infant's well-being.

Another situation in which parents serve as advocates for their infants occurs when the children have some form of chronic illness, developmental delay, or disability. These children may require coordinated health care, therapeutic interventions, mental health services, and educational supports. The Individuals with Disabilities Education Act (IDEA) requires every state to provide early intervention programs to support parents and help them understand the nature, prognosis, and treatment of the infant's condition from birth through age 2. Although each state has some discretion in the way they implement early intervention services, the program typically assigns case managers to families to help connect parents and infants with physicians and other health professionals. Case managers may also provide home services, identify the least restrictive environments for infants who need care, and assist in the identification of appropriate community

resources (U.S. Department of Education, 2016). However, parents are ultimately responsible for making sure that the services match the child's changing needs.

The Importance of Social Support

The infant's physical, cognitive, social, and emotional development are fostered through the loving care of mothers, fathers, other family members, and community caregivers who are able to create supportive relationships with one another and with the infant. Infant mental health and optimal development are intimately entwined with the mental health of caregivers (Fay-Tammach, Hawes, & Meredith, 2014; Karevold, Røysamb, Ystrom, & Kristin, 2009; Weatherston, 2001). A variety of factors play a part in parents' ability to promote their child's optimal development. Adults who had difficult experiences with their own caregivers may come to the parental role with special challenges. They may not have experienced the comfort, responsiveness, or appropriate stimulation that are essential for effective parenting. Some factors, however, help to make up for these deficits. The quality of one's intimate relationship with a loving partner is important in sustaining positive parent–child relationships. Couples who experience mutuality and trust in their own relationship are better able to create a predictable, supportive, and caring family environment for their children (Crockenberg, Leerkes, & Lekka, 2007).

Sources of social support beyond the intimate partner may also enhance one's effectiveness as a parent. This support may come from the child's grandparents and other family members, friends, and health care and mental health professionals (Bornstein & Tamis-LeMonda, 2010). Both men and women can benefit from talking with their friends about how to care for their infants. This seems to be easier for women to do than for men, but when men are able to talk freely with other men about their father role, it provides tremendous reassurance and can enhance their sense of parental efficacy (Bagnini, 2014).

The effective use of a social support network ensures that adults will not be isolated as parents, and that others will be available to help the parents identify and interpret childrearing problems. Often, the help is very direct—for example, child care or sharing of clothes, playthings, and furniture. Support may also take the form of companionship and validation of the importance of the parental role. However, social support cannot fully compensate for the lack of partner support or for the stresses on parenting caused by economic pressures that prevent parents from meeting basic life needs.

In reviewing this chapter, you can begin to appreciate the demanding nature of the parental role in promoting optimal development during infancy. The elements of effective parenting that we have identified or implied are listed in Table 5.10. As a parent, one must rely heavily on one's own psychological well-being and on the encouragement of one's spouse, caring friends, and family to sustain the ego strengths and emotional resources necessary to the task.

The way parents conceive of their role has a major influence on the direction and rate of their infants' development. Parenting also allows adults opportunities for creative problem solving,

Table 5.10 Optimizing an Infant's Development

Spend time with the child; be available when the child needs you.
Provide warmth and affection; express positive feelings toward the baby in many ways—verbally, through touching and hugging, and through playful interactions.
Play with the baby; sing songs; make up little games.
Communicate often, directly with the child; engage the child in verbal interaction.
Read to the baby; tell the baby stories.
Provide stimulation.
Encourage the child's active engagement in and exploration of the indoor and outdoor environments.
Help the child understand that he or she causes things to happen.
Help the child engage in directed problem solving. Encourage the child to persist in efforts to reach a goal.
Keep things predictable, especially when the infant is very young.
Guide language development by using words to name, sort, and categorize objects and events.
Accept the child's efforts to achieve closeness.
Be sensitive to the child's state; learn to interpret the child's signals accurately; time your responses appropriately.
Find effective ways to soothe and comfort the child in times of distress.
Help the child interpret sources of distress and find ways to regulate distress. Minimize the child's exposure to intensely negative, hostile, and frightening events.
Be aware of the visual and auditory cues you send when you interact with the child.
Pay attention to how the child is changing over time.
Monitor the child's emotional expressions to evaluate the success of specific actions and interventions.

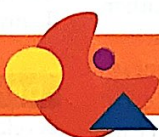
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empathy, physical closeness, and self-insight. Enacting the parent role makes considerable physical, cognitive, and emotional demands, but attachment to a child also promotes the parent's own psychosocial development. These contributions to adult development are described further in chapters 11 (Early Adulthood) and 12 (Middle Adulthood).

FURTHER REFLECTION: Hypothesize how life conditions such as poverty, the dual-earner family, single parenting, or having a very-low-birth-weight baby might influence a person's ability to function as an advocate for his or her infant.

Summarize how infants may influence and even enhance the lives of their family members.

CHAPTER SUMMARY



The genetic plan plays a major role in guiding physical and sensory/perceptual maturation during infancy. There is also considerable evidence for plasticity in neurological development as an infant interacts with the social and physical environments. During infancy, a child rapidly develops sensory and motor skills, social relationships, and emotional and conceptual skills. Babies are born with the capacity to perceive their environment and to evoke responses from their caregivers. They are ready to respond to a wide array of caregiving conditions. Caregivers convey cultural beliefs and values through their childrearing practices, thereby shaping the infant's experiences along particular cultural pathways. The result is a blend of many universal features of infancy, such as reflexes, motor development, attachment processes, and sensorimotor reasoning, with the specific experiences

infants have in their culture of care. Some of these experiences are a result of socialization goals, such as sleeping arrangements or types of food that are given to the infant. Some of the experiences are a result of the language, communication patterns, and social interactions that accompany care. Other experiences are a result of individual differences in the caregivers' sensitivity and ability to meet infants' needs.

OBJECTIVE 1 Describe characteristics of newborns and explain the challenges facing low-birth-weight babies.

Babies differ in their physical maturity and appearance at birth. Differences in physical maturity have distinct consequences for the capacity to regulate survival functions such as breathing,