The Changing Face of the United States

The Influence of Culture on Early Child Development

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ZERO TO THREE's mission is to support the healthy development and well-being of infants, toddlers, and their families. We are a national, nonprofit, multidisciplinary organization that advances our mission by informing, educating, and supporting adults who influence the lives of infants and toddlers.

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The Changing Face of the United States
*The Influence of Culture on Early Child Development*

Working with young children—or on behalf of them—has increasingly meant taking into account the effect of caretakers and other family members on the development of the child. “Families matter” has become an important credo of the field. This shift in perspective—thinking about families when designing service plans, educational programs, and policy decisions—though crucial, has been fraught with difficulties. Adding families to the mix often calls us to step out of ourselves—our ways of thinking, our ways of doing—to better understand the people we serve. It has become clearer and clearer that when families interact with their children, they bring more to this interaction than their own personal ways of doing things. They bring the weight of their cultural beliefs, values, and behaviors.

Sometimes less obvious is that we—the service providers, educators, program designers, policymakers and advocates working for and with children and their families—bring our own culture into our work with families. Even if our “culture of origin” is not the mainstream European American culture, we nonetheless have been steeped in the ideas of this mainstream culture. Our training in early child development has given us a European American lens that evaluates “healthy” or “normal” development from a particular perspective. But the parents and other caretakers with whom we work may have a different vision of what is important for their children’s well-being and may rely on different methods to assist their child in reaching these goals. For some children, these points of difference may not have much effect. But for others, the mismatch between parental or community expectations and the expectations of the formal learning environment may leave the child feeling as if he or she is straddling two distinct worlds (Norton, 1993).

Like the realization that “families matter,” it is becoming clearer and clearer that “culture matters.” But what does this credo mean in our everyday work with young children and their families? Sensitivity to other cultures is a goal toward which we strive, but the “how to” is harder to grasp. How do we sensitively respond to the many families we serve, many whose backgrounds may be different from our own? And what is this thing called “culture” anyway? One thing is certain: The need to think more deeply about these issues becomes more and more obvious with each passing year.

Rethinking “Culture”

How we think about culture can help us move toward greater sensitivity or, alternatively, can create additional roadblocks to our ability to engage and work with families. Early calls for “cultural competency” sometimes put forward a list of observed parenting traits of “minority” cultures with little explanation of how these aspects of culture may be part of a whole and with little understanding of the cultural participants’ intention behind these actions. This type of thinking, though well-meaning, can solidify stereotypes instead of helping us penetrate them. Educators, open to embracing the diverse cultures represented in their classrooms, had little guidance in how to achieve this sensitivity in more than just a superficial way. One observation notes that

> *ironically, teachers may conscientiously try to create culturally sensitive environments for their students (e.g., through multicultural displays and activities) while simultaneously structuring classroom interaction patterns that violate invisible cultural norms of various nondominant groups. Teachers may also inadvertently criticize parents for adhering to a different set of ideals about children, families and parenting.* (Greenfield, Raeff, & Quiroz, 1996, p. 40)
In the last few decades, the concept of “culture” has evolved in a direction that can aid us in our quest to more deeply understand the child’s lived experience and that can help bridge the distance between home and school. Although more than 100 definitions of culture have been noted (Haviland, 1993), more recent definitions focus on the beliefs, values, and concepts underlying observable behaviors and customs. This shift in focus may help us resist the tendency to simplify or stereotype someone else’s culture.

ZERO TO THREE proposes using the following definition, modified from Christensen, Emde, and Fleming (2004) and Emde (2006), to further the process of cultural understanding: Culture is a shared system of meaning, which includes values, beliefs, and assumptions expressed in daily interactions of individuals within a group through a definite pattern of language, behavior, customs, attitudes, and practices. This definition also points out that the members of a group may or may not be able to articulate the cultural elements that shape their worldview and motivate their actions because much of the cultural knowledge is tacit and gained through participation in the activities unique to that group.

This definition allows us to expand our understanding of culture in the following ways:

- **Cultures are dynamic webs of meaning, not lists of traits or customs.** The emphasis in the definition on a “shared system of meaning” is critical. It steers us away from simply memorizing a catalog of traits or customs and prompts us to engage with the worldview that underlies these traits or customs. According to Lieberman (1990), “cultural sensitivity does not entail an encyclopedic knowledge about different practices, but a genuine attempt to understand the other’s beliefs, the role that they play, not only in their understanding of adequate parenting but also in ways they intend to raise a child who will embody and perpetuate those traits they consider necessary in a well-adjusted adult” (p. 117).

- **The idea of cultural scripts as a tool with which to understand cultures.** The idea of “cultural scripts” fits well with this definition. Cultural scripts guide us as we face both the ordinary and the extraordinary challenges of life. These scripts are powerful motivators because they have evolved in response to human problems and serve as tools to solve human problems. They do not “dictate” behavior in any rigid way, but they do act as a guide, in concert with other considerations (including personal experiences that “color” the script). In the domain of child-rearing, they guide parents and other caretakers in the challenging task of raising children (D’Andrade, 1987).

- **Cultural scripts may be outside of awareness but are still powerful motivators for behavior.** According to D’Andrade (1987), the fact that they are often outside of awareness typically gives them more power because the person’s worldview “is experienced as undeniable reality” (p. 138, emphasis in original). They are thought of as “just the way things are done,” with no explanation needed.

- **We experience our own cultural scripts as undeniable reality.** Our own worldview, like the worldview of the families with whom we work, is experienced as an undeniable reality. In fact, our own cultural scripts may be more firmly entrenched than those of our clients. Our scripts are more likely to be reinforced by the prevailing ethos and less likely to be in tension with the institutions that surround us. This likelihood is especially true if we are middle-class European Americans; our reality in that case may rarely, if ever, be challenged. But even if we are from other ethnic, immigrant, or social class groups, we have likely been enculturated (to some degree) into the mainstream perspective by our educational and work experiences.

- **Cultures are not static and unchanging.** This definition of culture as a shared system of meaning also contains within it the notion of fluidity and change. With its mix of ethnic groups and different levels of acculturation, it is essential to remember that individuals in the United States may draw on several cultural models to respond to a given set of circumstances (Harkness, Super, & Keefer, 1992). Many of us have “cultures” rather than “a culture.”

- **Ethnicity is not the same as culture.** Information about ethnicity, class, geographic region of the
country, and years living in the United States help us define the “ecological niche” through which a family participates, but that information does not necessarily tell us what cultural values, beliefs, and behaviors it follows. Assuming otherwise can lead to stereotyping.

- **The key to better understanding other cultures may be the ability to elicit these cultural scripts from families and to be more aware of how our own scripts affect our work.** Although some researchers argue that deep cultural rules are nearly impossible for people to articulate, others claim that thoughtful questions can elicit some of the cultural rules that guide parenting decisions (Barrera, Corso, & McPherson, 2003; Greenfield, 1994; Harwood, 1992; Roer-Strier & Rosenthal, 2001). This ability to access parent’s understanding of the cultural beliefs that guide them may be key to working with families in a culturally sensitive way. In the last section, we will explore these tools in more depth.

### The Influence of Culture on Early Child Development in the United States: Using Research Studies to Enhance Understanding

How useful are traditional research studies in helping us better understand other cultures? In 2007, ZERO TO THREE conducted a literature search focusing on the influence of culture on child development from birth to age 3 years. This paper summarizes the key findings highlighted in that review and offers resources for practitioners as they strive to address the needs of a growing and diverse population of infants and toddlers. We have included matrices with summaries of studies referenced and their key findings. In addition, we provide a complete list of all the references used as this work was completed. ZERO TO THREE is grateful for the support of the Annie E. Casey Foundation and the Bernard Van Leer Foundation to complete this important and timely summary about the influence of culture on development.

Using the ZERO TO THREE Task Force’s definition of culture as a “system of shared meaning,” very few studies under review explored how parents actually think about their children or their child-rearing practices. Instead, much of the existing research is done from the perspective of a “scientific outsider” (what anthropologists call the “etic” approach). In this traditional social science approach, “culture” is reduced to a combination of ethnicity and class, and then these variables are correlated with social, cognitive, or language outcomes. If the goal is to understand another group’s culture, there really seems to be no substitute for in-depth observations, conversations with families or other “cultural insiders,” or some combination. This attempt to learn from the cultural insider’s perspective is called the “emic” approach and, though relatively rare, is gaining more favor in child development studies. The studies using this approach will be highlighted in this review.

Some of the other studies that look at child outcomes based on the ecological niches defined by ethnicity and class will also be reviewed, given that several of them have bearing on the issue of school readiness. These studies are presented with the caveat that the findings of differences between groups are not necessarily a result of “cultural” differences but may be a result of other differences in life experiences shaped by the families’ immersion in these ecological niches. For example, research on African American families by Black, Hutcheson, Dubowitz, Starr, and Berenson-Howard (1996); Caughy, O’Campo, and Muntaner (2004); and Smyke, Boris, and Alexander (2002) acts as a reminder that differences in parent-child interactional styles between ethnic groups may be a function of the group’s place in wider society rather than a cultural difference per se. In these studies, the researchers added scales looking at psychological distress and parental stress and found that the greater the distress, the more the mother tried to control her child at mealtime. In another study, Caughy, O’Campo, and Muntaner (2004) looked at how African-American parents living in impoverished Baltimore neighborhoods coped with experiences of racism, with an eye toward how this experience affected their children. Parents who denied experiences of racism reported higher rates of behavior problems among their preschool-aged children. In contrast, parents who actively coped with racism experiences by confronting the person or institution involved reported lower rates of anxiety and depression for their preschool-aged children.
Although mothers in all groups experience distress, the additional burdens on mothers from minority and immigrant groups makes it imperative to better understand the distinction between behaviors based on cultural differences and behaviors elicited because of environmental stress. This research also acts as a reminder that the mental health of the mother is crucial to the well-being and development of the child. In a study of stressed, low-socioeconomic status (SES) African American mothers, Smyke, Boris, and Alexander (2002) found that 60% of the mothers indicated that they believed it was possible to spoil infants age 5 months or younger. The study also showed, however, that mothers who reported being more concerned about spoiling their infants were more likely than other mothers to be depressed, show overall reduced maternal empathy, and have inappropriate developmental expectations. More research is clearly needed to understand how mental health issues interact with culture to shape a mother’s behavior when interacting with her child.

**Individualistic Versus Interdependent Cultures**

Some of the most fruitful research looking at differences among cultural groups has grown out of a large body of work in anthropology that sees different cultures on a continuum from individualistic to interdependent (also called “sociocentric” or “collectivist”). The distinctions between these two types of cultures have led to more insightful research and to greater applications for our work with young children than any other framework focusing on cultural differences. For that reason, it will be looked at in some depth here.

The goal in cultures labeled “individualistic” is individual fulfillment, and to aid in reaching this goal, children are encouraged to make choices and to strive assertively to achieve them. The goal in sociocentric cultures is the well-being of the group, and personal assertiveness can be frowned on to the degree that it upsets group harmony. According to the authors of *Bridging Cultures Between Home and School*, “At the most basic level, the difference is one of emphasis on individual success versus successful relations with others in a group. It could be characterized as the difference between ‘standing out’ and ‘fitting in’” (Trumbull, Rothstein-Fisch, Greenfield, & Quiroz, 2001, p. 5). Interestingly, when asked to complete the statement “I am . . .,” people from interdependent backgrounds are more likely to respond with reference to their role in a family, an organization, or a religion. In contrast, people from individualistic societies tend to list trait labels referring to personal qualities, such as “hardworking,” “intelligent,” or “athletic” (Triandis, Brislin, & Hui, 1988).

Not surprisingly, the dominant U.S. culture is thought to be extremely individualistic. In fact, Hofstede (1991) administered a scale to hundreds of respondents in 53 societies worldwide and found that people in the United States scored highest on individualism of the 53 countries surveyed. Asian and Latin American countries scored highest on measures of interdependence, while European countries were in the middle of the continuum. Although it used to be thought that individualism was an inevitable outcome of technological advancement, the case of Japan (a highly interdependent culture) is often used to point out that technological advancement does not necessarily depend on ascribing to individualistic values.

Although mainstream U.S. culture emphasizes individualism, most groups immigrating to the United States are from cultures with a more interdependent value orientation. Greenfield (1994) reminded us that each person is both an individual and a member of a social group. And although no society can “eliminate either the separate individual or the interdependent group, the nature of the ideal has important implications for what is responded to, emphasized, and sanctioned in the socialization process . . . . By these means, cultural ideals influence the trajectory of individual development” (p. 4). Greenfield (1994) added that in each society there is a tension between individualism and interdependence, and each society strikes its own balance between these two idealized cultural scripts. These value systems of individualism and interdependence shape the cultural scripts that are then transmitted and negotiated between generations. Values, perceptions, and beliefs are transmitted from one generation to another implicitly through modeling and explicitly through verbal messages such as “This is
good” and “This is not good” (Greenfield, 1994). In this way, these scripts are internalized by the child and come to affect perception, motivation, affect regulation, and social behavior in diverse ways (Markus & Kitayama, 1991). Kim (1987, cited in Greenfield, 1994) added the idea that each emphasis, whether it be individualism or interdependence, has its own psychological cost. In socially oriented societies, the cost of interdependence is experienced as suppression of individual development, whereas in individualistically oriented cultures, the cost of independence is experienced as alienation. In extreme cases, these costs can become cultural pathologies on either an individual or group level.

As previously mentioned, individualistic cultures tend to stress independence, autonomy in choice and action, and social assertiveness. As part of this push toward autonomy, even young children are encouraged to make individual decisions. Parents from individualistic cultures are more likely to use everyday situations to encourage children to make their own choices (e.g., “Which crayon do you want to use to draw the sun?”). They then give praise for the child's choices (e.g., “I like that red sun!”), reinforcing the behavior.

In individualistic cultures, caretakers also encourage children in behaviors that will enable them to function on their own at the earliest age possible. Babies and toddlers are trained to sleep alone, to feed themselves, to dress themselves, and to play by themselves earlier than they are in interdependent cultures. The goal of these activities is to enable a child to separate without too much distress (Hanson, 1992). Research by Schulze, Harwood, and Schoelmerich (2001) supported this conclusion: In this study, European American mothers expected their children to initiate and master feeding, sleeping through the night, and toilet training at an earlier age than did Puerto Rican mothers. In giving rationales for the timing of these goals, European American mothers (more individualistic) talked about these developmental tasks as intrinsically important for the child's growth, whereas the Puerto Rican mothers (more interdependent) emphasized the importance of meeting societal expectations.

At the other end of the continuum, the interdependent value system is more commonly found among the growing number of immigrant and minority groups in the United States. In interdependent cultures, children typically are socialized to be responsible for their families, and their families in turn are responsible for them. The family unit often includes extended family members: grandparents, aunts, uncles, and cousins. Optimal development includes the idea of being able to sacrifice personal goals for the good of the group (Greenfield, 1994; Triandis, 1995).

To prepare children to better subordinate individual interests when necessary, parents within interdependent cultures raise their children to be being respectful, empathic, self-controlled, dutiful, conforming, and cooperative. Tolerance of other people's views is encouraged so conflict is minimized (Triandis, 1989). Communication rules in interdependent societies encourage considering others' opinions or needs by seeking collaboration and consensus. A strongly worded personal opinion is frowned on because it is thought to derail consensus.

This emphasis on close connections and collaboration over personal self-development is thought to be fostered by family routines such as co-sleeping, weaning at older ages, emphasizing obedience toward adults, and playing collectively (Schulze et al., 2001). Children are more likely in interdependent cultures to be encouraged to ask adults for help with problems instead of being encouraged to figure out solutions for themselves. These partnering activities encourage more reliance on another and potentially lead to more group cohesiveness. These cultures also have traditionally had a wider sense of who is responsible for children; not only extended kin but also other community members are more likely to express concern for nonbiological children in the community (Kibria, 1993).

In a series of in-depth research studies conducted with European American mothers and Puerto Rican mothers of toddlers (Harwood, Schoelmerich, & Schulze, 2000), these differences between individualistic and interdependent cultures were borne out. Anglo mothers emphasized independence and individuality
in their children's achievements by encouraging their toddlers to make choices and explore the environment. They achieved this focus by phrasing their directives as suggestions, enabling the child to feel as if the idea was her own. These mothers also verbally praised their infants' actions and encouraged their children to play alone and to select their own toys. In contrast, in a more interdependent society, Puerto Rican mothers focused on their children's interactions with others, emphasizing particular ways to interact and communicate. The Puerto Rican mothers gave more directives, physically positioned or restrained their children's movements around the room, and played more social games with their children that involved touching and turn-taking. Each group of parents had different goals for their children, based on whether their cultural constructs for regulation of activities and proper social interaction were independent or interdependent.

In another study, Martini (2002) examined mother-infant interactions during mealtimes in Japanese American, European American, Hawaiian American, and Filipino American families. Filipino American mothers were attentive and directive with their toddlers, holding the toddlers in their laps and guiding their activities. In Hawaiian families, the toddlers were allowed to walk around and explore during mealtime, and other family members had as much interaction with these toddlers as their mothers did. Japanese American mothers seated their children at high chairs and provided structured opportunities for the infants to experiment with toys and objects. European American mothers encouraged their infants to actively explore their food and other objects but did not structure these explorations nearly as much as Japanese American mothers. European American mothers said that they wanted their children to be creative and expressive, whereas Japanese American mothers emphasized wanting their children to learn particular skills. The Filipino American and Hawaiian American mothers emphasized the importance of the child learning respect and self-control. More than any other group, the European American families treated their children as coequal conversational partners.

Similarly, using a tool called the Socialization Goals Interview, Harwood (1992) found that working-class Puerto Rican mothers emphasized the importance of their children learning to be well behaved and cooperative, whereas middle-class Anglo mothers emphasized the importance of autonomy and exploration for their children. Working-class Anglo mothers fell somewhere in between these two groups. In terms of child-rearing practices used to reach these goals, Anglo mothers were more likely to mention modeling and providing opportunities for exploration, whereas Puerto Rican mothers emphasized direct instruction. Also, the more acculturated to mainstream U.S. culture the Puerto Rican mother was, the more likely she was to emphasize earlier developmental goals for her child.

Several large scale studies (Bradley et al., 1989; Bradley et al., 2001 Part A; Bradley et al., 2001 Part B) using the Home Observation for Measurement of the Environment Inventory (HOME) tool found that, compared with European American mothers, African American and Latino mothers (both poor and non-poor) waited until their child was almost age 3 to introduce stimulating materials and varied experiences in the home. In the 2001 Part B study by Bradley et al., the researchers suggested this practice may be a result of differences in how the mothers view the cognitive capacity of their children, with European American parents being more likely to view children as capable of learning at an earlier age. The researchers did not use the concept of interdependent cultures to explain this difference, but it is one likely explanation.

Training early childhood practitioners to better understand distinctions between individualistic and interdependent cultures seems crucial, given that the great majority of immigrants to the United States come from countries in South America, Asia, and Africa that are strongly interdependent. American Indian and Alaska Native cultures are also strongly interdependent. African American culture has been described as more interdependent than the dominant White culture, as is evidenced by its greater orientation toward extended family and kinship-help patterns. However, perhaps because of its long exposure to mainstream culture, individual achievement is also stressed (McAdoo, 1993).
The Influence of Culture on Language Development

Regardless of culture, linguists agree that the purpose of language is the same: to communicate information, build and maintain relationships, and develop self-identity through the use of symbols that represent one's family of origin (Alvarez, H-Lemonnier, & Guimont, 1992). Research increasingly suggests that there is a universal sequence to the emergence of language. Babies in all cultures appear to be able to perceive speech sounds in terms of different categories (phonemes). After that ability, their first production of language is cooing (at approximately 2 months), then babbling (at approximately 4 to 6 months), and finally, referring to objects, expressing moods, or commanding actions. Although this sequence appears to be unchanged from culture to culture, the timing of specific milestones may vary (see Oller, 2000, for a summary of this research).

Another finding that seems consistent across classes and ethnicities is that the more language a child is exposed to in the first years of life, the greater his vocabulary (Hart & Risley, 1995; Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991). Language growth is especially helped by “extra talk” (i.e., talk that goes beyond simple directives and engages a child by highlighting and expanding on experiences) and by repetition (Hart & Risley, 1995; Huttenlocher et al., 1991). Studies of young European American children have found a strong effect of socioeconomic class on the frequency of talk in mother-child dyads (Clark, 2000). Parents from professional families tend to talk more to children than do working-class parents, and working-class parents tend to talk more to children than do parents in poverty. These findings were strongly related the size of the children's vocabulary growth, vocabulary use, and IQ scores at age 3.

In addition to the different timing of milestones, and perhaps differences in amount of speech produced, each culture has specific notions of communicative competence (Hymes, 1967). Communicative competence refers to the knowledge needed to use language appropriately within a given culture. According to Andersen (1996), aspects of communicative competence that vary from culture to culture include (a) who is thought to be the child's main communication partner, (b) which interaction styles are encouraged or discouraged, (c) which topics of conversation are allowed or are forbidden, (d) how highly participants value talk, (e) what the caretakers' beliefs are about teaching language, and (f) how consciously structured language teaching is in that culture. Although these beliefs about communication are usually outside of the caretaker's conscious awareness, they guide the nature of interactions between children and adults and are, to a large degree, influenced by the family's culture (Pye, 1986; Schieffelin & Gilmore, 1986).

We know a lot about communicative competence among middle-class European American families. As Hammer and Weiss (1999) argue, "The current story of how language learning occurs is really a story of mainstream American English language development, complete with an emphasis on (a) parental engagement of the child in conversation, (b) following the child's lead during the interaction, (c) placing high value on an interactional conversational style, (d) the mother's production of short sentences with a more limited variety of words, and (e) taking responsibility for the teaching of language to the child. (p. 1219)"

According to Hammer and Weiss, although this style of interaction is seen to be optimal for language development for all groups, there is actually not enough substantive research to draw this conclusion at this time.

Three studies under review highlighted communicative competence in two communities in the rural South. The researchers (Heath, 1983, 1989; Ward, 1971) undertook in-depth ethnographic studies of two African American communities. Children in these communities were tended by multiple adult caregivers and were frequent participants in adult events, to a much greater degree than the typical White urban child. Although caregivers structured other learning activities for children (e.g., teaching the alphabet), talking was seen as a natural by–product of observation and imitation of adults and was not specifically encouraged or highlighted. In terms of the content of talk,
parents in these communities valued independence in their children, and they emphasized the need for the child to be verbally assertive and to be able to defend himself in a sometimes hostile world. These families in the rural South illustrate the idea that families “differ in their expectations of communicative competence” (Andersen & Battle, 1993, p. 133).

Another series of studies looked at language development in six lower-SES and six middle-SES African American mother-toddler dyads, and then compared these findings with research conducted on White dyads (Hammer & Weiss, 1999, 2000). In their study of 12- to 18-month-olds, the researchers found that, similar to White mothers, African American mothers from both classes reduced their sentence length to an average of three words and used a relatively low percentage of different words to speak to their young children. Both classes also directed the same amount of speech toward their children, a finding that was different from two earlier research studies looking at class differences in African American samples of older children (Hart & Risley, 1995; Hoff-Ginsberg, 1991). In the same study, African American mothers from both SES groups were more likely to encourage task-specific outcomes rather than follow the lead of the child, which is a style more common in European American dyads. Also, both groups used directives as the most common form of communication, followed by statements. This “directive style” is in contrast to the more “conversational style” that has found to be more prevalent in White middle-class mothers (Hammer & Weiss, 1999). The researchers pointed out that although the conversational style is often considered the optimal style for language learning, there is no research that actually links it to better language outcomes.

The researchers did find differences between the African American mothers of different classes. Middle-class mothers were more likely than lower-class mothers to wait for their child to initiate play, and middle-class children were more likely to use words than actions to initiate play. Middle-class mothers also used significantly more communication goals with their children. The children in the middle-class group spoke, on average, twice as much as the children from the lower-class group. When interviewed, mothers from the low-SES group thought language development would occur naturally, without help from them, whereas middle class mothers saw it as their role to encourage language growth (Hammer & Weiss, 2000).

In a larger study comparing low- and middle-income African American dyads (Wallace, Roberts, & Lodder, 1998), mothers who more frequently expanded on their children’s use of words had children who scored higher on receptive communication. The results also suggested that although maternal warmth contributed somewhat to early cognitive and language skills, the more didactic behaviors such as elaboration and stimulation were more strongly linked. This relationship between these didactic behaviors and cognitive and language outcomes held, even after controlling for maternal education and the measure of environmental richness on the HOME tool.

In a study looking at differences in joint book-reading experiences, Anderson-Yockel and Haynes (1994) reported that middle-SES European American mothers were more likely to ask “WH” questions (who, where, and what) while reading books to their toddlers, whereas middle-SES African American mothers used more statements. Because they had more questions asked of them, the White children exhibited a much higher percentage of correct verbal responses to questions. The researchers concluded that “the white dyads appeared to be much more in the question/answer mode” (p. 587) and that “this mode will be particularly beneficial to them when they make a transition to school” (p. 587). This finding concurs with Heath’s (1983, 1986, 1989) observations of spontaneous interactions between adults and children in the rural African American communities noted above. Heath (1986) stated that in the community she studied, “Children do not expect adults to ask them questions, because children are not seen [by adults] as information givers or question-answers. This is especially true of questions for which adults already have an answer.” However, this difference in style can disadvantage the African American children from this community when they begin school: “When the children go to school, they face unfamiliar types of questions
that ask for explanations. They are asked as individuals to identify items by name and to label features such as shape, color, size, number . . . . They do not easily tolerate questions about reading materials that are structured in the usual lesson format” (p. 117).

In a study on Latino and European American mother-child dyads, differences were also found in the types of questions the mothers use to aid their 3½- to 5-year-old children in a shoe-tying task (Moreno, 1997). Although both groups of mothers asked the same amount of questions, White mothers were more likely to ask questions in which the answer could be found in the immediate perceptual field (e.g., “Where does this loop go?”). Latino mothers, in contrast, were more likely to ask questions about mental representations that would go beyond the immediate perceptual field (e.g., “What do we do first?” and “Why should we learn to tie our shoes?”). Moreno reported that the perceptual questions tended to keep the White children more on task and are the type of questions asked in learning environments for younger children.

**Language Development in Bilingual Children**

One of the more pressing concerns of professionals working with families of young children from immigrant cultures is the question concerning the influence of bilingualism on early development. As of the year 2000, one in five of the birth-to-3 population (3.2 million children) in the United States lives in an immigrant family (U.S. Census Bureau, 2001). Eighteen percent of all children in the United States speak a language other than English at home (Shields & Behrman, 2004). Among immigrant children, 72% speak a non-English language at home (Shields & Behrman, 2004). Tabors (1997) emphasized the resulting critical importance of researchers and practitioners understanding the process of bilingual language development and second language acquisition in very young children.

Oller, Eilers, Urbano, and Cobo-Lewis (1997) pointed out that there are two schools of thought in the literature concerning an infant learning two languages from birth. The first they called the “bilingualism deficit hypothesis.” According to this hypothesis, exposure to two languages at such an early age “might have a delaying effect on the precursors to speech” (p. 408). However, they also speculated that the influence of bilingual exposure could be advantageous for infants and toddlers. Perhaps children exposed to two languages at an early age “profit from the rich exposure to differing language inputs” and achieve language milestones even earlier than their counterparts (p. 408). They pointed out that what they call the “bilingualism advantage hypothesis” has found some support with older children and adults, including research that suggests that bilingual speakers have been reported to outscore their peers on measures of cognitive flexibility (Ben-Zeev, 1977; Ianco-Worrell, 1972).

The majority of the studies found on early language development in toddlers from bilingual homes concluded that the simultaneous acquisition of two languages does not lead to delays in speech or language development (Jackson-Maldonado, Thal, Marchman, Bates, & Gutierrez-Clellen, 1993; Junker & Stockman, 2002; Oller et al., 1997). Unfortunately, although bilingualism would seem to be a potential social advantage, prejudice against immigrants can create an odd dichotomy in which bilingual immigrant children are looked down on while middle-class children studying another language are socially rewarded. The research reviewed here at least gives scientific support that bilingual language acquisition is not harmful linguistically. Some linguists, notably Clark (2000) warn that it can be detrimental for a child to learn a language and then have it die out because the environment does not offer the opportunity for its use. This loss may negatively affect cognitive skills and socioemotional skills that were anchored in the forgotten language. Other societal pressures on bilingual immigrant children need to be addressed both through research and practice because what is detrimental about bilingualism seems to be society's stigmatizing response to immigrant status rather than to the act of acquiring two languages.

For additional research studies that highlight the benefits of learning more than one language, see Fernandez (2007). Most of the studies cited in this report, *Promoting the Benefits of Language Learning*, focus on the
effects of multilanguage learning on older children from other countries and so were not included in the Language Matrix of this report. The majority of the studies support the idea that multilingual learning increases cognitive flexibility, enhances literacy, and supports cross-cultural understanding.

The Influence of Ethnicity and Class on Cognitive Development

The literature search yielded 12 studies looking at the influence of ethnicity and class on the cognitive development of children from birth to age 3 years. Eight of these studies linked aspects of the home environment to children's cognitive outcomes, and four studies were more descriptive. A study by Bradley et al. (2001 Part A) focused on the similarities and differences in home environments among the three major ethnic groups using the National Longitudinal Survey of Youth data set of 5,310 families. Findings were presented separately for “nonpoor” and “poor” families of African American, European American, and Latino groups. Results from this study showed little difference among groups in the degree of parental responsiveness toward the child. However, on items more directly related to cognitive stimulation, there was greater variation between groups: Compared with European American families, a higher percentage of African American and Hispanic American families owned no children’s books. Poverty status had more effect on book owning than did ethnicity: Of all three ethnic groups, the nonpoor were far more likely than the poor to have three or more books for their infants. In terms of reading to their children, 64% of European American mothers reported reading to their infants three or more times a week compared with 38% of African Americans and 34% of Latinos. Once again, the poor families of each ethnic group read substantially less to their children than did the nonpoor families.

In Part B of the 2001 (Bradley, et al.) study, the researchers found a small, but significant relationship between four learning stimulation items (the number of books the child owns, how often the parent reads to the child, how many cuddly or role-playing toys the child owns, and how many push or pull toys the child owns) and social and motor outcomes for all ethnic and class groups. There was an even stronger relationship between these learning stimulation items and receptive vocabulary at age 5. Once again, this finding held for the poor and nonpoor families of all three ethnic groups.

In a longitudinal study of 3- to 5-year-old children’s attitudes toward reading (Saracho & Dayton, 1991), 3-year-old European American children had significantly more positive attitudes toward books and being read to than did Mexican American or African American children. However, the Anglo children’s attitudes did not change much over time. The attitudes of Mexican American children, however, increased significantly each year, with attitudes at age 5 slightly more positive than the Anglos. The attitudes of the African American children also grew to be more positive from year to year, but at a slower rate than the Mexican American children. The researchers pointed out that the majority of Mexican Americans in this sample attended bilingual education programs in California and Texas. The African American children attended traditional educational programs, which, from the researchers’ point of view,

failed to include appropriate instruction and materials to meet the needs of the African American group. For children to be interested, curriculum materials may well need to match the child’s prior experiences and environment. When a child from a different language or culture enters a classroom and finds that these components are removed from them, a conflict of culture, language and values may occur. (Saracho & Dayton, 1991, p. 41)

Resources for Increasing Cultural Sensitivity

Training in cultural sensitivity often emphasizes the need for more information about the cultural dynamics of cultures other than our own. Acquiring this information is perhaps the first step in increasing sensitivity, and the preceding studies were offered in this vein. Although this research information may be informative, it does little to guide the practitioner. In their thoughtful article, *Cultural Competence as Skilled Dialogue*, Isaura Barrera and Robert Corso (2002) pointed out how “practitioners can find it overwhelming and unrealistic to be familiar with cultural parameters for all the persons/children with whom they are asked to
interact, especially when these children and families participate in multiple cultures” (p. 1). This information about other cultures is important, but it leaves practitioners unable to respond to the question, What do we do now, in this specific situation with these particular persons/children?

In response to this essential question, Barrera and Corso (2002) and Barrera, Corso, and McPherson (2003) propose a process they call “skilled dialogue.” In Skilled Dialogue: Strategies for Responding to Cultural Diversity in Early Childhood (Barrera et al., 2003), they lay out a sophisticated yet pragmatic approach to enhance deeper communication about points of difference between cultures. For a brief introduction to this approach, see Barrera and Kramer (2007).

In addition, Cross-Cultural Roots of Minority Child Development, edited by Patricia Greenfield and Ronald Cocking (1994), is an additional resource for practitioners and policymakers. Several researchers and practitioners have contributed to this book, and it has a breadth few other books on the subject have. There are chapters highlighting family interactions in several cultures, including Mexican American, African American, Chinese American, Korean American and Japanese American as well as interactions in Navajo and Pueblo families. Although not solely about the socialization of very young children, these ethnographic studies are rich introductions to how cultural scripts shape family behavior. Several chapters also focus on the relationship between families and practitioners and are essential for understanding how to work respectfully with other cultures.

Building on the interdependent-individualistic framework, the Bridging Cultures Project has generated a large body of tools for practitioners working with Latino families, including books, professional development materials, workshops, and course modules. Although the focus is on families of school-aged children, much of the material also can be applied to families of younger children. Practitioners working with interdependent cultures other than Latino may also gain insights from the perspective found in these materials. To learn more about the Bridging Cultures Project, go to www.wested.org/online_pubs/bridging/about_bc.shtml.

For another interesting approach to gain a deeper understanding of parents’ cultural scripts, social workers Roer-Strier and Rosenthal conducted a series of research studies that focused on discussions with several immigrant groups in Israel. Referring to their research and that of others (Harwood, Schoelmerich, Schulze, & Gonzalez, 1999), Roer-Strier and Rosenthal (2001) claimed that “every parent has an image of their child that guides their childrearing and socialization practices” (p. 217). That image is reflected in the answer that parents have when asked questions such as “What kind of adult would you like your child to be?” Roer-Strier and Rosenthal call this image “the adaptive adult” and add that it is “so fundamental . . . that parents carry it with them through various cultural changes and even when they immigrate to other countries” (p. 217). This image may not be as relevant to the new culture as it was to the old, and in fact, it may even limit the child in the new culture, but it is so deeply held that it is not questioned by the parents (Goldman, 1993; Greenfield, 1994; Roer-Strier & Rosenthal, 2001). In their 2001 article, “Socialization in Changing Cultural Contexts: A Search for Images of the ‘Adaptive Adult,’” they described a process they have used to access and work with the adaptive adult images held by parents from different cultures. Though not specifically designed for use in the early childhood field, it may be of much practical use to gain a deeper understanding of the families we serve.

**Conclusion**

Although the United States has always been a nation of diverse cultural groups (the indigenous groups oftentimes monolithically termed “American Indians” or “Native Americans” were themselves a diverse group of cultures), the significance of this diversity has become clearer over time. Given that early childhood services are often the first point of contact with mainstream culture for immigrant families and “minority” families in the United States, it is essential that these services be based on a deeper understanding of the background and lived experiences of the families in our ever-changing culture.
References for Text and Tables


**Matrix of Studies on Cognitive Development**

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SES: Lower class, lower middle class, and middle class  
European American (456)  
African American (213)  
Mexican American (262)  
For ethnic comparison: 363 children matched on SES:  
131 Euro American  
131 African American  
131 Mexican American | General pattern of relationships between aspects of home environment and children’s cognitive scores  
Are there ethnic or SES differences in pattern of relationships between home environment and cognitive scores? | HOME (Home Observation for Measurement of the Environment Inventory)  
Mental Development Index (MDI) from Bailey Scales of Infant Development (BSID)  
Stanford Binet Intelligence Test  
Mother’s education and occupation | **Ethnic comparison** (see sample notes):  
1. Correlations between HOME scores and maternal education and occupation were higher for Whites ($r = .4$ to $.6$) compared with Blacks (0 to 3) and Mexican Americans (0).  
2. Correlations between 12-month HOME and 2-year MDI scores were higher for Whites than for other groups.  
3. Correlations between 2-year HOME and 3-year MDI were higher for Whites; correlations between 3-year HOME and 3-year MDI were higher for Blacks.  
4. For Mexican Americans, there was little relationship between HOME and maternal education or occupation or between HOME and MDI.  
**Class comparison** (used total sample):  
1. HOME was unrelated to maternal education and occupation for lower SES; for lower middle class, weak relationship between HOME and maternal education, but not occupation; for middle class, significant relationship between HOME and both education and occupation.  
2. Relationship between HOME and MDI was low for lower class (< .35) but was moderately correlated with lower middle and middle class (up to .60).  
3. For lower middle class, play materials and acceptance subscales had higher correlation with MDI than for middle class.  
4. For middle class, HOME scores were more highly related to maternal education and occupation than for the other two classes.  
5. Three sources of stimulation (the availability of toys and learning materials, the parent’s involvement and encouragement of the child, and the variety of experiences to which the child is exposed) showed moderate relationships to mental test scores beginning at age 2 years. |
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<tr>
<td>Bradley, Corwyn, McAdoo, and Garcia Coll (2001 Part A)</td>
<td>Children &lt;3 years and mother African American Nonpoor: 716 Poor: 663 European American Nonpoor: 2,568 Poor: 431 Hispanic American Nonpoor: 578 Poor: 309 Asian American: 45 Sample: National Longitudinal Sample of Youth (NLSY)</td>
<td>What is the average “home environment” across four ethnic groups, using the HOME-SF as the measure?</td>
<td>HOME Short Form (HOME-SF) Poverty compared with nonpoverty status at time of testing</td>
<td>Ethnic and SES differences: Learning stimulation: 1. Higher percentage of African Americans and Hispanic Americans had no books, but poverty status had more effect: nonpoor were far more likely to have 3+ books in infancy (effect size = .37). 2. African American children more likely to be taken to a museum than the other two groups. Parental responsiveness: 1. Most mothers of all groups responded to infant’s demand for attention (78%) and spoke to child (90%); the percentage was higher for nonpoor than poor in each ethnic group. 2. European American and Hispanic American mothers were more likely to show physical affection (hug, kiss, caress) than African American mothers, though the majority of mothers in each group did so; affluent mothers in all groups were more likely than poor mothers to show affection. Spanking: 1. Poor mothers of all groups were more likely to spank children; a higher percentage of African American mothers reported spanking, but poor European American mothers reported highest rate of spanking (&gt; 8 times per week). Teaching: 1. Sixty-four percent of European American mothers read to infants &gt; 3 times per week compared with Asian American mothers (45%), African American mothers (38%), and Hispanic American mothers (35%). Father involvement: 1. Nonpoor children of all groups were four to five times as likely to see father daily; poor African American children were least likely to see father daily (60%) compared with poor European American children (73%) and poor Hispanic American children (74%). Conclusion: 1. Being poor affects nearly every aspect of children’s lives; of 124 HOME-SF examined, 88% showed significant effects of poverty.</td>
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## Matrix of Studies on Cognitive Development (continued)

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</table>
| Bradley, Corwin, Burchinal, McAdoo, and Garcia Coll (2001 Part B) | Children < 3 years and their mothers  
African American: Nonpoor: 716  
Poor: 663  
European American: Nonpoor: 2,568  
Poor: 431  
Hispanic American: Nonpoor: 578  
Poor: 309  
Asian American: 45  
Sample: National Longitudinal Sample of Youth (NLSY) | "What is the relationship between HOME environment and early social and motor development?" | HOME-SF  
Motor and social development assessment completed by mother  
Poverty status compared with nonpoverty status at time of testing | Ethnic and class comparisons:  
Learning stimulation:  
1. Small, but significant associations were found between HOME and motor and social development for all groups; (also moderately associated with receptive language for all groups of ages 3–5 as well as with achievement test scores for all kindergarten groups).  
Spanking:  
1. Spanking was unrelated to early social and motor development.  
2. A few significant interactions emerged between HOME and ethnicity, but when did, they were stronger for European Americans than other groups. |
| Dearing, McCartney, and Taylor (2001)  | Hierarchical linear modeling used on participants of the National Institute of Child Health and Human Development Study of Early Child Care (N = 1,364) from the time children were age 1 year through 36 months.  
Associations between change in income-to-needs and 36-month child outcomes (school readiness, language, positive social behavior) | Demographics: family income data, mother's education, family structure, child ethnicity  
HOME Scale  
At 15 months: cognitive development assessed using Bayley Scales of Infant Development II  
At 36 months, children's cognitive development and school readiness assessed using composite score from Bracken Basic Concept Scale | 1. For four of the five child outcomes, there was an interaction between nonpoverty status and change in income-to-needs. Change in income-to-needs was less important for children from nonpoor families but was of greater importance for children from poor families. In other words, change in family income-to-needs mattered more for children with less.  
2. A positive change in income-to-needs was a powerful protective factor for children from poor families.  
3. Decreases in family income-to-needs were associated with worse developmental outcomes for children from poor families. Conversely, increases in family income-to-needs were associated with better developmental outcomes for children from poor families. |
1. Family income and poverty status are strong correlates of the cognitive development and behavior of children, even after accounting for differences—in particular, family structure and maternal schooling—between low- and high-income families.

2. Although the duration of poverty matters, its timing in early childhood did not. Age 5 IQs are found to be higher in neighborhoods with greater concentration of affluent neighbors.

Duncan, Brooks-Gunn, and Klebanov (1994) 

Primary data set included the Infant Health and Development Program (IHDP), a longitudinal survey of U.S. households. This analysis focused on eight sites, producing a sample of 895, of whom 489 were African American, 101 Hispanic, and 304 non-Hispanic White. Children ages birth to 5.

How are developmental outcomes in childhood affected by poverty?

Developmental outcomes measured at age 5 using the Wechsler Preschool and Primary Scale Behavioral functioning was assessed using Revised Child Behavior profile (mother’s report) Family variables assessed by using the HOME Scale General Health Questionnaire Social support assessed by using six vignettes

1. Family income and poverty status are strong correlates of the cognitive development and behavior of children, even after accounting for differences—in particular, family structure and maternal schooling—between low- and high-income families.
2. Although the duration of poverty matters, its timing in early childhood did not.
3. Age 5 IQs are found to be higher in neighborhoods with greater concentration of affluent neighbors.

Farver and Wimbarti (1995) 

Participants in the study included 90 children from three communities in the United States, Mexico, and Indonesia along with their mothers and older siblings. In each setting, 10 children were 18 months, 24 months and 36 months. Families from all three countries were considered to be working class.

How different cultural factors influence young children’s participation in daily activities, which influence the development of their skills and behaviors The purpose as well as values and goals of pretend play

Observation of child at home for a period of 6 to 8 hours. After this unstructured observation, a structured videotaped observation was conducted in the child’s home. The child was presented with wooden toys, and both mothers and older siblings were asked to play with the child. Mothers were interviewed after this observation and asked about their perspectives on the importance and purpose of play.

1. American and Indonesian mothers believed that play was important to the development of the child’s social and cognitive skills and helped prepare them for school.
2. Mexican mothers primarily talked about play as the opportunity for children to enjoy themselves.
3. In America, both mothers and older siblings were engaged in playing with the toddlers. In the other two countries, older siblings and mixed-age peers were more likely to be play partners.
4. In the United States, adults and children were considered equal partners in the activity, which was reflected in their conversations and participation in play.
5. Mexican mothers expected obedience from their children and used a more formal communication style. In Indonesia, young children were loud outside but quiet when playing inside the home.
### Matrix of Studies on Cognitive Development (continued)

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<th>Author and Year</th>
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<tr>
<td>Haight, Wang, Fung, Williams, and Mintz (1999)</td>
<td>Longitudinal data from five Irish American families in the United States and nine Chinese families in Taiwan. All were two-parent families. All parents had college educations, owned own homes, and were financially secure. Target children were age 2½ years.</td>
<td>Universal dimensions of pretend play</td>
<td>Ethnographic fieldwork, informal observations, field notes, and documentary material collected on each home and play area. Naturalistic observations. Children were videotaped at ages 2½, 3, 3½, and 4 years. Formal interviews with caregivers to learn about routines as well as socialization practices and beliefs.</td>
<td>1. Data suggest universal developmental and culturally variable dimensions of young children's pretend play. 2. Data also suggest that enriching existing theories of pretend play to understand pretend play as a culturally mediated activity will require attention to the interaction of a complex set of ecological and ideological factors. 3. Both groups incorporated objects into their pretend play. For both groups, pretend play was primarily a social activity embedded within interactions with family members and friends. 4. Interpersonal contact of pretend play varies. Chinese children pretended more with caregivers, whereas Irish American children pretended more with other children. 5. Caregiver-child pretend play in Irish American families was more typically initiated by children than it was for Chinese children.</td>
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<tr>
<td>Hammer and Weiss (1999, 2000)</td>
<td>Twelve mothers and their infants: Six of the mothers and their infants were of low SES and six were of middle SES. Mothers in the low SES group averaged 11.8 years of education, and mothers in the middle SES group averaged 14.7 years of schooling.</td>
<td>Children's early experiences with books and interaction styles of low- and middle-SES African Americans</td>
<td>The mothers and their infants participated in two to three 15-minute play sessions. All sessions were videotaped. The mothers and infants played with three sets of toys: cause-and-effect toys, symbolic toys, and books (picture books and books with text). The questionnaire that was completed with mother asking about the mother's and the child's behavior during book reading.</td>
<td>Similarities between the two groups: 1. Mothers in both groups engaged their children in book-reading activities for similar amounts of time. When talking to their children, the mothers shortened their utterances, used a relatively low percentage of different words, and produced a similar number of nouns and verbs in their utterances. Differences: 1. Mothers of middle SES reported reading more frequently to their children on a daily basis than did mothers in the low-SES group. 2. Specifically, middle-SES mothers produced more modifiers in their utterances than did mothers in the low-SES group. Mothers in the low-SES group used more directives. 3. The author suggests that differences between groups can be explained by the mothers' level of education.</td>
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<tr>
<td>Kelley, Smith, Green, Berndt, and Rogers (1998)</td>
<td>54 infants and toddlers along with their fathers and mothers Infants ages 1–3 years Primarily low SES All African American from urban area</td>
<td>Pattern of relationships between fathering (responsiveness and control) and children’s developmental outcomes</td>
<td>Fathers videotaped playing with target children for 1½ hrs. Parental Attitudes Toward Child Rearing Scale (PACQ) Bayley Scales of Mental Development Index McCarthy Scales</td>
<td>1. Father’s restrictiveness correlated with lower levels of cognitive and social development. 2. Paternal sensitivity was positively associated with motor and self-help skills. Fathers acted with more sensitivity toward daughters.</td>
</tr>
<tr>
<td>Kolobe (2004)</td>
<td>62 mother-infant pairs Infants ages 9–12 months All levels of SES Either one of the parents or the target child was Mexican or Mexican American</td>
<td>Child-rearing practices and developmental expectations for Mexican American mothers and developmental status of their infants</td>
<td>Child-rearing practices measured using HOME, Nursing Child Assessment Teaching Scale (NCATS) Parent Behavior Checklist (PBC) used to measure mothers’ behavior and expectations was based on parental report BSIDII (Bayley Scales) used to assess child’s developmental status</td>
<td>1. A positive correlation was found between mother’s nurturing behavior, parent-child interaction, home environment, and infants’ cognitive development. 2. Child-rearing practices, SES, mothers’ age and infants’ age together explained 45% of variance in cognitive scores. 3. Middle class mothers and those who completed high school scored higher on PBC, HOME, and NCATS. 4. Bicultural mothers reported higher developmental expectations and more nurturing behavior compared with those who were not acculturated.</td>
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# Matrix of Studies on Cognitive Development (continued)

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<tr>
<td>Martini (2002)</td>
<td>90 families, age of infants 3–23 months, SES not specified</td>
<td>Parents’ cultural beliefs and their influence on shaping infants’ learning How do mother’s teaching styles affect children’s learning styles and how are they related to cultural goals?</td>
<td>Each mother completed a questionnaire, providing information on child-rearing beliefs, child-rearing practices, and demographic information. Researchers also lent families a video camera to record a typical family evening meal. Data were coded for setting features, maternal behavior, and child behavior.</td>
<td>1. A relationship was observed between mothers’ views of being a successful adult and how they structure mealtime. 2. Filipino American mothers emphasized obedience and respect of authority and had a structured approach to feeding. 3. European American mothers’ emphasized spontaneity, creativity, expressiveness, and self-reliance; encouraged self-feeding; and viewed disruptive behaviors as sign of intelligence and independence. 4. Native Hawaiian mothers emphasized consideration for others, and infants were allowed to wander during mealtimes. Infants explored physical environment and learned primarily through trial and error. 5. Japanese American mothers emphasized achievement and mastery of tasks and were most attentive and responsive among all groups of mothers. Their infants had more opportunities to experiment with toys.</td>
</tr>
<tr>
<td>Norton (1993)</td>
<td>Sixteen children of young, single, low–SES African American mothers</td>
<td>How do daily routines and use of statements concerning time by mothers contribute to children’s developing concept of time?</td>
<td>Videotaping mothers and children on second day after birth, every 6 weeks during first year, and at regular intervals not exceeding 6 months in the following 5 years. Life histories of the mothers collected as well as social and cognitive outcomes on the mothers and the children using the Weschler Adult Intelligence Scale and McCarthy Scales for Children</td>
<td>1. Mothers who used statements with respect to time during the daily routine activities had children who scored higher onseration tests (tests designed to measure the emergence of the concept of time in young children). Children who performed well on this test had mothers who had a better sense of self-efficacy and were future oriented.</td>
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### Matrix of Studies on Language Development (Monolingual Infants and Toddlers)

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<tr>
<td>Bland-Stewart (2003)</td>
<td>8 African American toddlers (M = 2.1 years)</td>
<td>The development of phonemes and phonological processes in African American English-speaking toddlers (AAE)</td>
<td>Spontaneous language samples of 90 minutes</td>
<td>1. AAE-speaking children do use the same phonemes and phonological processes as found in the literature on typically developing Standard American English (SAE)-speaking children.</td>
</tr>
<tr>
<td>Hammer and Weiss (1999)</td>
<td>12 mother-infant dyads All African American</td>
<td>Use of language during structured play sessions</td>
<td>Mothers and their infants participated in two to three 15-minute videotaped play sessions. Mothers and infants played with three sets of toys: cause and effect toys, symbolic toys, and books. Questionnaire was completed by each mother.</td>
<td>Similarities between groups: 1. Amount of speech the mothers directed toward their children was similar. 2. Both groups reduced their sentence length to an average of three words per utterance and used a repetition. 3. Both groups favored directives, followed by statements, with “conversational style” used least. Differences: 1. Low–SES mothers initiated play more frequently whereas Middle SES mothers waited for their child to initiate play; these children often did so using words instead of actions. 2. Middle–SES mothers also used more communication goals. 3. Middle–SES children spoke twice as much as low SES children.</td>
</tr>
<tr>
<td>Hammer and Weiss (2000)</td>
<td>Same participants as above: 12 mother-child dyads (urban) All African American</td>
<td>Mothers’ view of how children learn language Semistructured interview focusing on mom’s view of language development</td>
<td></td>
<td>Similarities between groups: 1. Both groups saw it as their role to foster language development. 2. Both adapted speech for the child’s comprehension level (simple vocabulary, repetition, etc.). 3. Both saw themselves as responsible for solving communication breakdowns. Differences: 1. Mothers in both groups were able to articulate a teaching strategy, but middle SES reported a more extensive teaching agenda. 2. Mothers in middle SES reported children communicated verbally and nonverbally; mothers in low SES emphasized children’s nonverbal communication.</td>
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### Matrix of Studies on Language Development (Monolingual Infants and Toddlers) (continued)

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<tr>
<td>Hammer (2000)</td>
<td>Same participants as above:</td>
<td>Mothers’ behavior and use of language during book reading to toddlers</td>
<td>Videotapes of three 30-minute book-reading sessions</td>
<td>Similarities between the two groups:</td>
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<tr>
<td></td>
<td>12 mother-child dyads (urban)</td>
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<td></td>
<td>1. Mothers in both groups engaged their children in book readings for similar</td>
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<td></td>
<td>All African American</td>
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<td>amounts of time.</td>
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<td>6 low SES</td>
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<td>2. Both groups shortened their utterances, used a relatively low percentage of</td>
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<td>6 middle SES</td>
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<td>different words, and produced a similar number of nouns and verbs in their</td>
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<td></td>
<td>Infants from 12 to 18 months</td>
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<td>utterances.</td>
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<td><strong>Differences:</strong></td>
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<td>1. Middle–SES mothers reported reading more frequently to their children.</td>
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<td>2. Middle–SES mothers produced more modifiers in their utterances than did</td>
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<td>mothers in the low–SES group.</td>
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<td>3. Mothers in the low–SES group used more directives</td>
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<tr>
<td>Rescorla and Achenbach</td>
<td>National probability sample</td>
<td>Rate of language development in toddlers from parents reports</td>
<td>Language Development Survey</td>
<td>1. Vocabulary scores were modestly correlated with SES (.14 for vocabulary</td>
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<td>(2002)</td>
<td>278 children</td>
<td></td>
<td>Child Behavior Checklist, ages 1½ to 5</td>
<td>score and .18 for phrase length).</td>
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<td></td>
<td>157 European American</td>
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<td>2. European American children had significantly higher vocabulary scores and</td>
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<td>60 African American</td>
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<td>mean length of phrases even when SES was controlled for.</td>
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<td>35 Latino</td>
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<td>3. Rate of language delay was lower in the European American group (4%)</td>
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<td>24 Asian and other</td>
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<td>compared with African American (29%) and Latino and Asian (24%); however,</td>
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<td></td>
<td>Class diversity in each ethnic group</td>
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<td>SES was not controlled in this analysis.</td>
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<td>18–35 months</td>
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<td>4. Bilingual children had significantly lower LDS scores, but did not differ</td>
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<td>on length of phrases.</td>
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### Matrix of Studies on Language Development (Monolingual Infants and Toddlers) (continued)

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<tr>
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<tbody>
<tr>
<td>Wallace, Roberts, and Lodder (1998)</td>
<td>92 mother-infant dyads All African American 70% below poverty 30% above poverty 1-year-old infants</td>
<td>Relationship between maternal behaviors and language and cognitive development</td>
<td>Videotaped during an interview, a structured teaching task, and a semi-structured play session; coded using the MULTI-PASS and the Nursing Child Assessment Teaching Scale (NCATS) MDI (Mental Development Index) of Bailey SCID-R HOME (Home Observation for Measurement of the Environment Inventory)</td>
<td>1. Children of mothers who were rated as being more sensitive, responsive, elaborative, and stimulating received higher scores on the all development measures. 2. Mothers who expanded on their child’s verbal and nonverbal behavior and those who provided more cognitive and linguistic stimulation had children who scored higher on receptive communication. 3. Although maternal affective behavior contributed somewhat to early cognitive and language skills, the more didactic behaviors (elaboration and stimulation) were more strongly linked to outcomes. 4. Mothers in the lower income group had lower scores on six of the eight caregiving measures.</td>
</tr>
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</table>
### Matrix of Studies on Language Development (Bilingual Infants and Toddlers)

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<tbody>
<tr>
<td>Jackson-Maldonado, Thal, Marchman, Bates, and Gutierrez-Clellen (1993)</td>
<td>328 Spanish-speaking infants and toddlers</td>
<td>Do Spanish-speaking infants and toddlers show the same lexical development (nouns, verbs, adjectives, and grammatical function words) as English-speaking children?</td>
<td>Parent completed survey</td>
<td>1. Developmental language trends observed among the Spanish-speaking children were similar to those found in English-speaking children in other studies.</td>
</tr>
<tr>
<td>Junker and Stockman (2002)</td>
<td>30 toddlers (ages 24–27 months): 10 bilingual (German-English) 10 English-speaking 10 German-speaking</td>
<td>Do bilingual toddlers (German-English) show deficiency in vocabulary size or verb diversity compared with monolingual toddlers?</td>
<td>Parent completed Rescorla Language Development Survey</td>
<td>1. Bilingual toddlers were not deficient in conceptual vocabulary size and verb diversity when words in both languages were pooled. It seems that language separation is possible at age 2, given that nearly half of the bilingual conceptual vocabulary was associated with lexical forms in both languages.  2. Findings contribute to the growing body of evidence that early simultaneous acquisition of two languages is not disadvantageous to the child.</td>
</tr>
<tr>
<td>Oller, Eilers, Urbano, and Cobo-Lewis (1997)</td>
<td>83 infants (2–8 months) 58 English-speaking 29 bilingual (Spanish-English) Middle class</td>
<td>Is early babbling by bilingual infants delayed?</td>
<td>Parents tape recorded infant “canonical babbling”</td>
<td>1. Onset of canonical babbling in monolingual and bilingual children is “remarkably similar.”</td>
</tr>
<tr>
<td>Patterson (2000)</td>
<td>12 toddlers 21 to 27 months (M = 23 months) All bilingual (Spanish-English)</td>
<td>How reliable are parents’ reports of children’s word use? In bilingual families, what is the ratio of English to Spanish spoken by child?</td>
<td>Parent’s Spanish-English Vocabulary Checklist (SEVC) Videotaped 30 minutes of parent-infant play for language sample</td>
<td>1. Parents’ reports of whether child was combining Spanish and English words were consistent with videotaped observations.  2. Consistency of parents’ reports of vocabulary on the SEVC with observed child word use indicated that SEVC is a valid tool; in interviews, several parents added rich detail about child’s word use.  3. As a group, children used fewer Spanish than English words, although there was a wide range.</td>
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Matrix of Studies on Language Development (Bilingual Infants and Toddlers) (continued)

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<tbody>
<tr>
<td>Rescorla and Achenbach (2002)</td>
<td>National probability sample 278 children from 18 months to 3 years 157 European American 60 African American 35 Latino 24 Asian and other Class diversity in each ethnic group</td>
<td>Is language delay related to problem behaviors in toddlers? Do bilingual toddlers show deficiency in vocabulary size or phrase length compared with monolingual toddlers?</td>
<td>Language Development Survey (LDS) Child Behavior Checklist, ages 1½ to 5</td>
<td>1. Vocabulary scores were modestly correlated with SES (.14 for vocabulary score and .18 for phrase length) 2. European American children had significantly higher vocabulary scores and mean length of phrases than any other ethnicity, even when SES was controlled for (but the finding was interpreted cautiously because possible underreporting by African American parents has been reported on other language tools). 3. Rate of language delay was lower in the European American group (4%) compared with African American (29%) and Latino and Asian &amp; other (which were combined for analytic purposes; 24%); however, SES was not controlled. 4. Correlations between the LDS scores and problem scores on the CBC were low, indicating language delay and emotional/behavioral problems were not closely related for this sample of 18–35-month–olds. 5. Sixty-eight children (25%) were from bilingual homes, mostly Spanish-English; these children had significantly lower LDS scores but did not differ on length of phrases. There is a possibility that parents were more likely to give a full report of child’s phrases than to identify an LDS English equivalent in the child’s non-English vocabulary or these children were somewhat slower in acquiring vocabulary but are similar in phrase development.</td>
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### Matrix of Studies on Socioemotional Development

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| Black, Hutcheson, Dubowitz, Starr, and Berenson-Howard (1996) | 110 mother-child dyads
African American
Low SES
Urban | Mother-child interaction and developmental competence
Also, evaluation of the Parent-Child Early Relational Assessment (PCERA) scale for use with low-income African Americans | Dyads videotaped during lunch at infant age of 17 months; videotaped during play at infant age of 23 months, scored by the PCERA HOME (Home Observation for Measurement of the Environment Inventory) at infant age of 7 months
Bayley Mental Development Index
Batterelle Developmental Inventory
Infant Behavior Record from Bailey
Mothers: Brief Symptom Inventory
Parenting Stress Index | 1. Parental nurturance was consistent across feeding and play and was positively related to HOME score.
2. In the play context alone, nurturance was negatively related to parent affect and parenting stress.
3. Children with high levels of interactive communication exhibited lower rates of maladaptive behavior during testing, performed relatively well on standardized tests, and displayed lower levels of negative affect.
4. In both play and feeding contexts, parental control was positively related to child’s negative affect and positively related to parenting stress.
5. Among older children, there was a significant relationship between maternal nurturance and interactive communication; parental control was not related to children’s interactive communication. |
| Bornstein and Cote (2001) | 77 mother-infant pairs
37 Japanese American immigrants
40 South American immigrants
Infants: 5½ months
All middle SES | Relationship of mothers’ degree of acculturation and degree of individualism/collectivism to six domains of parenting behavior and to five domains of infant behavior | 50+ minute videotape coded for (a) six domains of parenting: nurturing, physical, social, language, didactic, and material and (b) five domains of infant behavior: physical, social, exploration, distress communication, and vocalization
Acculturation Scale
Individualism/Collectivism scale | 1. The level of acculturation was equivalent for both groups.
2. For Japanese American pairs, with SES controlled, no relationship was found between acculturation and mother’s behaviors.
3. For infants, no relationship was found between level of acculturation and infant behaviors.
4. Both groups were more collectivist than individualist; South American more so than Japanese American.
5. No relationship was found between mothers’ level of individualism/collectivism and mothers’ behavior.
6. No relationship was found between mothers’ level of acculturation and infants’ behavior. |
## Matrix of Studies on Socioemotional Development (continued)

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<tbody>
<tr>
<td>Cote and Bornstein (2001)</td>
<td>86 mothers of infants 42 Japanese American 44 South American (residing in United States) All middle SES Infants—5 months and again at 20 months</td>
<td>Ability of mothers’ cultural cognitions with respect to individualism and collectivism when infants were 5 months to predict parenting self-perception and knowledge when toddlers were 20 months</td>
<td>Individualism-Collectivism Scale Parental Attributions Questionnaire Self-perceptions of the parental role Knowledge of Infant Development Inventory</td>
<td>1. Both groups endorsed more collectivist than individualist statements. 2. For Japanese Americans, the more highly acculturated, the more likely they were to know about child development. 3. For Japanese Americans, a higher collectivist orientation at infant’s age of 5 months predicted effort (compared with ability) attributions with respect to childrearing at 20 months. 6. For Japanese Americans, a higher collectivist orientation at infant’s age of 5 months predicted more satisfaction with parenting at 20 months. 7. For South Americans, a higher collectivist orientation at infant’s age of 5 months predicted less knowledge of child development. 8. Both groups had relatively stable parenting cognitions over 15 months.</td>
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<tr>
<td>Carlson and Harwood (2003)</td>
<td>60 mother-infant pairs 28 Puerto Rican 32 European American All middle SES Infants at 4, 8, 12, and 13 months</td>
<td>Relationship between maternal sensitivity, emotional expression, and physical control during first year and attachment at 13 months</td>
<td>Videotapes of mother-infant dyads at 4, 8, and 12 months, rated for physical control, emotional expression, and emotional sensitivity Strange Situation at 13 months</td>
<td>1. Both groups showed similar percentages of securely attached infants (58% Anglo; 52% Puerto Rican). 2. Puerto Rican mothers used significantly more physical control than Anglo mothers. 3. Physical control was positively related to secure attachment among Puerto Ricans.</td>
</tr>
<tr>
<td>Caughy, O’Campo, and Muntaner (2004)</td>
<td>200 families African American Middle &amp; low SES Urban 3–4-year-olds</td>
<td>Parents’ style of coping with experiences of racism and the effect this has on the well-being of their children</td>
<td>Psychological Sense of Community Scale Parent’s Experience of Racial Socialization Scale Racism and Life Experiences Scale Child Behavior Checklist</td>
<td>1. Seventy-eight percent of parents reported experiencing racism in the past year or sometime during life. 2. There were no differences in the rate of behavior problems between parents who denied experiencing racism and those who did not deny; but those parents who denied that African Americans in general experience racism had children with higher rates of anxiety and depression. 3. Parents who reported experiencing racism and coping with an active response reported fewer symptoms of anxiety and depression in their children. 4. Those who did not respond could be depressed parents.</td>
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</table>
| Chen, Hastings, Rubin, Chen, Cen, & Stewart (1998) | 258 mothers and toddlers  
108 Canadian (Low & middle SES)  
150 Chinese (low & middle SES)  
Toddlers: 21–27 months (M = 24 months) | Child–rearing attitudes and beliefs  
The meaning of behavioral inhibition in different cultures | Structured laboratory procedure (Behavioral Inhibition Paradigm)  
Child-Rearing Practices Report  
Q-Sort | 1. Chinese toddlers more likely to display behavioral inhibition (high anxiety in novel social situations) than Canadian toddlers.  
2. Inhibition in Canadian toddlers was positively related with mothers’ orientation to punish and was negatively related with acceptance and encouragement to achieve. Canadian mothers more likely to see inhibited children as immature.  
3. Inhibition in Chinese toddlers was positively associated with warm and accepting qualities in mothers and was negatively related with rejection and orientation to punish the child. Inhibition is viewed as “restraint” in Chinese culture and associated with maturity and accomplishment.  
4. Maternal encouragement of independence was not correlated with inhibition for Canadian toddlers, but was positively correlated with inhibition in Chinese children.  
5. In both groups, mothers scored highest on encouragement of independence, second highest on encouragement of achievement and acceptance, and lowest on punishment and rejection. |
| Fracasso, Busch-Rossnagel, and Fisher (1994) | 50 mother-infant dyads  
26 Dominican American  
24 Puerto Rican  
All low SES  
13 months | Relationship between degree of acculturation and attachment security | Personal Information and Acculturation Interview  
Strange Situation  
In-home 30-minute “directed play” coded for maternal sensitivity | 1. Secure attachment was found among 50% of dyads in both samples, avoidant behavior in 30%, and ambivalent behavior in 20%.  
2. For both groups, girls were evenly divided (33%) in each attachment group, and 70% of boys were securely attached.  
3. Mothers of securely attached children engaged in more sensitive behaviors and more abrupt-interfering pick-ups, whereas mothers of insecurely attached children held their infants more during routine activities.  
4. No relationship was found between acculturation and attachment classification. |
Matrix of Studies on Socioemotional Development (continued)

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<tr>
<td>Gavin, Black, Minro, Abel, Papas, and Bentley (2002)</td>
<td>181 mothers, 109 partners (child's father)</td>
<td>Investigate fathers’ involvement with young infants and relationship between father and mother as well as father and grandmother</td>
<td>Paternal involvement scale completed separately by father and mother&lt;br&gt;Dyadic Adjustment Scale—quality of relationship between mother and father&lt;br&gt;Network of Relationship Inventories to assess grandmother-father relationship</td>
<td>Paternal involvement was defined as protection; caregiving; providing of material goods, comfort, and play; degree to which fed baby, changed baby, held baby.&lt;br&gt;1. Quality of father’s relationship with child’s mother was a significant determinant of paternal involvement.&lt;br&gt;2. Grandmothers as “gatekeepers.” The more grandmothers reported a positive relationship with father, the more father was involved with baby.&lt;br&gt;3. Employed fathers more likely to be involved than unemployed fathers.&lt;br&gt;4. Child’s gender was not associated with paternal involvement at this age.</td>
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<td>Gutierrez and Sameroff (1990)</td>
<td>60 mothers&lt;br&gt;20 moderately acculturated Mexican Americans&lt;br&gt;20 Highly acculturated Mexican Americans&lt;br&gt;20 European Americans&lt;br&gt;All middle SES&lt;br&gt;Average: 2 children of different ages</td>
<td>The relationship between biculturalism and cognitive flexibility</td>
<td>Interviews&lt;br&gt;Concept of Development Vignettes: assesses level of complexity of mother’s understanding of development&lt;br&gt;Acculturation Scale for Mexican Americans&lt;br&gt;Biculturalism Involvement Questionnaire</td>
<td>1. Highly acculturated Mexican American mothers demonstrated more cognitive complexity than European American or moderately acculturated Mexican American mothers when assessing vignettes about child development.</td>
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<td>Harwood, Schoelmerich, Schulze, and Gonzalez (1999)</td>
<td>48 mothers 18 Puerto Rican Working class 18 European American Working class 18 European American Middle class Firstborn between 12 and 15 months</td>
<td>Parental goals for children and whether mother-infant interactions vary according to these goals</td>
<td>Socialization Goals Interview: mother asked to describe qualities she would and would not like her child to possess as an adult and to describe children she knows who possess at least the beginnings of these positive and negative qualities. Used a rendition of the Strange Situation to discover mothers’ idea of ideal and undesirable child behaviors Open-ended interview for emic perspective</td>
<td>1. European American mothers emphasized self-maximization and self-control for the ideal child; they also spoke about modeling and providing opportunities for exploration as child-rearing strategies. 2. Puerto Rican mothers emphasized proper demeanor and decency for the ideal child; they also spoke about direct instruction as child-rearing strategy. 3. Both groups emphasized optimal emotional support and praise.</td>
</tr>
<tr>
<td>Hossain and Roopnarine (1994)</td>
<td>63 African American families 40 with both mothers and fathers working full time 23 with father working full time, mother working part time Infants &lt; 24 months ($M = 14$ months) Lower-middle to middle SES</td>
<td>Relationship of mother’s work hours, father’s functional style, and fathers’ involvement with infant</td>
<td>Parental Involvement in Childcare Questionnaire Family Functioning Style Scale Index of Social Support</td>
<td>1. Infant gender was not related to father’s involvement. 2. No differences were found in time fathers spent with children between the full-time mothers and the part-time mothers. 3. Fathers rated themselves as spending less time in all areas assessed: feeding, singing to infant, physical care of infants, bedtime routines, offering comfort when infant cried, and playing with infant.</td>
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</table>
| Kelley, Smith, Green, Berndt, and Rogers (1998) | 54 children, their fathers and mothers  
Primarily low SES  
African American  
Age of children: 1–3 years | Pattern of relationships between fathering (responsiveness and control) and children's developmental outcomes | Fathers videotaped playing with target children for 1½ hours.  
Coded with CARE-Index  
Parental Attitudes Toward Child Rearing Scale (PACQ)  
Parenting Attitude Research Scale  
Vineland Adaptive Behavior Scales  
Bayley Scales of Mental Development Index  
McCarthy Scales. | 1. Father's restrictiveness predicted lower levels of cognitive and social development.  
2. Paternal sensitivity positively predicted children's socialization and motor skills.  
3. Fathers acted with more sensitivity toward daughters.  
4. Results are similar to what might be predicted with White families and suggest that developmental processes may be similar. |
| Kubicek (2002)                   | 80 Mothers  
Low SES (Early Head Start)  
African American  
European American  
English dominant Latina  
Spanish dominant Latina | Social emotional exchanges during routine activities | Structured interview | 1. Many families viewed routines as an opportunity to engage in social emotional exchanges.  
2. Most mothers provided opportunities to participate actively in family routines.  
3. Most mothers engaged in at least one child-focused activity each day. |
| Martini (2002)                   | 278 families  
50 Filipino American  
120 Japanese American  
60 European American  
48 Native Hawaiian | Parents' structuring of environment for infant at mealt ime | Videotaped typical mealtimes at families' homes  
Questionnaires | 1. Mothers in the four groups expressed different messages with respect to autonomy and ways to fit in the group.  
2. Filipino and Japanese American mothers were most affectionate toward the infant but also tried to control the infants' behavior subtly.  
3. European American mothers focused on promoting autonomy and were more distant in their interactions with infants.  
4. Hawaiian mothers focused on autonomy but also emphasized conformity to the group. |
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<tr>
<td>Mosier and Rogoff (2003)</td>
<td>32 toddlers, their mothers and siblings&lt;br&gt;16 Guatemalan&lt;br&gt;16 European American Middle SES in each country&lt;br&gt;Age of infants: 14–20 months</td>
<td>Parents’ expectations about sharing between toddlers and their (3–4-year-old) siblings</td>
<td>Interviews&lt;br&gt;Structured procedure in home setting</td>
<td>1. Guatemalan mothers expected the older siblings to yield to the desires of the toddlers to access toys.&lt;br&gt;2. European American mothers expected the toddlers and the older siblings to abide by the same rules for sharing toys.</td>
</tr>
<tr>
<td>Schoelmerich, Lamb, Leyendecker, and Fracasso (1997)</td>
<td>82 mother-infant pairs&lt;br&gt;Central American (recent immigrants to the United States) (low SES)&lt;br&gt;European American (middle SES)&lt;br&gt;Infants at ages 4, 8, and 12 months</td>
<td>Relationship between mother-infant interaction during teaching of specific tasks and level of attachment security</td>
<td>Mothers asked to teach infants three tasks for each age period (4, 8, 12 months) Strange Situation at 13 months</td>
<td>1. In both groups, when mothers engaged in didactic behavior, infants responded by exploratory behavior toward the target object.&lt;br&gt;2. Central American parents spent 40% to 60% more time teaching their infants than European Americans.&lt;br&gt;3. European American mothers vocalized more compared with the other group, although this observation may be confounded by SES (higher SES tends to vocalize more).&lt;br&gt;4. Individual differences in maternal teaching activity were relatively unstable over the year for all groups.&lt;br&gt;5. Maternal teaching behaviors and vocalization patterns were unrelated to attachment classifications.&lt;br&gt;6. There were differences in frequency of specific behaviors, but the style of behaviors was similar across groups.</td>
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<td>Smyke, Boris, and Alexander (2002)</td>
<td>68 African American mothers Lower SES Mean = 2 children</td>
<td>Mother’s beliefs with respect to spoiling infants</td>
<td>Spoiling Questionnaire Beck Depression Inventory Adult-Adolescent Parenting Inventory Maternal Efficacy Questionnaire</td>
<td>1. Sixty percent of mothers believed it was possible to spoil infants under the age of 5 months. 2. Mothers with higher concerns about spoiling demonstrated signs of depression, reduced maternal empathy, and inappropriate developmental expectations.</td>
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<tr>
<td>Tyler, Boykin, Boelter, and Dillhunt (2005)</td>
<td>71 mothers African American Low SES Children were from first to sixth grade</td>
<td>The degree to which African American parents socialize their children toward communalism and verve versus individualism and competition</td>
<td>Cultural Socialization Scales capturing four socialization themes: communalism, verve, individualism, and competition</td>
<td>1. Parents reported communal socialization (sharing and working for the good of the group, deferring to others’ wishes) significantly more often than the three remaining themes. 2. Unexpectedly, parents marginally endorsed individualistic socialization practices (encouraging separation and self-reliance). 3. Unexpectedly, parents did not endorse verve as a preferred style of socialization (doing several things at once, doing activities differently each time they are done).</td>
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