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# Interpreting the Early Language Trajectories of Children From Low-SES and Language Minority Homes: Implications for Closing Achievement Gaps

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On average, children from low socioeconomic status (SES) homes and children from homes in which a language other than English is spoken have language development trajectories that are different from those of children from middle-class, monolingual English-speaking homes. Children from low-SES and language minority homes have unique linguistic strengths, but many reach school age with lower levels of English language skill than do middle-class, monolingual children. Because early differences in English oral language skill have consequences for academic achievement, low levels of English language skill constitute a deficit for children about to enter school in the United States. Declaring all developmental trajectories to be equally valid would not change the robust relation between English oral language skills and academic achievement and would not help children with poor English skills to be successful in school. Remedies aimed at supporting the development of the English skills required for academic success need not and should not entail devaluing or diminishing children's other language skills.

*Keywords:* language development, bilingual development, socioeconomic status, achievement gaps

Children who come from a lower socioeconomic status (SES) and children who come from homes in which a language other than English is spoken have language trajectories that are different from those of children from middle-class, monolingual English-speaking homes, and, on average, they have different language skills when they reach school age (e.g., Brooks-Gunn, Rouse, & McLanahan, 2007; Hernandez, Denton, & Macartney, 2007). In U.S. schools, many lower SES and language minority children underperform compared with their middle-class, English monolingual counterparts. Differences in language skills are often seen as a cause of these achievement gaps (for discussion, see Morrison, Bachman, & Connor, 2005; Oller & Eilers, 2002). Two different, and not mutually exclusive, arguments have been made for both these populations as to how their language skills could cause the frequently observed achievement gaps. One argument is that the less successful children are deficient in their English language skills, and the children's difficulties arise from these language deficits. The other argument is that the less successful children have different but not deficient language skills, and their academic difficulties arise from a mismatch between the skills the children possess and the skills that schools require.

For both low-SES and language minority children, then, the question of whether developmental differences should be inter-

preted as deficits to be remedied or as differences to be embraced has been posed. The difference-deficit debate was central to discussions in the 1960s and 1970s of the language skills of low-SES children and the appropriate approach to intervention (e.g., Feagans & Farran, 1982; Williams, 1970). Although not explicitly labeled as a difference-deficit debate, the value placed on the language skills of children who speak a minority language also underlies controversy over the best approach to their education (e.g., Baker, 2001; Faltis, 1997). This article aims to make two contributions to these longstanding debates.

The first aim of this article is to argue for a pragmatic approach in which the interpretation of differences in developmental trajectories and recommendations regarding remediation are guided by data on the causes and consequences of those differences. This is not a novel idea but rather is a commonsense and frequent approach to interpreting differences. For example, low musical ability is interpreted and treated differently from low language ability because of their different consequences, and short stature as a result of normal genetic variability is interpreted and treated differently from short stature as a result of malnutrition or illness because of their different sources. If some language development trajectories have negative consequences for children's ultimate achievement, then perhaps those trajectories are not as desirable as trajectories that lead to academic success. If the trajectories with negative consequences have causes that can be remedied, perhaps efforts should be directed toward that goal. According to this argument, the question of how to interpret and respond to differences between the language development trajectories of children from low-SES or minority language homes and their monolingual, middle-class peers depends on the answers to two empirical questions: (1) What are the consequences of the differences? and (2) Are the sources of those differences potential targets of intervention?

The second aim of this article is to address those empirical questions with the currently available evidence. Toward that end, this article reviews the literatures on the nature of the early

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language development trajectories of low-SES and language minority children, on the role of early oral language skills in explaining the achievement gaps that are characteristic of both groups of children, and on the source of the language skills that place these children at an educational disadvantage. The research is reviewed separately for each population and discussed together in a concluding section.

## **Early Language and Academic Achievement in Children From Low-SES Homes**

### **Who Are the Children From Low-SES Homes?**

Children who come from low-SES homes are children whose parents have low levels of education, income, and/or occupational prestige. Children who live in poverty represent the extreme of the SES distribution, and in the United States that group includes an estimated 22% of all children (Tavernise, 2011). However, maternal education may be the component of SES most relevant to children's language development, and there are effects of maternal education on children's language in samples that are above the poverty threshold (Hoff, 2006; Hoff, Laursen, & Bridges, 2012; Huttenlocher, Waterfall, Vasilyeva, Vevea, & Hedges, 2010). Thus, the number of children whose language development reflects influences of low SES is likely to be greater than 22% of all children in the United States.

### **What Are the Early Language Trajectories of Children From Low-SES Homes?**

Children from low-SES homes show lower levels of oral language skill than do children from more advantaged backgrounds on measures of language processing, language comprehension, and language production from infancy through high school, and the gap widens with age (Fernald, Marchman, & Weisleder, 2012; Hoff, 2006; Huttenlocher et al., 2010). Different studies use different indices of SES (Brooks-Gunn et al., 2007; Hoff et al., *in press*), but the effect of SES is sufficiently robust that it appears across different measurement approaches. The relation of SES to early language also appears within and across different ethnic groups, suggesting that although SES and minority group status are frequently confounded, the effects of SES are not merely ethnic differences, relabeled (Hoff, 2006).

Vocabulary size appears to be the aspect of language most sensitive to the effects of SES. Hart and Risley's (1995) well-known study documented differences in vocabulary size among children of professional, working class, and low-SES families that were observable from almost the beginning of speech and that increased with development. By 3 years of age, the higher SES children in Hart and Risley's study had produced over 1,000 different words, while the lower SES children had produced half that many, and these findings are not anomalous in the literature. Arriaga, Fenson, Cronan, and Pethick (1998) found that 80% of a sample of low-SES children between 18 months and 30 months scored below the 50th percentile in productive vocabulary, using a test normed on a mid- to high-SES reference group. Other studies using spontaneous speech, maternal report, and standardized tests to assess productive and receptive vocabulary have also found SES-related differences, with the size of the difference in vocab-

ulary depending on the size of the difference in SES represented in the sample (Dollaghan et al., 1999; Hoff, 2003; Hoff-Ginsberg, 1998; Pan, Rowe, Singer, & Snow, 2005; Rescorla, 1989; Rowe & Goldin-Meadow, 2009).

Grammatical development is also affected by SES. Higher SES children outperform lower SES children on standardized language tests that include measures of grammatical development (Dollaghan et al., 1999; Morisset, Barnard, Greenberg, Booth, & Spieker, 1990); they produce more complex utterances and use a greater variety of syntactic structures in spontaneous speech (Huttenlocher et al., 2010; Vasilyeva, Waterfall, & Huttenlocher, 2008), and they perform better on tests of complex syntax comprehension (Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002). As Hart and Risley (1995) found for vocabulary, these differences appear early and do not diminish with development—at least not before 54 months of age. In Arriaga et al. (1998), 70% of the lower SES sample scored below the 50th percentile on a measure of the grammatical complexity of their utterances. Although the pattern of findings and effect sizes across multiple studies suggests that the SES effect on vocabulary may be larger and more robust than the effect on grammatical development, the effect on grammatical development is not necessarily small or inconsequential for the children. The low-income children studied by Snow (1999) were more than a year behind norms derived from a middle-class sample in the length of their utterances in spontaneous speech.

In addition to these SES-related differences in vocabulary and grammar, there are SES-related differences in children's narrative skills, in their phonological awareness, and in their speed of language processing. The narratives produced by lower SES children are less sophisticated than the narratives produced by middle-class children of the same age, when assessed in terms of topic coherence and independence from the nonlinguistic context (Heath, 1983; Vernon-Feagans, Hammer, Miccio, & Manlove, 2001). Lower SES children show lower levels of phonological awareness than do middle-class children, with the size of the SES-related difference increasing from the ages of 2 years to 5 years (Bowey, 1995; Lonigan, Burgess, Anthony, & Barker, 1998; McDowell, Lonigan, & Goldstein, 2007). Lower SES children are also slower in accessing the words they know (see Fernald et al., *this issue*). It is important also to note that neither low- nor high-SES children are monolithic in their language skill, that substantial individual differences exist within both populations, and that the distributions of skills among lower and higher SES children overlap (Hoff, 2003; Pan et al., 2005). Nonetheless, the effect of SES on children's early language skills is large, pervasive, and robust.

### **What Are the Consequences of SES-Related Differences in Early Oral Language Skill?**

Three types of findings address the question of whether these SES-related differences in early language skills have consequences for children's academic achievement, including (1) findings that SES is related to children's academic achievement, (2) findings that oral language skills are related to academic achievement, and (3) findings that suggest that oral language skills mediate the relation between SES and academic achievement. In some of the studies to be reviewed, the outcome variable is academic achieve-

ment broadly defined; more frequently, it is the narrower outcome of literacy. However, literacy skills are an important component of academic achievement and a predictor of academic success more broadly defined, as evidenced, for example, by the high rate of school dropout among youth who have difficulty with reading (Durham, Farkas, Hammer, Tomblin, & Catts, 2007; Lloyd, 1978).

**The relation of family SES to children's academic achievement.** Across different measures of SES and different academic outcomes, a large body of research spanning decades has made it clear that family SES predicts not only children's academic skills at school entry but also their academic trajectories through high school (Alexander & Entwisle, 1988; Brooks-Gunn et al., 2007; Morrison et al., 2005; Stipek & Ryan, 1997; Willms, 2003; Zill, Collins, West, & Hausken, 1995). *The Nation's Report Card*, an assessment of the academic performance of a nationally representative sample of U.S. students at ages 9, 13, and 17 years, found that differences among children in their parents' levels of education are related to differences among children in their scores in all areas of schooling assessed; this includes reading, math, and science (National Center for Educational Statistics, 2000). These differences have appeared every year since data collection began in 1969; they have been stable over that time period, and the size of the differences can be substantial. To illustrate, the average reading score at age 13 of children whose parents had some education past high school was higher than the average reading score at age 17 of children whose parents had less than a high school education. The relation between SES and academic achievement appears across nations—although to different degrees depending on the size of the inequalities that exist (Keating & Hertzman, 1999; Willms, 2003).

**The relation of early oral language skills to the achievement of literacy.** The findings of multiple studies indicate that the different academic paths followed by children from different socioeconomic strata have their roots in skill differences established even before children start school and that differences in language skill are a significant component of these early differences (Dickinson & Tabors, 2001; Morrison et al., 2005; Snow, Burns, & Griffin, 1998). Children's oral language skills prior to reading instruction, including vocabulary, grammar, and narrative abilities, have been found to predict reading success (Muter, Hulme, Snowling, & Stevenson, 2004; NICHD Early Child Care Research Network, 2005; Roth, Speece, & Cooper, 2002; Scarborough, 2001). The metalinguistic skill of phonological awareness is a particularly strong predictor in the early stages of learning to read when the major hurdle for children is to learn to use letter-sound correspondences to decode printed text (i.e., to sound out words; Schatschneider, Fletcher, Francis, Carlson, & Foorman, 2004). Some research findings have suggested that oral language skill broadly construed is a stronger predictor of literacy than any isolated component (Dickinson, McCabe, Anastasopoulos, Peisner-Feinberg, & Poe, 2003; Lonigan, Schatschneider, Westberg, & the National Early Literacy Panel, 2008; NICHD Early Child Care Research Network, 2005).

**Oral language skills as the mediator of SES-related differences in literacy achievement.** It is possible, in principle, that language skills are not the source of the SES-related differences in children's school achievement. There are multiple nonlinguistic correlates of SES that also affect children's academic achievement and could contribute to the relation of SES to academic achieve-

ment. These include mothers' prenatal nutrition, the children's physical health, their parents' involvement in their academic work, the level of chaos in their households, the amount of sleep they get (Buckhalt, 2011), and perhaps a host of noncognitive abilities (Heckman, Stixrud, & Urzua, 2006).

A direct test of the hypothesis that oral language skills mediate the relation between SES and academic achievement that was conducted using longitudinal data from a large sample of White, midwestern children (thus eliminating race and cultural variation as confounds) found that children's oral language skill at kindergarten entry explained most of the effect of SES on elementary school performance (Durham et al., 2007). Findings of three other studies have also suggested that oral language skill has a real effect on literacy achievement and is not just a covariate of other SES-related influences or a marker of shared genetic influence. A follow-up study of the children first studied as toddlers by Hart and Risley (1995) found vocabulary size at 36 months to be a significant predictor of reading and spelling skills from kindergarten through third grade, holding the effects of SES constant (Walker, Greenwood, Hart, & Carta, 1994). Analysis of data from the NICHD Early Child Care Study found that oral language skills at 54 months predicted first grade reading scores within SES (NICHD Early Child Care Research Network, 2005). Last, a longitudinal study of 7,179 twin pairs found evidence for a direct causal influence of early language skill on subsequent reading skill (Harlaar, Hayiou-Thomas, Dale, & Plomin, 2008).

### What Are the Sources of SES-Related Differences in Early Oral Language Skills?

A substantial body of evidence has argued that differences in language experience are the primary cause of SES-related differences in children's oral language skills. Compared with mothers with more education, mothers with less education talk less to their children, and the nature of the speech they address to children is less supportive of language development than is the speech of more educated mothers. Lower SES mothers address speech to their children more frequently for the purpose of directing their children's behavior and less frequently for the purpose of eliciting and maintaining conversation (Hart & Risley, 1995; Hoff, 2006). In talking to their children, lower SES mothers make use of a smaller vocabulary and syntactic structures that are less varied and less complex, compared with higher SES mothers (Hoff, 2003; Huttenlocher, Vasilyeva, Waterfall, Vevea, & Hedges, 2007). Multiple studies have found that the properties characteristic of higher SES mothers are positive predictors of children's language development—even within SES (Hoff, 2006; Huttenlocher et al., 2010). One study found that properties of maternal speech fully mediated an SES-related difference in 2-year-olds' vocabulary (Hoff, 2003). Evidence that the relation between input and language acquisition is causal, and not just a reflection of genetically based similarity in the verbal skills of mothers and children, comes from studies of teacher input effects. Children whose teachers provide more language-advancing input progress more in their language over the course of the school year than do children with teachers whose language use is less supportive (Dickinson & Porche, 2011; Huttenlocher et al., 2002).

## **Are the Early Language Skills of Low-SES Children a Deficiency to Be Remedied, or a Difference to Be Accommodated by Schools?**

The argument has been made that low-SES children have unique linguistic strengths that are not captured by the procedures and tests most frequently used in research. The evidence put forward in support of this argument has tended to be in the form of ethnographic studies of specific populations and sometimes of particular uses of language that are unique to those populations. For example, Heath (1983) described the narrative skills displayed by young boys in a rural, lower SES African American community in the southeastern United States. Boys under the age of 4 years were able to hold the floor and engage the attention of adults with the stories they told, using a variety of poetic devices, sound effects, and accompanying movement. The narrative cohesion that is part of standard assessments of children's narrative skill is not a valued property of stories in this community. Similar skills in low-SES African American boys have been described by Vernon-Feagans et al. (2001), who also described the children's narratives as being jointly constructed with other, older children—in contrast to the narrative performances of mainstream children, which are often monologues. Research with both European American and African American children has described the other complex skill sets that lower SES children must master, including those used in teasing interchanges (Miller, 1986); in ritualized insults (Abrahams, 1962); and in the combination of improvisational rhymes, steps, and hand claps that form the “steps” performances of preadolescent African American girls (Gilmore, 1986). In addition to their description of the particular skills of particular groups, these studies have made the broader point that there is substantial sociocultural variation in norms for language use that can make children from nonmainstream backgrounds look deficient when viewed from the perspective of mainstream expectations, while they are not at all deficient according to the norms for their own group. A similar argument applies to the interpretation of standardized test scores, which are frequently developed and normed using middle-class reference groups and may not tap the skills of children from other backgrounds.

The measures on which low-SES children appear deficient, however, include many that predict academic achievement. In contrast, the language strengths of low-SES children do not appear to be in domains that contribute to academic success. In fact, one study found the unique narrative style described for low-SES African American children to be a negative predictor within that population, with more skillful children having lower literacy scores (Vernon-Feagans et al., 2001). The unique skills of low-SES children and the inadequacy of standardized tests notwithstanding, the diverging trajectories of language development that characterize lower and higher SES children put lower SES children at an educational disadvantage when they reach school age. By the pragmatic criterion of usefulness for academic success, the different skills of lower SES children constitute a deficit.

A remaining question, unanswered in the research reviewed, is whether the approach of schools could be modified to depend less on the language skills that are areas of weakness for lower SES children and make use of their unique linguistic strengths. It seems unarguable that schools could always do better to capitalize on the skills children bring to the classroom. However, the clear impli-

cation of the research on literacy is that the language skills that predict literacy are requirements of the reading process and not just the requirements of a particular pedagogical approach. Children need to be able to decompose words into individual sound segments (phonological awareness) in order to decode the printed word, and they need to know the vocabulary and grammatical structures they are reading to extract meaning. Compared with children from more advantaged backgrounds, lower SES children have deficits in these language skills, which literacy requires.

## **Early Language and Academic Achievement in Children from Language Minority Homes**

### **Who Are the Children From Language Minority Homes?**

In the United States, one in five children live in households in which a language other than English is spoken (Federal Interagency Forum on Child and Family Statistics, 2011). The majority of these children were born in the United States and have one or two foreign-born parents (Hernandez et al., 2007; Lesaux & Kieffer, 2010; Place & Hoff, 2011). Language use in these households can range from exclusive use of the heritage language to English dominance (Eilers, Pearson, & Cobo-Lewis, 2006; Lesaux & Kieffer, 2010; Oller & Eilers, 2002; Place & Hoff, 2011).

### **What Are the Early Language Trajectories of Children From Language Minority Homes?**

Early trajectories of language development among children who hear a language other than English at home vary widely. Some, who hear only the minority language at home, develop as monolingual speakers of their parents' heritage language until they begin preschool or kindergarten. Many children from language minority homes develop as bilinguals, but they vary in the balance of their English and heritage language skills. Some bilingual children from language minority homes have English skills on a par with monolingual English-speaking children, but many do not. Studies of preschool children with sufficient sample sizes for statistical comparison find that on average, children who are acquiring two languages have lower levels of skill in each language than do monolingual children (Marchman, Fernald, & Hurtado, 2010; Thordardottir, Rothenberg, Rivard, & Naves, 2006; Vagh, Pan, & Mancilla-Martinez, 2009)—even when matched for SES (Hoff et al., 2012). Significant differences appear both in vocabulary and in grammatical development. It is important to point out that children learning two languages do not learn language in total at a slower rate. Measures of bilingual children's total language knowledge, combined across both their languages, show that bilingual children equal or exceed monolingual children in their rates of vocabulary development (Hoff et al., 2012; Pearson, Fernández, & Oller, 1993; Thordardottir et al., 2006) and, in one study, grammatical development as well (Thordardottir et al., 2006).

There is little research on trajectories of bilingual development from 2 1/2 years to the age of school entry, and then the literature resumes—describing the English language skills of children from language minority homes at school entry. The clear and consistent finding from this work is that children exposed to a language other than English at home enter school with lower levels of English

skill than do monolingual children (e.g., Castro, Páez, Dickinson, & Frede, 2011). In the low income samples that are the focus of much of the research, Latino dual language learners at 4 and 5 years of age score one to two standard deviations below monolingual norms in receptive and expressive vocabulary and in auditory comprehension (Hammer, Lawrence, & Miccio, 2008; Páez, Tabors, & López, 2007; Tabors, Páez, & López, 2003). Low-SES Latino dual-language learners in prekindergarten and kindergarten programs have lower phonological awareness and letter identification abilities than do monolinguals (Hammer & Miccio, 2006; Hammer, Miccio, & Wagstaff, 2003; Páez et al., 2007; Tabors et al., 2003). The findings of multiple studies in the United States have led researchers to refer to a “school readiness gap” between low-income bilingual children and monolingual middle-class children (Castro et al., 2011).

It is not clear how much of the gap in school readiness characteristic of low-SES Latino children is a function of SES and how much is a function of their dual language exposure. Large samples of children from high-SES bilingual homes have not been studied—in part because in the United States bilingual homes are disproportionately low-SES homes (Haskins, Greenberg, & Fremstad, 2004). Although the size of the contributions of SES and dual language exposure are not known, there is evidence that SES is not likely to fully account for the difference between language minority and middle-class monolingual children. In their study of Spanish–English bilingual children and English monolingual children in Miami, Oller and Eilers (2002) found independent and additive effects of SES and language exposure at home on children’s English language skills. Using census data, Hernandez (2004) found that low income and exposure to a language other than English at home (and the concomitant reduced exposure to English) are both risk factors.

Another unanswered question is whether and when bilingually developing children catch up to monolingual children in their levels of English language skills. Data from the United States have suggested that children from language minority backgrounds do not catch up to their monolingual peers in vocabulary (Mancilla-Martinez & Lesaux, 2011)—even by the age of 11 years. One study of French–English bilinguals in Montreal reports a significantly diminished monolingual–bilingual gap by the age of 5 years (Thordardottir, 2011). Studies in Wales have found that children who hear only Welsh at home catch up to monolingual English-speaking children in their English language skills by the age of 9 years (Gathercole & Thomas, 2009). In the United States, a follow-up of some of the children studied in Hoff et al. (2012) indicated that the bilingual children had caught up to monolingual norms in English by the age of 4 years—although not their SES-matched monolingual age mates—and they also had slipped relative to monolingual norms in their Spanish skills (Hoff, Rumiche, & Lago, 2012). In fact, a common developmental trajectory among children in immigrant communities is to become increasingly dominant in the community language as they get older (Najafi, 2011; Pearson, 2007). To many, this loss of heritage language proficiency is as great an issue as the achievement of majority language proficiency (Fillmore, 1991). In sum, although the literature at this point does not provide a full description of the trajectories of English language development in children from language minority homes with the effects of dual language exposure isolated from effects of other, correlated variables, it is

nonetheless clear that there is a substantial population of children from language minority homes who reach school age with levels of English oral language skills that are obstacles to their academic success (Shatz & Wilkinson, 2010).

### What Are the Consequences of Language Minority Children’s Early Oral Language Skill?

As was the case for examining consequences of the language skills of low-SES children, the question of whether the language skills of children from language minority homes affect their academic achievement is addressed by three types of findings: (1) findings that language minority status is related to academic achievement, (2) findings that oral language skills are related to academic achievement—and this question takes a different form for children who have skills in two languages—and (3) findings that indicate a role for language skills in mediating the relation between language minority status and academic achievement.

**The relation of language minority status to children’s academic achievement.** In the United States, 31% of children who speak English but who hear a language other than English at home fail to complete high school, compared with 10% for students who speak only English at home (National Center for Education Statistics, 2004). Latino dual language learners, who are the largest segment of bilingual children in the United States, have lower levels of school achievement than do non-Hispanic Whites throughout school (National Center for Education Statistics, 2006). This phenomenon is not unique to the United States. In many other countries as well, low levels of academic achievement characterize the children of immigrants and are cause for national concern (Scheele, Leseman, & Mayo, 2010).

Because language minority status is confounded with SES in the United States, it is difficult to isolate the effect of language minority status on academic achievement. Some evidence has suggested that the effect observed in the United States—and elsewhere—is not solely a function of the children’s dual language environment and resultant language skills but rather also reflects the lower social prestige of minority languages. It is argued, in this vein, that bilingual children do not differ in academic achievement from monolingual children in countries where bilingualism is a stable phenomenon and where both languages enjoy some measure of prestige. For example, data from Welsh–English bilingual children have suggested they do not suffer academic hardship (Gathercole, 2010), although it may also be relevant that in Wales, parents have the option of sending their children to Welsh language schools. Perhaps relatedly, some evidence has suggested that educational programs that provide instruction in language minority children’s heritage language do a better job of supporting academic success among language minority students than do other educational approaches (Genesee & Lindholm-Leary, 2012).

**The relation of language minority children’s oral language skills to academic achievement.** The evidence that oral language skills in English are related to literacy and academic achievement, which was reviewed as it pertained to low-SES children, is also relevant to the question of whether low levels of English skill cause difficulties for children from language minority homes. The data from monolingual children have made it clear that low levels of English oral language skill are a handicap in school. However, the relations could be different for children who know

two languages, either because their English skills do not fully reflect the abilities they bring to the task of achieving in school or because their skills in another language transfer to English literacy tasks. Here we review the evidence on the relation of English oral language skills to the acquisition of literacy and academic achievement in English among language minority children, and we also review the evidence on the relation of language minority children's skills in their heritage language to their acquisition of English literacy.

A recent systematic evaluation of the literature concluded that the relation of English language skills to the acquisition of English literacy in bilingual children is much the same as it is for monolingual children (August & Shanahan, 2006). Phonological processing skills, including phonological awareness, are strong predictors of decoding skills; other skills, including vocabulary size, matter less at the decoding stage. Reading comprehension, however, does depend on broad English oral language skills, including vocabulary knowledge and syntactic skills (August & Shanahan, 2006). Subsequent studies have also found that English oral language skills have a large effect on English reading comprehension among elementary school children from Spanish-speaking homes (Gottardo & Mueller, 2009; Lesaux, Cross, Kieffer, & Pierce, 2010).

There are also relations between bilingual children's oral language skills in their home language and their acquisition of literacy in English. Phonological awareness, morphological awareness, and higher order comprehension skills acquired and assessed in the heritage language appear to transfer to the task of learning to read in English (Durgunoğlu, 2009; Geva & Wang, 2001; Riches & Genesee, 2006). Throughout elementary school, literacy skills in one language are correlated with literacy skills in the other language, more so than oral language skills correlate across languages (Oller & Eilers, 2002). Although there remain unanswered questions about the degree to which such language transfer may differ among different heritage languages and may depend on the level of proficiency achieved in that language (Oller & Jarmulowicz, 2007), the conclusion this work suggests is that bilingual children need to know the vocabulary and grammar of the language in which they will learn to read but that their prior experiences with language and literacy in another language will also confer benefits. Relatedly, children's early experience with books in their first language is predictive of their reading comprehension skills in the second language (Goldenberg, Reese, & Rezaei, 2011). Bilingual children may also derive academic benefits from the metalinguistic and cognitive advantages associated with bilingualism. In particular, the greater phonological awareness found in Spanish-English bilingual children compared with English monolingual children (Bialystok, Majumder, & Martin, 2003) should help in the early stages of the acquisition of English literacy.

**Oral language skills as the mediator of the language minority gap in academic achievement.** Although there is agreement that proficiency in oral English is necessary for academic success in the United States, some evidence has suggested that low oral language skills in the majority language do not carry the same negative implication for academic achievement in bilingual children as they do in monolingual children. For example, elementary school bilingual children have been found to perform better in verbal memory tasks than their single-language vocabulary size would predict, even though vocabulary is a predictor of task

performance in both monolinguals and bilinguals (Bialystok & Feng, 2011), and bilingual students in college have been found to have higher grade point averages than their SAT scores would predict, although SAT scores predict grade point in both monolinguals and bilinguals (Pearson, 1993). A more profound argument for why low language skills are not the same risk factor for bilingual children as they are for monolingual children has to do with the relation between language skills and their antecedents in experience (Snow, 1982). For monolingual children, the size of their vocabulary is a gauge of the richness of their experience. Bilingual children have experiences in another language that build their understandings of the world but are not reflected in their English language vocabularies. The literature does not provide data that would allow estimating the portion of the achievement gap between children from language minority and monolingual homes that is attributable solely to differences in English oral language skill at school entry.

### What Are the Sources of the Different Early Oral Language Skills in Language Minority Children?

Because the average level of education and average level of income among parents in language minority homes is lower than the national average (Hernandez, 2004), it is likely that some portion of the differences in English language skill between language minority and monolingual children reflect the effects of SES. However, the English skill differences between monolingual English-speaking children and language minority children likely also reflect differences in exposure to English. Studies of monolingual development have clearly demonstrated that the amount of talk addressed to children predicts the children's rates of language development (Hoff, 2006). Studies of bilingual development have indicated that bilingual development is not exempt from the requirement of language exposure—among bilingual children, their relative amount of exposure to each language is correlated with both their relative and absolute levels of development in each language (e.g., De Houwer, 2009; Gathercole & Thomas, 2009; Goldenberg, Rueda, & August, 2006; Hoff et al., 2012; Pearson et al., 1997; Place & Hoff, 2011; Saunders & O'Brien, 2006). Because children who are exposed to a language other than English at home are likely to hear less English than are children in monolingual English-speaking homes, their English language development lags behind that of monolingual English-speaking children.

Language minority children's English skills not only reflect how much exposure to English they have had but also the sources of that English exposure. Children who hear English from several different people have more advanced English skills than do children who have fewer sources of English exposure, over and above effects of the amount of time children are exposed to English (Place & Hoff, 2011). This may be an effect of the density of language exposure provided by multiple speakers, or it may be an effect of the richness and variability in input that comes from hearing multiple speakers.

The findings of two studies have suggested that English input provided by native speakers of English is more supportive of English language development than is input provided by nonnative speakers. Place and Hoff (2011) found that together the number of different English speakers and the proportion of English input

provided by native speakers were a significant source of variance in bilingual 2-year-olds English language skills, over and above the variance accounted for by the number of hours of English exposure. Hammer, Davison, Lawrence, and Miccio (2009) found in a sample of Head Start children with Spanish-speaking parents that children whose parents spoke more English to them did not have stronger English skills, but they did have weaker Spanish skills.

In sum, although the ability of children to acquire language is remarkable, it is not magical. Language acquisition depends on the amount and nature of language exposure. In the long run, exposure to two languages potentially yields the benefit of proficiency in two languages. In the short run, however, children exposed to and acquiring two languages will acquire each at a somewhat slower rate than will children acquiring one (Hoff et al., 2012), and many children from language minority homes will not have had sufficient exposure to English to achieve the same level of oral language skill as have monolingual English-speaking children by the time they enter school.

### **Are the Early Language Skills of Language Minority Children a Deficiency to Be Remedied, or a Difference to Be Accommodated by Schools?**

Bilingual children have an obvious skill that monolingual children do not: They know two languages. The fact that many adults spend a great deal of money trying to learn a second language suggests a certain consensus that knowing two languages is a desirable developmental outcome. (The language instruction software company Rosetta Stone reported \$173.8 million in U.S. sales for 2010; Rosetta Stone, 2011). In addition to the social and economic value of bilingualism for anyone who speaks two languages, bilingualism has a particular benefit for the children of immigrants. Bilingualism allows them to communicate with their parents and grandparents, who may not be proficient in English. Good family relations, successful social adaptation, and school success have all been found to be related to children's ability to speak their heritage language (Oh & Fuligni, 2010; Tseng & Fuligni, 2000). Despite this, bilingualism is not a universally valued outcome. Often in the United States, the ability to speak a language other than English is a valued skill for children of the middle class but not for children from lower SES homes, whose other language is the heritage language of their immigrant parents.

Bilingualism confers advantages beyond the ability to speak another language. Bilingual children and adults reliably show superior performance on a range of tasks related to executive function and attentional control (Akhtar & Menjivar, 2012; Bialystok, 2005, 2009; Bialystok, Craik, & Freedman, 2007; Wodniecka, Craik, Luo, & Bialystok, 2010). Bilingual children show more advanced metalinguistic skills than do monolingual children (Bialystok, 2009; Bialystok & Feng, 2011), and some studies have found bilingual children to have more advanced concepts of print than do monolinguals (Bialystok & Feng, 2011). Spanish-English bilingual children show greater phonological awareness than do monolingual English-speaking children (Bialystok et al., 2003), perhaps because the transparency of Spanish orthography makes the principle that letters stand for sounds more apparent. Some findings have suggested that living in bilingual environments fosters children's development of the ability to understand the intentions and knowledge of others (Akhtar & Menjivar, 2012).

Although there are multiple ways to make the point that bilingualism is a difference that should be valued and embraced, it is also true that at school entry many bilingual children have levels of English language skills that are an obstacle to their academic achievement. Educational programs to meet the needs of bilingual children can and should be improved. Some research has suggested that dual language approaches, which provide instruction in both English and children's heritage language, are associated with high levels of academic achievement among bilingual children (Genesee & Lindholm-Leary, 2012). There is not, however, consensus in the field of bilingual education concerning the most effective approach (August & Shanahan, 2006). There is also the problem that many different heritage languages are spoken by bilingual children in the U.S. school system and even by children in the same classroom. The success of bilingual education in places where bilingual children all speak the same two languages, such as Quebec and Wales, may be difficult to replicate in the United States. So long as there is not a clear solution to the problems caused by the low levels of English language skills that characterize many children from homes in which a language other than English is spoken, their different trajectories can have negative academic consequences.

### **Conclusion**

The purpose of the foregoing review of the literatures on the early language skills of low-SES and language minority children was to bring data to bear on the question of whether the differences between these children and monolingual, middle-class children should be interpreted as deficits to be remedied or as valued differences to be embraced and supported. The evidence argues that although both groups of children have mastered styles of language use, dialects, and languages that serve them well in their homes and communities, many children from both groups also have weaknesses in their English language skills that are an obstacle to their achievement in English language schools. By the pragmatic criterion of interpreting a difference as a deficit if it has negative consequences for children's probability of future success, these differences are deficits.

The evidence also argues that the cause of these deficits is in the amount and nature of the children's early language experience. Children who reach school age with strong English oral language skills of the sort that are predictors of academic success have acquired those skills as the result of years of experience interacting with responsive, conversational adults who talk to them using rich vocabularies and grammatically complex and varied utterances. Children from lower SES homes frequently have lower levels of the sort of English language skills that school requires because lower SES parents tend to talk less to their children, they tend to be more directive and less conversational in the functions of their speech, and they tend to use a more restricted vocabulary and range of grammatical structures. Children from language minority homes also often have lower levels of those English language skills. The most obvious reason is that they have had less experience with English because their language experience is divided between two languages. Children from language minority homes may have language experiences and resultant language skills in a language other than English, and some of these skills transfer and benefit the acquisition of literacy in English; thus they are less disadvantaged than their English-only skills would suggest. However, many children from language minority homes have not had



enough exposure to English to acquire the oral language skills necessary to achieve in school.

The conclusion that low-SES and language minority children have deficits in their English-language skills is politically sensitive. The issues of how to interpret the different patterns of linguistic strength and weakness in low-SES children and the issue of whether to value the heritage language skills of bilingual children have long and somewhat inglorious histories (see, e.g., Blank, 1982; Crago, 2006; Hakuta, 1986; Vernon-Feagans et al., 2001). The interpretation of any difference as a deficit has unhelpful associations with classist and racist arguments of the past. In reaction to the cultural imperialism of some early approaches, it is sometimes argued that it is not appropriate to make direct comparisons between outcomes associated with different social groups—that all language developmental trajectories are equally valid. That argument does a disservice to the children who experience difficulty in school because of weak English skills. Declaring all language skills equally valid does not change the causal relation between particular English language skills and the acquisition of literacy in English. Declaring all developmental trajectories equally valid ignores the fact that all children must find their place in the same larger society. It ignores the national economic necessity of educating all children to be productive members of society, and it ignores the hopes of the parents who want their children to succeed in school.

Some might argue that the different patterns of skill displayed by children from low-SES and language minority homes only appear to be deficits because of the way schools and teachers operate. No doubt schools could be improved. Schools should respect all children and should be welcoming places for all children. However, schools cannot change the reading process so that it does not depend on oral language skill, and the central role of language as the means of instruction is not easily circumvented. Although some skills acquired in a heritage language will transfer to the acquisition of English literacy, children in the United States still need to acquire English in order to succeed. For bilingual children, it is possible to argue that the school could provide children instruction in their stronger language until their English skills catch up. In some locales and for some languages, that may be feasible. Given the large number of different heritage languages in the United States, heritage language instruction may be difficult to implement for all children from language minority homes.

The argument that low-SES and bilingual children have deficits in the English language skills they need to succeed in school is not an argument that their skills in other styles, dialects, or languages should be diminished or replaced. To the contrary, efforts to support the development of academically necessary English language skills should add to the repertoire of skills the children bring from home. Humans are capable of mastering more than one style, dialect, or language, and they are capable of switching styles and languages to fit the social circumstance (Reyes & Ervin-Tripp, 2010).

The implication of the evidence reviewed here and the resultant interpretation of the language trajectories of low-SES and language minority children as deficits is a call to provide extra support for the development of English skills, while also valuing and making use of children's home language skills. Other research findings not reviewed here have argued that extra support must begin early and be sustained so long as children's skill levels place them at risk. The differences among children in language skills

they possess at school entry reflect the cumulative effect of differences in experiences from infancy (Halle et al., 2009; Hoff, 2006; Huttenlocher et al., 2010). Language development takes time, even for children, and children who start school with low levels of English skill do not catch up easily or quickly (Paradis, 2007; Tabors, 1997).

To summarize, the evidence that differences in the language trajectories of children from low-SES and language minority homes contribute to their low levels of academic achievement argues that those differences in trajectories should be interpreted as deficits. Evidence that a major source of those differences in language trajectories is differences in language experience points to a target for intervention. Efforts should be directed toward developing and implementing interventions that will remedy those deficits in order to help all children achieve their maximum potential. The alternative interpretation—that their different trajectories are not deficits and should be embraced—will not close achievement gaps that have causes in the children's lack of readiness for school.

## References

- Abrahams, R. (1962). Playing the dozens. *Journal of American Folklore*, 75, 209–220. doi:10.2307/537723
- Akhtar, N., & Menjivar, J. A. (2012). Cognitive and linguistic correlates of early exposure to more than one language. In J. B. Benson (Ed.), *Advances in child development and behavior* (Vol. 42, pp. 41–78). Elsevier.
- Alexander, K. L., & Entwisle, D. R. (1988). Achievement in the first 2 years of school: Patterns and processes. *Monographs of the Society for Research in Child Development* (Vol. 53, No. 2, Serial No. 218). Ann Arbor, MI: University of Michigan.
- Arriaga, R. I., Fenson, L., Cronan, T., & Pethick, S. J. (1998). Scores on the MacArthur Communicative Development Inventory of children from low- and middle-income families. *Applied Psycholinguistics*, 19, 209–223. doi:10.1017/S0142716400010043
- August, D., & Shanahan, T. (Eds.). (2006). *Developing literacy in second-language learners: Report of the National Literacy Panel on language-minority children and youth*. Mahwah, NJ: Erlbaum. doi:10.3102/0013189X09339353
- Baker, C. (2001). *Foundations of bilingual education and bilingualism* (3rd ed.). Clevedon, England: Multilingual Matters.
- Bialystok, E. (2005). Consequences of bilingualism for cognitive development. In J. F. Kroll & A. M. B. de Groot (Eds.), *Handbook of bilingualism: Psycholinguistic approaches* (pp. 417–432). New York, NY: Oxford University Press.
- Bialystok, E. (2009). Bilingualism: The good, the bad, and the indifferent. *Bilingualism: Language and Cognition*, 12, 3–11. doi:10.1017/S1366728908003477
- Bialystok, E., Craik, F. I. M., & Freedman, M. (2007). Bilingualism as a protection against the onset of symptoms of dementia. *Neuropsychologia*, 45, 459–464. doi:10.1016/j.neuropsychologia.2006.10.009
- Bialystok, E., & Feng, X. (2011). Language proficiency and its implications for monolingual and bilingual children. In A. Y. Durgunoğlu & C. Goldenberg (Eds.), *Language and literacy development in bilingual settings* (pp. 121–138). New York, NY: Guilford Press.
- Bialystok, E., Majumder, S., & Martin, M. M. (2003). Developing phonological awareness: Is there a bilingual advantage? *Applied Psycholinguistics*, 24, 27–44. doi:10.1017/S014271640300002X
- Blank, M. (1982). Moving beyond the difference-deficit debate. In L. Feagans & D. C. Farran (Eds.), *The language of children reared in poverty: Implications for evaluation and intervention* (pp. 245–250). New York, NY: Academic Press.
- Bowey, J. (1995). Socioeconomic status differences in preschool phono-

- logical sensitivity and first-grade reading achievement. *Journal of Educational Psychology*, 87, 476–487. doi:10.1037/0022-0663.87.3.476
- Brooks-Gunn, J., Rouse, C. E., & McLanahan, S. (2007). Racial and ethnic gaps in school readiness. In R. C. Pianta, M. J. Cox, & K. L. Snow (Eds.), *School readiness & the transition to kindergarten in the era of accountability* (pp. 283–306). Baltimore, MD: Brooks.
- Buckhalt, J. (2011). Insufficient sleep and the socioeconomic status achievement gap. *Child Development Perspectives*, 5, 59–65. doi:10.1111/j.1750-8606.2010.00151.x
- Castro, D. C., Pérez, M. M., Dickinson, D. K., & Frede, E. (2011). Promoting language and literacy in young dual language learners: Research, practice, and policy. *Child Development Perspectives*, 5, 15–21. doi:10.1111/j.1750-8606.2010.00142.x
- Crago, M. (2006). Multiple perspectives on research on childhood bilingualism. In P. McCardle & E. Hoff (Eds.), *Childhood bilingualism: Research on infancy through school age* (pp. 149–156). Clevedon, England: Multilingual Matters.
- De Houwer, A. (2009). *Bilingual first language acquisition*. Bristol, England: Multilingual Matters.
- Dickinson, D. K., McCabe, A., Anastasopoulos, L., Peisner-Feinberg, E. S., & Poe, M. D. (2003). The comprehensive language approach to early literacy: The interrelationships among vocabulary, phonological sensitivity, and print knowledge among preschool-aged children. *Journal of Educational Psychology*, 95, 465–481. doi:10.1037/0022-0663.95.3.465
- Dickinson, D. K., & Porche, M. V. (2011). Relation between language experiences in preschool classrooms and children's kindergarten and fourth-grade language and reading abilities. *Child Development*, 82, 870–886. doi:10.1111/j.1467-8624.2011.01576.x
- Dickinson, D. K., & Tabors, P. O. (Eds.). (2001). *Beginning literacy with language: Young children learning at home and in school*. Baltimore, MD: Brookes.
- Dollaghan, C. A., Campbell, T. F., Paradise, J. L., Feldman, H. M., Janosky, J. E., Pitcairn, D. N., & Kurs-Lasky, M. (1999). Maternal education and measures of early speech and language. *Journal of Speech, Language, and Hearing Research*, 42, 1432–1443.
- Durgunoğlu, A. Y. (2009). *The impact of L1 oral proficiency on L2 (reading) comprehension*. Paper commissioned for the U.S. National Academy of Sciences Oral Language Task Force.
- Durham, R. E., Farkas, G., Hammer, C. S., Tomblin, J. B., & Catts, H. W. (2007). Kindergarten oral language skill: A key variable in the intergenerational transmission of socioeconomic status. *Research in Social Stratification and Mobility*, 25, 294–305. doi:10.1016/j.rssm.2007.03.001
- Eilers, R. E., Pearson, B. A., & Cobo-Lewis, A. B. (2006). Social factors in bilingual development: The Miami experience. In P. McCardle & E. Hoff (Eds.), *Childhood bilingualism: Research on infancy through school age* (pp. 68–90). Clevedon, England: Multilingual Matters.
- Faltis, C. (1997). Bilingual education in the United States. In J. Cummins & D. Corson (Eds.), *Encyclopedia of Language and Education: Vol. 5. Bilingual education*. Dordrecht, the Netherlands: Kluwer Academic.
- Feagans, L., & Farran, D. C. (Eds.). (1982). *The language of children reared in poverty: Implications for evaluation and intervention*. New York, NY: Academic Press.
- Federal Interagency Forum on Child and Family Statistics. (2011). *American's children: Key national indicators of well-being, 2011*. Retrieved from <http://childstats.gov/americaschildren/index.asp>
- Fernald, A., Marchman, V., & Weisleder, A. (2012). *SES differences in language processing skill and vocabulary are evident at 18 months*. Manuscript submitted for publication.
- Fillmore, L. (1991). When learning a second language means losing the first. *Early Childhood Research Quarterly*, 6, 323–346. doi:10.1016/S0885-2006(05)80059-6
- Gathercole, V. C. M. (2010). Bilingual children: Language and assessment issues for educators. In K. Littleton, C. Wood, & J. K. Staarman (Eds.), *International handbook of psychology in education* (pp. 715–740). Bingley, United Kingdom: Emerald Group.
- Gathercole, V. C. M., & Thomas, E. M. (2009). Bilingual first-language development: Dominant language takeover, threatened minority language take-up. *Bilingualism: Language and Cognition*, 12, 213–237. doi:10.1017/S1366728909004015
- Genesee, F., & Lindholm-Leary, K. (2012). The education of English language learners. In K. R. Harris, S. Graham, & T. Urdan (Eds.), *APA Education Psychology Handbook: Vol. 3. Application to learning and teaching* (pp. 499–526). Washington, DC: American Psychological Association.
- Geva, E., & Wang, M. (2001). The development of basic reading skills in children: A cross-language perspective. *Annual Review of Applied Linguistics*, 21, 182–204. doi:10.1017/S0267190501000113
- Gilmore, P. (1986). Sub-rosa literacy: Peers, play and ownership in literacy acquisition. In B. B. Schieffelin & P. Gilmore (Eds.), *The acquisition of literacy: Ethnographic perspectives* (pp. 155–168). Norwood, NJ: Ablex.
- Goldenberg, C., Reese, L., & Rezaei, A. (2011). Contexts for language and literacy development among dual-language learners. In C. Goldenberg & A. Y. Durgunoğlu (Eds.), *Language and literacy development in bilingual settings* (pp. 3–25). New York, NY: Guilford Press.
- Goldenberg, C., Rueda, R. S., & August, D. (2006). Sociocultural influences on the literacy attainment of language-minority children and youth. In D. August & T. Shanahan (Eds.), *Developing literacy in second-language learners: Report of the National Literacy Panel on Language-Minority Children and Youth* (pp. 269–318). Mahwah, NJ: Erlbaum.
- Gottardo, A., & Mueller, J. (2009). Are first- and second-language factors related in predicting second-language reading comprehension? A study of Spanish-speaking children acquiring English as a second language from first to second grade. *Journal of Educational Psychology*, 101, 330–344. doi:10.1037/a0014320
- Hakuta, K. (1986). *Mirror of language: The debate on bilingualism*. New York, NY: Basic Books.
- Halle, T., Forry, N., Hair, E., Perper, K., Wander, L., Wessel, J., & Vick, J. (2009). *Disparities in early learning and development: Lessons from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B)*. Washington, DC: Child Trends.
- Hammer, C. S., Davison, M. D., Lawrence, F. R., & Miccio, A. W. (2009). The effect of maternal language on bilingual children's vocabulary and emergent literacy development during Head Start and kindergarten. *Scientific Studies of Reading*, 13, 99–121. doi:10.1080/10888430902769541
- Hammer, C. S., Lawrence, F. R., & Miccio, A. W. (2008). The effect of summer vacation on bilingual preschoolers' language development. *Clinical Linguistics & Phonetics*, 22, 686–702. doi:10.1080/02699200802028033
- Hammer, C. S., & Miccio, A. W. (2006). Early language and reading development of bilingual preschoolers from low-income families. *Topics in Language Disorders*, 26, 322–337. doi:10.1097/00011363-200610000-00005
- Hammer, C. S., Miccio, A. W., & Wagstaff, D. A. (2003). Home literacy experiences and their relationship to bilingual preschoolers' developing English literacy abilities: An initial investigation. *Language, Speech, and Hearing Services in Schools*, 34, 20–30. doi:10.1044/0161-1461(2003)003
- Harlaar, N., Hayiou-Thomas, M. E., Dale, P. S., & Plomin, R. (2008). Why do preschool language abilities correlate with later reading? A twin study. *Journal of Speech, Language, and Hearing Research*, 51, 688–705. doi:10.1044/1092-4388(2008)049
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore, MD: Brookes.
- Haskins, R., Greenberg, M., & Fremstad, S. (2004). Federal policy for

- immigrant children: Room for common ground? [Policy brief]. *Future of Children*, 14(2), 1–5.
- Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. London, England: Cambridge University Press.
- Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior. *Journal of Labor Economics*, 24, 411–482. doi:10.1086/504455
- Hernandez, D. J. (2004). Demographic change and the life circumstances of immigrant families. *Future of Children*, 14(2), 17–47. doi:10.2307/1602792
- Hernandez, D. J., Denton, N. A., & Macartney, S. E. (2007). Demographic trends and the transition years. In R. C. Pianta, M. J. Cox, & K. L. Snow (Eds.), *School readiness and the transition to kindergarten in the era of accountability* (pp. 217–282). Baltimore, MD: Brookes.
- Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74, 1368–1378. doi:10.1111/1467-8624.00612
- Hoff, E. (2006). How social contexts support and shape language development. *Developmental Review*, 26, 55–88. doi:10.1016/j.dr.2005.11.002
- Hoff, E., Core, C., Place, S., Rumiche, R., Señor, M., & Parra, M. (2012). Dual language exposure and early bilingual development. *Journal of Child Language*, 39, 1–27. doi:10.1017/S0305000910000759
- Hoff, E., Laursen, B., & Bridges, K. (2012). Measurement and model building in studying the influence of socioeconomic status on child development. In M. Lewis & L. Mayes (Eds.), *A developmental environmental measurement handbook*. Cambridge, England: Cambridge University Press.
- Hoff, E., Rumiche, R., & Lago, K. (2012). *Trajectories of bilingual development from 2 to 4 years*. Manuscript in preparation.
- Hoff-Ginsberg, E. (1998). The relation of birth order and socioeconomic status to children's language experience and language development. *Applied Psycholinguistics*, 19, 603–629. doi:10.1017/S0142716400010389
- Huttenlocher, J., Vasilyeva, M., Cymerman, E., & Levine, S. (2002). Language input at home and at school: Relation to child syntax. *Cognitive Psychology*, 45, 337–374. doi:10.1016/S0010-0285(02)00500-5
- Huttenlocher, J., Vasilyeva, M., Waterfall, H. R., Vevea, J. L., & Hedges, L. V. (2007). The varieties of speech to children. *Developmental Psychology*, 43, 1062–1083. doi:10.1037/0012-1649.43.5.1062
- Huttenlocher, J., Waterfall, H., Vasilyeva, M., Vevea, J., & Hedges, L. V. (2010). Sources of variability in children's language growth. *Cognitive Psychology*, 61, 343–365. doi:10.1016/j.cogpsych.2010.08.002
- Keating, D. P., & Hertzman, C. (Eds.). (1999). *Developmental health and the wealth of nations: Social, biological, and educational dynamics*. New York, NY: Guilford Press.
- Lesaux, N. K., Crosson, A. C., Kieffer, M. J., & Pierce, M. (2010). Uneven profiles: Language minority learners' word reading, vocabulary, and reading comprehension skills. *Journal of Applied Developmental Psychology*, 31, 475–483. doi:10.1016/j.appdev.2010.09.004
- Lesaux, N. K., & Kieffer, M. J. (2010). Exploring sources of reading comprehension difficulties among language minority learners and their classmates in early adolescence. *American Educational Research Journal*, 47, 596–632. doi:10.3102/0002831209355469
- Lloyd, D. N. (1978). Prediction of school failure from third-grade data. *Educational and Psychological Measurement*, 38, 1193–1200. doi:10.1177/001316447803800442
- Lonigan, C. J., Burgess, S. R., Anthony, J. L., & Barker, T. A. (1998). Development of phonological sensitivity in 2- to 5-year-old children. *Journal of Educational Psychology*, 90, 294–311. doi:10.1037/0022-0663.90.2.294
- Lonigan, C. J., Schatschneider, C., Westberg, L., & the National Early Literacy Panel. (2008). Identification of children's skills and abilities linked to later outcomes in reading, writing, and spelling. In National Early Literacy Panel (U.S.) & National Center for Family Literacy (Eds.), *Developing early literacy: Report of the National Early Literacy Panel: Scientific synthesis of early literacy development and implications for intervention* (pp. 55–106). Washington, DC: National Institute for Literacy.
- Mancilla-Martinez, J., & Lesaux, N. K. (2011). The gap between Spanish speakers' word reading and word knowledge: A longitudinal study. *Child Development*, 82, 1544–1561. doi:10.1111/j.1467-8624.2011.01633.x
- Marchman, V. A., Fernald, A., & Hurtado, N. (2010). How vocabulary size in two languages relates to efficiency in spoken word recognition by young Spanish-English bilinguals. *Journal of Child Language*, 37, 817–840. doi:10.1017/S0305000909990055
- McDowell, K. D., Lonigan, C. J., & Goldstein, H. (2007). Relations among socioeconomic status, age, and predictors of phonological awareness. *Journal of Speech, Language, and Hearing Research*, 50, 1079–1092. doi:10.1044/1092-4388(2007)075
- Miller, P. (1986). Teasing as language socialization and verbal play in a white working-class community. In B. B. Schieffelin & E. Ochs (Eds.), *Language socialization across cultures* (pp. 199–212). Cambridge, England: Cambridge University Press.
- Morisset, D., Barnard, K., Greenberg, M., Booth, D., & Spieker, S. (1990). Environmental influences on early language development: The context of social risk. *Development and Psychopathology*, 2, 127–149. doi:10.1017/S0954579400000663
- Morrison, F. J., Bachman, H. J., & Connor, C. M. (2005). *Improving literacy in America*. New Haven, CT: Yale University Press.
- Muter, V., Hulme, C., Snowling, M. J., & Stevenson, J. (2004). Phonemes, rimes, vocabulary, and grammatical skills as foundations of early reading development: Evidence from a longitudinal study. *Developmental Psychology*, 40, 665–681. doi:10.1037/0012-1649.40.5.665
- Najafi, B. (2011). Supporting positive language and literacy outcomes for young dual language learners: Introduction. *Child Development Perspectives*, 5, 1–3. doi:10.1111/j.1750-8606.2010.00139.x
- National Center for Education Statistics. (2000). *NAEP 1999 trends in academic progress: Three decades of student performance* (NCES Statistical Report 2000–469). Jessup, MD: U.S. Department of Education.
- National Center for Education Statistics. (2004). *English language learner students in U.S. public schools: 1994 and 2000* (NCES 2004–035). Washington, DC: U.S. Department of Education.
- National Center for Education Statistics. (2006). *The condition of education 2006* (NCES Statistical Report 2006–071). Washington, DC: U.S. Department of Education.
- NICHD Early Child Care Research Network. (2005). Pathways to reading: The role of oral language in the transition to reading. *Developmental Psychology*, 41, 428–442. doi:10.1037/0012-1649.41.2.428
- Oh, J. S., & Fuligni, A. J. (2010). The role of heritage language development in the ethnic identity and family relationships of adolescents from immigrant backgrounds. *Social Development*, 19, 202–220. doi:10.1111/j.1467-9507.2008.00530.x
- Oller, D. K., & Eilers, R. (Eds.). (2002). *Language and literacy in bilingual children*. Clevedon, England: Multilingual Matters.
- Oller, D. K., & Jarmulowicz, L. (2007). Language and literacy in bilingual children in the early years. In E. Hoff & M. Shatz (Eds.), *Blackwell handbook of language development* (pp. 368–386). Oxford, England: Blackwell. doi:10.1002/9780470757833.ch18
- Páez, M. M., Tabors, P. O., & López, L. M. (2007). Dual language and literacy development of Spanish-speaking preschool children. *Journal of Applied Developmental Psychology*, 28, 85–102. doi:10.1016/j.appdev.2006.12.007
- Pan, B. A., Rowe, M. L., Singer, J. D., & Snow, C. E. (2005). Maternal correlates of growth in toddler vocabulary production in low-income families. *Child Development*, 76, 763–782.
- Paradis, J. (2007). Second language acquisition in childhood. In E. Hoff, &

- M. Shatz (Eds.), *Blackwell handbook of language development* (pp. 387–406). Oxford, England: Blackwell.
- Pearson, B. Z. (1993). Predictive validity of the Scholastic Aptitude Test (SAT) for Hispanic bilingual students. *Hispanic Journal of Behavioral Sciences, 15*, 342–356. doi:10.1177/07399863930153004
- Pearson, B. Z. (2007). Social factors in childhood bilingualism in the United States. *Applied Psycholinguistics, 28*, 399–410. doi:10.1017/S014271640707021X
- Pearson, B. Z., Fernández, S. C., Lewedeg, V., & Oller, D. K. (1997). The relation of input factors to lexical learning by bilingual infants. *Applied Psycholinguistics, 18*, 41–58. doi:10.1017/S0142716400009863
- Pearson, B. Z., Fernández, S. C., & Oller, D. K. (1993). Lexical development in bilingual infants and toddlers: Comparison to monolingual norms. *Language Learning, 43*, 93–120. doi:10.1111/j.1467-1770.1993.tb00174.x
- Place, S., & Hoff, E. (2011). Properties of dual language exposure that influence two-year-olds' bilingual proficiency. *Child Development, 82*, 1834–1849. doi:10.1111/j.1467-8624.2011.01660.x
- Rescorla, L. (1989). The language-development survey: A screening tool for delayed language in toddlers. *Journal of Speech and Hearing Disorders, 54*, 587–599.
- Reyes, I., & Ervin-Tripp, S. (2010). Language choice and competence: Code switching and issues of social identity in young bilingual children. In M. Shatz & L. C. Wilkinson (Eds.), *The education of English language learners* (pp. 67–86). New York, NY: Guilford Press.
- Riches, C., & Genesee, F. (2006). Literacy: Crosslinguistic and crossmodal issues. In F. Genesee, K. Lindholm-Leary, W. M. Saunders, & D. Christian (Eds.), *Educating English language learners: A synthesis of research evidence* (pp. 64–108). New York, NY: Cambridge University Press.
- Rosetta Stone. (2011). *Rosetta Stone Inc. reports fourth quarter and full year 2010 results and appointment of non-executive chairman Laurence Franklin, former Tumi Inc. CEO, to serve as non-executive chairman*. Retrieved from <http://investors.rosettastone.com/phoenix.zhtml?c=227935&p=irol-newsArticle&ID=1533889&highlight=>
- Roth, F. P., Speece, D. L., & Cooper, D. H. (2002). A longitudinal analysis of the connection between oral language and early reading. *Journal of Educational Research, 95*, 259–272. doi:10.1080/00220670209596600
- Rowe, M. L., & Goldin-Meadow, S. (2009, August 13). Differences in early gesture explain SES disparities in child vocabulary size at school entry. *Science, 323*, 951–953. doi:10.1126/science.1167025
- Saunders, W., & O'Brien, G. (2006). Oral language. In F. Genesee, K. Lindholm-Leary, W. M. Saunders, & D. Christian (Eds.), *Educating English language learners* (pp. 14–63). New York, NY: Cambridge University Press.
- Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 97–110). New York, NY: Guilford Press.
- Schatschneider, D., Fletcher, J. M., Francis, D. J., Carlson, C. D., & Foorman, B. R. (2004). Kindergarten prediction of reading skills: A longitudinal comparative analysis. *Journal of Educational Psychology, 96*, 265–282. doi:10.1037/0022-0663.96.2.265
- Scheele, A. F., Leseman, P. P. M., & Mayo, A. Y. (2010). The home language environment of monolingual and bilingual children and their language proficiency. *Applied Psycholinguistics, 31*, 117–140. doi:10.1017/S0142716409990191
- Shatz, M., & Wilkinson, L. C. (2010). Introduction. In M. Shatz & L. C. Wilkinson (Eds.), *The education of English language learners* (pp. 1–22). New York, NY: Guilford Press.
- Snow, C. E. (1982). Knowledge and the use of language. In L. Feagans & D. C. Farran (Eds.), *The language of children reared in poverty: Implications for evaluation and intervention* (pp. 257–260). New York, NY: Academic Press.
- Snow, C. E. (1999). Social perspectives on the emergence of language. In B. MacWhinney (Ed.), *The emergence of language* (pp. 257–276). Mahwah, NJ: Erlbaum.
- Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Stipek, D. J., & Ryan, R. H. (1997). Economically disadvantaged preschoolers: Ready to learn but further to go. *Developmental Psychology, 33*, 711–723. doi:10.1037/0012-1649.33.4.711
- Tabors, P. (1997). *One child, two languages: A guide for preschool educators of children learning English as a second language*. Baltimore, MD: Brookes.
- Tabors, P., Pérez, M., & López, L. (2003). Dual language abilities of bilingual four-year olds: Initial findings from the early childhood study of language and literacy development of Spanish-speaking children. *NABE Journal of Research and Practice, 1*, 70–91.
- Tavernise, S. (2011, September 13). Soaring poverty casts spotlight on “lost decade.” *New York Times*. Retrieved September 29, 2011, from <http://www.nytimes.com/2011/09/14/us/14census.html>
- Thordardottir, E. (2011). The relationship between bilingual exposure and vocabulary development. *International Journal of Bilingualism, 15*, 426–445. doi:10.1177/1367006911403202
- Thordardottir, E., Rothenberg, A., Rivard, M.-E., & Naves, R. (2006). Bilingual assessment: Can overall proficiency be estimated from separate assessment of two languages? *Journal of Multilingual Communication Disorders, 4*, 1–21. doi:10.1080/14769670500215647
- Tseng, V., & Fuligni, A. J. (2000). Parent-adolescent language use and relationships among immigrant families with East Asian, Filipino, and Latin American backgrounds. *Journal of Marriage and Family, 62*, 465–476. doi:10.1111/j.1741-3737.2000.00465.x
- Vagh, S. B., Pan, B. A., & Mancilla-Martinez, J. (2009). Measuring growth in bilingual and monolingual children's English productive vocabulary development: The utility of combining parent and teacher report. *Child Development, 80*, 1545–1563. doi:10.1111/j.1467-8624.2009.01350.x
- Vasilyeva, M., Waterfall, H., & Huttenlocher, J. (2008). Emergence of syntax: Commonalities and differences across children. *Developmental Science, 11*, 84–97. doi:10.1111/j.1467-7687.2007.00656.x
- Vernon-Feagans, L., Hammer, C. S., Miccio, A., & Manlove, E. (2001). Early language and literacy skills in low-income African American and Hispanic children. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 192–210). New York, NY: Guilford Press.
- Walker, D., Greenwood, C., Hart, B., & Carta, J. (1994). Prediction of school outcomes based on early language production and socioeconomic factors. *Child Development, 65*, 606–621. doi:10.2307/1131404
- Williams, F. (Ed.). (1970). *Language and poverty*. Chicago, IL: Markham.
- Willms, J. D. (2003). Literacy proficiency of youth: Evidence of converging socioeconomic gradients. *International Journal of Educational Research, 39*, 247–252. doi:10.1016/j.ijer.2004.04.005
- Wodniecka, Z., Craik, F. I. M., Luo, L., & Bialystok, E. (2010). Does bilingualism help memory? Competing effects of verbal ability and executive control. *International Journal of Bilingual Education and Bilingualism, 13*, 575–595. doi:10.1080/13670050.2010.488287
- Zill, N., Collins, M., West, J., & Hausken, E. G. (1995). Approaching kindergarten: A look at preschoolers in the United States. *Young Children, 51*, 35–38.

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