Assessing Early Communicative Abilities in Spanish-Speaking Children From Low-SES Families

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Pedro and Mariana are both 2 years old. They live on opposite sides of the same city, one lives in a middle-class neighborhood, the other in a poor family. They have two things in common: both come from Spanish-speaking families and neither has begun to produce his or her first words. Neither child's parents are particularly worried, but the day care center each one attends has requested that the children be tested for language delay. Two issues must be addressed in order to determine whether these children are at risk for a language disorder: which aspects of early communication can predict future language development, and are there culturally and linguistically appropriate instruments available to assess Spanish-speaking children that use normative data based on this population? Language testing at this age is difficult in most languages, but is further complicated by methodological

Note: This work was supported, in part, by a grant from the Consejo Nacional de Ciencia y Tecnología to Donna Jackson-Maldonado and a grant from the John D. and Catherine T. MacArthur Foundation to Donna Thal, San Diego State University. The authors would like to thank Donna Thal for her cooperation in the development of the research.
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abstract

The incidence of Spanish-speaking children who require language and education services is increasing. Language testing of these children requires assessment instruments that are linguistically, culturally, and developmentally appropriate. However, most of the currently available Spanish-language instruments are limited in number and are designed for older children. The authors describe a study that used direct observation and parental report to provide information about the development of early gestures and vocabulary to explore the effect of mother's educational level on language skill acquisition. Participants included 64 10- and 12-month-old children (31 of each) and the study included both parental report measures and a laboratory observation to assess language skills. No significant differences were found between groups for the two measures of language assessment or for the effect of mother's educational level. The parental report instrument may be more effective then direct observation in a laboratory setting to learn about early language development in Spanish-speaking children.

Speech and language pathologists need norm-referenced assessment instruments that evaluate early communication skills, are predictive of future development, and take into account differences between economic and educational status.

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flaws such as the limited number of norm-referenced tests in Spanish. To combat this problem, assessors frequently use parental report measures to obtain initial information about language risk.

Speech and language pathologists need norm-referenced assessment instruments that evaluate early communication skills, are predictive of future development, take into account differences between economic and educational status (we will use Socioeconomic status, or SES, to refer to both), and are linguistically and culturally appropriate. When these conditions are not met, children from Hispanic backgrounds could be misdiagnosed, leading to a disproportionate number of children who receive early intervention for language delay. Using assessment instruments that are developed on English-speaking children is highly likely to yield inaccurate diagnoses in Spanish-speaking children and subsequently identify them as having a language disorder they may not have. Further complicating the situation is that most language tests have not taken into consideration the effects of different SES levels on child development. In this article, we discuss the use of gestures and vocabulary comprehension in Spanish-speaking children, abilities that are thought to be important predictors of future language development. We also discuss the effects of SES on early communicative abilities using data from observational techniques and parental report instruments.

Early Communicative Abilities

In their first year and half of life children begin to communicate symbolically. Although the most obvious signs of communication are early vocalizations and babble, children begin to communicate with gestures and to understand words before they can use words to communicate. Early babbling patterns are related to later language development, though they are not communicative in themselves. Children who are late talkers have a reduced phonetic inventory, that is, they use fewer consonants in their babble and their syllable structure is less complex (Carson, Klee, Carson, & Hime, 2003; Paul & Jennings, 1992; Rescorla & Ratner, 1996; Thal, Oroz & McCaw, 1995; Whitehurst, Smith, Fischel, Arnold, & Lonigan, 1991).

Gestures, which infants begin to use between 8 months and 12 months old, are the stepping stones for future language development (Acredolo & Goodwyn, 1985, 1988; Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979: Bates, Thal, Whitesell, Fenson, & Oakes. 1989; Carpenter, Nagell, & Tomasello, 1998; Caselli, 1990; Caselli & Volterra, 1990; Crais, Douglas & Cox, 2004; Iverson & Thal, 1997; Thal & Katich, 1996). Gestures are one of the first manifestations of intentional communication. Although different cultures use gestures in different ways, their function in development is similar (Capirci, Iverson, Pizzutto, & Volterra, 1996). Pointing, along with showing, requesting, and giving, is important to language comprehension and production. Thal and colleagues (Iverson & Thal, 1997; Thal, 2000; Thal & Bates, 1988; Thal & Tobias, 1992, 1994; Thal, Tobias, & Morrison, 1991) have shown that children who do not use these early gestures are more at risk for language delay, and possibly disorder, than are children who use gestures to communicate.

Gestures are a form of early nonlinguistic communication. They are, in a way, less complex than oral language, which may explain why they are important predictors of future language development and are associated with early vocabulary comprehension and production. This has been consistent in English and in other languages (Bates, Thal, Whitesell, Fenson, & Oakes, 1989; Capirci, Iverson, Pizzutto, & Volterra, 1996; Caselli, et al., 1995; Iverson & Thal, 1997; Thal, 2000). Thal and colleagues (Thal & Bates, 1988; Thal & Tobias, 1992; Thal, Tobias, & Morrison, 1991) have found that comprehension skills, along with gesture use, are as important, if not more, than the production of the first words. Therefore, to illustrate communication abilities before age 2, assessments should include gestural abilities along with word comprehension and production.

Assessment of Gestures and Vocabulary in Spanish

A limited amount of assessment instruments are available in Spanish. Most are translations of English forms (Jackson-Maldonado, 1999; Jackson-Maldonado, et al., 2003; Langdon, 1992). Assessment instruments for Spanish-speaking children need to include language-specific items and be based on Hispanic culture. For instance, in the English language, word order changes are seldom tolerated. In Spanish, morphological cues, such as subject–verb agreement, are stronger. Another common measure of language skills, the "mean length of utterance" (MLU) in English is counted in number of morphemes, whereas in Spanish counting whole words may be more appropriate (Jackson-Maldonado & Conboy, in press; Gutierrez-Clellen, Restrepo, Peña, & Anderson, 2000). In addition, vocabulary items should be culturally relevant on language tests. For example, using "taco" or "quesadilla" instead of "hamburger" or including more family member items or pronominal forms with gender and number.

Several researchers have stressed the importance of careful adaptations of language instruments into Spanish (Gutierrez-Clellen, 1996; Kayser, 1995, 1998). Not only can the linguistic items themselves be affected by cultural bias, but discourse strategies are also different (Jackson-Maldonado, 2004; Mattes & Omark, 1991). Thus, before using an English assessment instrument with Spanish-speaking children, a strict evaluation of its cultural and linguistic relevance is necessary. Further, children from different SES groups may not respond the same way to linguistic and cognitive tests. We will, therefore, examine whether using a parental report instrument and direct observation yield similar results.

The MacArthur-Bates Communicative Development Inventory (MBCDI), a frequently used parental report assessment, is now available in a variety of languages. The MBCDI (Fenson et al., 1993) was developed over 25 years ago by Bates and colleagues (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979) in English and in Italian (Camaioni, Caselli, Longobardi, & Volterra, 1991; Caselli & Casadio, 1992, 1995) for children between 8 months and 3 years old. The effectiveness of this type of instrument lies in the fact that it uses a recognition rather than recall format. Parents are asked to identify the language skills their child currently demonstrates, rather then having to remember what they did in the past. Practitioners and researches have relied on parental report since the early 1990s for screening and developing prognosis for children with language delays (Rescorla, 1991; Yoder, Warren, & McCathren, 1998) and multiple studies have used this format with other language disorders (see Jackson-Maldonado et al., 2003; and Fenson, et al., 1993; or the MBCDI Web site: www.sci.sdsu.edu/cdi).

Each adaptation of the MBCDI into another language has included language-specific items and considered cultural differences although the basic format has remained the same. The MacArthur-Bates Inventario del Desarrollo de Habilidades Comunicativas: Primeras Palabras y Gestos (Inventario) (Jackson-Maldonado, et al., 2003) is a cultural and linguistic adaptation to the Mexican Spanish language (Jackson-Maldonado, et al., 2003; and Thal, Jackson-Maldonado, & Acosta, 2000). Researchers have demonstrated strong validity and reliability for this version for both monolinguals (Jackson-Maldonado et al., 2003; Thal, Jackson-Maldonado, & Acosta, 2000) and bilinguals (Marchman & Martínez-Sussman, 2002).

The Influence of Socioeconomic Status on Language Development

Several studies have addressed the relationship between SES, usually measured by maternal educational levels and language development (Hart & Risley, 1995; Dolloghan, et al., 1999; Hoff, 2003; Hoff-Ginsberg, 1991). Hart and Risley´s (1995) pioneering work compared multiple variables of development across different socio-demographic groups. Their findings showed that children from lower-SES families were slower in their language development when measured by the number of words they used and the length of their sentences (see Oetting, Pruitt, & Roy in this issue for a more extensive description). Most research that compares children by SES has been conducted on English-speaking families and little, if any, work is available for Spanish-speaking children.

Other studies have suggested that the interactions between mothers and children may explain why children from lower-SES families lag behind their peers in language development (Fish & Pinkerman, 2003; Hoff, 2003; Hoff-Ginsberg, 1991; Pan, Rowe, Singer, & Snow, 2005; Roberts, Burchinal, & Durham, 1999). They have demonstrated less social interaction in low-SES homes, which could explain why their children have lower language scores. However, the existing research is inconclusive.

The role of low-SES influences on language development has strong clinical implications. Most assessment

instruments have been normed (establishing the scores that are considered typical and those that deviate from the "norm") mostly on middle-class children and test items that may be socially and culturally biased. The testing format may also influence the effectiveness of an instrument with different SES populations. For instance, the use of parental report for assessing low-SES children´s language has been questioned because of the inconsistency of the results. Some researchers have found that when using the MBCDI with low-SES children between 8 and 12 months, mothers report higher vocabulary comprehension scores than do middle-class mothers (Dolloghan et al., 1999; Feldman, et al., 2000; Feldman, et al., 2003; Fenson, et al., 1993; Reznick, 1990), while others claim that these mothers are accurate reporters (Fish & Pinkerman, 2003; Rodrigue, Fenson, & Thal, 2003) or that they under report (Roberts, Burchinal, & Durham, 1999). In contrast, at older ages (between 16 and 30 months), children were reported to have significantly lower scores in vocabulary production, word combination, and sentence complexity (Arriaga, Fenson, Cronan, & Pethick, 1998).

Evaluators must use caution when using the MBCDI norms for these children as further research needs to be done to determine the validity of the instrument for this group (Fenson, et al., 2000; see also Marchman & Martínez-Sussman, 2002). These findings, though, do not undermine the importance and effectiveness of parental report. They simply note that results must be interpreted with sensitivity to the population in question. Similar caution should be used with all types of language assessment instruments and when using them with children from other cultures and language groups.

It is also clear that using language assessment instruments with diverse SES populations should be done with caution. A way to overcome limitations with lower SES families is to compare parental reports to direct observations. These comparisons may aid clinicians in their understanding of the necessary components to effectively assess early communication and alternative means to obtain reliable information.

A Study of Early Communication in Lower-Income and Middle-Class Spanish-Speaking Children

The goals of this study were: (a) to describe areas of early communication that are important predictors of future linguistic abilities, (b) to provide information about a parental report instrument for assessing communication in Spanish for children under the age 3, and (c) to compare parental report data to laboratory observations with families from low-socioeducational levels. Specific research questions included:

(1) What components of linguistic and nonlinguistic communication should be observed in early child development to determine language skills?

(2) Can assessors obtain similar results from the parental report, Inventario,, and observational measures when assessing children from low-SES families?

We studied 62 children as part of a larger study that addressed the relation between language and cognition. Subjects included 10-month-old (n = 31) and 12-month-old (n = 31) children from two different SES groups, measured by mother's educational level: Twenty-seven mothers had a below high school education and 35 had completed high school or higher. Twenty-eight of the children were male; 34 were female. All children were being brought up as monolinguals in two large cities in central Mexico.

All families were recruited through personal contacts or community services and day care centers in both locations. Participants were invited into the university lab for the observational procedures for sessions that lasted approximately 1½ hours. At the time of enrollment, the higher education mothers were given the parental report instruments and asked to fill them out and return them at the lab visit, no more than 2 weeks later. The mothers from the lower education group completed the questionnaires with the assistance of a research assistant or another family member with sufficient literacy skills to complete the form. Children participated in a series of directed and spontaneous measures to provide a measure of language skills through direct observation.

The MacArthur-Bates Inventario del Desarrollo de Habilidades Comunicativas: Primeras Palabras y Gestos (or Inventario) (Jackson-Maldonado, et al., 2003) was used to measure vocabulary comprehension and production, and gesture use. The observational task measured the spontaneous production of words and gestures solicited by the evaluator using a series of common objects (Thal, Jackson-Maldonado, & Acosta, 2000). For example, researchers presented an object to the child and he or she was asked to name it or to carry out an action with it. The objects included: a telephone, a comb, a cup, a hat, a spoon, an airplane, a doll, a flower, a dog, and a car.

Results from the parental report were compared to the direct observation of gestures and naming objects. As expected, children at 10 months were reported to use fewer gestures than at 12 months. They used more deictic (pointing, etc.) and communicative gestures (saying "bye bye," "yes," and "no"; 57% and 67% out of the total) than symbolic gestures (play with an airplane or comb; 30% out of the total). In the direct observational task, though, children used very few gestures (10% and 20% for each age). Thus, the parental report provided richer information about gesture use than did direct observation. The parent report data suggested that gesture use and vocabulary comprehension are well under way at 10 months, but word production was only reported in isolated cases. The observational methods in the laboratory were not able to solicit word production from the children. Thus, it seems

that parental report was a more efficient means for obtaining information as it can offer information about the child's current abilities that are not readily observed in a laboratory or clinical situation.

When we compared the children who had mothers with low education to the children of mothers who completed high school or above, the raw numbers for the groups favored middle class children in vocabulary comprehension and production (though not in gesture use). No statistical differences were found between both sociodemographic groups in word comprehension and production as well as in gesture use at either age. Children from the lower educated mothers did use more gestures in the direct observation.

Conclusion

Our study sought to describe the early communicative skills of infants that might be used as predictors of language development. The use of gestures and vocabulary comprehension were able to be captured at the 10- and 12-month age points, but word production was limited by both parent report and observational assessment. How these early communicative skills effect later language development requires further study. Our research demonstrated that parental report using the Inventario appeared to be an adequate measure for obtaining early communicative information assuming that the forms are administered by an informed person and that mothers from families with low educational levels receive assistance in completing the forms as described in our study. The observational assessment did not yield as much information as the parental report did about word production due to limited word production in children under 12 months. When children become more productive in word use, a controlled and culturally appropriate clinic situation may be another means for observing early vocabulary productions in children from families with lower educational achievement.

Based on research such as Hart & Risely's (1995), many clinicians and professionals expect that lower income children will be at a disadvantage. Our study did not find such differences, however, and in fact, demonstrated that children whose mothers had limited education used more gestures. This finding raises the question that if gestures are thought to be good predictors of later development, and the children from households with lower educational level used more gestures, why would they potentially demonstrate language delays later? One can speculate that even when gestures are used early on, the entry into productive (more symbolic) language may be a problem if cognitive or other deficits are present (Yoder & Warren, 2002; Yoder, Warren, & McCathren, 1998). Several factors may explain why children from low-SES families fall behind in development. For example, if the children are undernourished, development will lag behind. Also, it may be the case that richer input or specific early stimulation is required to ensure the emergence of productive language. The children in our study, all 12 months or younger, did not yet show any language delays and early intervention may prevent problems from emerging later on. Additional studies on the early assessment and intervention strategies, including gesture use and vocabulary comprehension and production, are required to determine whether low-SES children are truly at a disadvantage before later language abilities emerge.

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