

Linguistics and speech-language pathology: Combining research efforts toward improved interventions for bilingual children

**Adele W. Miccio, Carol Scheffner Hammer, and
Almeida Jacqueline Toribio**

The Pennsylvania State University, University Park

Introduction. Becoming proficient speakers of English is a multifaceted skill that all children living in the United States must accomplish in order to be successful. This process becomes more complex when the children's primary language is different from the oral and written language they encounter in school. Because bilingual children's language acquisition differs from that of their monolingual counterparts, they may be referred for speech and language services when their teachers or parents express concerns. Because the investigation of bilingual language acquisition may be most profitably viewed as a continuum from formal inquiry to applied study, services that involve bilingual children can be maximized if an interdisciplinary approach is taken.

Researchers in formal areas of linguistics study the differential status of two component systems of the bilingual child (e.g., disparities in phonological inventories and processes and the language convergence at all linguistic levels), with the aim of achieving an adequate characterization of bilingual competence. At the same time, researchers in more applied fields such as speech-language pathology assess the bilingual child's linguistic competence and usage to determine the role psychological and social factors play in the language acquisition process, and plan interventions for children presenting difficulty learning any aspect of language. In addition, they are increasingly called on to consult and collaborate with teachers and policy makers to plan educational programs for children whose home language differs from that of the language of instruction in school. Language interventions are complex and problematic in optimal situations. To address more difficult issues of bilingual language development, collaboration among research scholars in diverse disciplines is essential. Research efforts in the formal and applied disciplines of linguistics and speech-language pathology can contribute to each other in informing and advancing successful interventions for Spanish-speaking children.

This paper is organized as follows: First, we present examples of typical and atypical monolingual and bilingual phonology, illustrating the ways in which generative linguistics informs speech-language pathology. Second, we address

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selected aspects of the speech production and language use of children exposed to two languages, attending to the observed patterns of language apparent convergence and separation. Subsequent discussion expounds on the importance of an ethnographically oriented assessment to more effective clinical remediation. Finally, the paper ends with summary commentary on the benefits accrued from the cross-disciplinary approach advocated here.

Clinical linguistics: Examples of phonological disorder. Some children learning a language have difficulties at the phonological level of language acquisition, including problems with knowledge of phonetic segments and phonological constraints, and how that knowledge is implemented in speech production (Powell et al. 1999). These problems result in impaired intelligibility and most often difficulty in other language domains such as lexical and syntactic development. In addition, they may lead to later problems in developing literacy (Bird, Bishop, and Freeman 1995).

Early research in speech production disorders had little concern with the nature of phonology (Locke 1983). Rather, children who used few speech sounds or used them incorrectly were studied to determine if they had problems with sensory, cognitive, motor, or perceptual tasks. A speech sound production problem was presumed to be a peripheral motor problem. Much later, research began to attend to the nature of the phonology itself through the use of analytical procedures of generative linguistics (Dinnsen 1984). Attention to the linguistic aspects of speech production revealed that speech errors were not random but systematic patterns of difference from the typical acquisition. Researchers concluded that children's speech problems could derive from problems at higher levels.

Phonetic problems, however, do occur. Many clinicians and researchers continue to argue that problems with speech sound production are peripheral motor problems, a position that will likely be defended for years to come. We cannot yet distinguish unambiguously among levels of phonology. A child may misidentify phonetic cues to a phonological contrast and, consequently, store incorrect forms in lexical memory. Unless an obvious sensory or motor deficit such as deafness or cleft palate occurs, it is not easy to definitively determine whether a problem is related to the grammar of a sound system or to its physical properties (Powell et al. 1998). It is probable that problems arise from the interaction of a number of factors, including phonetic capabilities, the nature of the environmental input, and pressures from a rapidly developing lexicon (Locke 1983).

Monolingual phonology. Miccio and Ingrisano (2000) presented an example of a 5;3 (years; months) year-old monolingual English-speaking child with a systematic gap in her phonological system. Her consonant inventory contained all of the consonants of English except the fricative sound class. In other words, an

