Phonological Awareness in Spanish : A Tutorial for Speech––Language Pathologists

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Communication Disorders Quarterly 2003 25: 13
DOI: 10.1177/15257401030250010301

Phonological Awareness in Spanish:

A Tutorial for Speech–Language Pathologists

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In the United States, more than 2 million children in Grades pre-K through 6 speak Spanish as their primary language. Approximately 50% of these students receive academic instruction in Spanish. This tutorial provides research-based recommendations for presenting phonological awareness tasks to children who receive literacy instruction in Spanish. The authors also discuss how phonological awareness development may differ between monolingual children learning Spanish and monolingual children learning English, and the implications of these differences for choosing appropriate phonological awareness tasks for Spanish speakers.

Phonological awareness is the ability to consciously reflect on and manipulate the sound components of language, such as syllables and phonemes (Gillam & van Kleeck, 1996). Phonological awareness is one critical component of reading acquisition (Adams, 1990; Goswami & Bryant, 1990; Perfetti, Beck, Bell, & Hughes, 1987; Tunmer & Nesdale, 1985). In fact, it has been shown to be a stronger predictor of reading development than IQ, language proficiency, and other conventional tests of reading readiness (Juel, Griffith, & Gough, 1986; Lombardino, Riccio, Hynd, & Pinheiro, 1997; Mann, 1991; Stanovich, Cunningham, & Cramer, 1984; Vellutino & Scanlon, 1987; Wagner, 1988). Phonological deficiencies hamper a reader's ability to use letter–sound relationships to recognize new words. Consequently, low phonological awareness is strongly associated with reading deficits and is even thought to cause reading failure in some children (Kamhi & Catts, 1999). Based on this research, current reading assessment practices for mainstream children frequently incorporate measures of phonological awareness to identify and develop interventions for children at risk for reading deficits.

The U.S. Department of Education and the American Speech-Language-Hearing Association (ASHA) have strongly encouraged speech–language pathologists (SLPs) to take an active role in promoting young children's literacy development (ASHA, 2001). Justice, Invernizzi, and Meier (2002) recommended that the early screening protocols used by SLPs include items for evaluating literacy motivation, home literacy, awareness of letter names, letter–sound correspondence, written language, and phonological awareness. Numerous assessment instruments and intervention programs are available in English; however, research-based instruments are also needed for children who speak languages other than English.

U.S. DEMOGRAPHICS

According to the National Clearinghouse for English Language Acquisition & Language Instruction Educational Programs (NCELA), more than 1 million students enrolled during the 2000–2001 school year in Grades pre-K through 12 had recently come to the United States (Kindler, 2002). More than 3 million children (11.7% of the total) enrolled in Grades pre-K through 6 were classified as Limited English Proficient (LEP). Moreover, the highest proportion of students with LEP (44%) was enrolled in early elementary grades, when early identification of reading and writing deficits is most crucial. The NCELA also reported that Spanish is the primary language of 79% of students with LEP (Kindler, 2002). Research has indicated that phonological awareness and literacy are strongly correlated in other alphabetic lan-

guages, such as Spanish (Carrillo, 1994; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Jiménez, 1997; Manrique & Signorini, 1994; Signorini, 1997; Vernon & Ferreiro, 1999). Phonological awareness thus is important for SLPs who are more actively involved in the literacy development of children entering school with Spanish as their primary language.

In areas of the United States with sufficient Latino populations, many Spanish-speaking children enroll in bilingual education programs, such as dual-language or transitional, where they receive literacy instruction in their native language. Approximately 58% of pre-K students and 50% of students in Grades K through 3 with limited English proficiency receive academic instruction that incorporates their native language (Kindler, 2002).

TERMINOLOGY

For the purposes of this article, the use of terms to refer to children's language experience needs to be clarified. At the present time, there is no consensus on what it means to be *bilingual.* Because all children eventually learn English in the U.S. school system, children whose first language is one other than English are often referred to as bilingual, regardless of their English language ability. Children come to school with a wide range of English language exposure, however, and when and how a child was exposed to each language will have significant implications for assessment (Gutiérrez-Clellen, Restrepo, Bedore, Peña, & Anderson, 2000). For more specific classification, speakers have commonly been distinguished as either *simultaneous bilinguals,* who learn both languages from birth, or *sequential bilinguals,* who learn the second language after acquiring a general knowledge of the first. Some researchers have further classified Spanish speakers who receive most (approximately 80% or more) of their daily language input in Spanish and little (less than 20%) in English as *predominantly Spanish speaking,* and children who have more regular (20% or more) daily language input in English as *bilingual* (Peña, Bedore, & Rappazzo, 2003). In this article, we use these terms in a similar fashion. Such a distinction is necessary because a child's particular language experience will have a significant impact on his or her phonological knowledge.

PURPOSE

In this article, we synthesize the current research and discuss the clinical implications for bilingual SLPs and assistants who work in Spanish with predominantly Spanish-speaking children. Because we have assumed that children will eventually learn and receive instruction in English, a secondary purpose is to (a) summarize the research that has been conducted with children who are sequential bilingual learners and (b) stimulate critical thinking about how phonological awareness development might differ between children who know one language and children learning two languages.

In the past, when Spanish materials were unavailable, academic and language assessment instruments were often translated or adapted directly from English into Spanish. Subsequent contrastive analysis and developmental research in English and Spanish has indicated that such translations and adaptations often yield culturally and linguistically biased methods that lack construct validity. Similarly, because of differences between the languages, translating or adapting phonological awareness tasks from English into Spanish will result in significant changes in word structure and parts of speech. Several researchers have pointed out that developmental data about phonological awareness from English speakers may not be equally relevant for Spanish speakers (Jiménez & García, 1995; Manrique & Signorini, 1994; Vernon & Ferreiro, 1999).

SPANISH–ENGLISH PHONOLOGICAL AWARENESS DIFFERENCES

The Competition Model described by Bates and MacWhinney (1989) is useful for conceptualizing the development of phonological awareness. According to this input-driven model, different sources of linguistic information—or cues—compete to determine how language processing develops. These cues differ among languages; therefore, the language development of a child in a predominantly Spanish-speaking environment will be driven by the most salient and reliable cues of Spanish, whereas a child in a predominantly English-speaking environment will be driven by the most salient and reliable cues of English. In line with the Competition Model, several researchers have proposed that the rate and pattern of children's phonological awareness and literacy development in a given language will be influenced by the linguistic structure, phonological system, and orthographic nature of that language (Bruck, Genesee, & Caravolas, 1997; Jiménez, 1997; Signorini, 1997).

One major difference between Spanish and English is that each language presents different cues regarding syllables. Spanish presents consistent syllabic cues and has a more clearly defined syllable structure than English. For example, Spanish is a syllable-timed language, meaning that all syllables have approximately equal duration. In contrast, English is a stress-timed language, so syllables have longer or shorter durations, depending on whether they are stressed or unstressed. Moreover, syllable boundaries are relatively clear in Spanish due to the prevalence of the open consonant–vowel (CV) syllable (e.g., *fo-to, ca-si-ta*), which is the most common syllable shape in Spanish. In English, the predominant syllable shape is the closed consonant–vowel–consonant (CVC) syllable, for which it is often unclear to which syllable a consonant belongs (Lass, 1984). These differences in syllable structure have several implications for the development of language and literacy. Syllable stress has been found to influence children's ability to identify word initial phonemes in English (Treiman & Weatherston, 1992) but not in Spanish

(Jiménez & García, 1995). Because of its salience in Spanish, the syllable appears to be a significant unit of processing for Spanish speakers. For instance, there is evidence that Spanish-speaking adults compute syllables while processing written words (Jiménez & García, 1995). Children learning to write in Spanish tend to write one letter per syllable during early stages of writing development (Ferreiro & Teberosky, 1982). In contrast, the intrasyllabic onset-rime unit (e.g., *b-ook, h-ook*) appears to be a significant and early-developing processing unit for English speakers (Kessler & Treiman, 1997; Treiman, 1991). As a result, onset-rime tasks are frequently included on phonological awareness measures in English. According to Jiménez, González, Monzo, and Hernández-Valle (2000), however, onset-rime does not appear to be a relevant unit of analysis for children learning to read in Spanish.

The word shapes in Spanish and English also provide different cues to language learners. English has a wide variety of word shapes. There are numerous monosyllabic words in English, many of which are content words (e.g., *book, chair*). In Spanish, most words are polysyllabic, and monosyllabic words are generally function words, such as prepositions (e.g., *en*), adverbs (e.g., *mal*), conjunctions (e.g., *con*), pronouns (e.g., *él*), and articles (e.g., *la*). In addition, English consonant clusters are frequent and may occur in all word positions (e.g., *spring, thirsty, plank*). In Spanish, consonant clusters are relatively infrequent, occurring in only 3.59% of words (Guirao & Manrique, 1972). Clusters can occur in word initial or medial position but not in word final position (e.g., *plato, bloque, madre*). Furthermore, whereas most consonants can close English words, very few consonants (*d, j, l, n, r, s, z*) can occur in word final position in Spanish. Because of these numerous differences, it is very difficult to translate or adapt phonological awareness tasks from English into Spanish without significantly changing the length, structure, and parts of speech of the words.

Major differences also exist between the English and Spanish sound systems. Spanish has five tense vowels, /ɑ/, /e/, /i/, /o/, /u/, and diphthongs, whereas English has many tense and lax vowels, such as /ɑ/, /æ/, /ɔ/, /e/, /ɛ/, /i/, /ɪ/, /o/, /ʊ/, /u/, /ʌ/, and diphthongs. Because Spanish vowels are easily distinguishable, Spanish speakers identify them with 97% accuracy in isolation and 99% accuracy in context (Manrique, 1979). In contrast, English speakers correctly identify vowels in isolation 58% of the time and 83% of the time in context (Strange, Verbrugge, Shankweiler, & Edman, 1976). Because of strong vowel cues, Spanish-speaking children rarely omit vowels when writing (Manrique, 1979). In contrast, vowels cause special difficulties for English speakers, who are more likely to omit them (Treiman, 1991). Spanish and English share the majority of consonants, except for the Spanish *ñ*, although many have different voice-onset times (e.g., Spanish vs. English /p/), degree of aspiration (e.g., Spanish vs. English /t/), and exact place of articulation (e.g., Spanish dentalized vs. English alveolar /d/). Because of differences in voice onset and aspiration, Jiménez and García (1995), for example, found that Spanish-speaking children isolated word initial continuant consonants (e.g., /s, m, r, f/) more easily than stops (e.g., /b, p, d, g/), whereas English speakers isolated stop consonants more easily than continuants (Treiman & Weatherston, 1992).

As alluded to earlier, literacy and phonological awareness skills are also believed to be influenced by the *orthographic depth* (grapheme-to-phoneme correspondence) of each language (Bruck et al., 1997; Jiménez, 1997). According to this hypothesis, the strategies that readers use will depend on the level of orthographic depth of a given language (Katz & Frost, 1992). Spanish is considered to have a relatively transparent orthography, because there is a nearly 1:1 correspondence between letters and sounds, with five exceptions (*c, g, r, ll, y*). In contrast, English is considered to have an opaque, or deep, orthography because there is less consistency. To illustrate, consider the many ways the phoneme /i/ can be represented in English: *read, reed, cede, yield, either, many, money, people, caesar, pique,* and *chablis.* Clearly, readers of Spanish have an advantage because sounding out nearly always leads to conventional spelling and decoding. Manrique and Signorini (1994) found that Spanish-speaking children mastered the alphabetic principle and developed spelling skills relatively early compared to English speakers. Unlike English readers, Spanish readers, even the less skilled readers, could spell many words that they could not read. Yet, as in English, Spanish speakers with reading disabilities consistently display poorer phonological awareness skills and use a phonological strategy (sounding out) less often than their nondisabled peers (Jiménez, 1997).

PHONOLOGICAL AWARENESS DEVELOPMENT IN BILINGUAL CHILDREN

Many children enter school as virtually monolingual or predominantly Spanish speaking, but it is assumed in the United States that these children will eventually receive instruction in and learn English. The Competition Model provides a deeper understanding of the processes underlying their phonological awareness development as the children become bilingual. Learners exposed to more than one language receive input from two distinct phonological systems. As mentioned earlier, linguistic cues compete to influence language development, with the most salient and reliable cues generally winning out. As a result, children in a sequential bilingual context, who have already learned the cue system of their first language (L1), may apply those cues to their second language (L2), a process known as *forward transfer.* To illustrate, a child who speaks Spanish has learned the Spanish noun–adjective word order cue to produce *agua fría.* The child may use forward transfer of this cue and say *water cold* until the child learns the English cue system. Based on this concept, we might also expect sequential bilingual children to transfer their phonological awareness skills from L1 to L2. This is exactly what several

studies have indicated (Cisero & Royer, 1995; Durgunoglu et al., 1993; Gottardo, 2002; Quiroga, Lemos-Britton, Mostafapour, Abbott, & Berninger, 2002). In fact, Durgunoglu and colleagues (1993) found that the best predictors of literacy development in both Spanish and English for native Spanish-speaking children were their phonological awareness and word-recognition skills in Spanish. As a result, the investigators suggested that building children's phonological awareness in L1 would transfer and help improve their reading ability in English.

Children who are bilingual language learners must sort out these competing language cues. As a result, they attend to and process language differently from monolingual children (Bialystok, 1991; Watson, 1991). For example, *phonological translation* is the ability to hear a word in one language and convert its phonological form into another language. Oller, Cobo-Lewis, and Eilers (1998) presented a task in which bilingual (Spanish/English) children phonologically translated proper names from one language into the other. They found that performance on this task was a significant predictor of reading for the bilingual children, accounting for 39% to 49% of the variance in scores on standardized measures of reading, writing, and vocabulary. The SLP thus may find not only unique patterns of phonological awareness development in bilinguals but also unique ways of tapping into their skills.

CLINICAL IMPLICATIONS

Thus far, we have discussed why the development of phonological awareness may be different in Spanish and English and why English tasks may have less validity when translated or adapted into Spanish. The existing literature about literacy and phonological awareness in Spanish includes research conducted with monolingual and predominantly Spanish-speaking children in Argentina, Mexico, Spain, and the United States. Although social, educational, and dialectal differences between and within these countries exist, we believe that this research on native Spanish speakers whose phonological systems are driven by the salient cues of the Spanish language provides valuable information about normal phonological awareness development and beneficial tasks in Spanish.

This research showing the strong correlation between phonological awareness and literacy acquisition indicates that the SLPs role in literacy should include screening for and promotion of children's phonological awareness skills (Justice et al., 2002). Phonological awareness training appears to yield the greatest benefits when activities include explicit instruction and a decoding element (Fuchs et al., 2001). More good news for the SLP is that even preschool-age children with speech and language disorders improve their phonological awareness abilities when they receive direct training (van Kleeck, Gillam, & McFadden, 2000), and children with speech and language deficits who participate in phonological awareness training make gains in reading and greater improvement in articulation than do children receiving traditional articulation therapy alone (Gillon, 2000). In light of this research, we offer the following suggestions for presenting phonological awareness tasks to children receiving literacy instruction in Spanish.

Developmental Progression

There appears to be a typical developmental progression of phonological awareness in Spanish that is similar in English. Although individual ability at a particular age will depend on each child's prior language and literacy experiences, knowledge of this progression will help the SLP understand the difficulty level of each task. Carrillo (1994) and Manrique and Signorini (1998) referred to two levels of phonological awareness: *basic metaphonological skills* and *segmental awareness.* The former include rhyming, syllable awareness, and sound matching, which children often learn indirectly as they master speech sounds and are exposed to songs, word games, and so forth. With formal literacy instruction, children develop more sophisticated segmental awareness skills, such as sound–letter identification, blending, phoneme segmentation and manipulation, spelling, and reading.

Rhyming

Carrillo (1994) found that rhyming was correlated with reading level in kindergarten but not in first grade. She suggested that rhyming may simply become less relevant once children are introduced to more advanced tasks. Although rhyming may not contribute significantly to later reading, it is one of the easiest tasks and is developmentally appropriate for young children. For this task, the clinician might ask, "*Cuál palabra rima con* (Which word rhymes with) *sal: mal, pez,* o *ver*?" Other examples of possible stimulus word sets are *dan, ven, sol, pan,* and *tío, solo, mío, come.*

Stimulus words containing one or two syllables and three to five phonemes are appropriate for this task and for most of the following tasks. It is important to note that children may not have prior experience with explicit phonological awareness tasks. Even when screening to determine children's skill levels, clinicians should always model the task and allow children to practice it several times to ensure that they understand what is expected.

Phoneme Matching

Initial Phoneme Matching. Several studies have indicated that initial phoneme matching is indicative of Spanish reading ability for a wide age range (Carrillo, 1994; Cisero & Royer, 1995; Durgunoglu et al., 1993; Jiménez, 1997; Manrique & Signorini, 1998; see Table 1 for task descriptions in these research studies). For this task, the clinician might verbally present a target word and three possible response choices. The clinician then would ask, "*Cuál palabra empieza con el mismo sonido con el que empieza la palabra* (Which

TABLE 1. Descriptions of Initial Phoneme Matching Tasks

Characteristic	Carrillo (1994)	Cisero & Royer (1995)	Durgunoglu et al. (1993)	Jiménez (1997)	Manrique & Signorini (1998)
Grade/age	K and 1st	K and 1st	1st	6–10 yrs	K
# items	24	3 practice, 10 test	22	3 practice, 10 test	32
Word structure	CVC	CVC	Varied	Varied	No information
Description	Share initial CV (e.g., *sol, son, sor*); yes/no response	Authors do not elaborate; yes/no response	• Share initial C (e.g., *ganas, gota*) • Intact syllables share initial CV (e.g., *capa, caro*) • Broken syllables share initial CV (e.g., *bota, bolsa*); response unclear	Child identifies which words of four begin with same sound as the target word (e.g., *sol, silla, saco, libro*); response unclear	Authors do not elaborate; yes/no response

Note. CVC = consonant–vowel–consonant; CV = consonant–vowel; C = consonant.

word starts with the same sound as) *sol: voz, son, mar*?" Giving children more than one choice allows for a more descriptive error analysis than one choice and a yes/no response. Easier items for children may share initial CV with the target word, as in the above example, and increasingly difficult items may share only initial C (e.g., *sol: silla, taco, libro*; Durgunoglu et al., 1993). An example would be using *sol* as the target word and offering choices of *voz, ser, mar.* Even though the goal is to match words beginning with /s/, children new to such activities may respond with *voz* because the first syllables /so/ and /vo/ rhyme. We therefore recommend using incorrect choices that do not share vowels in the first syllable with the target word when introducing this task. This can be done later, however, when the child is ready for more difficult items.

Final Phoneme Matching. Although final phoneme matching is a common task in English, our review of the literature indicated that with the exception of Cisero and Royer (1995), no researchers used a final phoneme matching task to study the phonological awareness of Spanish speakers. Cisero and Royer administered this task to Spanish speakers in bilingual education classrooms and monolingual English speakers in kindergarten. The Spanish-speaking students performed at chance level on this task (i.e., their performance did not surpass the level that could be obtained by guessing). This task may not be relevant for screening because there are few word final consonants in Spanish, and, in certain dialects, final consonants are frequently deleted in connected speech. Because all children will eventually learn to read in English, however, this task may be presented as an activity. For this task, the clinician might ask, "*Cuál palabra termina con el mismo sonido que* (Which word ends with the same sound as) *paz: más, dan,* o *mal*?" Other possible word sets are *pon, con, mes, tal,* and *papel, comal, cine, salon.*

Sound Identification

Initial Sound Identification. Initial sound identification appears developmentally appropriate for children as young as preschool age (Jiménez & García, 1995). Carrillo (1994) found that initial sound identification was one of the best predictors of reading level for kindergartners and first graders. Jiménez and García reported that children isolated continuants (e.g., /s, m, r, f/) more easily than stops (e.g., /b, p, d, g/; see Table 2). Thus, the clinician may want to present items beginning with continuants before items beginning with stops. Words with initial consonant clusters are more difficult. The clinician might say, "*Dime el primer sonido de* (Tell me the first sound in) *cama.*"

Final Sound Identification. Initial sound and final sound identification were the two tasks that best distinguished good versus poor kindergarten and first-grade readers in Carrillo's (1994) study. This finding is quite interesting, considering that the usefulness of the final sound matching task in Cisero and Royer's (1995) study was questionable. Nevertheless, this task may be informative. For this task, the clinician might say, "*Dime el último sonido de* (Tell me the last sound in) *pan.*"

Embedded Phoneme

Carrillo (1994) found a significant correlation between performance on this task, also called phoneme position iden-

tification, and reading for kindergartners and first graders. According to Signorini (1997), performance on this task differentiated skilled readers from less skilled readers in the first and third grades. Signorini included two orthographic conditions in the embedded phoneme subtest. In the easier condition, the target phoneme had unequivocal 1:1 phoneme-to-grapheme representation, which children find easier. In the second, more difficult condition, target phonemes could be represented by more than one letter, and these alternative letters occurred among the response choices (see Table 3). Because of its apparent relevance to readers with a wide range of abilities, this task merits consideration for application. The clinician might ask children to identify the position of target sounds in words. An example would be "*Dónde está la* (Where

TABLE 2. Descriptions of Sound Identification Tasks

Characteristic	Carrillo (1994)	Jiménez & García (1995)
Grade/age	K and 1st	Pre-K and K
# items	10 in each subtest	16
Word structure	CVC	Varied
Description	• Initial sound identification (e.g., *mar*) • Final sound identification (e.g., *sol*)	Stops /b, p, d, g/, continuants /s, m, r, f/ • CV'CV stops/continuants (e.g., *pato, misa*) • CVCV' stops/continuants (e.g., *bebé, sofá*) • CV'CV vs. CCV'CV stops (e.g., *puro, globo*) • CV'C mono vs. CV'CVCV trisyllabic (e.g., *pan, sábado*)
Instructions	• "Say the first sound" in word said by examiner. • "Say the last sound" in word said by examiner.	"Say the first sound" in word said by examiner.

Note. CVC = consonant–vowel–consonant; CV = consonant–vowel.

TABLE 3. Descriptions of Embedded Phoneme Tasks

Characteristic	Carrillo (1994)	Signorini (1997)
Grade/age	K and 1st	1st and 3rd
# items	6 series of 4 words	3 practice, 24 test
Word structure	CVC	Varied
Description	Each series shares a target segment.	Words presented orally and with pictures to reduce memory demands: • Neutral-target phoneme: unequivocal graphemic representation (e.g., *moto: pelo, masa, bebé*). • Foil-orthographic representation: conditional correspondence (e.g., *¡aula: gallina, camino, vegetal*); target letter can be represented by two different phonemes, both of which appear among the choices
Instructions	"Where is /a/ in *ola*: at the beginning, middle, or end?"	"Which word contains the first sound in *rosa: sierra, cero, o tiza*?"

Note. CVC = consonant–vowel–consonant.

is the) */o/ en sol: al principio, en medio, o al final* (at the beginning, middle, or end)?" To avoid confusion with syllables, these words should initially contain only one syllable. Another presentation option proposed by Fowler (1990) was the following: "*Cuál palabra tiene el primer sonido de* (Which word has the first sound in) *fila: bola, rifa, o taza*?" Other examples of possible stimulus word sets are *sal, dos, ven, par,* and *nube, jugo, moda, tapón.*

Sound Deletion

Initial Sound Deletion. Carrillo (1994) found that performance on this task was correlated with reading but was one of the most challenging tasks for the kindergartners and first graders in her study, suggesting that this may be a skill that develops later. Signorini (1997) found that task performance correlated with first graders' reading, although she noted that the correlation was not as high as for English speakers (Fowler, 1990). This task did not distinguish the skilled readers from the less skilled readers among the third graders in her study. Signorini suggested that perhaps this task was too easy for later readers and that more difficult items containing consonant clusters or a more complex task, such as medial phoneme deletion, might be more informative. To present this task, the clinician could ask the child to repeat a word without its initial sound, either a consonant or vowel. For example, "Di tarde sin /t/" ("Say *tarde* without /t/"). Additional possible stimulus words could be *bola, caro,* and *calma.*

Final Sound Deletion. Carrillo (1994) was the only researcher to utilize final sound deletion with first-grade students. Some poor readers scored high on this task, whereas some good readers scored low. Although results indicated a relationship with reading, more data about this task need to be collected before we would recommend it for use in screening. Because all children will eventually learn to read in English, however, this task might be presented as an activity, for example, "*Di vez sin /s/,*" ("Say *vez* without /s/"). Other possible stimulus words are *piel, pelón,* and *formal.* Note that final sound deletion will often change word syllable stress, which may increase the difficulty level.

Segmentation

Syllable segmentation of monosyllabic and polysyllabic words is an age-appropriate task for children as young as preschool age, and it can be practiced through simple activities such as clapping or drawing lines representing syllables. Evidence has indicated that phoneme segmentation is an effective task for Spanish-speaking children from a wide age range (Carrillo, 1994; Durgunoglu et al., 1993; Jiménez, 1997; Manrique & Signorini, 1994, 1998; Vernon & Ferreiro, 1999; see Table 4). All of these researchers found correlations with reading ex-

TABLE 4. Descriptions of Segmentation Tasks

Characteristic	Carrillo (1994)	Durgunoglu et al. (1993)	Jiménez (1997)	Manrique & Signorini (1994)	Manrique & Signorini (1998)	Vernon & Ferreiro (1999)
Grade/age	K and 1st	1st	6–10 yrs	1st	K	K
# items	10	20	2 practice, 14 test	42	42	9
Word structure	Varied (1–4 phonemes)	1–2 syllables, 2–3 phonemes	All CVCV	1, 2, or 3 segments	1, 2, or 3 segments	CVC, CVCV
Description	Manner of presentation is unclear; child segments by putting correct # of chips	• 2 phonemes (e.g., *en, no, al*) • 3 phonemes (e.g., *nos, fin*) • 2 syllables (e.g., *foto, cena*); presentation and response	(e.g., *baño, gato, tapa*); child "says" how many phonemes; response unclear	Examiner says a word; child segments by tapping # of phonemes	Examiner says a word; child segments by tapping # of phonemes	• Picture stimuli: Examiner says a word; child segments orally • Written words: Child points to each letter, saying word in bits

Note. CV = consonant–vowel; CVC = consonant–vowel–consonant.

cept Manrique and Signorini (1998), who found that total segmentation was correlated with children's spelling but not with reading.

If segmentation is used as an oral task, we recommend having children tap their response, as originally suggested by Liberman, Shankweiler, Fisher, and Carter (1974), to facilitate the clinician's judgment regarding accuracy. As we have discovered, it is difficult to judge children's verbal responses, and chips are often distracting. Moreover, because lining up chips more closely simulates word writing, children who can spell the stimulus word often put the number of chips according to the number of written letters in the word rather than the number of phonemes. There are two-letter combinations in Spanish—although only a few—that represent one phoneme, such as "qu," "gu," and "ch." Consequently, words containing these combinations confuse some children who are attempting to count phonemes. For easier items, the clinician may instruct the child to segment words into syllables; for later items, he or she may require segmentation into individual phonemes. The use of nonwords helps isolate children's pure phonological skills from their prior lexical knowledge.

Using both oral and picture stimuli, as suggested by Fowler (1990), Vernon and Ferreiro (1999) first modeled how to segment words by syllables, then by the first syllable and the last two phonemes, and finally by each phoneme before testing children in their study. In one segmentation task, they instructed the children to say the smallest sounds possible and observed the most analytical response the children could give. For the second task, they presented written words, and the children pointed to each letter while saying the words in small bits. When visual stimuli accompanied oral stimuli, the children produced even more analytical responses than during purely oral tasks, which made the task even more informative. For this task, clinicians might instruct a child as follows: "*Di esta palabra en los pedacitos más pequeños que puedas*" ("Say this word in the smallest bits you can").

Blending

Curiously, only one study incorporated a blending task. Durgunoglu et al. (1993) found that task performance of Spanish-speaking first-grade children in a bilingual education classroom was intercorrelated with their scores on both segmentation and matching tasks. The children blended syllables, phonemes, and onset-rimes into words (e.g., *p-an, d-on, m-al, s-ol*). Although these children performed similarly on the phoneme and onset-rime items, the relevance of onset-rime tasks to children with little exposure to English remains questionable (Jiménez & García, 1995; Jiménez et al., 2000). For this task, a clinician might have children blend syllables into words (e.g., *e-ra, na-da*), which appears easiest, and then blend phonemes into words (e.g., *n-i, l-o, p-e-z, m-e-s-a, g-o-m-a*). Because we know that onset-rime will be important when children learn English, the clinician might also model and practice blending onset-rimes into words (e.g., *m-al, s-ol*). As with the segmentation tasks, presenting nonwords may facilitate analysis of children's pure phonological skills versus lexical knowledge. The clinician could ask, "*Qué palabra forman estos sonidos*?" ("What word do these sounds make?")

Spelling

Manrique and Signorini (1994) found a strong relationship between spelling and phonological awareness in Spanish-speaking first-grade students. As mentioned previously, they suggested that spelling may develop earlier than reading and may also be a natural segmentation task in Spanish. As a result, we strongly recommend that clinicians observe children's spelling skills. Regular words are easiest, and irregular and polysyllabic words are more difficult.

Writing

In Spanish, phonological awareness and writing level appear to be strongly correlated (Manrique & Signorini, 1998; Vernon & Ferreiro, 1999). Vernon and Ferreiro found that even in kindergarten, better writers also produced more analytical word segmentation responses. We therefore recommend evaluating young students' writing levels. Following Vernon and Ferreiro's procedures, evaluators could collect a writing sample based on topics the children choose and analyze them for conventional writing (phoneme-to-grapheme correspondence), conventional-restricted writing (partial accuracy), or unconventional writing forms.

CONCLUSION

Speech–language pathologists have a number of roles and responsibilities in helping children with speech and language impairment achieve their highest communicative and academic potentials. Because written language is spoken language mapped onto print, the SLP is an excellent candidate for collaborating with other educators to promote literacy skills and early identification of children at risk for reading difficulties.

Many children attending school in the United States who are predominantly Spanish speaking are taught to read in Spanish before they are taught to read in English. Until recently, little information was available about phonological awareness in Spanish. More research in task and item analysis and typical versus atypical development of phonological awareness is needed. We have discussed how the development of phonological awareness may differ between children learning Spanish and those learning English due to the internal structure of the languages. We have also offered alternatives to translating tasks from English by providing suggestions for presenting phonological awareness tasks and stimulus words appropriate to Spanish phonology. Because children often transfer skills from L1 to L2 as they learn language sequentially, their phonological awareness skills in Spanish should be

predictive of their reading acquisition in Spanish as well as in English. Furthermore, helping children who receive native language instruction cultivate their phonological awareness skills in Spanish will have beneficial effects on Spanish literacy and on later literacy development in English.

Bilingual SLPs can make significant contributions toward the language and literacy development of children who speak Spanish. As recommended by Justice and colleagues (2002), such contributions include screening and supporting children's literacy motivation, home literacy practices, knowledge of letter names and sounds, written language, and phonological awareness.

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