Epilogue: Perspectives in the Assessment of Children’s Speech

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The goal of phonological assessment, according to Grunwell (1997), is to describe and classify sound differences in a child’s speech based on the functions and organization of his/her sound system. Based on the description of the child’s sound system, the most appropriate treatment goals and treatment plan are selected. The assessment perspectives presented in this forum will be discussed in the following sections: old and new developments, assessment options, limitations of current assessments, and finally, the role of theory.

Old Procedures, New Developments

All of the articles in this forum adopted a general approach to phonological assessment that:
1. Identified patterns of error and their generality across a child’s sound system;
2. Attempted to find the “order” in the “disorder” and examined consistencies of errors;
3. Utilized their assessment framework for recommendations for target selection and/or intervention planning.

This general assessment framework differs from the traditional articulation-based approach that Fey (1992) described, which included an articulation test, deep-test for facilitating contexts, and stimulability testing. Although aspects of the traditional approach were certainly included in several of the perspectives presented in this forum, they were based on a different set of assumptions. The constructs of stimulability and consistency exemplify the differences between these two frameworks. See Table 1.

Another particularly relevant example includes Lof’s (2002) commentary regarding information obtained from an oral mechanism examination to plan intervention. The oral mechanism examination is common to both traditional and phonological assessments, but recently it has been used specifically to guide treatment in addition to diagnosis. Often information from the oral mechanism examination is used in a diagnosis of childhood apraxia of speech (CAS), which has recently become a more common diagnosis of children’s speech disorders. In fact, Davis, Jakielki, and Marquardt (1998) reported that 75% of the children in their study were overdiagnosed with CAS. Even if you accept CAS as a separate clinical entity, Lof’s point is well made that intervention directed towards oral motor exercises will not yield improvements in speech sound production.

Ingram and Ingram (2002) address another common procedure in phonological assessments, measurement or judgment of intelligibility, that continue to be valuable. Traditionally, many of our measures are limited to single words and subjective judgments. Recent clinical advances that take into account whole-word complexity in assessing intelligibility (i.e., phonological mean length of utterance [PMLU]; Ingram & Ingram, 2001), will improve a traditional measure of intelligibility to make it a more clinically valid assessment.

As these examples illustrate, many of the assessment activities we use include tried and true procedures, but we now use them in light of new theories and clinical advances.

Assessment Options

This forum posed a pragmatic challenge of completing an assessment within a time constraint of 60 to 90 minutes. Table 2 summarizes the procedures that each contributor included within their assessment perspective and the amount of time taken within each activity. The time listed for each activity was either estimated or specified by the authors. The final column summarizes the total amount of time spent to complete the assessment. Outside of Khan’s (2002) clinician perspective that only involved 45 minutes, Bleile (2002) completed the assessment in the shortest period of time (70 to 90 minutes) whereas Hodson et al. (2002) and Miccio (2002) took the longest time (92 to 117 minutes and 100 to 105 minutes, respectively). Similarly, Tyler and Tolbert (2002) and Hoffman and Norris (2002) took 75 to 105 minutes and 90 to 105 minutes, respectively. Many of the accounts included “hidden time” that was not part of the evaluation session. These included, for example, pre-evaluation phone conferences, follow-up parent conferences, using an audiologist to screen the child’s hearing, and time allotted for analysis and scoring
of tests or procedures. Bleile’s assessment was the only one that fell within the allotted time limits and it is interesting to note that his was the only one that assumed the child’s language abilities were normal and therefore devoted the least amount of time to language assessment (15 to 20 minutes, compared to the average time of about 30 minutes).

Is 60 to 90 minutes reasonable, or even preferable, for an evaluation of a child’s speech and language abilities? We can utilize assessment options regarding time limits. We can conduct shorter, focused evaluations or more comprehensive evaluations that will take more time. Procedures for each of these assessment options are summarized in Table 3.

Ingram and Ingram (2002) specifically addressed the issue of the depth of the phonological analysis in their commentary. Their point relates to the feasibility that one test/one analysis will be sufficient to identify the phonological rules of a child’s system. They further note that identification of the child’s phonological rules will likely take more time than the 60 to 90 minute timeframe. It may be misleading for clinicians to believe that it is possible to complete an accurate and thorough phonological analysis within that time limit.

Khan’s (2002) “quick and dirty” evaluation that was further constrained by her clinical caseload to only a 45-minute evaluation fits within the focused evaluation outlined in Table 3. Specifically, Khan focused her 45-minute evaluation session to the primary concern expressed for the evaluation, i.e., speech intelligibility. As a consequence, she limited her evaluation to a standardized articulation/phonology test, oral mechanism evaluation, and hearing screening. Khan’s primary goal was to qualify the child for services and additional testing and left treatment goals to be completed later.

Procedures, such as stimulability and better abilities could be addressed later as part of dynamic assessment since these areas are geared more toward treatment planning. Or as Khan (2002) indicated, other aspects of the child’s communication abilities could be evaluated during the first therapy sessions. Having two different types of evaluations, focused and comprehensive, reflects the guidelines Kamhi (1992) proposed for assessment. Specifically, he suggested that comprehensive phonological assessments be completed on children with moderate-to-severe phonological disorders and less comprehensive assessments be completed on children with mild-to-moderate phonological disorders who exhibit common phonological error patterns.

**Limitations of Current Assessment Perspectives**

What is missing in our current assessment perspectives? Notably missing is the presence of any perceptual testing in each of the five assessment perspectives. Fey (1992) and Kamhi (1992) in the *LSHSS* clinical forum both state that a phonological assessment should attempt to identify the level at which the speech problems are occurring: perceptual, organizational (cognitive-linguistic), or speech production (articulatory). The contributors to the present forum included procedures to assess the organizational and speech production levels, but none included procedures to assess the perceptual level. Absence of perceptual testing likely reflects the complexity in assessing perception.

Internal discrimination tasks, such as Locke’s (1980) Sound Production-Sound Perception Tasks, have been identified as better measures of a child’s perception abilities in which the child discriminates his or her own spoken productions with the ambient productions of the same word (e.g., [so] and [to] for “sew”). External discrimination measures, such as the Goldman-Fristoe-Woodcock Test of Auditory Discrimination (Goldman, Fristoe, & Woodcock, 1970), assess broad discrimination abilities and may not reflect the child’s perceptual abilities related to their specific sound errors. Further, speech discrimination is a maturational skill, which makes perceptual testing of a preschooler less reliable.
A second limitation of the assessment frameworks involves the lack of an explanatory account for the speech disorder. Fey (1992) noted Locke’s (1983) statement that identification of an error pattern does not explain its occurrence. Although some error patterns (e.g., assimilation) and phonological rules (e.g., complementary distribution) appear to be motivated by phonetic factors, not all error patterns or rules can be accounted for on a phonetic basis. Many clinicians may wonder why our assessments should go beyond descriptions of the speech disorder to an explanation of the speech disorder. Kamhi (1992) claimed that many clinicians may not see the relevance of explanation as long as they are able to get the child to produce the sound correctly. His response to this reluctance is to demonstrate that broadening of one’s perspective provides not only descriptive accounts of the child’s sound system in terms of phonetic/phonemic inventories, syllable structure, and phonological rules, but also provide information about the level at which the problems are occurring.

Lof (2002) noted that there are limitations to the phonological processes approach used by several authors in this forum to provide an adequate descriptive account of a child’s error patterns. Although phonological processes provide clinicians with descriptive labels for categorizing error patterns, Lof discussed how these broad categories...
TABLE 3. Comparison of focused and comprehensive evaluations.

<table>
<thead>
<tr>
<th>Focused Evaluations (45 minutes)</th>
<th>Comprehensive Evaluations (90–105 minutes)</th>
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</thead>
<tbody>
<tr>
<td>• Single-word test (15 min)</td>
<td>Same as Focused Screenings Plus:</td>
</tr>
<tr>
<td>• Screen hearing (5–10 min)</td>
<td>• Assess phonological awareness</td>
</tr>
<tr>
<td>• Oral mechanism examination (5 min)</td>
<td>(15–20 min)</td>
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<tr>
<td>• Conversational sample (20 min)</td>
<td>• Assess receptive and expressive language abilities</td>
</tr>
<tr>
<td>– Speech intelligibility</td>
<td>(30–45 min)</td>
</tr>
<tr>
<td>– Consistency of errors</td>
<td></td>
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<tr>
<td>– Morphosyntactic abilities</td>
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frequently miss subtle and often unique characteristics of a child’s phonological rule. The fact that phonological processes represent a finite and a priori set of error patterns has implications for planning intervention, as well as in demonstrating phonological change as a result of intervention (Leonard & Brown, 1984; Williams, 1993).

A final limitation involves the relative lack of technology in our assessment frameworks. Ingram & Ingram (2002) summarized how computers can assist us in the sampling, transcriptions, and storage of assessment data. Additionally, computer programs, such as Computerized Profiling (Long & Fey, 1993), can be used in completing phonological analyses, as indicated by Hodson et al. (2002) for the HAPP-3.

Theory Revisited

In concluding this forum, I would like to try to link the information presented in these different perspectives to new theories in phonology. How do we integrate these assessment procedures within the theoretical foundations of organizational models of phonology, such as non-linear phonology?

Barlow (2001, 2002) coordinated two recent clinical forums in LSHSS that addressed the application of newer linguistic theories, such as optimality theory, in the assessment of phonological disorders in children. The emphasis of these newer theories represents a shift from descriptive models of assessment (e.g., phonological processes) toward explanatory models of assessment that, hopefully, will lead us to an understanding of the organization of a child’s phonological system. The goal of these advances in linguistic theory is improved target selection, which will ultimately lead to greater phonological change in less time.

The practical role of theory is as relevant in the present discussion of phonological assessment as it was a decade ago in the 1992 LSHSS forum. Schwartz (1992) noted that the differences in goals between clinical application and research lead to differences in how theories are applied in each of these situations. For example, Schwartz commented that “it would be surprising to see clinicians drawing complete sets of autosegmental charts in assessment procedures” (p. 275). Yet commitment to a theory provides clinicians with “a framework that determines the dimensions of phonology to be examined in assessment and the content and organization of intervention goals” (Schwartz, 1992, p. 275).

Although the practical application of newer theories may not result in clinicians’ diagramming of hierarchical structures of phonological organization or determining the nature of a child’s underlying representations, it will shape our thinking of speech disorders in children. Specifically, I believe it will lead us to conceptualize phonological disorders from a broader-based and multidimensional perspective, which in turn will direct us in our pursuit of the order within the disorder.

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