

## Introduction

# Prologue: Toward Accurate Identification of Developmental Language Disorder Within Linguistically Diverse Schools

Janna B. Oetting<sup>a</sup>

**Purpose:** Although the 5 studies presented within this clinical forum include children who differ widely in locality, language learning profile, and age, all were motivated by a desire to improve the accuracy at which developmental language disorder is identified within linguistically diverse schools. The purpose of this prologue is to introduce the readers to a conceptual framework that unites the studies while also highlighting the approaches and methods each research team is pursuing to improve assessment outcomes within their respective linguistically diverse community.

**Method:** A *disorder within diversity* framework is presented to replace previous *difference vs. disorder* approaches.

Then, the 5 studies within the forum are reviewed by clinical question, type of tool(s), and analytical approach.

**Conclusion:** Across studies of different linguistically diverse groups, research teams are seeking answers to similar questions about child language screening and diagnostic practices, using similar analytical approaches to answer their questions, and finding promising results with tools focused on morphosyntax. More studies that are modeled after or designed to extend those in this forum are needed to improve the accuracy at which developmental language disorder is identified.

A language difference due to a child's status as a nonmainstream English dialect speaker or a bilingual English language learner (ELL) does not constitute a language disorder. All speech-language pathologists should know this. Linguistic differences have been distinguished from language disorders in multiple position statements by the American Speech-Language-Hearing Association (ASHA, n.d., 1983), numerous papers have been written about the clinical error that occurs when differences are interpreted as disorders (e.g., Paradis, 2016; Stockman, 2010), and knowledge about the *difference vs. disorder* construct is routinely tested on the Praxis (Educational Testing Service, 2015) and required by ASHA for national certification (Council for Clinical Certification in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association, 2013).

Recently, for nonmainstream dialects, Oetting, Gregory, and Rivière (2016) advocated for the *difference vs. disorder*<sup>1</sup> construct to be reframed as *disorder within difference*. They argued that the change is needed to help clinicians steer conversations with others toward the identification and treatment of children who present a language disorder that manifests *within* the context of their dialect. As shown in Figure 1a and 1b, these authors also suggested a single-box, *disorder within difference* model (as compared to a two-box, *dialect vs. difference* model) to help clinicians talk to others about the low percentage of nonmainstream dialect-speaking children who present a language disorder relative to the very high percentage of nonmainstream dialect-speaking children who are typically developing.

Here, we refine the construct even more to *disorder within diversity* to encompass all dialects (i.e., nonmainstream and mainstream) and all language learning contexts (i.e., multilingual and monolingual). As shown in Figure 1c, the *disorder within diversity* approach encourages conversations about how the surface manifestation of a disorder differs as a function of a child's specific dialect and/or ELL profile, and no dialect or language learning context is excluded

<sup>a</sup>Louisiana State University, Baton Rouge

Correspondence to Janna B. Oetting: [cdjanna@lsu.edu](mailto:cdjanna@lsu.edu)

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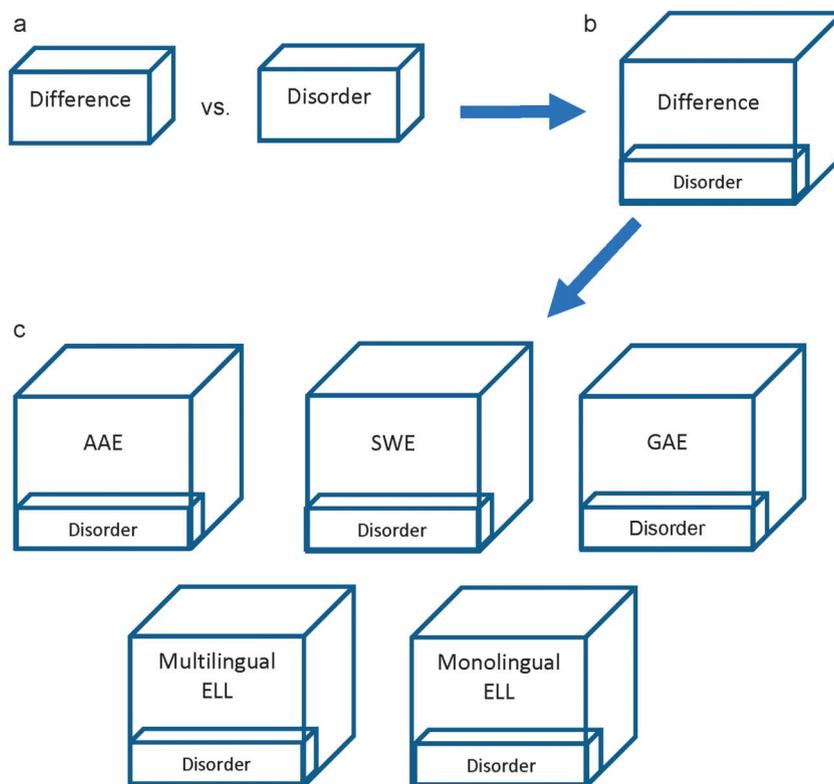
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<sup>1</sup>Oetting et al. (2016) referred to the *disorder within difference* construct as *disorder within dialect*. Here, we have adopted the term *difference* instead of *dialect* to include ELL profiles.

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**Figure 1.** Traditional and revised conceptual models. (a) Traditional *difference vs. disorder* model: concepts are presented as distinct but without illustrating children who present both a language difference and a language disorder; (b) revised *disorder within difference* model: concepts are presented as distinct while also showing that a disorder manifests within the context of a child's language difference, and concepts are scaled to illustrate the low percentage of children with disorder relative to those with typical development; (c) revised *disorder within diversity* model: multiple boxes are presented to illustrate all dialects (e.g., AAE, SWE, GAE) of a language and all language learning contexts (e.g., multilingual and monolingual) while also showing that the same disorder can manifest in different ways within different dialects and language learning contexts. AAE = African American English; SWE = Southern White English; GAE = General American English; ELL = English language learner. Parts a and b are adapted from Figures 1 and 2 from Oetting, Gregory, and Rivière (2016). Copyright © 2016 American Speech-Language-Hearing Association. Adapted with permission.



from the conversation. The *disorder within diversity* framework also encourages clinicians to understand the specific dialects and ELL contexts of their communities and seek community-specific information about the accuracies at which a tool, combination of tools, or set of practices identify children with disorders.

Speech-language pathologists work in many different types of linguistically diverse schools. Thus, it was by design that the studies in this forum include different types of linguistically diverse children. The studies were conducted across seven different states (three in urban/suburban areas; two in rural areas), with three including speakers of a non-mainstream dialect of English (i.e., African American English [AAE] or Southern White English [SWE]) and two including speakers learning two languages (i.e., Spanish and English). The ages of the children also varied across the studies, with one focused on preschoolers, two focused on kindergartners, and two focused on children in first through fifth grades. Despite these differences, there is considerable overlap in the research teams' clinical questions,

selection of tools, and analytical approaches. Indeed, all five teams ask practice-driven question(s) about the clinical usefulness of a tool(s), focus on tool(s) that measure morphosyntax, and implement statistical analyses to learn about a tool(s)' classification accuracy and/or predictive validity.

## The Five Studies

Identification of children with developmental language disorder often involves a two-step process, with screenings conducted first to identify those whose language ability status requires more testing, observation, or monitoring. Three of the studies in the forum focus on screening. Gregory and Oetting (2018) ask if teacher questionnaires can be used to reduce the number of direct screens conducted by clinicians. Using a sample of kindergartners (47 who spoke AAE and 51 who spoke SWE) living in rural Louisiana, they pitted two teacher rating tools, the Teacher Rating of Oral Language and Literacy (TROLL; Dickinson, McCabe, & Sprague,

2003) and Children's Communication Checklist-2 (Bishop, 2006), against two other screeners, the Diagnostic Evaluation of Language Variation: Screening Test-Part II (DELV-ST-II; Seymour, Roper, & de Villiers, 2003) and the Dynamic Indicators of Basic Early Literacy Skills (DIBEL) Next (Good, Gruba, & Kaminski, 2009). They found that for both AAE and SWE, all four screeners led to group differences between the children with and without language impairment, and all four were moderately correlated to each other. In addition, with empirically derived (i.e., community-specific) adjustments made to each tool's cut scores, they found the TROLL to accurately classify 77% of the children, and the TROLL and DELV-ST-II together to classify 79%. Their findings support the use of the TROLL as a teacher questionnaire within kindergarten screenings, while also supporting the use of the TROLL and DELV-ST-II together.

Next, Washington, Branum-Martin, Sun, and Lee-James (2018) ask whether a change across grades in children's nonmainstream English responses on the DELV-ST-I<sup>2</sup> relates to changes in their skills in oral language and reading. Oral language was measured by either the Test of Language Development-Primary (Hammill & Newcomer, 2008b) or Test of Language Development-Intermediate (Hammill & Newcomer, 2008a), and reading was measured by the Passage Comprehension subtest of the Woodcock-Johnson IV Tests of Achievement (Schrank, Mather, & McGrew, 2014). The participants were 835 first through fifth graders, all of whom spoke AAE and lived in an urban area of Georgia. Using an accelerated cohort design and dual change growth models, the authors found that change in the children's dialect use was influenced by their oral language abilities, whereas there was a reciprocal relationship between changes in the children's nonmainstream dialect use and their reading abilities. For screening purposes, Washington et al.'s findings demonstrate the importance of considering the density at which children produce nonmainstream dialect forms during school-based tasks and the task-specific dialect adaptations children make (or do not make) as they matriculate through school.

Also, it is interesting that Washington et al. (2018) and Gregory and Oetting (2018) examined different subtests (DELV-ST-I vs. DELV-ST-II) of the same screener. With adjustments made to the cut score of the DELV-ST-II, both subtests were found to be informative. Although the subtests were designed for different purposes (with one targeting grammar structures that contrast across dialects and the other targeting grammar structures that do not), both subtests target morphosyntax and are correlated to each other (Oetting, Porter, Seidel, McDonald, & Hegarty, 2011) and to the syntax subtest of the Diagnostic Evaluation of Language Variation-Norm Referenced (DELV-NR; Seymour, Roper, & de Villiers, 2005; DELV-ST-I: McDonald, Seidel,

Hammarlund, & Oetting, 2018; DELV-ST-II: Gregory & Oetting, 2018). Returning to Figure 1, this finding further demonstrates the difficulty (and, we would argue, inaccuracy) of discussing a child's use of grammar as reflecting either a dialect difference or a disorder. Indeed, all children who speak a language speak a dialect of that language; by extension, all children with developmental language disorder will present that disorder within the context of their dialect.

Weiler, Schuele, Feldman, and Krimm's (2018) participants were 274 kindergartners who lived in rural Tennessee. All attended schools where > 90% of the children were classified as White and non-Hispanic and where rural varieties of SWE are typically spoken. Using a population-based design, they administered the screening portion of the Rice/Wexler Test of Early Grammatical Impairment (TEGI; Rice & Wexler, 2001). Like the DELV-ST-I and DELV-ST-II, the TEGI screener targets morphosyntax. It includes two probes: one for past tense morphemes and the other for third-person present morphemes.

Across the 2 years of study, the fail rates of the TEGI past-tense probe averaged ~29%, which Weiler et al. (2018) noted was consistent with the fail rate implemented by a larger epidemiology study of specific language impairment (Tomblin et al., 1997). The TEGI screener also did not correlate at high levels to two other screeners, the Test of Articulation Performance: Screen (Bryant & Bryant, 1983) and Get Ready to Read! (Whitehurst & Lonigan, 2001). This finding supports the practice of school-wide, oral language screens that target morphosyntax and highlights the clinical error that likely occurs in linguistically diverse schools when screenings are limited to measures of articulation or emergent literacy.

The final two studies in the forum focus on measures of morphosyntax that can be used within an assessment. Potapova, Kelly, Combiths, and Pruitt-Lord's (2018) participants were 93 Spanish-English language learners who were attending a preschool in urban California. Based on caregiver report, 80% were classified as developing language typically and 20% were classified as low language learners. Using beginning- and end-of-year language samples elicited in English, these authors examined the children's percentage of correctly produced tense and agreement (T/A) morphemes along with two measures of T/A onset (i.e., T/A marker total and T/A marker productivity; Hadley & Short, 2005).

Results showed that the two T/A onset measures separated the groups (typical vs. low language) better than the traditional percent correct measure. Moreover, the two onset measures showed more stable growth over time and higher correlations with other language sample measures than the percent correct measure. Through two bilingual case studies, the authors also show the relative ease at which the two onset measures can be calculated.

Bedore et al. (2018) close out the forum by examining the diagnostic accuracy of 11 morphosyntactic forms that are targeted within the Bilingual English-Spanish Assessment (Peña, Gutiérrez-Clellen, Iglesias, Goldstein, & Bedore, 2018). Pooling data from three separate studies,

<sup>2</sup>Washington et al. (2018) refer to the subtest as the DELV-ST; we use the acronym DELV-ST-I to differentiate it from the DELV-ST-II subtest.

the participants were 378 first through fourth graders attending schools in urban/suburban areas of Texas, Utah, and Colorado. Children were classified as either high English experience, balanced English and Spanish experience, or high Spanish experience.

Across all three language groups and almost all forms, children with language impairment scored lower than those with typical language development. Nevertheless, the diagnostic accuracy of most of the forms was affected by the children's language experience, with diagnostic accuracy rates acceptable (> 80%) for only the high English experience and balanced English and Spanish experience groups. For the high Spanish experience group (when tested in English only), overall accuracy was < 80%, and 30% of the children with typical language were misclassified as impaired. These findings demonstrate the importance of collecting not only community-specific data but also child-specific language experience data to determine if and when an assessment tool should be administered. Returning to Figure 1, the results from this study suggest the need for multiple ELL boxes to help clinicians talk about developmental language disorder *within* the context of different ELL language experience profiles.

## Conclusion

The research teams that contributed to this forum work in different areas of the country and focus on different types of child language learning profiles, yet they are united in their commitment to improve the accuracy at which developmental language disorder is identified *within* the context of linguistic diversity. Given this, the research teams are seeking answers to similar questions about child language screening and diagnostic practices and using similar analytical approaches to answer their questions. Moreover, all five research teams are finding promising (although not yet optimal) results with tools focused on morphosyntax.

More studies that are modeled after or designed to extend those in this forum are needed to further evaluate—and hopefully improve upon—the tools that are currently available to clinicians. Future studies will be most useful if authors (both researchers and clinicians) learn as much as they can about the linguistic diversity of their communities, consider various measures of morphosyntax within their screening and assessment batteries, and explore community-specific and language experience-specific indices of classification accuracy and predictive validity. To do this, we all need to engage in more conversations with each other and with the children, families, and school personnel we serve. We hope the articles presented in this forum and the *disorder within diversity* framework facilitates these conversations.

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