Differentiating Language Difference from Language Disorder in Culturally and Linguistically Diverse Populations

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The Issue

•Misdiagnosis and overrepresentation of minority children in special education.

•Clinicians struggle to determine whether many minority children have normal language abilities influenced by their primary language or dialect, or if they do in fact have a language disorder.

•Especially prevalent given a growing minority population in the US.

What is a language disorder?

A problem with understanding and/or using spoken, written, and/or other symbol systems.

May involve…

1) the form of language (phonology, morphology, and syntax) 2) the content of the language (semantics), and/or
3) the function of language in communication (pragmatics)

Problems with current assessment

Norm-referenced standardized tests assume that all children being tested have been exposed to the same concepts, vocabulary, and life experiences that are often derived from White, middle-class school settings.

Problems with current assessment cont.

- Pointing and labeling objects occurs more often for children in a White middle-class setting than other cultural groups.
- Instead of asking, “What is this?” (an apple), Mexican American and African American parents would ask a question with an unknown answer like, “What happened at school today?”.
- Linguistic bias may occur when a child uses a dialect instead of Standard American English. Differences between dialects may result in overidentification or underidentification of a disorder.

Examples of Linguistic Differences

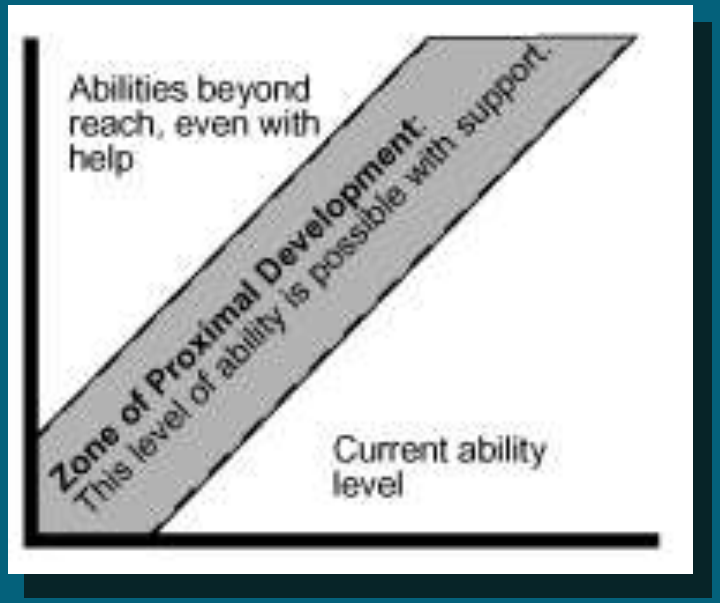
Black English	Spanish-Influenced English	Asian-Influenced English
“She be funny.” vs “She is funny.”	“I have five years.” vs “I am five years old.”	“I see she car.” vs “I see her car.”
“They eating.” vs “They are eating.”	“That table is more long.” vs “That table is longer.”	“He no live here.” vs “He doesn’t live here.”
“Nobody don’t never talk to him” vs “No one ever talks to him.”	“No touch that.” vs ‘Don’t touch that.”	“She is more shorter than me.” vs “She is shorter than me.”

Newer Solutions

- Assessments that require little language knowledge or experience.
- Dynamic assessment: A process which allows the clinician to combine assessment and teaching to reveal an ability to learn.
- Processing-dependent procedures: Assess abilities through asking the child to complete a task which requires metalinguistic, attentional, and memory skills.

Dynamic Assessment

- Based on Vygostky's "zone of proximal development"



Dynamic Assessment Cont.

- A pretest-teach-posttest format allows the clinician to see learning strategies such as how the child approaches tasks, the patterns of errors made, and the ability to self-correct.
- Examination of learning strategies also gives the clinician insight on a child's latent capacities for change (i.e., modifiability).

Dynamic Assessment Cont.

- Modifiability illustrates the degree to which a child is likely to benefit from a program of intervention.
- If a child is highly modifiable then it is likely that he has normal language abilities.
- In contrast, if a child has limited modifiability then it is likely that he has a language disorder and needs speech and/or language services.

Dynamic Assessment Cont.

- Establish the child's baseline.
- Mediated learning experience (MLE) session.
- Modifiability is scored through various learning behaviors including planning, self-regulation, application, motivation, response to intervention, and/or examiner effort.
- Posttest also measures modifiability.

Processing-Dependent Procedures

- The NRT tests working memory by asking subjects to repeat nonsense words at one-,two-, three-, and four-syllable lengths.
- No accounting for dialectical variation.
- A score is determined by calculating the number of phonemes (consonants and vowels) produced correctly.
- Children with language impairments repeat nonsense words more poorly than their normally developing peers (Bishop, North, & Donlan, 1996).

The Question

When differentiating between language difference and language disorder in culturally and linguistically diverse populations, do dynamic assessment procedures provide more accurate classification rates than processing-dependent procedures?

Results for Dynamic Assessment

Author (Year)	Participants	Procedures	Findings
Peña et. al. (1992)	50 children from ages 3;7 to 4;9. Majority were Puerto Rican or African-American.	Pretest-teach-posttest with two 20- or 30-minute MLE sessions	**1.** Classification accuracy of 92%.
Peña et. al. (2000)	**1.** 50 children ages 3;8 to 4;10 (78% Puerto Rican and 22% African American). **2.** 55 children ages 3;9 to 4;9 (76% Latino American 24% African American).		**1.** Modifiability classification accuracy 95%; 100% sensitivity; 93.8% specificity. **2.** Modifiability classification accuracy: 90.6%; 95.2% specificity; 72.7%.sensitivity **3.** Modifiability with LSC: Classification accuracy: 92.9%; 97.3% specificity; 60% sensitivity.
Peña et al. (2001)	79 children ages 3;9 to 4;9 (78% Latino, 22% African American).		1. Posttest measures using optimum cutoff: Overall classification accuracy 89% - 94%. 2. Modifiability score using optimum cutoff: 91%.
Peña et al. (2006)	71 1st and 2nd grade children (35% African American, 32% European American, 30% Latino American).		**1.** Posttest measures: 64% sensitivity; 83% specificity. **2.** Story Components combined with Episode Structure: 78.6% sensitivity; 85.2% specificity. **3.** Modifiability scores: 93% sensitivity; 82% specificity. **4.** Modifiability scores combined with other narrative scores: 100% overall classification.
Ukrainetz et al. (2000)	23 Native American kindergarten children.		**1.** Modifiability score with 1.4 cutoff point: 87% sensitivity; 100% specificity. **2.** Post-test scores with “no change” as diagnostic standard: 75% sensitivity; 87% specificity.

Results for Processing-Dependent Procedures

Author (Year)	Participants	Procedures	Findings
Dollaghan & Campbell (1998)	85 children ages 5;8 to 12;2 (58% African American, 34% White, 2% Hispanic, and 5% mixed).	Nonword repetition task (NRT)	**1.** Positive likelihood ratios using a cutoff point of 70% TOTPPC or lower was 25.15. **2.** Negative likelihood ratio using a cutoff point of 81% or higher was 0.03.
Oetting et al. (2008)	95 children ages 4-6 (42% White, 58% African-American).	CSSB and/or NRT	**1.** NRT with 70% SD cutoff yielded classification accuracy of 81%. **2.** Positive likelihood ratio of 7, negative likelihood ratio of .48.
Rodekohr & Haynes (2001)	40 participants between the ages of 7;0 and 7;3 (50% African American, 50% White).	Competing Language Processing Task (CLPT) and the Nonword repetition task (NRT)	African American mean on NRT= 81.15; White mean on NRT = 79.5.
Weismer et al. (2000)	581 2nd grade children (85% Caucasian, 13% African American, 1% Hispanic).	Nonword repetition task (NRT)	**1.** Positive likelihood ratio using 60 TOT PPC: 4.0 (NLI) and 4.5 (SLI). **2.** Negative likelihood ratio using 90 TOT PPC: .21 (NLI) and .43 (SLI).

Evidence-Based Decision and Conclusion

Dynamic Assessment…

- Sensitivity ranged from 60% to 100%
- Specificity rates ranged from 82% to 100%.
- Correct overall classification of 89% to 100%.
- Plante and Vance (1994) suggested that 90% + is ideal.

Processing-Dependent Procedures…

- Overall classification accuracy of 81%.
- Positive likelihood ratios ranged from 4.0 to 25.15 (ideally 10-99 to rule in disorder).
- Negative likelihood ratios ranged from .03 to .43 (ideally less than .1 to rule out disorder).
- Most of the likelihood ratios were not ideal.

Evidence-Based Decision and Conclusion Cont.

These findings suggest that **dynamic assessment is more accurate** than processing-dependent measures in differentiating between language difference and language disorder.

Future Research Should…

- Investigate other formats of dynamic assessment and processing-dependent procedures.
- Put more focus on Native American and Asian American children which current research has largely neglected.
- Investigate both measures as they pertain to various age ranges rather than focusing on one age, or combining the results of various ages together.
- Compare measures with the same population to determine which procedure most accurately classifies children of the **same study**.