Contrastive Analysis As An Option For Nonstandard Dialect Speakers

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Abstract

This study compared the clinical utility of contrastive analysis with two other language sample indices (average sentence length and complex syntax use) when working with low-income, African American English-speaking children. Only the contrastive analysis generated reliable differences between the at-risk children and the normally developing children.

Rationale

A number of alternative testing methods have been suggested for children who are not white nor from middle class families. Some of the alternative methods involve changes and/or revisions to existing standardized language tools (Fagundes, Haynes, Haak and Moran, 1998), the use of a dynamic assessment (Ukrainetz, Harpell, Walsh and Coyle, 2000) or use of experimental probes (Campbell, Dollaghan, Needleman, and Janosky, 1997). Language samples are often used by SLPs as part of the diagnostic process and are advocated for low-income, AA children. Stockman (1996) advocated language sample analysis relies on speech events within the natural context of the community, and can be applied to various groups because its content is ordinary speech that is not culture specific. The goal of the current study is to examine the utility of contrastive analysis, average sentence length, and complex syntax use when examining AA children.

Contrastive analysis is defined as a method for separating expressive speech-language patterns that are consistent with a child's native language (or dialect) from patterns that represent a language impairment. If the patterns are inconsistent with both Standard American English and the child's native dialect, then the pattern can be identified as a linguistic error.

A second language sample measure that has been proposed for AA children is average utterance length. Craig, Washington, and Thompson-Porter (1998) found a positive, and statistically significant, correlation between the children's C-unit lengths and their chronological age in months.

Washington and Craig (1994) found that children who produced low percentages of AAE forms, produced fewer instances of complex syntax. Children who produced high percentages of AAE forms, produced a greater amount of complex syntax.

This current research addresses one question:

1. What is the clinical utility of contrastive analysis versus other recommended language sample methods (average sentence length and use of complex syntax)?

Data

Twenty-one, AA three-year-olds (18 normally developing and 3 identified as at-risk for language impairment) from a preschool for at-risk children in Baton Rouge provided language samples for this study. The procedure for eliciting the language samples was through play interaction during a 15-20 minute session with graduate student clinicians using identical toy boxes that contained a Barney stuffed animal, a doll with a broken arm, and a parking garage. Thirty-five different nonmainstream patterns of southern African American English were coded following the procedures of Oetting and McDonald (2001). The average number of nonmainstream pattern tokens produced by each child was 33.05 (SD=23.78; range: 0-86). There were a total of 3,015 utterances produced by the children. The average number of total utterances produced by the normally developing children was 149.61 (SD= 70.29; range=57-348) and the average number of total utterances produced by the at-risk children was 107.33 (SD=31.64; range 80-142). The average number of utterances that were complete and intelligible in the normal samples was 133.17 (SD=66.36; range=50-320) and in the at-risk samples the number was 84.00 (SD=26.63; range=59-112). Only complete and intelligible utterances were analyzed for this project. Therefore there were 2,649 utterances available for this project.

Results

Table 1 presents a token count of each group's use of the 35 different nonmainstream patterns. Impressionistically, the two groups look similar when the first ten patterns on the listed are examined. Specifically, the first ten patterns on the list were used by both the normal and at-risk children. The rank ordering of these ten patterns is also similar across the two groups. The normal children, though, produced a greater range of nonmainstream patterns types (normal children = 27 vs. at-risk = 13). The average rate of nonmainstream pattern use for each child within each group, however, was similar across the two groups (normal = 7.11, SD = 3.46; at-risk = 7.33, SD = 1.53).

Table 1
Frequency of dialect patterns as a function of group.

	SLI	6N	4N
n	16	12	12
Age in months	77.1 (6)	74.5 (4)	56.83 (3)
PPVT-R	71.4 (10)	102.2 (13)	97.8 (8)
Mean C&I utterances	188 (52)	211 (79)	192 (63)
Total C&I utterances	3003	2652	2303
Full samples			
MLU	4.75 (.90)	5.90 (1.60)	4.98 (.60)
DSS	6.22 (1.06)	7.67 (2.14)	6.03 (.75)
IPSyn Total Score	83.25 (11.74)	91.75 (11.69)	85.92 (9.49)
IPSyn Sentence Score	25.00 (4.89)	29.50 (4.33)	27.50 (3.65)
Samples excluding utterances with nonmainstream patterns			
MLU	4.27 (.93)	5.28 (1.24)	4.58 (.58)
DSS	6.48 (1.01)	7.88 (1.53)	6.64 (1.35)
IPSyn Total Score	same as above	same as above	same as above
IPSyn Sentence Score	same as above	same as above	same as above
Normative data			
MLU[c]	--	5.49 (.97)	4.22 (1.20)
DSS[d]	--	9.84 (1.70)	7.40 (1.51)
IPSyn Total Score[e]	--	--	85.80 (4.21)
IPSyn Sentence Score	--	--	24.47 (2.36)

Contrastive analysis was the first alternative language sample analysis examined. A total of six patterns were coded as contrastive and eight were coded as noncontrastive. Table 2 lists the number of obligatory contexts of each pattern and the percent at which the children produced each of the patterns using a Standard English form. The total rate of contrastive patterns was .43 (SD=.18). The rate of nonconstrastive patterns was .92 (SD=.06).

Table 2 lists the rate of Standard English marking for each contrastive and noncontrastive pattern for the two groups of children. Two t-tests were completed to examine whether the three at-risk children's rates of use were lower than the rates of the normally developing children. The groups did not differ on the contrastive patterns, t (18)= 1.46, p= .259. The groups did differ on the noncontrastive patterns, t (19)= 4.5, p= .037. Both normal and at-risk children should show low rates of Standard English marking with the contrastive patterns but only the at-risk children should show low rates of use of the noncontrastive patterns.

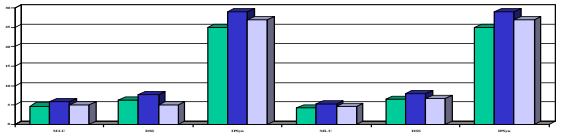
Table 2
Changes in MLU and DSS scores by rate of nonmainstream pattern use.

	10% or less of utterances with nonmainstream dialect patterns	10 – 20% of utterances with nonmainstream dialect patterns	30% or more of utterances with nonmainstream dialect patterns
Change in MLU Score	.22 (--)	.35 (.16)	.52 (.39)
Change in DSS Score	-.24 (--)	-.38 (.21)	-.37 (.77)

Utterance length was calculated two ways, once with the full samples and once with the first set of 50 utterances. Using the full samples, the children produced an MLU in words of 2.78 (SD= .80, range= 1.63-4.37) and an MLU in morphemes of 3.00 (SD= .86, range= 1.82-4.81). Using the first set of 50 utterances from each child, the children produced an MLU in words of 2.67 (SD= .83, range= 1.32-4.14) and an MLU in morphemes of 2.91 (SD= .89, range= 1.44-4.48).

Table 3 presents a comparison of the normally developing versus the at-risk children's MLU in words and morphemes. Four t-tests were completed to examine whether the three at-risk children's mean length of utterances differed from that of the normally developing children. For all four measures (i.e., MLU in words and morphemes for full samples and samples restricted to 50 utterances), the groups were not found to differ; full samples MLU-w t(19)= .486, p= .655 and MLU-m t(19)=.542, p=.620; restricted samples MLU-w t (19)= .099, p= .928 and MLU-m t(19)= .192, p= .861.

Figure 1
Group differences in MLU, DSS, and IPSyn.



Each sample was searched for nine different complex syntax patterns. Ninety-six tokens of these nine forms were identified in the samples. The most frequently produced patterns were simple infinitive-same subject, let (s)/ lemme, and tag questions.

Ninety of the complex syntax forms were produced by the normally developing children and six were produced by the at-risk children. Table 4presents the number of complex syntax forms produced by each group. The average number of complex syntax tokens per child in the normally developing group was 5.29 (SD=6.71). The number of tokens per child in the at-risk group was 2 (SD= 1.0). The difference between these group counts was marginally significant, t (18)= 1.9, p= .072. Like nonmainstream pattern use, however, frequency counts of complex syntax are difficult to interpret when sample length varies across the children. When each child's complex syntax use is divided by the number of utterances in the sample, rates of syntax use becomes very low; normally developing= .03 (SD= .03); at-risk= .02 (SD < .01). The difference between these groups' rates was not significant, t (18)= 1.54, p= .14.

Table 2
Diagnostic accuracy of MLU, DSS, and IPSyn.

	Accuracy	Sensitivity	Specificity
MLU	72%	37%	96%
DSS	63%	94%	42%
IPSyn Sentence Score		--	92% (4N only)

Discussion

The purpose of this study was to examine the clinical utility of three language sample analyses to determine which of these methods is most effective in identifying a language impairment in low-income, AA children.

The three alternative language sample analyses resulted in the following findings. For the groups combined, the rate of Standard English marking of the contrastive patterns was .43 (SD=.18) and the rate of Standard English marking of the noncontrastive pattern use .92 (SD=.06). The average utterance length of all of the children was 3.0 in morphemes and 2.78 in words when the full samples were analyzed and 2.91 and 2.67 when restricted samples of 50 utterances were analyzed. Finally, the children as a group produced 96 tokens of complex syntax. The most frequently produced patterns produced by the children were: simple infinitive-same subject, let(s)/lemme, and tag questions. When the at-risk children's scores were compared to those from the children developing normally, a group difference was found for the noncontrastive patterns. Group differences were not observed for measures of utterance length or for the children's rate of complex syntax use.

The results of this study indicate that only the contrastive analyses generated differences between the at-risk children's scores and those of the children developing language normally. For the other methods, group differences were not found. Some other types of group differences were found in the data, however. In particular, the at-risk group produced a greater rate of nonmainstream AAE patterns as a function of words spoken than the normal group (.24 vs. .17). As a group, the normal controls produced a greater number of AAE pattern types than those identified as at-risk (27 vs. 13), but the average rate of nonmainstream patterns per child was the same across the two groups (~ 7). Also, the at-risk group talked less than the normally developing group (84 vs. 133 utterances per sample). Finally, the at-risk group produced fewer complex syntax forms per child, even though the groups did not differ when sample length was controlled.

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