

# Social biases toward children with speech and language impairments: A correlative causal model of language limitations

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## ABSTRACT

This study explores adults' attitudes toward children with limited linguistic competency. Four groups of adult judges participated in this study: kindergarten teachers, women matched for age and education level with the teachers, undergraduate college students, and speech-language pathologists. The judges listened to audiotaped samples of preschool children's speech. Two triads of children were formed, matched for age, gender, and intelligence, but differing in communication abilities. The adults responded to questionnaire items addressing child attributes (e.g., intelligence, social maturity) and parental attributes (e.g., education level, SES). Systematic biases were revealed toward children with limited communication abilities. The biases are interpreted as reflective of adults' expectations for children's language. It is argued that adults call upon a correlative causal model of language acquisition to interpret individual differences in children's language abilities. Negative social and academic consequences of such misinterpretations are discussed.

It is widely accepted that language use reveals social identity which, in turn, can be associated with social attitudes. Language use involves conventions of linguistic discourse, pronunciation patterns, lexical selection, and the choice of which language or dialect to speak. These can, individually or in combination, trigger assumptions on the part of the listener about the speaker's ethnic origins, social class, socioeconomic level, and personal attributes, such as intelligence, diligence, and sociability. The associations between language use and presumed personal characteristics of the speaker are worked out most thoroughly for speakers of substandard dialects or nondominant languages. In these cases, listener biases are thought to tap into underlying attitudes toward nondominant social groups, such as recent immigrants (Hakuta, 1986), lower socioeconomic classes (Heath, 1983), ethnic discrimination (Grosjean, 1982; Lambert, Hodgson, Gardner, & Fillenbaum, 1960; McLaughlin, 1978; Williams, 1973b), or racial prejudices

(Taylor, 1973; Terrell & Terrell, 1983). Interpretations have focused on the associated cultural stereotypes as mediators of linguistic attitudes, a perspective put most succinctly by McLaughlin (1978, p. 3), who stated: "This hostility toward bilingualism has nothing to do with language as such. The hostility is directed not at language but at culture."

What is not captured in these studies is the social attitude displayed toward individuals who may be of the mainstream cultural identity, but who have not mastered their native language – that is, individuals who have speech and language impairments. These people are of interest for several reasons. First, because these individuals do not speak a conventional dialect but do cross racial, ethnic, or socioeconomic lines, any possible negative social biases could not be grounded in attitudes toward aggregates of people defined by income, race, or sociocultural identity. Negative attitudes toward speakers with speech/language impairment could reveal additional sources of attitude formation in the case of nonstandard language. Perhaps some portion of negative preconceptions toward dialect speakers and bilinguals (although surely not all) is attributable to general, socially widespread notions about language difference. These notions could lead listeners to attribute detectable differences between expected and observed linguistic forms to limitations in individual capacity and restricted environmental resources.

A second reason to identify possible social biases toward speech/language impairment is that it would enrich our interpretation of communicative impairment and enhance the effectiveness of intervention strategies. To the extent that speech and language impairments are associated with negative social judgments, individuals with such limitations have, in effect, two problems to cope with: they have limited linguistic skill in their native language, which is compounded by the additional problem of negative assumptions on the part of their listeners about their other psychological and personal capacities (cf. Rice, 1992). Remedial methods, then, would need to address the sociocultural context as well as an individual's linguistic competencies.

In this study we explored adults' attitudes toward children who have limited linguistic competency. Given that teachers and speech-language pathologists assume responsibility for the education of these children and the remediation of their linguistic deficiencies, we were interested in the nature of their assumptions about the children's personal attributes. Further, we were interested in the attitudes of adults who were not directly involved in service to children as indicators of more widespread social assumptions about communicative limitations. Four groups of adult judges, differing in professional identities and educational levels, were included. Thus, it was possible to examine the pervasiveness of possible biases (i.e., whether negative assumptions were evident across age and educational levels, and if such assumptions were ameliorated by specialized professional training). The findings reveal systematic biases toward youngsters with speech/language impairment, which become more pronounced with greater impairment.

### *Attitudes toward speakers of nonstandard dialects*

The classic studies of attitudes toward language groups were conducted by Lambert and his colleagues (1960). They introduced a viable methodology and established that listeners reveal social biases in the traits they attribute to speakers. Their methodology was the matched-guise design in which perfectly bilingual speakers record a passage, first in one of their languages and then in the other. Thus, the speaker is the same, but the language differs. Listeners were then asked to rate the speakers on personal characteristics, such as intelligence, leadership, character, and so on. Lambert et al. demonstrated that listeners ranked the dominant language (English) version higher in desirable personal attributes than they did the nondominant language (French) version, thereby revealing that the listeners did not realize they were evaluating the same individuals. Instead, they seemed to project their attitudes toward the group of dominant or nondominant language speakers. These findings inspired an extensive sociolinguistic literature in which negative social attitudes toward groups of nonstandard language speakers have been repeatedly confirmed and linked to associated cultural stereotypes (cf. Grosjean, 1982; Hakuta, 1986; Shuy & Fasold, 1973).

These attitudes are now thought to be constructed from peoples' experiences and cognitions (Giles & Coupland, 1991). As listeners process the language in such judgment tasks, they bring to their interpretations social representations associated with the speaker. These social categories are, in turn, constructed from accumulated information obtained from observations of, interactions with, and learning about individual speakers (Hamilton, 1981). Thus, the process of attributing personal characteristics to speakers is an active, dynamic, and complex one which draws upon the considerable depth of a listener's social experiences and the ways the listener has conceptualized those experiences.

### *Attitudes toward child speakers*

Relatively little is known about the effect of individual differences in children's language performance on listener judgments of related child attributes. In the few studies available, judgments of intelligence are linked to language competencies. Burroughs and Tomblin (1990) explored the social impact of language variation within the normal range of development by sampling the language of 35 children, aged 3;0 to 6;6 years, presenting 2-minute samples of children's speech to four adult judges (undergraduate students) and asking them to complete a semantic differential rating scale for each sample. The judges were told that the children were 4;6 to 5;6 years of age. Factor analyses produced a maturity factor composed of descriptors such as "intelligent," "independent," and "mature." Variance in the maturity ratings was predicted by speech and language features of the samples - phonological accuracy and average number of words per turn. The authors concluded that adults are "likely to view an individual with

immature grammatical and phonological skills as low in cognitive capacity" (p. 492). Their normative speech samples did not allow for a direct test of this prediction, nor did their limited sample of adults allow for estimates of the generalizability of their judgments. The study reported here is designed to address these limitations.

The association of child intelligence with child speech and language proficiency would be especially important in educational settings, where teacher judgments could translate into immediate educational consequences. In a study in which student teachers were asked to evaluate speech samples of third grade boys, the boys with "good voices" were perceived as more intelligent than boys with "poor voices" (Seligman, Tucker, & Lambert, 1972). To the extent that teachers' attitudes are constructed from their experiences and cognitions (Giles & Coupland, 1991) and conform to general cognitive processes of attitude formation (Hamilton, 1981), it would not be surprising to find that their judgments reflect general social expectations. This is consistent with evidence that teachers may carry mainstream negative attitudes toward minority groups and dialectal variations into their classrooms. Teachers are sensitive to dialectal differences, and they tend to regard children who speak nonstandard dialects less favorably than those who use standard grammar and discourse conventions (Heath, 1983; Reck, Reck, & Keefe, 1987; Taylor, 1973; Williams, 1973b). Thus, before individual personal qualities are known, adults (including teachers) may have formed some assumptions about children's intellectual abilities and other attributes. Because the communication skills of speech- and language-impaired children do not conform to social expectations, it is likely that they will also be victims of such preconceptions.

#### *Limited communication skills of specific language-impaired children*

Children with specific language impairment (SLI) are those who are otherwise developing according to age expectations, but who have significant deficits in speech and language skills. Obvious causal factors, such as hearing loss, mental retardation, and deviant social development, have been ruled out. Although there is considerable individual variation within this group of children, some characteristics can be considered typical. They tend to acquire first words and first word combinations at a later age than their normally developing peers. Morphosyntactic features, such as tense and agreement, may be slow to appear, relative to more general syntactic indices such as mean length of utterance. Speech production (phonological acquisition) may also be impaired, although not necessarily so (cf. Rice, 1991).

At the preschool level, relative to nonimpaired children of the same age, SLI children's spontaneous utterances typically have a reduced length of utterance, restricted vocabulary, a tendency to omit the small functor words and morphemes, and, sometimes, limited intelligibility. One impression could be that the language of these children is like that of younger, normally developing children. However, there are two cautions that apply to

this characterization. First, the technical accuracy is a matter of dispute (cf. Curtiss, Katz, & Tallal, 1992; Lahey, Liebergott, Chesnick, Menyuk, & Adams, 1992; Leonard, 1989; Rice & Oetting, 1991). Second, it suggests that the children might simply be talking "baby talk" or some kind of "cute" speech, as in the case of children who lisp or have minor mispronunciations (and yet still show up in television commercials). Although these minor deviations can be considered charming, few who know SLI children, with their more extensive limitations, would characterize their style of language use in this way.

In the sense that SLI children have limited communication skills relative to their same-age, English-proficient (EP) playmates, SLI children can be compared to children learning English as a second language (ESL). Observations in a preschool setting indicate parallel findings for these two groups of children, relative to the way they adjust their use of language to interact with their peers and the way their peers respond to them (Rice, Sell, & Hadley, 1991). These children are less likely than their EP playmates of the same age to initiate conversational turns with their peers, and they are more likely to shorten their responses and to be avoided as the recipient of an initiation. In sum, both groups of preschoolers with limited language skills were less well integrated into the classroom discourse interactions than were EP children – a finding consistent with other reports of ESL children's limited conversational participation in preschool classrooms (Hirshler, 1991; Tabors, 1987). Rice (1992) interpreted these findings as suggesting that children with restricted communicative repertoires can encounter social consequences at the level of participation in peer play activities. These adjustments could, in turn, be perceived as "social immaturity" by adult observers who are not familiar with a child's language limitations.

#### *School-entry risk for SLI children*

It is when children enter kindergarten that teacher attitudes may be particularly critical, for the transition to school brings the expectation that they have mastered basic communication and social interaction skills (Hains, Fowler, Schwartz, Kottwitz, & Rosenkoetter, 1990). This expectation is clearly expressed by the 7,000 kindergarten teachers sampled in the recent survey by the Carnegie Foundation for the Advancement of Teaching. When asked to report "serious problems" in children's readiness for school, teachers overwhelmingly cited "deficiency in language" (Boyer, 1991).

New evidence suggests that it is at the kindergarten level that SLI children are also likely to fail. In a prospective longitudinal study of SLI children, Catts (1990) found that these children are less likely than their non-SLI peers (of the same age and intellectual aptitudes) to be promoted to regular first grade at the end of kindergarten. He studied a group of kindergarten children referred for speech and language evaluations and reported that 33% of kindergarten children who were *suspected* of speech and language problems repeated kindergarten or were placed in developmental first grades. (Developmental first grades provide an "in-between" transitional

year with further preparation for the regular first grade curriculum.) Of the 35 children with *significant* language impairments, 17 (or 49%) did not advance to regular first grade classrooms.

Judgments of "social immaturity" are often implicated in the recommendations for nonpromotion to first grade. Informal discussions with the teachers in the Catts (1990) study indicate that many of their placement decisions for the SLI children were based on perceived social immaturity. Similarly, Walsh (1989) reported that the decision not to promote a child to regular first grade can depend on the teacher's estimate of the child's social maturity. Teachers' most common explanation of why children were not promoted was as follows: children who are academically advanced, but socially immature, are promoted to transitional first grades, whereas children who are academically slow are retained in kindergarten. Thus, even if the child's academic prerequisites are established, they are vulnerable to special tracking. Furthermore, the determination of a child's social maturity seems to be largely based on a teacher's subjective impressions. Thus, if a child's limited verbal interactive competency is interpreted by the teacher as social immaturity or limited cognitive competency, that child may not be promoted to regular first grade and thereby would be vulnerable to the likely negative effects on self-esteem and dubious educational outcomes of the developmental first grade placement (cf. Peterson, DeGracie, & Ayabe, 1987). This bias, of course, could be operative toward children speaking nonstandard English or with a limited English repertoire, as well as SLI children (Cummins, 1984).

In addition to teachers, SLI children receive specialized instruction from speech-language pathologists, who are professionally trained in speech/language disorders and etiologies, assessment, and intervention. As part of their training, these specialists learn to differentiate speech and language disorders from characteristics of general intellectual abilities or social status. Information about the way they make blind judgments of variations in young children's speech and language competency is not available, yet it could help illuminate the contribution of specialized training relative to general social expectations.

To summarize, it is well known that adults attribute personal characteristics to speakers on the basis of variations in speech and language. Historically, explanations for biased attributions have focused on the ethnic or sociolinguistic group affiliation of the speaker. Little is known about adults' judgments of child speaker characteristics. Because adults are instrumental judges of children's intellect and social maturity, it is important to learn more about their ability to detect variations in children's speech and language competencies and how they interpret those variations in terms of speaker attributes. Children with SLI demonstrate deviations from expected levels of speech and language competency and, therefore, are interesting test cases for investigation. The identification of systematic adult assumptions based on children's speech samples and of plausible underlying mechanisms of bias formation would have possible applications to other

child speakers of nonstandard forms, such as ESL and dialect-speaking children.

## METHOD

In order to test listener judgments of variations in children's speech and language directly, the present study adapted the Lambert methodology. In the matched-guise procedure, the same speaker presented the same information in two different languages or dialects. Because it is not possible to get a preschool child to switch from a "normal" to "disordered" dialect, an adaptation was necessary; thus, different children's voices were used in the experimental stimuli. In order to minimize possible differences in pitch or voice quality, as well as possible gender effects, two triads of children were formed, matched for age, gender, and intelligence, but differing in language skill. To keep the content of the utterances as similar as possible, the children were asked to count and to describe a toy, a procedure that allowed for a general content match, although not an exact one.

### *Sample children*

Six children were selected to provide short speech samples for the stimulus tape. All children demonstrated normal intelligence as measured by the Kaufman Assessment Battery for Children (K-ABC) (Kaufman & Kaufman, 1983); one child demonstrated performance in the low-average range. None of the children had physical or visual handicaps, and their hearing was within normal limits.

Two same-sex triads were formed, one male and one female. Children were matched within the triads on age (within 5 months) and IQ. Each triad consisted of a child with a speech and language impairment (S&L), a child with a speech impairment only (SI), and a child with normally developing speech and language skills (ND). Thus, three levels of communicative ability were represented in each triad. The SI and S&L children were enrolled in a language intervention preschool and were thought to be typical of children receiving clinical services for speech and language impairment.

Children classified as SI demonstrated one or more of the following criteria: (a) multiple articulation errors on the Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1986), (b) failure to master at least three age-appropriate phonemes, or (c) speech errors that adversely affected their intelligibility in conversational speech. It is important to note that these children's speech errors were more extensive than lisping or saying "wabbit." Children classified as S&L met the previous SI criteria and, in addition, at least two of the following language-impaired criteria: (a) a score below one standard deviation on the Peabody Picture Vocabulary Test-Revised (PPVT-R) (Dunn & Dunn, 1981), (b) a score below the 25th percentile on the Reynell Developmental Language Scale-Revised (Reynell, 1985),

or (c) a mean length of utterance (MLU) below the predicted range for chronological age (Miller, 1981). Children selected for the normal language group demonstrated age-appropriate skills on all standardized speech and language measures.

### *Stimulus tape*

An audiotaped sample of each child's spontaneous speech was collected. Three tasks were used to elicit the sample: counting, toy description, and event description (i.e., going to McDonald's). The original speech samples for each child were approximately 3 minutes in length. However, pilot testing suggested that the procedures were too long when samples were used in their entirety. Thus, samples were edited to approximately 1½ minutes in length, including only the counting and toy description tasks. This sample length compared favorably with the conventional 2-minute samples, found to be long enough for adult raters to make behavioral judgments (Williams, 1973a).

The samples were arranged on the stimulus tape in two orders of presentation. Children within the same triad were grouped together to facilitate within-triad comparisons. Conversely, children within the same language group were separated on the tape. The two orders were: Order 1 (SI male, ND male, S&L male, ND female, SI female, S&L female), and Order 2 (SI female, S&L female, ND female, S&L male, SI male, ND male).

The children's experimental samples were analyzed for MLU and percentage of intelligible utterances using the Systematic Assessment of Language Transcripts (SALT) (Miller & Chapman, 1990). SALT analyses confirmed that the two ND children's samples contained the highest MLUs and intelligibility scores. The MLUs for the S&L children were considerably lower, as expected. The female SI child had only a mild speech impairment, and therefore her percentage of intelligible utterances was higher than that of the male SI child. In general, the communication skills of the SI children fell between those of the ND and the S&L children, as intended. (See Table 1, for measures of the children's general speech and language skills, drawn from tests and more extensive spontaneous samples, and a description of the audiotaped samples.)

The sample editing was carried out with the goal of maximizing the comparability of content across the samples wherever possible, while maintaining the naturalness of the interaction. The entire transcripts of each sample are provided in Appendix 1. The counting sequence was standard across samples; accuracy was not predictive of "normal" status. There are no obvious content cues available to signal group affiliation.

### *Listener judges*

A total of 283 adult raters participated in this two-part study. The subjects were drawn from four adult groups: kindergarten teachers, a comparison group of noneducators matched for gender and educational levels, undergraduate college students, and speech-language pathologists.



Table 1. *Description of sample children: Chronological age (CA), sex, speech, language, and intelligence scores*

Sex	CA (in mos)	Communication ability <sup>a</sup>	Kaufman <sup>b</sup>	PPVT <sup>c</sup>	Standardized descriptors			Stimulus tape descriptors	
					Reynell <sup>d</sup> Rec/Exp	MLU <sup>e</sup>	GFTA <sup>f</sup>	MLU <sup>g</sup>	Intelligibility <sup>h</sup>
M	50	ND	98	95	+ .9/- .8	4.62	40%	6.89	100 %
M	46	SI	101	109	+1.4/- .7	3.64	8%	5.29	28.57%
M	51	S&L	86	82	- .6/-1.3	3.78	29%	3.73	33.33%
F	68	ND	115	112	+ .6/+ .6	5.39	47%	8.57	100 %
F	65	SI	126	105	+1.0/+ .3	4.45	22%	4.45	80 %
F	65	S&L	105	120	+1.1/-1.1	2.96	1%	2.36	36.36%

<sup>a</sup>ND = normally developing language, SI = speech impaired only, S&L = speech and language impaired.

<sup>b</sup>Processing composite on the Kaufman Assessment Battery for Children (Kaufman & Kaufman, 1983).

<sup>c</sup>Standard scores on Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981).

<sup>d</sup>Receptive/Expressive standard scores ( $M = 0$ ,  $SD = 1$ ) on Reynell Developmental Language Scales-Revised (Reynell, 1985).

<sup>e</sup>Mean length of utterance from 100 utterance language sample (not the experimental tape) calculated by Miller's (1981) criteria.

<sup>f</sup>Percentile rank on Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1986).

<sup>g</sup>Mean length of utterance language sample on the stimulus tape.

<sup>h</sup>Proportion of complete and intelligible utterances from language sample on the stimulus tape.

Thirty kindergarten teachers were selected to participate in this study. They were selected from public schools in a university community of 55,000 people, a smaller community of 7,000 people, and a larger metropolitan area. Of the kindergarten teachers contacted, 27 (90%) participated in the study. The teachers ranged in age from 24 to 54 years ( $M = 38.77$ ,  $SD = 8.43$ ). Their teaching experience ranged from 1 to 35 years ( $M = 13.07$ ,  $SD = 8.84$ ). Of these teachers, 26 were female. Their educational degrees ranged from BA/BS to MA/MS or more.

Female adults of comparable educational backgrounds, although not in the field of education, were selected to form a comparison group: 15 were members of a women's social sorority, and 10 were nurses. The comparison group was drawn from a small community of about 7,000 people. The women ranged in age from 31 to 56 years ( $M = 38.56$ ,  $SD = 5.95$ ). Their educational backgrounds ranged from high school diplomas to MA/MS degrees, with the majority of women holding BA/BS degrees. Various occupations were represented in the comparison group, including business positions and nursing, as well as homemakers and students.

Additionally, data from two larger samples were collected during guest lectures given by the first author. One group consisted of 175 undergraduate students at a large midwestern university who were enrolled in a developmental psychology course. The second sample consisted of 56 speech-language pathologists who were attending a professional state convention. Although the general educational backgrounds of these subjects can be inferred, additional demographic information is unavailable. These groups heard the Order 1 stimulus tape because preliminary analyses indicated that this order yielded more conservative effects (less exaggerated differences between groups).

### *Rating task*

A 9-item form was used to collect the adults' responses to the audiotaped speech samples: 7 items elicited judgments of child attributes, such as social maturity, peer relationships, intelligence, and academic success; 2 items elicited judgments of parental attributes, including assumed level of education and social status. Responses were organized on a 5-point Likert scale ranging from 1–5 for each item, where 1 was negative and 5 was positive. See Appendix 2 for the individual items.

### *Procedure*

A packet of six single-page forms, one for each child's speech sample, was distributed to all subjects. Each form was numbered with corresponding subject codes. The instructions were read verbally to the subjects by an examiner. It is important to note that the judges were told that the children were of equivalent ages.

You will hear samples of six children's voices. These children are preschool-age and will be beginning kindergarten next year. Each child will count and

then describe a toy. Please circle the response that most closely matches your impressions of each child. The anonymity of all responses will be observed.

You will complete one form per child.

The examiner remained in the room to play the stimulus tape and to ensure that subjects in pairs or groups did not discuss their responses. Before each sample was played, the examiner stated the subject identification number for the current sample. Following each sample, subjects responded to the nine questions on the form. They were instructed not to compare their responses to those on any forms previously completed.

## RESULTS

We were interested in how adult raters evaluated both child and parental attributes of children who varied in communication abilities. Children were selected for the stimulus tape as a function of their varying communication skills. It was important to verify that listeners did indeed perceive the communication skills of the children in the manner we intended. Therefore, the item "How well does this child get his/her message across?" was used as a validity check on the children selected. A  $4 \times 3$  (Rater Group  $\times$  Communication Ability) analysis of variance (ANOVA), with the levels of speaker communication ability as a repeated measure, revealed significant effects for communication ability,  $F(2, 536) = 615.88$ ,  $p < .001$ . The adult judges rated the ND children an average of 3.7 (or "normal for age"), the S&L children, 1.5 (where 1 was "not very well"), and SI children, in between at 2.5 (somewhat below "normal"), thus confirming our continuum of communication difficulties. Significant differences were noted for the between-group factor, rater group,  $F(3, 268) = 19.14$ ,  $p < .001$ , although this main effect was of considerably smaller magnitude than the effect for communication ability. These differences contributed to a Rater Group  $\times$  Communication Ability interaction effect,  $F(6, 536) = 4.39$ ,  $p < .001$ . The difference between the ND and the SLI children was greatest for the control group and least different for the speech-language pathologists. It was not the case that the speech-language pathologists were more likely to rate SI and SLI children as less effective. Instead, their ratings for the ND children were lower than those of the others raters.

Following confirmation that raters exhibited the anticipated perceptions of differences in the children's communication abilities, we were interested in how these differences resulted in judgments of personal attributes and indirect judgments about the children's parents. Two composite variables were computed to reflect child and parental attributes. For the Child Total, responses for 5 items were summed. These items inquired about the following characteristics: intelligence, social maturity, leadership qualities, peer relationships, and kindergarten success. (For overall responses to individual items, refer to Table 2.) At each level of communication ability (i.e., ND, SI, or S&L), a score ranging from 10 to 50 was possible:  $2(\text{Children}) \times 5(\text{Items}) \times (\text{Rating } [1-5])$ . (The first item, asking about the child's age, was not included because age-related information was provided in the in-

Table 2. *Mean scores and standard deviations (in parentheses) for individual items*

Items	Communication ability		
	ND	SI	S&L
Message	3.72 (.71)	2.69 (.74)	1.54 (.52)
Smart	3.62 (.48)	3.30 (.44)	2.40 (.50)
Leadership	3.57 (.56)	3.09 (.58)	1.96 (.59)
Likable	3.83 (.53)	3.70 (.54)	2.84 (.55)
Parent education	3.64 (.56)	3.30 (.61)	2.42 (.67)
Parent social status	3.34 (.45)	3.07 (.45)	2.34 (.58)
Social maturity	3.53 (.55)	3.12 (.52)	2.00 (.61)
Academic success	4.22 (.60)	3.66 (.67)	2.37 (.74)

*Note:* ND, normally developing language; SI, speech impaired only; S&L, speech and language impaired.

structions. Instead, it served as a factual "warm-up" item.) For the Adult Total, responses for 2 items were summed. These items reflected judgments about the parents' educational background and social status. Thus, a score ranging from 4 to 20 was possible. Reported in Table 3 are the cell means and standard deviations for the three levels of Communication Ability  $\times$  Rater Group for the Child Total and the Adult Total (see also Figures 1 and 2).

### *Group comparisons*

Two univariate two-factor ANOVAs were run, with rater group as a between factor and communication ability as the repeated factor. The dependent variables were Child Total and Adult Total. For each analysis, any subject that did not respond to items necessary for the computation of the composite variables were discarded. Only 6% and 10% of the total subjects were eliminated from the analyses for Child Total and Adult Total, respectively.

For the Child Total analysis, significant differences between rater groups were not apparent,  $F(3, 262) = 2.02$ ,  $p > .05$ , indicating that all four groups rated the speech samples similarly on items pertaining to child attri-

Table 3. *Mean scores and standard deviations (in parentheses) for child total and adult total composite variables*

Rater group	n	Communication ability		
		ND	SI	S&L
<i>Child Total</i>				
Teachers	24	37.54 (4.51)	33.13 (5.13)	23.29 (4.71)
Comparison group	24	39.58 (3.89)	32.96 (4.17)	20.04 (4.90)
Undergraduates	170	37.85 (3.85)	34.15 (3.94)	23.49 (4.62)
Speech-language pathologists	48	36.08 (3.76)	32.98 (4.62)	23.21 (4.76)
<i>Adult Total</i>				
Teachers	21	12.81 (1.80)	12.14 (1.91)	8.57 (2.14)
Comparison group	24	13.50 (1.72)	10.96 (1.55)	6.83 (2.14)
Undergraduates	166	14.36 (1.75)	13.02 (1.90)	9.68 (2.26)
Speech-language pathologists	44	13.34 (1.51)	12.96 (1.57)	10.57 (1.62)

Note: ND, normally developing language; SI, speech impaired only; S&L, speech and language impaired.

butes. Significant differences were noted for the repeated variable, communication ability,  $F(2, 524) = 661.61$ ,  $p < .001$ , and the interaction between rater group and communication ability,  $F(6, 524) = 4.68$ ,  $p < .001$ . The comparison group was primarily responsible for the interaction effect, accounting for the highest rating for the ND children and the lowest ratings for the SI and S&L children (see Figure 1). At the level of individual items (see Table 2), the main effects for communication ability held for each item ( $p < .001$ ). Rater effects were apparent for two items, maturity and probability of kindergarten success ( $p < .001$  and  $.01$ , respectively). Interaction effects were evident for each of the items.

For the Adult Total, main effects for rater group were apparent,  $F(3, 251) = 16.59$ ,  $p < .001$ , as were main effects for communication ability,  $F(2, 502) = 304.95$ ,  $p < .001$ , and the interaction between the two factors,  $F(6, 502) = 8.56$ ,  $p < .001$  (see Figure 2). As in the case of the Child Total, the interaction seemed attributable to extreme ratings by the comparison group, whose range separating the ND children from the S&L children was the largest among the four groups of raters. At the level of individual items, communication ability effects were evident for both items ( $p < .001$ ), as were interaction effects. The rater effect held for parent education alone ( $p < .001$ ).

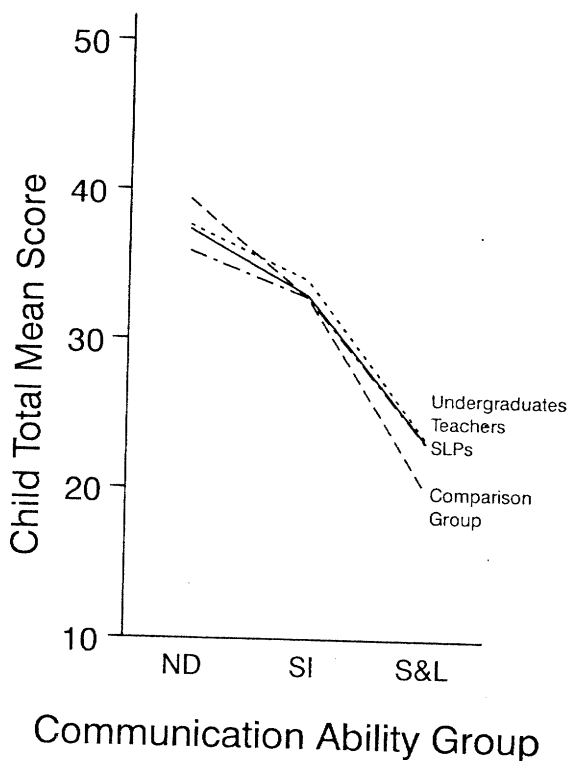


Figure 1. Adult judgment questionnaire: Group means for Child Total score.

A consideration of the effect sizes for the main effects and interactions can assist in interpretation. The communication ability main effects for individual items ranged from .46 to .65, indicating that the group means for these items were separated by approximately .5 of a standard deviation or more. According to Stevens (1986), these are medium effect sizes (it is rare to get very large effect sizes in the social sciences). On the other hand, the effect sizes for the interaction effects were far more modest, ranging from .03 to .09. In other words, the interaction effects, although significant, are separated by .09 of a standard deviation or less. Neither were the effect sizes for the rater group main effects very compelling. For the items entering into the Child Total composite score, only the items relating to social maturity and kindergarten success yielded rater group differences: the effect sizes for these items are .08 and .05, respectively. The effect sizes for the two parental attributes were somewhat larger: .17 for parental education and .11 for SES. Still, however, these effects remained small, particularly in relation to the considerably stronger effect sizes revealed by the communication ability factor. Thus, the overwhelming effect is that adults associate levels of children's communicative competence with levels

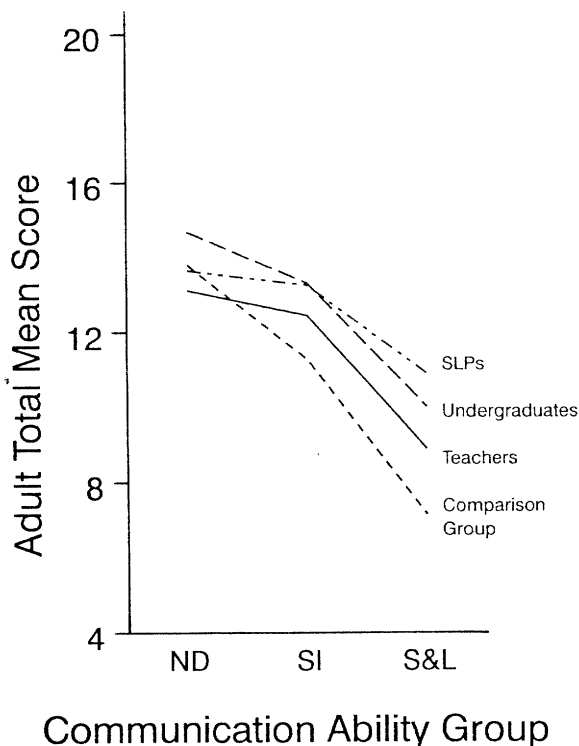


Figure 2. Adult judgment questionnaire: Group means for Adult Total score.

of their intelligence, leadership skill, popularity, social maturity, and probability of academic success, and, furthermore, with levels of parental income and education. This is all the more impressive given the brief duration (about 90 seconds) of the speech samples. The extent to which these judgments are modulated by the professional backgrounds and educational levels of the judges sampled is relatively minor.

#### *Factors influencing rater judgments*

In order to determine what factors influenced the judgments of the adult rater groups, each child's IQ score, as well as the two measures computed from the speech sample (i.e., MLU and percentage of complete and intelligible utterances), were correlated with the Child Total for each child. It should be noted that only six data points were available, and therefore the correlations should be interpreted very cautiously. Nevertheless, Child Total appeared more strongly related to the measure of intelligibility ( $r = .86$ ,  $p < .05$ ) than to either IQ or MLU (see Table 4), although the other two associations were positive and quite high.

Table 4. *Correlations between child descriptors and Child Total score*

Rater group	Child descriptors		
	Kaufman	MLU	Intelligibility
Teachers	.70	.78	.87*
Comparison group	.63	.82	.90*
Undergraduates	.76	.75	.85*
Speech-language pathologists	.69	.77	.83*
All subjects	.73	.77	.86*

\* $p < .05$ .

## DISCUSSION

It is clearly the case that adult judges do regard some children as better able to "get their message across" than others. Although the judges were not informed of the children's clinical status, their judgments corroborated the children's a priori clinical classifications, a finding that was true for the untrained as well as the trained judges. Thus, there is some social validity to the notion of "impaired" communicative ability for the children sampled.

What is interesting is how adults arrived at this detection of individual differences. There must be some sense of age-referenced speech and language competencies – some template of expected skills – that is applied to individual variations. The adult judges (even those without technical training) were able to identify the ND children as those whose speech and language was "normal for their age" and the clinically defined children as below that level. This is all the more impressive because in these samples, as real instances of 4½- to 5-year-old speech, the ND children's speech was not adultlike: that is, the children were not completely intelligible and did not speak with the clear enunciation of adults, nor with fully fluent grammatical utterances. Grammatical errors were present, such as the normal male's utterance, "now all the horses get out because he's to the farm"; false starts, repetitions, and unfinished utterances were evident in the normal female's sample. Thus, the distinction is not as simple as those of "fully correct, conventional language" versus "errorful language," but instead is operative on some relative scale.

Given the considerable variability in language skills across children, and of different ages, it is somewhat remarkable that such a judgment should be operative for late preschoolers. Presumably, in their informal, daily interactions with children of various ages, adults are able to accumulate a general sense of what constitutes "child talk." It would be very interesting to learn the basis of the adult's judgments, the kinds of cues they rely on in children's talk, to determine age-referenced competencies. Because the samples used in this study varied on multiple dimensions, they are not well suited for identifying the contribution of individual features, although the correlations imply that phonological competency (intelligibility) plays a



substantial role, as probably does MLU. These two features were also implicated in the Burroughs and Tomblin (1990) study; their measure of average number of words per turn is roughly equivalent to the MLU measure used here.

If adults can differentiate between young children on the basis of how well they talk and project attributes to the speaker on the basis of this perceived difference, this suggests that some of the bias demonstrated toward children speaking nonstandard English may, in part, be due to judgments about language accuracy as well as language difference associated with ethnic or minority group affiliation. In other words, the risk may be for *any* perceived differences from the expected patterns. In this sense, then, there may be a "different child dialect" for children that carries with it sociopsychological consequences similar to those observed for dialect speakers.

### *Correlative causal model of language impairment*

It is how the adults interpret the "different child dialect" that is of the most interest. In this case, there are no social stereotypes about aggregates of people, such as ethnic subgroups, to call upon. Instead, the judges inferred some individual differences on the part of the children: they assume that, as compared to children with normative speech and language acquisition, children with limited skills are less bright, less likely to be classroom leaders, less likable, less socially mature, and less likely to succeed in kindergarten. Furthermore, the judges ascribed limitations to these children's parents: the average SES level for the parent ratings of S&L children was blue collar/middle class, whereas for the ND and SI children it was middle/upper middle class; the average educational level for the S&L children's parent ratings was high school, whereas some college or college training was attributed to the parents of ND and SI children.

In the absence of an explanation of the linguistic differences based on social group membership, another explanation must apply. One possibility is that in their interactions with children, adults formed a *correlative causal model of language limitation*, which they then used to interpret differences from the normative template. Following Hamilton's (1981) correlational model of stereotyping, we suppose that adults, in their interactions with and observations of children, noted the co-occurrence of children's linguistic competencies and other variables, such as child attributes (e.g., intelligence, social maturity, and academic aptitude) and child background (e.g., parental education and social class). Furthermore, we suppose that the noted associations would be biased in a way that confirms the adults' expectations. Thus, the expected associations would be remembered better than the unexpected ones.

This can be illustrated using a contingency table (see Figure 3). For the predictor variable *x*, we can assume one or a combination of the attributes rated on the questionnaire, such as social maturity, intelligence, or parental educational level. The actual expected frequency for each of the cells is not

		Predictor Variable X	
		Good	Limited
Child's Linguistic Competency	Good		
	Limited		

Figure 3. Contingency table of information relevant to assessing the relationship between children's linguistic competency and other predictors.

known, although the generally high positive correlations of intelligence with verbal language skills and of parental education and SES with vocabulary development lead us to expect that the highest frequency will be in the good-good cell (i.e., children with high verbal abilities tend to have good intellectual and social skills and come from "good" home situations). Thus, it could be concluded that these predictor variables "cause" the good language abilities. This correlative causal model would receive further confirmation by the existence of children in the diagonal cell (i.e., those of limited language and limited variable *x*). For example, children with low intellectual functioning tend to have low verbal skills. What happens to the children who fall into the off cells? Our expectation is that both groups of these children will be vulnerable to misinterpretation. On the one hand, children with good language skills but limited variable *x* may benefit from the predictions of the correlative causal model and be regarded as functioning somewhat higher on variable *x* than may be the actual case. On the other hand, children with limited language skills may be misjudged and viewed as having less of variable *x* than is the case.

Thus, some distributional realities may strengthen a correlative causal model; however, the model would erroneously predict some associations. For example, although speech accuracy influenced judgments of intelligence in this study and in Burroughs and Tomblin (1990), in the nonretarded population (as in the samples here), phonological proficiency is not strongly associated with intelligence (Winitz, 1969). Furthermore, complex interactions among the variables may contribute to the improbability of

disconfirming the model. If, for example, youngsters with limited language skills are aware of these limitations and begin to make some adjustments in their interactive styles, they can begin to appear as if they are socially inept, in much the same way that adults can seem to be somewhat unresponsive when they do not know the language of their interactants. Thus, these children can be misinterpreted as confirming instances of the model; they are also likely to go unrecognized as disconfirming cases of the model. There simply is not available an alternative mechanism as salient as language for the expression of social and intellectual insights. Thus, in order to recognize these resources in language-impaired individuals, more extensive contact is required or more subtle observations. Finally, to the extent that this model is widespread, that it brings a negative assessment of the cause of a child's language limitations, and that it is assumed on the part of parents and families, there may be a sense of embarrassment about a child's language limitations. If so, there may be a reluctance to acknowledge a child's speech and language impairments, adding further to the invisibility of the disconfirming cases.

Thus, an oversimplified view of the origins of individual variability in language acquisition – a correlative causal model – could lead to the negative social judgments revealed in the findings of this study. While the technical details of the causal factors, and their interactions, remain to be worked out, they will surely be more complex than this model implies. What this model does suggest is how such biases could develop, operate, and continue. At the same time, such biases have obvious and powerful consequences for children's academic and social development.

A correlative model could also apply to children with dialects or limited nonnative language competency. It is consistent with the report that multilingual children are often classified as having low intelligence or learning disorders (Cummins, 1984). The implication is that *any* kind of nonstandard dialect or language may invoke this causal model to account for the difference. In the case of ethnic differences, an additional filter of cultural stereotypes could be overlaid on this model to flesh out the set of attributes associated with a conventional dialect.

### *Further questions*

An obvious question is why the educators and speech-language pathologists did not differ more from the nonspecialists in their attribution of personal characteristics to speech and language impaired children. Indeed, there were some hints that these raters responded differently from the other groups. Some individuals in these groups did indicate reluctance to respond to the parent items, saying in effect that they "weren't supposed to make these kind of judgments." When encouraged to respond anyway, their blind evaluations of the children did demonstrate a bias, although the speech-language pathologists had a somewhat more restricted range of judgments than the other groups. On the other hand, some members of the comparison group, who indicated the most extreme judgments, actually laughed

when the SI and S&L children's samples were played, as if the samples were jokes or parodies of expected abilities.

It is not known whether the professionals, especially the speech-language pathologists, may have surmised the clinical status of some of the samples. If they did so (and it seems likely that this happened at least occasionally), they would have had to guess at an etiology as well. Mental retardation would be a plausible etiology, in addition to SLI, that could not be ruled out without professional assessment. Our interpretation is that professionals are also likely to default to an account consistent with the conventional correlative causal model when other information is not available to override it (information they are trained to obtain in formal assessment circumstances). It would be interesting to examine the influence of diagnostic category on listener judgments to see if professionals modulate their biases when told that the children are SLI, while lay persons exaggerate their biases.

This study was not designed to identify the linguistic features associated with the "different child dialect," nor the question of which features are linked to the personal attributes. Bradac (1990) reviewed interesting ways in which factors such as lexical diversity and speaking rate interact with listener judgments of dialect speakers. Future investigations of child speakers could profit from the observation that intelligibility of the children's speech seem to play a substantial role, as well as other general descriptors such as mean length of utterance and general intellectual level. Discourse (dis)abilities are not well represented in such small samples, of course, although it is plausible that they contribute to listeners' judgments of speaker aptitudes. Some time ago, Williams (1973b) identified a dimension of "confidence-eagerness" by which teachers differentiated children's speech and linked those differentiations to ethnic/social class stereotypes. This dimension was thought to "reflect the degree to which the child speaks continuously and fluently, carries the 'conversational ball,' and reflects enthusiasm" (p. 116). That dimension has strong parallels to the discourse/social interactive limitations observed for SLI children, which are also linked to social status among ND children (Black & Hazen, 1990; Hazen & Black, 1989).

#### *Social consequences account of SLI*

The findings support the notion that SLI children suffer social consequences of their language limitations, in much the same way that dialect or nonnative speakers do (Rice, 1992). To the extent that adults and peers are likely to interpret limited speech and language competencies as an indication of limited child capacity or home setting, a child's opportunities to engage in discourse are likely to be curtailed, his or her confidence in communicative success will be reduced, and both factors will contribute further to a marginal interactive status.

Furthermore, the possible academic consequences are obvious. If decisions to advance kindergartners to first grade, for example, depend on

estimates of children's social maturity, and if these estimates are biased by the children's verbal capacities, then children with limited verbal skill may not be promoted. The tragedy is that confusing language limitations with social or personal attributes not only perpetuates a self-fulfilling prophecy of academic risk, but also does little to enhance confidence in the communicative interactive skills that are valued in classrooms.

## APPENDIX 1

Each unintelligible word is denoted by an X. Completely unintelligible utterances are denoted with XXX. Words set off by parentheses (and counting) were not included in the calculation of mean length of utterance. It is also important to point out that the language samples provided here were transcribed by a familiar adult using high fidelity stereo equipment. The descriptors for each sample provided in Table 1 were computed based on the intelligible speech heard in a quiet room, conditions similar to those experienced by the subjects.

Child, Examiner.

Classification = Male, normally developing speech and language (ND).

Age at sample = 50 months.

E Let's count and see what number it is.

E All the way to here, okay?

E 1.

C (2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 14).

E 14.

E Tell me about your toys.

C They're not my toys.

E Okay well tell me about them anyway.

C You hook this in here.

E Mhm.

C It's hard to hook.

E It is?

E Then what?

C It's hooked.

E Uhhuh.

C You put the horses in here.

E Oh, I see.

C The black ones get to be in the front.

E I see, then what?

C The brown ones get to be in the back.

E Oh.

E Then (what) what does it do?

C It rolls.

E Oh.

C Now all the horses get out because he's to the farm.

Child, Examiner.

Classification = Male, speech impaired only (SI).

Age at sample = 46 months.

E Let's see what number it is, okay?

E So help me count all the way to here.

E 1.

C (2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 17, 16, X, um, 20).

E 20.

C (22, 23, 24, 25).

E And what's this one, what's one more?

C (26).

E Did you bring something for sharing today?

C No.

C But I bring in the money out of my X.

E Well, tell me about that.

C (Um) I got it X X X X.

C X out my X and I got it out X X X X.

E Uhhuh.

C And I X X.

C XXX.

E (Oh) that's lots and lots of it.

C Yeah.

Child, Examiner.

Classification = Male, speech and language impaired (S&L).

Age at sample = 51 months.

E Okay let's try counting, okay?

E <1, 2>.

C <(1, 2)>.

E Sit up.

E Okay.

E 3.

C (3).

C (4, 9, 10, 11).

E What's next?

E 12.

C (Hey) why you live here?

E Tell me about your toys.

C I brought it for my.

C And my own.

E Mhm, what else?

C I got some whole bunch of toys.

C And I got whole bunch not for sharing.

E What's this?

C I'm taking my ball (and I) and I don't bring it.

C Tina, my ball.

C Why are the boys way up there?

- E Uhhuh.  
C XXX.  
C And I had to fall down.  
C XXX.  
E Uhhuh.  
C XXX.  
C XXX.

Child, Examiner.

Classification = Female, normally developing speech and language (ND).

Age at sample = 68 months.

- C (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20).  
E Good, QK.  
C (20).  
E Now, did you bring something to show me?  
E Tell me about your toys.  
C (Um well) you can paint their nails.  
E Mhm.  
C (And) you can put them in (my) my play pony bag (and you can um).  
C (And) they'll stand up (so, so you can) so you can (um) pretend (you're) something's riding the horse.  
E Oh neat.  
C (And) you can (um, un) pretend like >  
C (And) you can put it in the bathtub (and) and put real water in it.  
C (and) wash it.  
E Really, wow.  
E Anything else?  
C (And) you can (put buh) braid its hair and put barrettes in it.

Child, Examiner.

Classification = Female, speech impaired only (SI).

Age at sample = 65 months.

- E Let's see what number it is, one.  
C (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27).  
E Did you bring something for sharing?  
C Yes.  
E Tell me about these.  
C My mama bought them.  
C For my school here.  
C (And we take) the other kids can play with them cause I won't be here.  
C (cause) I'll be in kindergarten.  
E Mhm.  
C It's gonna be so fun at kindergarten.  
E Can you tell me something about this?  
C Okay.  
C My little brother Mark has this.

- C X X my mama X.  
C XXX.  
E Okay.  
C Knockknock.

Child, Examiner.

Classification = Female, speech and language impaired (S&L).

Age at sample = 65 months.

- E Now let's count and see what number it is.  
C Okay.  
E 1, 2.  
E (1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 18, 19, 21, 22, 23, 24, 28, 27, 29).  
E Okay, thanks.  
E Can you tell me about your toy?  
C Mhm.  
E In to here.  
C Yep.  
C I like to X at her.  
E Uhhuh.  
C I like (um) X.  
C XXX.  
C XXX.  
C I like them both.  
E Uhhuh.  
C And I like X X.  
E What else?  
C Nothing.  
E What do you do with her?  
C X at her.  
C X at her.  
E Uhhuh, OK.

## APPENDIX 2

### CHILD SPEAKER RATING SCALE

Child Number \_\_\_\_\_

1. How old *did* you think this child sounded?

1	2	3	4	5
3 yrs.	4 yrs.	5 yrs.	6 yrs.	7 yrs.

2. How well does this child get his/her message across?

1	2	3	4	5
not very well		normal for age		very well

3. How smart is this child?

1	2	3	4	5
well below average	below average	average	above average	well above average



4. Would this child be a classroom leader?  

1	2	3	4	5
definitely		maybe		definitely
not				
5. Would other children like this child?  

1	2	3	4	5
definitely		maybe		definitely
not				
6. How well educated are this child's parents?  

1	2	3	4	5
less than	high	some	completed	advanced
high school	school	college	4-yr. degree	degree
7. What is the social status of this child's family?  

1	2	3	4	5
welfare/ indigent	blue collar	middle class	upper- middle class	upper class
8. Does this child seem socially mature?  

1	2	3	4	5
not very mature		normal for age		very mature
9. Would this child academically succeed in a kindergarten classroom?  

1	2	3	4	5
definitely		maybe		definitely
not				

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