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ABSTRACT

To examine language outcomes related to language acquisition and academic readiness, this study followed a group of toddlers with slow expressive language development (SELD) through their kindergarten year. Subjects were 27 children between 20 and 34 months who produced fewer than 50 words or no 2-word combinations on L. Resconla's (1989) Language Development Survey. This group was matched with a control group of 25 children with expressive vocabularies larger than 50 words. All subjects were given an intensive battery of assessments for receptive language, cognitive development, oral motor function, and adaptive behavior. A videotaped free play interaction between parent and child was analyzed for maternal linguistic input, child communicative behavior, and child phonological characteristics. Subjects received follow-up assessments during their kindergarten year. A conversational speech sample was analyzed for mean length of morpheme utterance, and a narrative sample was collected using a wordless picture book. Findings suggested that children with SELD as toddlers: (1) performed on par with children who exhibited normal patterns of language acquisition, in terms of general and nonverbal intelligence, daily living and motor skills, and receptive language; and (2) demonstrated deficits in phonological awareness and narrative ability, two areas related to language acquisition. (MM)

Language Outcomes in Late-talkers: Kindergarten

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One of the most puzzling problems confronting clinicians is the child who, at age two, appears normal in every way, but fails to begin talking. While it is well-known that children with learning disabilities frequently have histories of slow language growth, and that older preschoolers with delayed language tend to have chronic deficits, very little is known about the prognosis for two year olds with delayed onset of speech. Traditional wisdom has counseled a "wait and see" attitude and parents are still frequently told that their two year old will grow out of the delay. While, no doubt, this spontaneous improvement does frequently occur, there are some two year olds for whom early expressive delay presages long term difficulty in language and school achievement. This study followed a cohort of children with slow expressive language development (SELD) as toddlers to their kindergarten year in order to examine outcomes in terms of language acquisition and academic readiness

METHODS

Subjects. Rescorla's (1989) Language Development Survey (LDS), a parent checklist consisting of 300 of the most common words in children's early vocabularies, was used to assign subjects to diagnostic groups. Twenty-seven children between the ages of 20 and 34 months who produced fewer than 50 words or no two word combinations were identified by means of preliminary questionnaires distributed in pediatricians' offices and through radio and newspaper advertising. SELD designation was later confirmed through use of the LDS. The SELD group was matched to a control group of twenty-five children who had expressive vocabularies larger than 50 words and used two word sentences, again using the LDS. Groups were matched on the basis of age, SES, race, birth order, nonverbal cognitive level, and sex ratio. All subjects passed hearing screening, had IQs above 85 and passed informal screening for neurological disorders and autism. (See Table 1.)

Procedures. At the intake evaluation, all the subjects were given an intensive battery of assessments for receptive language, cognitive development, oral motor function, and adaptive behavior. Parents also filled out questionnaires regarding demographic information, medical history and child behavior. A videotaped free play interaction between parent and child was analyzed for maternal linguistic input, child communicative behavior, and child phonological characteristics.

Subjects were seen for follow-up assessment during their kindergarten year. At that time, the Test of Language Development-Primary (Newcomer & Hammill, 1988) was given. The Vineland Adaptive Behavior Scale, a parent interview instrument, was administered. The McCarthy Scales of Children's Abilities (McCarthy, 1972) was used to assess IQ, and the Harris-Goodenough (1963) Draw-a-Person task was administered to determine nonverbal cognitive level. School readiness was measured with the Developmental Skills Checklist (CTB-McGraw Hill, 1990), a nationally standardized, individually administered readiness test. A conversational speech sample was gathered and analyzed for mean length of utterance in morphemes (Miller, 1981), and a narrative sample was collected using a wordless picture book.

RESULTS

Tables 2 through 8 present the results gathered from the kindergarten evaluation. Table 2 shows that SELD children perform on par with peers with normal language history on IQ measures. Table 3 shows that children with SELD continue to show significant deficits in adaptive communication and socialization skills at kindergarten age. Tables 4 and 5 suggest that children with SELD show persistent delays in certain expressive syntactic and articulatory skills. Further, they score within the normal range of general expressive language performance, but significantly lower than peers with a history of normal language development. Table 6 indicates that children with SELD score within the normal range, but significantly lower on a reading readiness test than do children with normal language histories. Table 7 gives the results of an item analysis of the Developmental Skills Checklist, which shows that the SELD group performed significantly more poorly on items requiring subjects to analyze and synthesize phonemic segments in words, a skill known to be related to reading success (Blachman, 1989). Table 8 suggests that children with SELD produce narratives with less mature story grammar structure and less adequate use of cohesive markers than do their peers with normal language histories.

IMPLICATIONS

These findings suggest that children with a history of slow expressive language development as toddlers perform on par with normal language history peers in terms of general and nonverbal intelligence, daily living and motor skills, and receptive language. They score at the low end of the normal range in most expressive language skills, as well as in reading readiness, but score significantly lower than normal peers in these areas. Children with SELD also demonstrate deficits in two areas known to be related to literacy acquisition: phonological awareness and narrative ability. These findings suggest that children with a history of SELD are at risk for academic difficulty, even though their general oral language skills have moved within the normal range by kindergarten age. The need for preventive intervention at the preschool or kindergarten level for children with a history of SELD is indicated, in order to increase their chances for success in school.

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Table 1

Demographic Information

	Age (mo.) at Kindergarten Evaluation	Socio Economic Status *	Percent Male	Vocabulary Size at Age 2 **	Hearing Level at Kindergarten
N	61.5 (1.8)	2.7	66	194.1	17.1 (4.3)
LT	62.0 (2.6)	2.8	75	27.7	18.1 (4.1)

* on a four factor scale with 1 the highest and 5 the lowest, based on Meyers and Bean (1968)

** Based on Parent Questionnaire.
Rescoria, L. (1989). The language development survey: A screening tool for delayed language in toddlers. *Journal of Speech & Hearing Disorders, 54, 587-599.*

Table 2

Cognitive Measures

	Nonverbal IQ Kindergarten*	McCarthy Verbal Intelligence Scale Scores**	McCarthy Performance Intelligence Scale Scores**
N	111.1 (16.2)	59.7 (8.4)	59.6 (8.6)
LT	111.5 (21.7)	55.1 (9.4)	55.4 (10.8)

* Based on *Draw-a-Person Test* - Standard Score. Goodenough, H., and Harris, D. (1963). New York: Harcourt, Brace and Javonovich.

** McCarthy, D. (1972). *McCarthy Scales of Children's Abilities.* N.Y.: Psychological Corp.

Table 3

Standard Scores on Vineland Adaptive Behavior Scales*

	Communication Domain †	Social Domain †	Daily Living Domain	Motor Domain
N	95.2 (12.1)	93.2 (8.1)	90.3 (11.9)	94.9 (10.8)
LT	84.2 (9.0)	86.7 (9.5)	84.3 (10.3)	93.2 (10.9)

* Sparrow, S., Balla, D., and Ciccetti, D. (1984). *Vineland Adaptive Behavior Scores.* Circle Pines, MN: AGS.

† Significantly different at $p < .01$

Table 4

Test of Language Development - Primary (TOLD-P)*
Percentile Scores

	Receptive Vocabulary	Expressive Vocabulary	Grammatical Understanding	Sentence Imitation †
N	68.8 (26.7)	45.1 (22.0)	59.0 (28.0)	63.6 (30.6)
LT	64.7 (25.4)	37.1 (25.3)	48.8 (30.8)	39.7 (29.4)

	Grammatical Completion	Word Discrimination	Word Articulation †
N	49.9 (24.6)	51.4 (25.5)	69.1 (21.6)
LT	45.0 (23.3)	62.6 (23.3)	40.2 (30.9)

* Newcomer, P. L. and Hammill, D. D. (1988). *Test of Language Development-Primary.* Austin, Texas: Pro-Ed

† Significantly different at $p < .01$

Table 5

TOLD-P Composite Standard Scores*
and
Mean Length Utterance (MLU)**

	Listening Quotient (Receptive Language)	Speaking Quotient † (Expressive Language)	MLU †
N	106.1 (11.1)	104.1 (11.1)	4.4 (0.6)
LT	105.2 (11.6)	93.1 (11.5)	3.9 (0.9)

* Newcomer, P. L. and Hammill, D. D. (1988). *Test of Language Development - Primary.* Austin, Texas: Pro-Ed

** Miller, J. (1981). *Assessing Language Production in Children.* Baltimore, MD: University Park Press.

† Significantly different at p < .03

Table 6

Developmental Skills Checklist*
Standard Scores

	Language	Memory †	Auditory	Print Concepts	Total Prereading †
N	98.0	97.2	99.1	91.5	98.1
LT	92.7	88.2	93.3	87.0	90.1

* CTB: McGraw-Hill (1991). *Developmental Skills Checklist.* Montery, CA.

† Significantly different at p < .01

Table 7

Developmental Skills Checklist*
Phonological Awareness Items

	Segmental Phonological Awareness Items † (from Memory subtest)	Supra-segmental Phonological Awareness Items (from Auditory subtest)
N	5.1	5.7
LT	3.4	5.9

* GTB: McGraw-Hill (1991) *Developmental Skill Checklist.* Montery, CA.

† Significantly different

Table 8

Narrative Skills

	MLU/T-unit*	Information Score**	% Use of Complete† Cohesive Ties***	Appleby† Score****
N	7.2 (1.0)	11.9 (3.2)	84.7 (16.6)	4.1 (.8)
LT	6.8 (1.2)	10.6 (3.9)	71.3 (27.1)	3.5 (.9)

* Miller, J. (1981). *Assessing language production in children: Experimental procedures.* Austin, Texas: Pro-Ed.

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† Significantly different at p < .05