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ABSTRACT

This study evaluated (1) whether the metalinguistic difficulties of younger children with language impairments are similar to those of older children and (2) whether there are any age differences in the ability of children to use encoding and retrieval strategies provided them. Fifty-two younger children (ages 5.0 to 8.9 years) and 88 older children (ages 9.0 to 11.9 years), all with oral language or reading problems, comprised the study population. Subjects were given standard oral and reading tests, a non-verbal intelligence test, and a set of metalinguistic tasks. Subjects were given the metalinguistic tasks again 9 months later under varying conditions designed to help improve performance. The study found that initially there were significant differences between the groups on every measure of metalinguistic processing, all in favor of the older group. The later scores, however, indicated that the young children improved more than the older children in all aspects though degree of improvement was related to type of task and particular diagnostic group. Results suggest that intervention in the beginning school years can have a positive effect on metalinguistic abilities, especially in the area of semantics. (Contains nine tables/graphs.) (DB)

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DEVELOPMENTAL CHANGES IN METALINGUISTIC ABILITIES OF LANGUAGE IMPAIRED CHILDREN*

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This paper is concerned with the effect of maturation on the development of metalinguistic abilities in children with oral language and/or reading problems, and on the effectiveness of intervention. We felt that both questions were important ones. In our previous research we had found that with maturation children with specific language impairment and delay in language development improve in their metalinguistic skills. However, even at age 7 and a half these children do not perform equally with their normally developing peers. Further, the specifically language impaired children have particular difficulty with semantax tasks requiring conscious awareness.

The claim is frequently made that early intervention is better than later intervention regardless of the domain or purpose of that intervention. However, this might not be the case when children are asked to engage in metalinguistic tasks. Studies of the development of metalinguistic awareness point to the middle childhood years as being the ones during which awareness of the complexity of the categories and relations being assessed can be achieved. In addition, more recent studies of second language acquisition in the classroom suggest that older children are able to learn more rapidly than younger children under these conditions. Since our interventions were not naturalistic this seemed to be an appropriate question to ask.

The two questions about age that were asked about the data collected in our study thus far were1) are the metalinguistic difficulties of younger language impaired children similar to those of older children? and 2) were there any age differences in the ability of these children to use the encoding and retrieval strategies provided them. Fifty two younger children, aged 5.0 to 8.9 years (mean age 7.5 years) and 88 older children, aged 9.0 to 11.9 years (mean age 10.0 years) on entrance to the study comprised the age

groups. Each group contained children with oral language problems, children with reading problems and children with both.

As stated in the earlier paper, the children were given standard oral (TOLD P or I) and reading (Metropolitan or Stanford) tests on entrance to the study. They were also given a non-verbal intelligence test (TONI) and a set of metalinguistic tasks. Comparisons were made of the younger and older children on all of these measures. These results are shown in the next overhead.

OVERHEAD ONE- COMPARISON ON INITIAL TESTS

There was no significant difference between the groups on the test of non-verbal intelligence. There were significant differences between the groups on the over-all measure of language in favor of the younger group. The differences on this oral language test, perhaps, could be accounted for by the fact that the younger group received the TOLD Primary, whereas the older group was given the TOLD Intermediate. Although the tests given to each age group was appropriate for the age range of each group, the test given to the older group might have had requirements especially difficult for children with reading and oral language problems. There were no significant differences between the groups on the reading tests.

The performace of the two groups was different on the initial battery of metalinguistic tasks. These results are shown in the next overhead.

OVERHEAD TWO- COMPARISON OF GROUPS ON META-TASKS

As can be seen there were significant differences betweer. the groups on every measure of meta-linguistic processing, all in favor of the older group.

Approximately 9 months after the children received these initial tests they were again given the metalinguistic tasks under varying conditions that were designed to help improve their performance. This time the older children did not perform significantly better than the younger ones on any of the tasks. For

some of the tasks the older children continued to do better than the younger However, for a few of the tasks the younger children performed significantly better than the older ones. Under the altered retrieval conditions the younger subjects did significantly better on the CLOZE and the sentence judement tasks, two of the three semantactic tasks. Under the altered encoding conditions the younger subjects did significantly better on these two tasks plus the rapid recall of numbers.

When scores from tasks assessing metaprocessing of each aspect of language were grouped together and standardized and differences from Battery 1 to Battery 2 were measured, a significantly greater amount of improvement by the younger as compared to the older subjects in these intervention conditions was found. These results are shown in the next overhead.

OVERHEAD THREE -STANDARD SCORE COMPARISONS

As these scores indicate the younger children improve more than the older children in all aspects. The next few overheads show that although younger children improve more than older children over-all, this is more or less the case depending on the aspect of language assessed and the particular diagnostic group they belong to. The following overheads show the amount of improvement in each type of metaprocessing task (phonological in overhead 4, lexical in overhead 5 and semantactic in overhead 6) with each type of intervention.

OVERHEADS 4, 5 & 6

Our first paper discussed our finding that significant differences among the diagnostic groups on metalinguistic tasks disappeared when the children were given encoding and retrieval starategies for these tasks. In general our results indicate that, thus far, these intervention strategies are useful to the

population as a whole. Our findings concerning the younger and older children suggests that this may not continue to be the case over the entire course of the study.

One explanation for the findings on the younger compared to the older children might be a possible difference in the degree to which language was impaired in these two groups. The older children might have a more severe language impairment to begin with given the initial significant advantage of the younger children on the TOLD. We earlier provided a possible explanation for this difference. Further, all the older children were significantly better than the younger ones on the metalinguistic tasks to begin with. The results of performance with intervention indicate that younger children are more responsive to help provided in metalinguistic tasks than are older children, especially in the area of semantactic processing. This, in turn might indicate that the nature of the language processing problems of language impaired children change with development. They appear to become more entrenched. It has been found that children with oral language problems , who have no overt neurological, physiological and emotional problems (specifically language impaired or SLI children) develop language more slowly than children without such problems, and, in like fashion that children of different ages with reading problems also display a developmental lag in their reading skills. The data we have obtained indicate that developmental lag might be an insufficient description for children with these problems. There appear to be increasing constraints on the language processing abilities of these impaired children with age. These data also indicate that intervention in the beginning school years can have positive effects on metalinguistic abilities, especially on an aspect of language that is notoriously difficult for these children, semantax.

It is our hope that the results of our study will provide information on how to intervene with which children at what ages to help them meta-process aspects of language more effectively. Thus far our findings are interesting and promising. We trust that they will continue to be so.

OVERHEAD ONE

T TEST COMPARISON BETWEEN YOUNGER AND OLDER GROUPS ON INITIAL MEASURES

MEASURE	GROUPS					
	YOUNGER		OLDER		TVALUE	P>T
	N=52		N=88			
	Mean	SD	Mean	SD		
TONI	100.12	9.45	99.52	10.61	0.34	0.73
TOLD	91.35	12.13	84.47	11.42	3.31	0.001
READ	28.23	27.09	27.91	22.85	0.07	0.94

OVERHEAD TWO

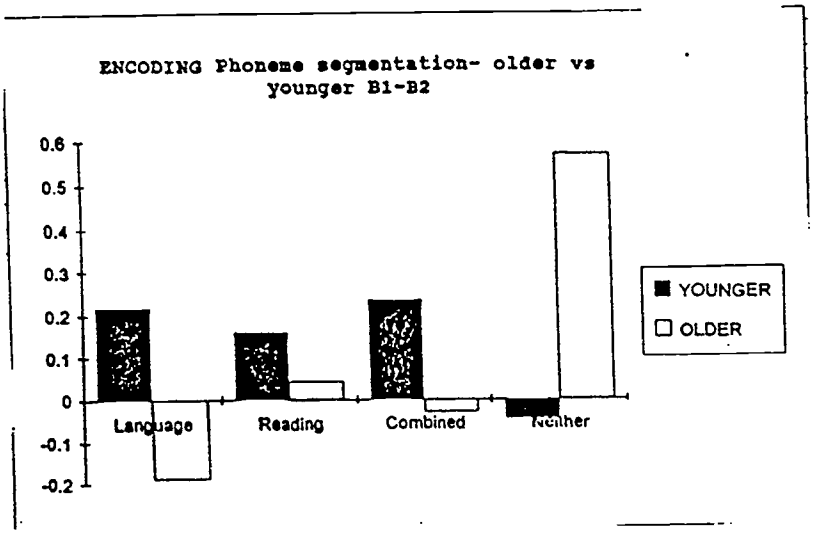
T-TEST COMPARISON BETWEEN YOUNGER AND OLDER GROUPS ON INITIAL META-LINGUISTIC TASKS

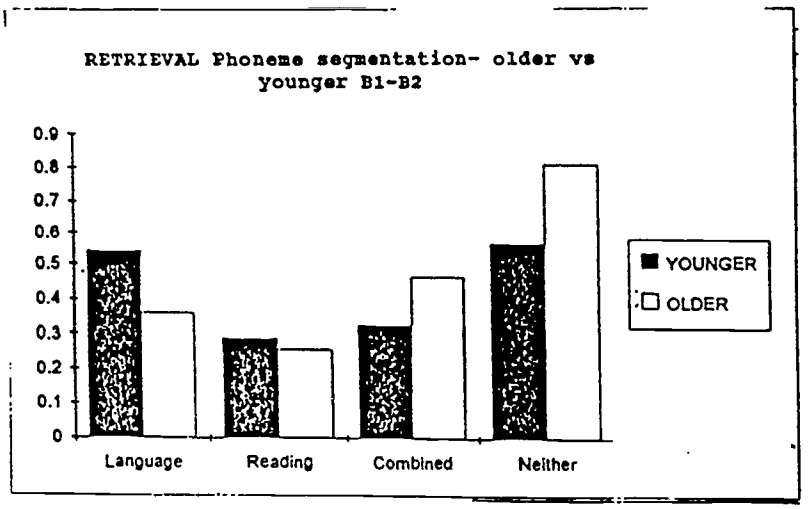
TASKS	GROUPS				TVALUE	P>T
	YOUNGER N=52		OLDER N=88			
	MEAN	SD	MEAN	SD		
PHONOLOGY	11.20	4.75	13.23	3.18	-2.72	0.01
SEMANTAX						
Grammar	32.43	10.99	42.28	7.42	-5.68	0.001
Sentence	8.57	2.13	9.48	2.45	-2.28	0.02
Cloze	14.59	5.89	20.54	4.23	-6.33	0.001
LEXICAL						
Recall	9.43	2.85	11.37	2.47	-4.04	0.001
Naming	1.03	0.35	1.41	0.39	-5.90	0.001
Tasks						

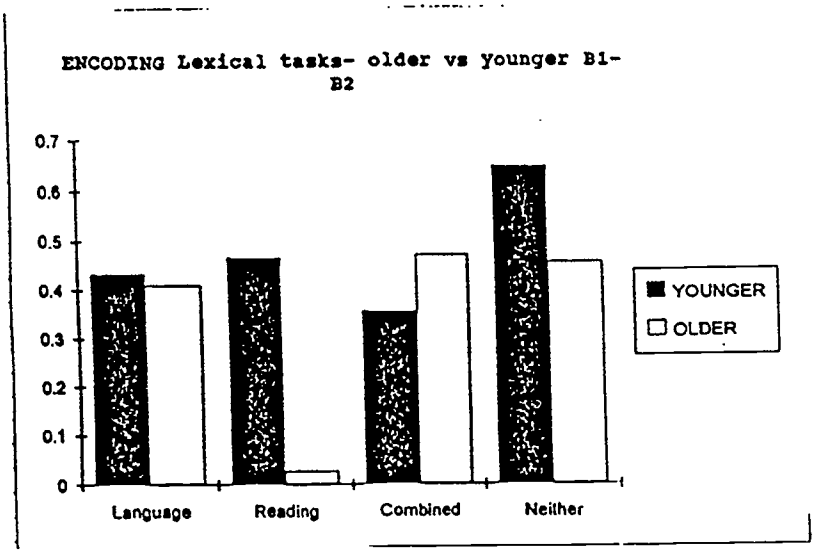
AMOUNT OF IMPROVEMENT FROM BATTERY 1 TO 2 BY YOUNGER AND OLDER SUBJECTS

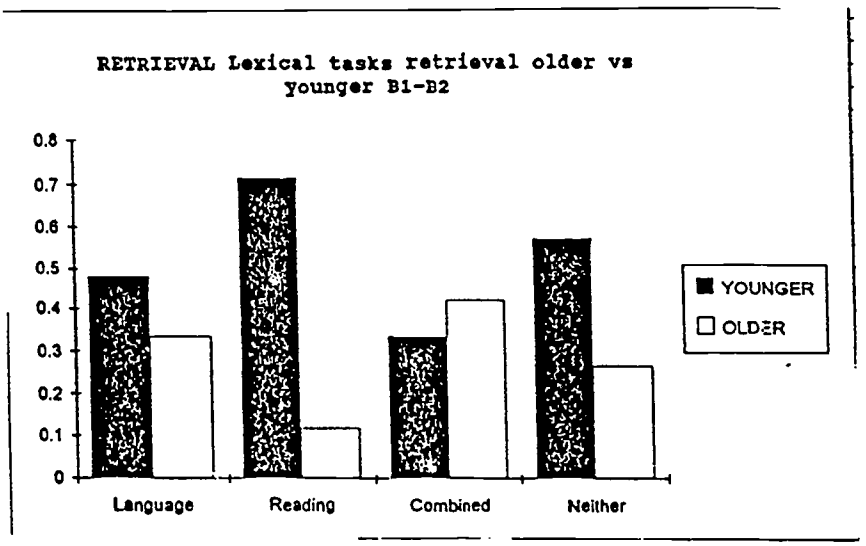
TASK	YOUNGER Mean Standard Score	OLDER Mean Standard Score	p Level
RETRIEVAL			
Phonology	.42	.47	
Syntax	1.92	1.18	
Lexicon	.52	.28	
All Retrieval			.002
ENCODING			
Phonology	.14	.13	
Syntax	1.85	1.12	
Lexicon	.47	.34	
All Encoding			.002

OVERHEAD FOUR

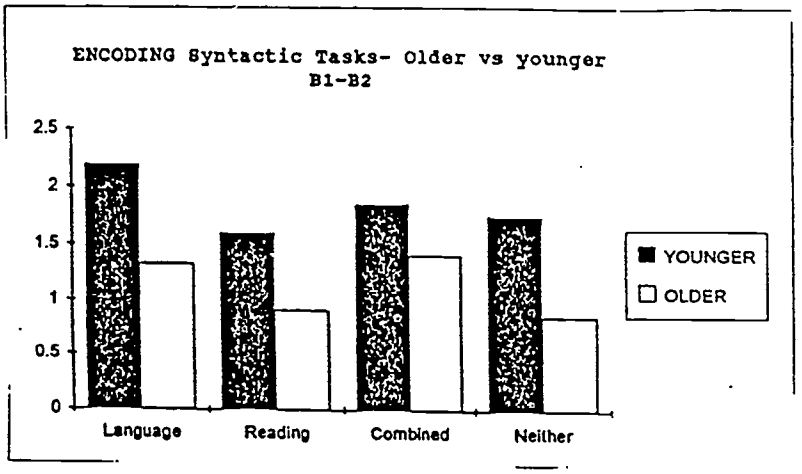


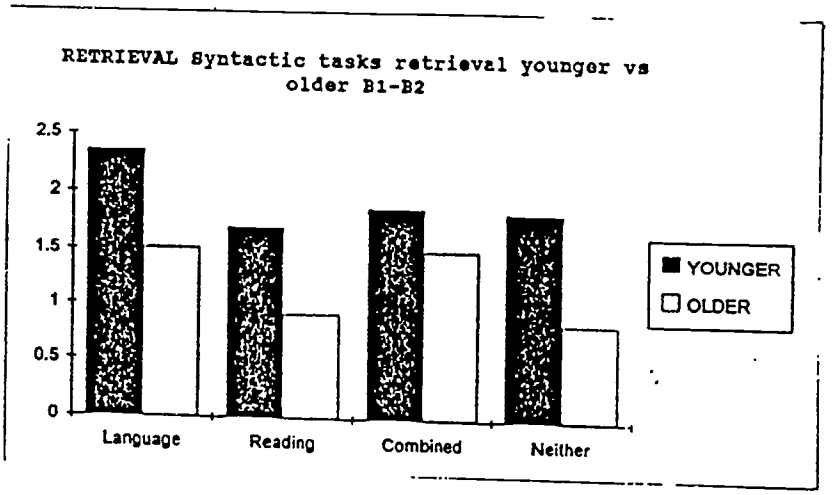



ENCODING Lexical tasks- older vs younger B1-B2
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Language
Reading
Combined
Neither
YOUNGER
OLDER


RETRIEVAL Lexical tasks retrieval older vs younger B1-B2
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Language
Reading
Combined
Neither
YOUNGER
OLDER

OVERHEAD SIX





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