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Once a Poor Reader - Always a Poor Reader?

Eva Magnusson and Kerstin Nauclér

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INTRODUCTION

In this paper we will present some data on the development of both language-disordered and normally speaking children's reading abilities from grade 1 to grade 3. The ultimate aim of the research project is to predict reading and spelling achievements and to develop methods for identifying at-risk children at an early age, preferably before they learn to read and write. If the children can be found already as preschoolers, they can be given adequate training before they start school instead of having to live through the slow and painful experience of winning a reputation as "poor readers", "bad students" and "unable to learn to read and write" before they finally qualify for remedial teaching.

Before going into the questions to be discussed in this paper, we will give some background information about the project. The children's reading and spelling achievements in grades 1, 3 and 4 are correlated with data from their preschool years on linguistic ability, linguistic awareness and other abilities that are considered important for the development of reading and writing such as short-term memory and information processing strategies.

When we started six years ago the subjects were 115 children, 76 language-disordered children and 39 normally speaking children. The language-disordered children consisted of all the children in the city of Malmö, Sweden, born in 1978, who were diagnosed as having an idiopathic (functional) language disorder. The language-disordered children fell into two subgroups, one which had language therapy before starting school (39 children) and one group (37 children) which did not, depending on whether the disorder was diagnosed by a speech pathologist as severe or mild. The 39 children in the normal group had been matched on an individual basis to the children with the most severe language disorders, i.e. the language-

disordered children in the therapy group. The matching was based on variables including sex, age, and nonverbal cognitive level. (A more detailed description of the study is given in Magnusson & Nauclér 1987.) After five years, 100 children still took part in the testings in grade 4.

At the end of grade 1 the group of language-disordered children did not read and spell as well as the group of normal children. This does not always hold on the individual level, as there are language-disordered children who perform better on reading and spelling tasks than the matched normal child. In these cases the language-disordered child differs from the matched normal child by being more linguistically aware, already at the preschool testings.

As could be expected, we find more language-disordered children among the worst readers and more normally speaking children among the best readers (Magnusson & Nauclér 1990). An interesting finding is that there are some language-disordered children who are good readers (see below). What characterizes the good readers, irrespective of language group, and distinguishes them from the poor readers, is their higher level of linguistic, or more precisely phonological, awareness and their more advanced syntactic ability, already as preschoolers.

High correlations between phonological awareness in preschool and reading and spelling in first grade are probably due to the fact that learning to read and spell in an alphabetic code always implies a decoding process, regardless of the type of instruction used. After the first years, when reading tasks turn from pure decoding into interpretation of the text, something more than phonological awareness is needed. If reading is seen as consisting of two components, decoding and comprehension, it seems plausible that good decoding is sufficient for a child to be regarded as a good reader according to grade 1 standards. This is further supported by the fact that we find high correlations with phonological awareness. In grade 3 when texts become more linguistically demanding and are of a less infantile character than in most first readers, it might not be enough to be a good decoder in order to qualify as a good reader. Therefore, high scores on a reading test after one year of reading instruction do not necessarily guarantee good reading later on.

The questions we will focus upon in this paper are the following: What happens after first grade when children are supposed to develop more advanced reading (that is when reading is no longer a goal *per se* but a means of gaining new information)? Do the best grade 1 readers remain good readers? Do the poorest grade 1 readers remain poor readers or do they improve, maybe even enough to qualify as good readers?

SUBJECTS AND TESTS

This paper is based on data from the reading tasks given at the end of grade 1 and grade 3 to the subjects in our longitudinal study. In both grades the following reading tasks were given:

comprehension (decoding) of single words
comprehension of sentences
reading of texts aloud

When the children were tested in grade 3, the tasks had of course been adjusted to the more advanced reading level of the grade 3 students.

RESULTS

The presentation of results will be organized around the following questions:

- Are the same children good/poor readers in grade 3 as in grade 1?
- Why do some children develop into good readers while others remain poor?
- What characterizes good/poor readers in grade 3?

Criteria for good and poor reading

To define good and poor readers we have used *ad hoc* limits. Children who perform more than 90% correct on the reading comprehension task (reading of sentences) are considered good readers, while children who are less than 20% correct are seen as poor readers. This is a mechanistic way of simplifying a complex issue and we will return to this matter in the discussion .

Are the same children good/poor readers in grade 3 as in grade 1?

Using the 90% and 20% limits for good and poor reading we can identify 14 good readers in grade 1: six normally speaking children, two language-disordered children from the therapy group, and six from the non-therapy group. Besides being good at sentence comprehension they were also good decoders (cf Figure 1). There were 12 poor readers: two normal children and five children from each of the language-disordered groups. Decoding ability differs among the poor readers, as can be seen in Figure 2.

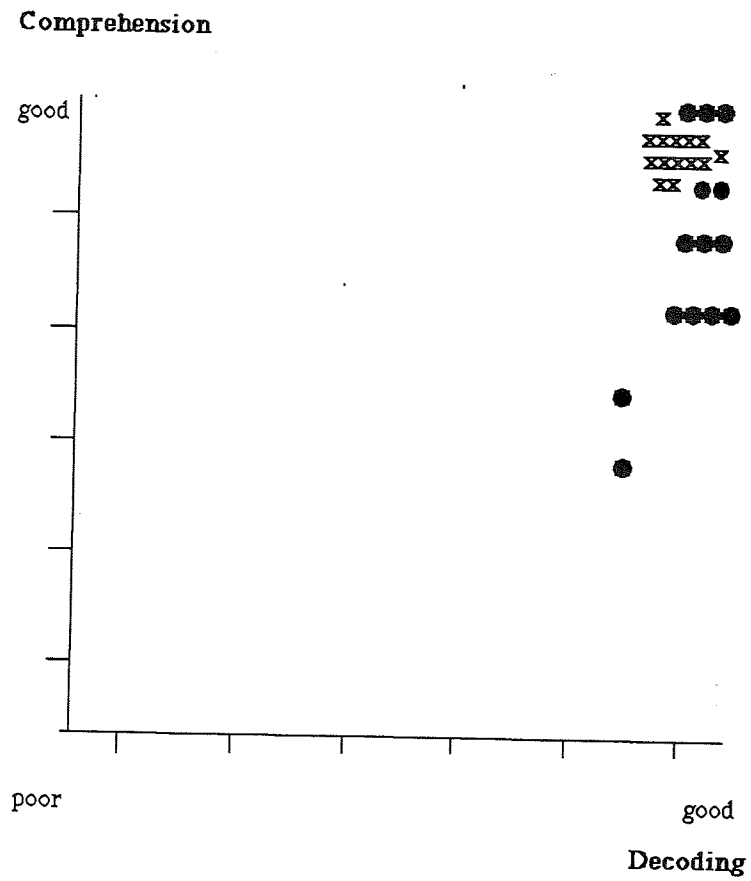

Figure 1. Distribution of good readers' comprehension and decoding ability in grade 1 (x) and grade 3 (o).

Let us now see what happens to the *14 good readers in grade 1* at the end of grade 3. Figure 1 shows that they all remain good decoders. On the sentence comprehension task, five remain good readers with the definition of good reading used above: two from the language-disordered non-therapy group and three from normal group. Another three manage 80% correct, among them one child from the language-disordered therapy group. Still another four manage 70% correct.

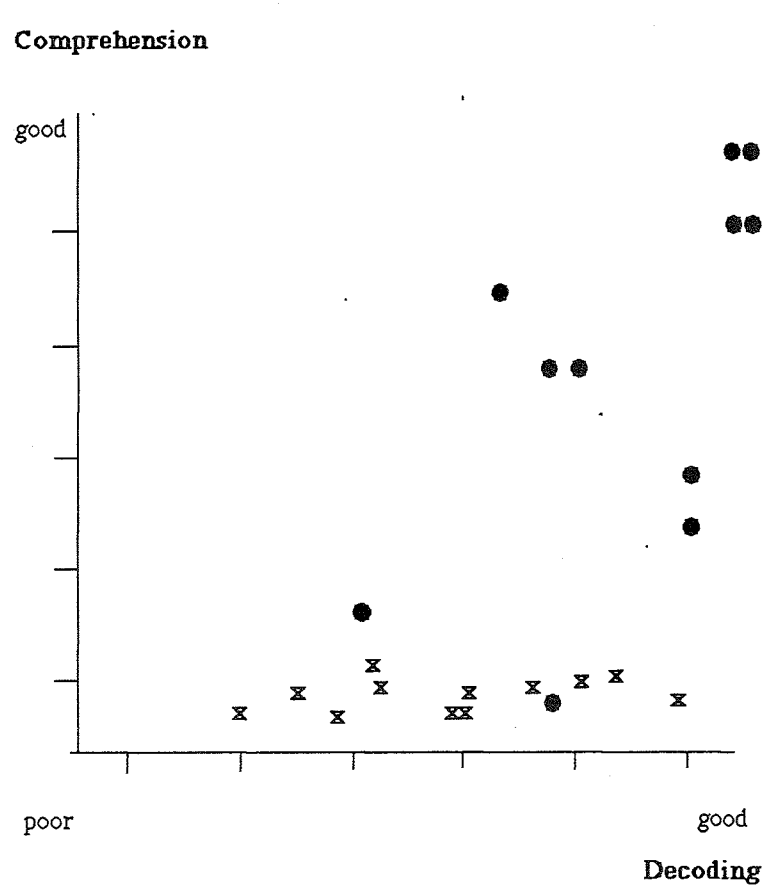

Figure 2. Distribution of poor readers' comprehension and decoding ability in grade 1 (x) and grade 3 (o).

Among the *12 poor readers in grade 1*, only two remain poor readers on the sentence comprehension task if the 20% limit is used: one child from the language-disordered therapy group and one from the non-therapy group. If 40% correct is used as a limit on the sentence comprehension task, we find another three poor readers, two language-disordered children from the therapy group and one from the normally speaking group (cf Figure 2).

These two children who were less than 20% correct on the sentence comprehension task were among the poorest decoders in grade 3. Since decoding ability has increased in all groups in grade 3, the least successful

decoders are four children who score less than 70% correct on the decoding task.

Four of the poor grade 1 readers had developed into good readers, one language-disordered child from the therapy group and three from the non-therapy group. In grade 1 all of them were doing better on the decoding task than on the sentence comprehension task.

If the same criteria for good and poor reading are used in grade 3 as in grade 1, the development from grade 1 to grade 3 can be summarized as follows:

five out of 14 good readers remain good;
four out of 12 poor readers improve into good readers;
two out of 12 poor readers remain poor.

There are no poor decoders in grade 3 if poor decoding is defined as less than 20% correct.

On the whole, there are fewer subjects in grade 3 than in grade 1 who fit the criteria for poor reading that we have used so far. If all the 100 children who were tested in grade 3 are taken into account, we only find three poor readers on the sentence comprehension task, i.e. one besides the two who were poor readers already in grade 1, and no poor decoders. As the level of decoding was higher than in grade 1, the least successful decoders in grade 3 are doing much better than the poor decoders in grade 1. In grade 3 the poorest decoders are five children who manage less than 70% correct, i.e. one subject besides the four subjects who were poor readers in grade 1. Two of these are poor on the sentence comprehension task in grade 3 as well.

Not only is the overall decoding level higher in grade 3, but the number of good readers has also increased. Out of 100 subjects, 39 qualify as good readers, and they were good on both the sentence comprehension and the decoding tasks. Thus, the majority of the good readers in grade 3 had not been good readers in grade 1.

Why do some children develop into good readers while others remain poor?

Let us consider if an explanation to the children's reading achievements can be found in what the school provides for the children. What is the role of reading methods and remedial teaching?

Reading method. The reading instruction methods used in Sweden are of mainly two types: language experience approach (LEA) and phonics. In our

interviews with the teachers about how they conduct reading instruction, most teachers confessed to one or the other type of method, while some characterized their methods as "phonics with some elements inspired by language experience approaches". All the poorest readers have been taught with phonics methods or by "LEA inspired phonics", while good and improved readers have been taught with either LEA or phonics. Thus, we have no grounds for considering one method as more effective than the other. Whether children improve or not does not seem to be a consequence of the type of reading method they have been subject to.

Remedial teaching. The poor readers who remain poor have been subject to remedial teaching more often and more intensively than the poor readers who improve their reading. Several of those who remain poor have been placed in special units for learning disabled children or in reading groups with only a few students. From these facts it is tempting to draw the conclusion that remedial teaching does not help, children improve their reading. However, such an interpretation may be too rash. A more satisfactory conclusion about an unsatisfactory situation is that poor readers (remaining poor) need a lot of extra help, and that this is the level they reach with the best and most intensive support that can be provided for them in our school system at present.

As we cannot find an explanation for the individual children's reading results in the school activities, let us turn to the children themselves and the linguistic and metalinguistic abilities they have when they start school.

Linguistic and metalinguistic prerequisites. The abilities that children have when they start school seem to be decisive. In a comparison between the good and poor grade 3 readers' results on the preschool testings, we find that the good readers showed a higher level of linguistic awareness and a better syntax, already a year before starting school. This is confirmed in our correlation studies of all the subjects in the longitudinal study. What is needed is an ability to identify phonemes and recognize rhymes, i.e. not a very advanced level of linguistic awareness. Phonological problems do not seem to prevent reading acquisition, provided that the children are linguistically aware. Children who are aware of phonemes when they start school become better readers, either in grade 1 or, at least, in grade 3. Some children become aware of phonemes during first grade, but that seems to be too late, at least in order to allow them time to improve their reading or catch up with the good readers in grade 3.

Table 1. Error analysis in grade 3

Reading group	*operation%*					*unit%*			*consequences%*					
	subst	*delet*	*add*	*meta*	*manip*	*phon*	*morph*	*word*	*lex*	*morph*	*synt*	*sem*	*text*	*negl*
Good readers ≥ 90% N = 39	51	21	15	3	10	25	52	20	10	7	21	5	16	40
Poor readers Comprehenders ≤ 40% N = 12	46	20	14	4	16	39	41	16	20	4	29	6	13	29
Decoders ≤ 70% N = 5	56	15	11	5	6	35	51	13	18	8	24	4	14	31

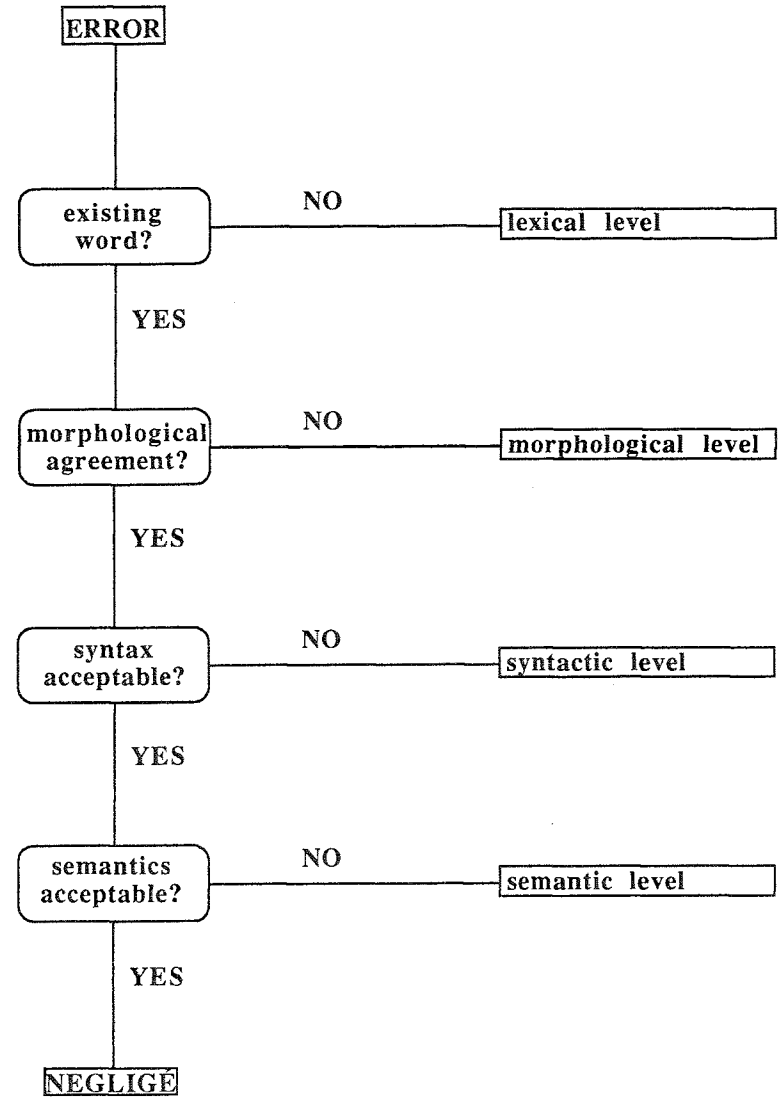

Figure 3. Flow chart showing the analysis of error consequences.

The conclusion we draw is that what can be done in order to help children develop into good readers should be done before the children start school. After that it may be too late.

What characterizes good and poor readers in grade 3?

Analysis of reading errors - when such an analysis is done - usually consists of categorizing the errors as to operation in substitutions, deletions, additions and metathesis and summing up the errors made by the reader. Such a procedure provides nothing but the error frequency for each category and gives no information about the reading strategies used by the readers. We have tried to capture this by taking into account the linguistic unit(s) involved in each reading error. We have added another aspect as well, i.e. the consequence of the error on the text. Table 1 shows how each error is analysed as to *operation* (substitution, deletion, addition, metathesis and manipulation), *linguistic unit* (phoneme, morpheme, word and boundary) and *consequence*. The consequences of the error are analysed as to whether they affect the lexical, morphological, syntactic or semantic level of the text. If none of these levels are appropriate, the effect of the error is regarded as negligible and therefore called a *negligé*. The flow chart in Figure 3 shows the procedure.

We found that by far the most common operation used by all readers was to substitute. However, there was a difference between the good and the poor readers as to what linguistic unit was substituted. It can be seen in Table 1 that almost 3/4 of the substitutions made by the good readers consisted of meaningful units (morphemes and words) and only 1/4 of meaningless units (phonemes). The poor readers, divided into poor comprehenders and poor decoders, substituted a greater part of phonemes (39% and 35% respectively) and, consequently, the amount of meaningful units involved in errors was lower. The difference as to reading strategies is also obvious in error consequences. Forty percent of the good readers' errors are negligés compared to about 30% of errors made by the poor readers. Almost 20% of the errors made by the poor readers are non-words compared to 10% of the errors by the good readers, and poor readers make many more errors with syntactic consequences than the good ones.

Table 2. Mean of reading error frequency and reading rate

Reading group	*Error frequency*	*Reading rate (sec.)*
Good readers ≥90% N = 39	9.8	75
Poor readers Comprehenders ≤40% N = 12	7.7	162
Decoders ≤70% N = 5	9.0	184

Thus, concerning reading strategies we find the same tendencies here as we have found in earlier studies (e.g. in Magnusson & Nauclér 1985): Good readers use meaningful units more frequently than poor readers and their errors do not violate syntactic rules or the content to the same extent as the errors made by the poor readers. However, since we have defined good and poor readers in this study from the results on a reading comprehension task (and not on reading rate or error frequency) it is not surprising that there is such a difference in reading strategies between good and poor readers as reflected in the analysis.

As could be expected, the good readers are by far the fastest reading group with an average reading rate of 75 sec compared to the poor comprehenders' and decoders' average of 162 sec and 184 sec, respectively. This is shown in Table 2.

An unpredicted result, however, is error frequency. As can be seen in the same table, the group of good readers made more errors (9.8 on the average) than the poor comprehenders and decoders (7.7 and 9.0, respectively).

DISCUSSION

In answer to our main question of whether a good reader remains good and a poor reader poor, we can say this: Children who are good readers in grade 1 have a chance of remaining good readers. For children who are poor readers in grade 1, there is a risk that they may remain poor, although

some of them can improve. Reading improvement does not seem to be related to what is done at school, but rather to the children's linguistic and metalinguistic level *before* they start school.

In our presentation so far we have treated good and poor reading as if these concepts were easily defined. This is not the case, however. For instance, when different types of reading tasks are given (which is necessary unless we think that there is just one type of reading), which task(s) is (are) to be used as a basis for decisions about reading level? What are we to measure e.g. in a task of reading aloud - reading rate, or number of errors, or maybe something else? Or are tests of reading comprehension better indicators of reading ability? What about reading strategies?

The complexity and the difficulty in defining good and poor reading become apparent in observations of the relationship between reading comprehension, reading rate, and error frequency. As we find a correlation between reading rate and comprehension, we could say that a fast reader is someone who understands what he is reading, while a slow reader does not. In other words: comprehension is necessary for fast reading, and slow reading is slow because the reader does not understand. If comprehension was improved, reading would be speeded up.

A fast reader makes more reading errors than a slow one. It is noteworthy that readers with extremely long reading times make no or very few errors. In order to make errors, errors of a certain kind at least, understanding is required.

Thus, high speed is associated with good understanding and many errors, while slow speed is associated with poor understanding and few errors. If we define a good reader as a reader who makes few errors, we must accept slow speed and poor understanding as good reading as well. If, on the other hand, good reading is defined as good understanding, we must accept that good readers make many errors. However, it is to be noticed that a good reader does not make errors in tasks where an exact understanding of the text is required, as for instance in instructions. It is characteristic for a good reader that he can change his reading strategy according to what is required in different reading tasks, while a poor reader uses the same inadequate strategy in all types of reading tasks.

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