

Reading strategies in bilingually educated deaf Children: some preliminary findings

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In 1991, the first group of deaf children, educated according to what was stated in the Swedish National Curriculum in the early eighties - i.e. bilingually with Swedish Sign language as their first language and Swedish in its written form as their second - finalized their compulsory schooling. In my paper I will present a study of their reading proficiency, as shown by their retellings and translations of texts into Swedish Sign language, in comparison to reading abilities found among other deaf children within the same age-group but with a less consistent bilingual education, mainly a Total Communication approach. Contrary to the latter, the first group demonstrated an age-appropriate level of understanding written Swedish. Their reading strategies, as proved by the study, will be discussed not only in comparison to the less effective strategies found among the others, but also in relation to the instruction they had got in written Swedish as a "silent" second language, i.e. without taking speech into account for developing reading skills but using their first language, Swedish Sign Language, as the base. Out from this, the assumption of a phonologically based decoding as a prerequisite of literacy in the deaf will be questioned.

Key words: bilingualism, reading strategies, written language as a second language for the deaf
Stratégies de lecture chez les enfants sourds bilingues : résultats préliminaires.

En 1991, le premier groupe d'enfants sourds éduqués selon ce qui était prescrit dans le Curriculum National Suédois au début des années 80, c'est-à-dire de façon bilingue avec la Langue des Signes Suédoise comme première langue et le suédois dans sa forme écrite comme seconde langue, a fini son cursus scolaire obligatoire. Dans ma contribution je vais présenter une étude sur leurs compétences en lecture à partir de répétitions et de traductions de récits faits à partir de textes en Langue des Signes Suédoise, en comparaison avec les capacités de lecture d'autres enfants sourds du même groupe d'âge, mais ayant eu une éducation bilingue moins complète, essentiellement une approche Communication totale. Par opposition au dernier, le premier groupe a montré un niveau de compréhension du suédois écrit correspondant à leur âge. Leurs stratégies de lecture, comme le démontre l'étude, seront discutées non seulement en comparaison des stratégies moins efficaces trouvées chez les autres, mais aussi en relation avec l'instruction qu'ils ont acquise en suédois écrit, considéré comme deuxième langue « silencieuse », c'est-à-dire sans tenir compte de la parole pour développer les compétences en lecture, mais en utilisant leur première langue, la Langue des Signes Suédoise comme base. A partir de là sera questionnée l'hypothèse du décodage à base phonologique comme préalable à la capacité de lire chez les sourds.

Mots-clés: bilinguisme, stratégies de lecture, langue écrite comme seconde langue pour les sourds

In 1981, the Swedish Parliament passed a Bill in which it was stated that deaf people need to be bilingual in order to function both among themselves and in society. This meant that Swedish Sign Language was officially recognised as a language in its own right -the language often referred to as the 'genuine' Sign Language or 'the Sign Language of the Deaf' as opposed to constructed ways of signing and speaking simultaneously, such as 'Signed Swedish/English/French' etc. (I will refer to Swedish Sign Language merely as 'Sign Language' in the following in order to avoid misunderstandings). As consequence of this decision, deaf children were to be guaranteed adequate linguistic training in school to accomplish this goal of bilingualism.

One year after this decision, the first experimental bilingual class started at the Manilla School, one of the five schools for the deaf in Sweden. This class consisted of a group of children, by then in their second grade (around 8 years old), who had had early access to Sign Language.

They were brought together for their lessons in Swedish and were taught by a deaf and a hearing teacher who worked in close co-operation with linguists from Stockholm University (Inger Ahlgren and, somewhat later, also myself).

During their years in school, the model for teaching Swedish to them was further developed in co-operation between teachers and us researchers; the insights gained from this experiment were also spread to other classes. The core of the model can shortly be summarised in this way: Sign Language is considered as the first language of the deaf, Swedish as the second. Thus, Sign Language is taught as a mother tongue in the schools; it is also the language of instruction in all school subjects, including Swedish. As to Swedish, the written form of the language -i.e., the form fully available by vision- is considered as the base for language learning, not speech.

Meaningful written language -i.e. texts of different kinds- is presented to the children in Sign Language and explained to them contrastively to this language. Within this approach, the process of learning the language of the society and the process of learning how to read it are looked upon as basically one and the same process in the deaf.

Shortly after the beginning of the experiment, in 1983, a supplement to the National Curriculum, valid for all schools for the deaf in Sweden, was introduced in which bilingualism was emphasised. However, the new demands on the teachers of the deaf -which included using Sign Language as the language of instruction and having the new goal of bilingualism to strive for -made it impossible to implement the Curriculum in full from the very beginning; this was by necessity to become a long process rather than something that happened over one night.

So, when the children from the first experimental group were about to leave school in 1991, after their compulsory 10 years of schooling, their class-mates in the same age-group had had a different linguistic background and training.

They had met many teachers who couldn't sign but merely used some kind of Signed Swedish, as well as teachers who had had no formal training at all in teaching Swedish as a second language to the deaf, only a former training according to the tradition of oralism or, as to the younger teachers, in Total Communication. A comparison between the reading skills of the first group and their class-mates' would thus show whether the new, bilingual approach had been successful or not.

Within a research project which I was responsible for, the reading skills among the schoolleavers that year were tested. 19 out of altogether 23 students participated in the study. Some Swedish texts were presented to them individually by a deaf investigator. One of the texts was taken from a test designed for hearing immigrants; it was said to imply a high level, equivalent to native proficiency in Swedish to be understood. Another text was taken from a magazine for adults, bordering on popular science, with health as its theme.

This text was expected to be even more difficult to the students, not only because of its somewhat more complex style but also because of its content. The students were requested to summarise the texts and render content, using Sign Language. The texts were further discussed with them in a semi-structured interview, which included questions concerning parts of the texts such as the meaning of some unusual words, metaphors, idioms, passive constructions, constructions for which a correct interpretation of word order was crucial, etc. All this was videotaped.

Test design did not aim at getting quantifiable data regarding the reading skills among the students. Instead, I wanted to get a general picture of their skills along a quite simple scale with « understanding » at one end and « not understanding » at the other. I was primarily interested in finding out whether the method used, the rendering of text content in Sign Language as well as the discussion about the texts, could reveal more about the reading strategies as such as -not less important to the aim of the project- about crucial difficulties in written Swedish at different linguistic levels, than what ordinary, standardised reading tests would do. (Since such texts usually are designed for hearing children -and, in general, for children reading in their mother tongue - I would, as a linguist, advocate a very cautious use of them. To put it short, they may be unfair to deaf readers, especially to younger ones. Results may well be biased by such a simple fact that deaf children can not be expected to build up their grammar and vocabulary out from free and flowing, everyday conversations with others, using colloquial language; their linguistic input is by necessity different both quantitatively and qualitatively when compared to hearing children. Thus, there is an apparent risk that test results show only the shortcomings, not the strengths of the deaf readers).

The data was sorted into three groups: those students that clearly showed that they had grasped content by summarising the texts satisfactory -here called the 'high' group; 7 students), those who tried to give a summary but either had to give up or showed that they had missed several important parts (4 students; the «'medium' group) and those who hardly didn't even try and for whom the following discussion showed that they didn't understand much of the texts (8

students, the 'low' group). The 'high' group consisted of the students from the first, experimental group (one of them is missing in the data, though, but her teacher reports that her reading skills were in line with the others; another girl had joined the group somewhat irregularly during the first years in school but is here regarded as a member of the group although she became deafened at the age of 4 and thus had a different linguistic background than the others; however, no differences between her and the others can be discerned in the data) plus one more student. This latter will be excluded from what I call the 'high' group in the following and discussed separately as « the extra one », because of some differences found between him and the other six in their reading.

Common to the students in the 'high' group, was that they demonstrated a very good capacity for identifying words and phrases that were new to them and that they did not understand, either not in full or not at all. For many of these, they made quite appropriate proposals about their meaning. Here, their comments showed that they actively used the context for getting clues to the meaning. Their comments also showed awareness about whether it was necessary or not to understand the meaning of such words and phrases; sometimes they were just commented as in the following, quite accurate statement, made by one of the students. « That word isn't especially important for understanding content ». The metalinguistic awareness thus demonstrated by the students, as well as their active use of context when encountering new words etc, as shown by their own comments, emanates from the actual teaching of Swedish to them: from the very beginning they were encouraged to read in this way. The process of reading was pointed out to them as an active and conscious search for meaning, not in single words but within texts. -To this, I could add that the discussions about the texts also contain several examples of how the students spontaneously related facts from the texts to their own previous knowledge of connected subject fields. These examples fit well into the picture of the students as active and conscious readers, using their pre-existing knowledge (as emphasised in schema theory) when encountering new texts.

Examples of metalinguistic awareness of this kind are rare, very rare, in the data from the 'medium' and the 'low' groups. Instead, the tapes are filled with misreading that can be described as unsuccessful guessing about meaning. Many of these misreadings seem to emanate from confusion between words that are similar in form but different in meaning, as in the following examples; The Swedish words on the left are the original words from the texts; the words on the right side are translated from the signs used for them.

jäktade /jäkla stressed/blasted (stressé/fichu)
hopa/hoppa accumulate/jump (accumuler/sauter)
hejda/heja stop/support (arrêter/acclamer)

To interpret misreadings of this kind merely as examples of, e.g., problems with letter discrimination or as showing shortcomings in a visually and/or phonologically based memory for words is not sufficient. In their contexts, the proposed meanings of the words, as reflected by the signs used by the students, simply do not make sense. Similar nonsensical proposals were also

made about words for which the proposed meaning reflected faulty recognition of parts of them, as in the following examples:

aptitförlust/lustig loss of appetite/funny (perte d'appétit/drôle)
proviantera/prov take in supplies/test

Altogether, such misreadings testify that meaning was of less importance to these students in their «reading ». When trying to reproduce the words each by each by signs, they were thus « reading » only in a technical sense of the word rather than in a way that reflected consciousness about meaning. (Here I could add that in the late 70'ies I could observe a similar, mechanical way of reproducing Swedish words in deaf children, then by speech).

If discussions about meaning can not be carried through in class because of a lack of a wellfunctioning language for this, such « reading » behaviour can easily be misjudged by the teacher as evidence of understanding. As reflected in the data, many deaf children manage to develop a quite convincing fluency in such a reproduction of words by signs -but without understanding much of their own « reading ». A short excerpt from one of the tapes may illustrate what I mean. The student, who belongs to the 'low' group, « reads » one word after the other by representing each of them with one sign. The signs used are translated into English (+ French at the overhead that I will show for the audience to read); fingerspelling is represented by hyphens between the letters:

this make pain worse fast v-e-r-k-a-n-d-e s-t-i-m-u-l-a-n-t-i-a
wear more on body that they a-v help stress
ceci fait mal pire rapide
user plus sur corps que eux aider stress

This is more or less nonsense, whether in its English, French or signed version. However, to someone fluent in Swedish, for example a teacher, it may be possible to get at least an idea of the message out from a similar sign-to-word-translation into Swedish. (And, of course, if having the text available, as often is the case in a teaching situation, there would be no problems at all to understand the message). So, the teacher could well get the impression that the student understands the words in the text when they are reproduced in this way and encourage the student to go on « reading » like this -but this impression emanates from the teacher's OWN knowledge of Swedish, not the student's. -In this case, the student interrupted himself after the sequence and asked: « What does this mean !?!? »

The point that I wish to make is that any assumptions about shortcomings as to memory for words in the deaf etc must be supplemented by a thorough understanding of how written language has been taught to them and what reading actually means to them. If meaning is of less importance for their « reading », paying attention to how differences in meaning are reflected by slight differences in spelling, as in the first examples shown, might well become less important to them as well. Further, paying attention to only parts of words, as in the latter examples of misreadings above, is not especially remarkable for a

reader to whom prefixes and suffixes merely lengthen words and lack real meaning, i.e., a reader who lacks command of the language.

In the example just shown, fingerspelling is used in a way that deserves a comment of its own.

Within the 'medium' and the 'low' groups, students sometimes took their resort to fingerspelling for representing words for which they had no corresponding sign -and no meaning whatsoever- to suggest, as proved by the following discussions with them. Now and then, fingerspelling was also used as the only answer when the meaning of the words was asked for. Thus, fingerspelling may well be included in a strategy for « reading » in the technical sense as just discussed, as something that primarily satisfies the teacher. Only one example of a similar behaviour is found within the « high' group, exhibited by a girl when questioned about a difficult passage of one of the texts. She fingerspelled a word from this passage fast and blurry as if trying to slip the word and its meaning over. But, in general, fingerspelling was used within the group according to its normal use in Sign Language.

The strategy of trying to map one word -one sign was prevalent within both the « medium » and the 'low' group. In the 'high' group, on the contrary, this kind of one-to-one mapping only appear in what can be described as quotation forms of phrases and idioms, etc; often followed by translations of these phrases in Sign Language. One example of this is a phrase from one of the texts, a phrase that when literally translated into English would be 'they got long in their face'.

Such a literal translation, word by word, is of course quite meaningless (unless, of course, the target language has a similar phrase). The meaning of this phrase is 'they got perplexed' - and this was also how it was expressed after the quoted form, correctly translated into Sign Language, by several of the students.

A strategy close to the one word -one sign-mapping was, however, exhibited by the student that I earlier called « the extra one », reading on line with the 'high' group. However, when compared to his mates within the 'high' group, his reading was more lacking in independence -or in self-confidence?- than theirs. He often stopped to check meaning with the interviewer and he seemed to be rather dependent upon getting positive feed-back throughout his reading.

When reading the second, more difficult text, his insecurity increased distinctly and obviously it became more and more difficult for him to grasp meaning. The tapes also show a number of misreadings of the kind discussed above examples of which are rare in the data from the 'high' group as a whole. His signing was not exact Signed Swedish, in the sense that he tried to represent every single Swedish word in the texts by a sign, but can be described as highly influenced from Swedish. At the end of the session, he complained about what he felt to be gaps in his Sign Language skills and expressed his desire to learn more.

According to his teacher, this student was unusually energetic and eager to learn. She also reports that his mother had worked hard with him at home from an early age, using Signed Swedish as the means of communication. Signed Swedish/Total Communication was most likely also the medium for teaching Swedish to him during most of his years in school.

Contrary to his class-mates in the 'medium' and the 'low' groups, he seemed to have developed fairly adequate skills in Swedish out from this approach. When compared to his mates in the 'high' group, however, he did not read with the same ease as they did.

What can be said about internal phonology in these deaf readers, then, whether belonging to the 'high' group or to any of the two others? Out from the test data, only assumptions can be made about its role in their reading, of course, but at least a hint might be traced out from observations made of lip movements at the tapes. (No voicing was observed as used by any of the students).

The 'extra' student, just discussed, moved his lips now and then while reading through the texts before the discussions about them began. These movements were mostly accompanied by a distressed expression in his face, suggesting that he used them when encountering extra difficult parts of the text. This suggests that some kind of phonologically based decoding was important to him. Lip movements of this kind was also found in one girl in the 'medium' group. She claimed that reading aloud, with some voicing, used to be helpful to her when reading difficult texts.

Common to all of the students in the 'high' group was that they read through the texts without making any movements at all neither of their hands nor their lips. Later, when summarising content and during the discussions, they now and then made a short pause in their signing and looked down at the text, thus showing a distinct separation between their actual reading and the rendering of what they had read. Of course this behaviour could not be taken as a proof of anything regarding the decoding process as such in their reading. Anyhow, out from knowledge about how Swedish was taught to them, it is most unlikely to assume that they had a phonological base for their reading: written language was taught to them entirely as a visual language without any reference to speech sounds. If claiming that a phonological representation anyhow must be the base for their reading, this claim must entail an assumption about the phonological coding as having had developed spontaneously. Such an assumption is less probable.

Once again I wish to point out the importance of considering the educational background when studying reading processes in the deaf, whether their reading is successful or not. What differs between a hearing and a deaf child when it comes to learning the language of the society -whether as a first or as a second language- is that deaf children can not learn the language spontaneously. Their learning process requires instruction. Thus, earlier findings as to a positive correlation between phonological decoding and high level reading skills in the deaf, are far from remarkable. I wish to claim that these findings mainly reflect

the effects of successful instruction. The problem is, of course, that such positive effects are scarce in speech based paradigms of teaching.

Another, not less important claim that I wish to make, is that further research about reading in the deaf -as well as further development as to teaching the deaf the language of the society- must learn more from research concerning reading in second language learners. The points in common are many and there are many important insights to gain from this research. Out from this, we can learn more about, for example, the relationship between working memory capacity in reading and proficiency in the language read; another example is that we can learn more about how reading problems can reflect low skills in a second language rather than reading problems as such.

Finally, I wish to make an even more provocative claim than my earlier ones might be. When discussing written language, we always look upon it as a linear, sequential representation of spoken language. But texts are in fact simultaneously presented language: all the words are there at the page from the very beginning of the reading. The reader must not process the text in a strictly sequential, temporally ordered way. Instead, the eye is free to get back and forth in the text to get information out from it. Of course, sequential ordering must be emphasised in teaching as an important part of showing how the language is structured at different linguistic levels, but that does not mean that the actual processing of the text must be made according to this. Developing a well functioning semantical mapping between Sign language and written language as a second language seems to be enhanced by a strategy for reading in which the reader is encouraged to use his eyes for going back and forth in texts for getting meaning out of them. And, of course, getting meaning out from texts is what reading really is about.

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