

I

INTRODUCTION

1 A research project on deaf children – background, aim, method and partial studies

Background

From the end of the 19th century to the middle of the 1970s the so-called oral method prevailed in the education and upbringing of deaf children in Sweden. For communication with their environment and for their own lingual development the children were expected to rely on lip-reading in combination with residual hearing, if any, and on self-produced speech.

During this oral period the majority of deaf children in principle were non-lingual when starting special school at the age of seven. In schools, sign language was used *for teaching purposes* in exceptional cases only, but it continued to exist because the children used it among themselves.

The behaviour of orally trained children has led to the opinion that *deafness as such* entails delayed and limited development. Descriptions in literature have formed a picture of deaf children as egocentric, aggressive and both lingually and socially retarded.

In the late sixties and early seventies the attitude towards sign language began to change in Sweden, and from 1973 a fairly systematic use of sign communication was introduced in the pre-schools for deaf children within the County of Malmöhus in Southern Sweden. In the 1983 Curriculum for Compulsory Education it was stated that education in Schools for the Deaf should be in Sign Language and in Swedish (with special stress on written Swedish), with the aim of educating the children bilingually.

In the mid-seventies, for the first time, we had the opportunity to study the development of a fairly large group of deaf children who had had access to sign communication as early as pre-school or before. Deaf children of deaf parents had been studied earlier but could not really be termed representative of deaf children in general.

Aim and method

At the Department of Educational and Psychological Research of the Malmö School of Education, a longitudinal study – “Learning Processes and Personality Development in Deaf Children” – began in 1977 with the aim of documenting the development of deaf children who had been allowed to use sign language in pre-school or earlier still.¹ The aim was to study the children throughout elementary school and to try to make a survey of the effects of the changed method of communication (cf. Nor-dén et al. 1979).

Originally the group of subjects included 20 deaf children born in 1970-74, all of whom had hearing parents. The group comprised all prelingually deaf children attending Pre-schools for Deaf Children in the County of Malmöhus in 1977 and whose further education was projected at the School for the Deaf, i. e. at Östervångsskolan in Lund. Six younger children, born in 1975-80, were later included in the group of subjects, but they are not included in this study.

The children were studied through video recordings combined with direct observations in natural situations in the pre-school and school environment. In pre-school we produced up to ten video recordings per year, whereas in school the opportunities were reduced to about four times a year.

Besides continuous registrations and observations, certain formalised assessments were also made. In pre-school (normally in the last year before school) a developmental assessment was made with the emphasis on perceptual motor ability (Heiling 1978). In the first year of school non-verbal intelligence tests were carried out, viz Snijders-Oomen Nonverbal Scale – SON (Snijders et al. 1959), standardized for both hearing and deaf pupils.

In grades 3, 4 and 6 the youngest children were given different types of standardized reading and writing tests, the results of which will be reported in a later paper.

As the pupils from the original project group gradually reached the eighth grade a selection of tests out of a fairly comprehensive test pro-

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Introduction

gramme were administered to all pupils in the classes, including those who did not belong to the original investigation group. The tests applied were mainly taken from a test programme for deaf adolescents in grade 8, developed by Nordén in the sixties (Nordén 1969, 1975). The purpose of that programme, comprising problem-solving and knowledge tests, was to serve as support in academic and vocational counselling. Certain language tests, which in the sixties had been considered too difficult for the group of pupils and therefore excluded from the programme at that time, have now been applied in the testings.

The diagram below illustrates the realization of video recordings, testings and language tests in the five age groups in pre-school and school between 1977-89.

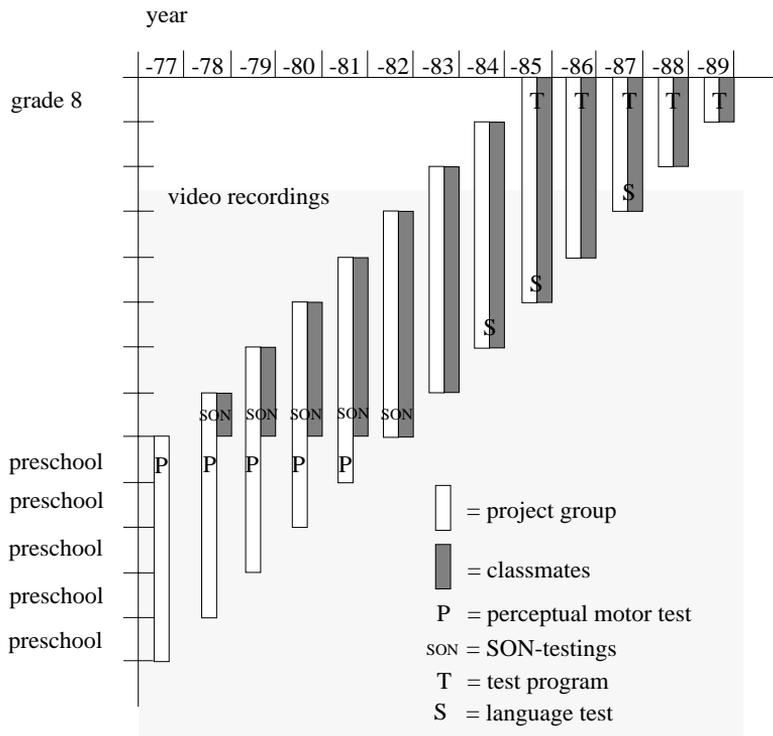


Diagram 1

Video recording, testing and language tests in various grades 1977-1989

I

Within the framework of the project and in connection therewith, a number of articles and reports have been published on social, communicative and cognitive development of deaf children, e.g. Nordén et al. (1979), Preisler (1979), Nordén (1981 a,b), Nordén/Preisler (1981), Nordén et al. (1981), Nordén/Tvingstedt (1983), Preisler (1983), Hülphers (1984) and Heiling (1985). These reports mainly describe the development of deaf infants or pre-school children.

Studies reported in this book

The first study in this thesis is in many respects a further elaboration of the first report mentioned above (Nordén et al. 1969) and concerns the development of some children during their last years of pre-school and their first years of school. Various – more or less successful – social strategies used by the children are described and related to theories about and descriptions of the conduct of hearing children.

The testings in grade eight are reported in the second study of this thesis. The report comprises five consecutive batches of eighth-graders at Östervångsskolan between 1985-1989. The results are compared with the achievements in corresponding tests in a study of all Swedish deaf children in the eighth grade in 1967 and 1969, reported by Nordén (1975).

2 Deafness and education of the deaf – a historical account and definition

The view taken of deafness and of deaf persons has varied greatly in different environments and at different periods. The main outlines of development are reported here, with no intention of giving a complete historical account thereof. Most of the information was obtained from Nyström (1900), Hammar (1986) and Moores (1987).

Throughout history, deafness has generally been considered as pathological and deaf persons as deviant. Physicians and others have tried to “cure” deafness or at least to reduce its effects, with the aim of making the person in question as similar as possible to a hearing person. In writings from ancient Greece and Rome the deaf are described as inferior, but their ability to communicate with gestures was nevertheless acknowledged. In the Roman Empire the deaf had no legal rights if they were not able to read and write. Most probably they filled their place in society all the same – as peasants, soldiers and craftsmen.

In medieval Western Europe the deaf were discriminated against both legally and religiously – they had no right of inheritance, were dis-

Introduction

qualified from marriage and were not allowed to participate in the mass. The limited educational opportunities were never open to the deaf. Even though the Bysantine/Islamic world, including Spain, had a well developed educational system, it is not known if the deaf received any education or had any social rights.

In the 16th century the Spanish monk Pedro Ponce de Leon became the first known teacher of the deaf. Mainly he taught deaf children from the Spanish aristocracy – apparently with great success. Incentives from his activities, which put great emphasis on training speech through reading and the manual alphabet, spread to the British upper classes in the 17th century.

Many of the pioneers in the education of the deaf kept their methods secret to safeguard their livelihood as teachers for deaf children of well-to-do families – public schools for the deaf did not exist.

In 18th century France the development of education of the deaf also included sensory training based on sight and touch – techniques that by and by were developed further in the education of the retarded and, inter alia, by Maria Montessori in her activities with non-handicapped children.

At the end of the 18th century, front lines in an intermittently fierce contest were drawn between the differing pedagogic ideologies, which were to dominate the education of the deaf for more than two centuries. A prominent advocate of one persuasion, known as the *French method*, was the Abbé de l'Épée, who stressed the importance of sign language and the manual alphabet as a means of developing the deaf intellectually and religiously. He founded a school for the deaf in Paris and considered articulation training and lip-reading too circumstantial and time consuming in relation to the aim of transmitting knowledge. He also developed the so-called “methodical signs” to indicate inflected forms, tenses etc.

Ranged on the other side were the representatives of the so-called *German method*, headed by Samuel Heinecke. He put great emphasis on the spoken word, which he considered to be the basis of all thinking and the starting-point for learning to read. His followers banned all types of signs and gestures in communication with the deaf. The German, or the oral method became more and more dominant – partly for political reasons (France lost the wars) – and the superiority of the oral method was proclaimed at a famous congress of teachers of the deaf in Milan in 1880. This method became predominant in deaf education all over the world for almost a century, in spite of protests from the deaf themselves.

I

In Sweden the first school for deaf and blind children, Manillaskolan in Stockholm, was founded in 1809. The founder, a clerk by the name of Pär Aron Borg, had been influenced by the French method, and sign language was used at the school, which also had deaf teachers. Any other education of the deaf was private.

In the 1889 law on the "education of the deaf mute" compulsory school attendance for deaf pupils was introduced, organized as an eight-year course of education at seven regional schools. The pupils were referred to classes with different teaching methods: oral, writing and sign classes. In oral classes the teaching was strictly oral, i.e. it was based on the spoken and written language only. In writing classes the manual alphabet was used too, whereas in sign classes, where the pupils were considered to be less gifted, sign language was allowed in combination with the manual alphabet and writing (Nyström 1900).

As from 1938, the Government has been in charge of the special schools for the visually handicapped, for the deaf/hard-of-hearing and for language-impaired pupils. In 1965, ten-year compulsory attendance was also introduced at special schools, and in 1967 a national upper secondary school for the deaf ('riksgymnasium') started in the city of Örebro.

At present there are five fully developed regional compulsory schools for deaf and hard-of-hearing pupils: Östervångsskolan in Lund, Vänerskolan in Vänersborg, Birgittaskolan in Örebro, Manillaskolan in Stockholm and Kristinaskolan in Härnösand. In addition there are three schools for pupils with multiple impairments: Hällsboskolan in Sigtuna, Åsabackaskolan in Gnesta and Ekaskolan in Örebro. These three schools admit pupils from all over the country.

After World War II technical progress, especially in the fields of audiometers and amplifiers, made it possible to distinguish between pupils with different degrees of hearing impairment and certain expectations were raised that hearing aids and other technical means might allow everyone to apprehend some type of sound. The term 'deaf' was considered degrading, all were to be called hard-of-hearing, and in the fifties and sixties teaching was almost totally oral. Pre-schools working with sign language were no longer able to continue. In spite of the "experts'" very negative opinion of sign language in those days, it did continue to exist within the deaf community. In the special schools sign language was conveyed from one generation of children to the next, especially by the children of deaf parents, and partly it was constructed by the children themselves.

Introduction

The following “Classification of hearing-impairment according to the degree of severity” has been taken from Lidén (1980) and illustrates the possibility of distinguishing individuals with different degrees of impaired hearing according to the audiogram. The most common way of measuring the degree of hearing-impairment is pure tone audiometry, showing what level a clear sound must have at a certain frequency to be discernible to an individual. The frequency is indicated in Herz (Hz) and measurements are normally made in the 125-8000 Hz range. Low frequencies indicate bass sounds, high ones treble sounds. The amplification needed to make a tone audible is given in decibel hearing level (dB HL). Zero dB HL indicates a sound level that is barely audible to the average young hearing population. The measured hearing level thus also indicates the loss of hearing in relation to an average normal hearing at each measured frequency. The values are shown on an audiogram sheet with a curve for each ear. Henceforth, for the sake of simplicity, only the term dB will be used, since no other types of audiological measurement are of importance.

A pure tone audiogram is often summarized in an average tone value, mostly based on three frequencies (500, 1000 and 2000 Hz). As the major part of spoken sounds come within the 250-4000 Hz frequency range, average values occur which are based on four frequencies (500, 1000, 2000 and 3000 Hz) or even five (250, 500, 1000, 2000, 4000 Hz).

<i>Hearing-impairment</i>	<i>Ability to understand speech</i>	<i>Degree of disability</i>
0-25 dB	slight difficulty in discerning faint speech	nil
26-45 dB	difficulty only with faint speech	mild – moderate
45-60dB	often difficulty understanding normal speech	moderate – severe
60-75 dB	often difficulty understanding loud speech	severe – profound
75-93 dB	can understand only very loud or amplified speech (hearing-aid)	profound – deaf
>93 dB	can routinely not understand speech with hearing-aid	deaf

Table 1 Classification of hearing-impairment according to degree of severity. Average tone value 500-3000 Hz of best ear (Lidén 1980)

I

In the course of time, experience has shown that persons with the same degree of impaired hearing according to an audiogram, may have varying functional hearing. Pure tone audiometry tells us how much a pure tone has to be amplified to be heard, but it says very little about any ability to discern speech sounds. A person with a seemingly moderate hearing impairment may have worse functional hearing and have greater difficulties using audio-technical aids than another person whose hearing impairment is much more serious according to the audiogram.

Meanwhile it has become common for the terms “deaf” and “hard-of-hearing” to be based on a functional classification, known as the CEASD definition (Frisina 1974). The expression deaf is used for individuals with a congenital or very early hearing impairment, which is so serious that it has prevented natural speech and language development based on hearing, even with a hearing aid. Development of language for such children relies on the aid of sight; they are dependent on sign communication and they need early access to sign language in order not to have a retarded linguistic development. This group is also called congenitally deaf or prelingually deaf, to distinguish them from those who lost their ability to hear later in life. *Hard-of-hearing* are persons who have been able to develop speech and language by way of hearing in spite of a certain degree of hearing impairment. Routinely they are dependent on a hearing aid and on other technical facilities (e.g. microphone, loop) and on favourable external conditions (e.g. good light, absence of noise) in order to utilize their residual hearing. Internationally this classification, emanating from the primary communication channel, has gradually replaced definitions mainly based on average audiogram values.

The organisations of the deaf themselves especially have consistently maintained that deaf children have a chance of social participation and “normal” schooling only in an environment where sign language is available. This is one of the most important reasons why the integration efforts, characterizing the school placement of handicapped children since the sixties, have not been as effective for deaf children as for visually handicapped, physically disabled and learning-disabled (SOU 1980; Ahlström et al. 1986). That is why deaf children normally go to special schools, whereas the hard-of-hearing attend regular classes or are gathered in special groups within schools for hearing pupils (Nordén et al. 1990).

The stronger organisations for the deaf have grown, the more the term *Deaf* has come to stand for a cultural affiliation, an identity associated with sign language and with a fellowship with other deaf persons and an

Introduction

identity on which members of the group pride themselves. Linguistic research in the field of sign language has enhanced the status, not only of sign language itself but of deaf people generally. Technical innovations such as the TTD teletype device, teletext/videotex and videotaped news and information programmes in sign language have supplied the deaf with a flow of information beyond their reach in earlier times. Fairy tale programmes and “Silent Theatre” are examples of a growing culture for the deaf. By the same token the deaf want to be classified not as a group of handicapped persons but as a linguistic and cultural minority.

In the following pages, the terms *deaf* and *hard-of-hearing* are used in accordance with the CEASD definition. A person is called deaf if he/she uses sign language as his/her main channel of communication. Accordingly the terms ‘school for the deaf’ and ‘education of the deaf’ indicate the education provided at special schools for the deaf and hard-of-hearing.

3 Development of sign language

Sign language is not international – it has developed in the fellowship of the deaf in different countries. Vocabulary, grammar and syntax differ from spoken national languages. Linguistic research – initiated during the past decades – has shown that national sign languages are fully developed languages and that sign languages in different countries have certain grammatical and syntax similarities dependent on the fact that they are visual gestural codes (Stokoe 1960; Bellugi/Klima 1980; Bergman 1982; Hansen 1985).

Several attempts have been made to construct codes where signs are produced in closer conjunction with the national spoken language. The earliest known code was the so-called methodical signs developed by de l’Epée in the 18th century. In Sweden, “signed Swedish” was constructed at the end of the 1960s (Bergman 1982). Each Swedish word was to have a corresponding sign and different symbols were added to indicate tense, inflected forms etc. The system turned out to be too clumsy for communication and is now hardly used. Several different systems for expressing English in signed form have been developed and are still in use in the USA.

A mixture of the spoken national language and a sign language that has not been constructed but has developed naturally between hearing and deaf persons is often called pidgin sign language. Pidgin in this case represents a continuum – from variants where signs are mostly combined with speech and in general conform to the spoken language (but without sym-

bols for tenses, inflections etc.) to variants increasingly similar to the sign language of the deaf themselves, without involvement of the voice (Hansen 1985; Vogt Svendsen 1987).

“Simultaneous communication” generally indicates some form of concurrent use of speech and signs. It can be a pidgin variant as well as one of the codes that have been constructed to combine the national language with signs.

A much debated point in Sweden at present concerns the justifiability or possibly destructive effect on language development of using some form of pidgin in communication with deaf children. From the psychological point of view the contents of the communication and the way of relating to the child probably are of greater importance than a formal linguistic code.

I use the term *sign language* mainly for linguistic variants close to the sign language of the deaf themselves, whereas the term *sign communication* stands for codes influenced by the spoken language. The meanings of the two terms, however, are not clearly defined since we are dealing here with a linguistic continuum.

4 Mapping of a new field of research

Since the overall aim of the longitudinal research project *Learning Processes and Personality Development in Deaf Children* has been to investigate as many aspects as possible of the development of the children, information has been gathered in several different ways. The main emphasis was laid on video recordings accompanied by direct observations and on testings. This material has been supplemented by notes taken during interviews with teachers and parents and memoranda from various types of conferences.

Naturally you can define in advance the categories of behaviours to be investigated, but another possibility is to start making video recordings, to begin documentation without deciding what is most important to observe. In the course of work, issues may then arise that could not possibly have been predicted. Especially when beginning investigations in a new field, predetermined structuring of a work can entail limitations and a risk of new and important aspects being overlooked. The videotapes, a unique way of conserving the original situation, can later be analysed in several ways.

The development of deaf children was a fairly unexplored field in 1977, as it still is today, and Sweden is one of the few countries in the world where sign language is consistently used for the instruction and edu-