

The development of education for deaf people

Legacy of the Past

The book *Legacy of the Past* (Some aspects of the history of blind education, deaf education, and deaf-blind education with emphasis on the time before 1900) contains three chapters:

Chapter 1: The development of education for blind people

Chapter 2: The development of education for deaf people

Chapter 3: The development of education for deaf-blind people

In all 399 pp.

An internet edition of the whole book in one single document would be very unhandy. Therefore, I have divided the book into three documents (three internetbooks). In all, the three documents contain the whole book. *Legacy of the Past*.

This Internetbook is

Chapter 2: The development of education for deaf people.

Foreword

In his Introduction the author expresses very clearly that this book is not The history of blind education, deaf education and deaf-blind education but *some aspects of their history of education* with emphasis on the time before 1900.

Nevertheless - having had the privilege of reading it - my opinion is that this volume must be one of the most extensive on the market today regarding this part of the history of special education.

For several years now I have had the great pleasure of working with the author, and I am not surprised by the fact that he really has gone to the basic sources trying to find the right answers and perspectives. Who are they - and in what ways have societies during the centuries faced the problems?

By going back to ancient sources like the Bible, the Holy Koran and to Nordic Myths the author gives the reader an exciting perspective; expressed, among other things, by a discussion of terms used through our history.

As I am trying to say, Dr. Enerstvedt not only presents a historical survey, rather he discusses the situation of the blind, the deaf and the deaf-blind in the context of the actual time they were living in.

Dr. Enerstvedt is not only a theoretical researcher - he also has a practical experience from the field, which he reveals in his discussion on methods.

The book has the character of having been written by a professional in sociology and by a person with a deep understanding and knowledge in special education. As said earlier, this volume is not a bare historical outline, but is also a story of individuals and their helpers from the Antiquity and beyond - to our time.

This book should be of great interest to all of us working with sensory-deprived people, to parents and to students in the area of education, psychology, sociology and other related areas.

Oslo 28th of May 1996

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Introduction

The present book is not The history of blind education, deaf education, and deaf-blind education. It is not A history of ..., it is precisely what is stated in the title: Some aspects of the history of blind education, deaf education, and deaf-blind education with emphasis on the time before 1900.

My own qualifications for trying to make a contribution to the field of deafness, blindness, and deaf-blindness:

My main profession is that of a professor of sociology, Department of Sociology, University of Oslo. I am Senior Research Officer at Skådalen Resource Centre for Special Education of the Hearing Impaired and the Deaf-Blind (previously: Skådalen School).

I worked as care-worker at a residential school for deaf and deaf-blind children in Oslo - Skådalen school - from January 1990 to July 1991. Previous to that I worked for more than a year as a relief worker at the same institution/school (from October 1988 to December 1989).

During the autumn of 1991 I studied deaf-blindness with Sense - The National Deafblind and Rubella Association in the UK, at Sense in the Midlands, i.e. a regional centre for Sense in Birmingham.

The first half of the year 1993 I studied deaf-blindness at Perkins School for the Blind, Watertown, USA.

Although my interest in working with deaf-blind people primarily was a theoretical and general one - that of the essence of communication and language - my actual work with deaf-blind persons altered my perspectives. I am still interested in the general theoretical questions of communication and language and plan to write something on that subject. However, I have gradually become more and more interested in the lives and fates of deaf-blind people. In the beginning I merely wanted to give a very brief historical overview before I came to my main interest, that of the communication of (and with) deaf-blind people. However, my studies led to an interest in the history of both deaf and blind education. I recognized the necessity of studying blindness and deafness as prerequisite to understanding deaf-blindness, although the latter is not merely the sum of deafness

and blindness. The result is this book - the first part of my main project: the communication of (and with) deaf-blind people. It is the result of the practical experience and theoretical studies of several years.

It is impossible to mention all the people who have been important and helpful in my work. However, some persons without whom this and the next book never could have been published, deserve being named. To exemplify this help would require the space of a great book in itself! (Perhaps such a book should be written so that the reader might understand that every book is a collective product.) In alphabetic order :

Yerker Andersson, Abdel Magid Al-Araki, Thomas E. Allen, Eldbjørg Arnesen, Knut Arnesen, Jim Banta, Cafer Barkus, Anne-Grete Barlaug, Mike Bello, Carol Benoit, Barbara Birge, Lynne F. Bernstein, Peter Blackwell, Delma Boyce, Martin Jon Bray, John Bridge, Silje Brosvik, Norman Brown, Wendy Buckley, Tony Bugge, Eddie Calhoun, Linda Callahan, Cristina Castro, Rodney Clark, Gini Cloke, Carol Crook, Steve Davis, Lorraine Delhorne, Susan DeCaluwe, Jennifer R. Douglas, Nat Durlach, Steinar Dybvad, Kimberly Emrick, Åse Enerstvedt, Bård Engen, Elizabeth Engen, Trygg Engen, Paul Ennals, Lyn Faulkener, Marte Feiring, Arvid Fennefoss, Peter Fitzgibbons, Janice C.Gatty, Dennis Gjerdingen, Debbie Gleason, Unni Gran, Mary Grannell, William Green, Sharon Grey, Torill Grønhaug, Terje Haraldsen, Virginia Harris, John Hatton, Rosie Hayes, Margareta Henriksson, Karen Hern, Mary Hill-Peters, Angunn Hirth, Gunnar Høgden, Robert J. Hoffmeister, Grete Høie, Lisa Holden-Pitt, Alvina Holyoake, Deborah Hughes, Yvonne Hurley, Bitten Haavik Ikdahl, Carolyn Jones, Steve Kiekopf, Tony Kirk, Mari Klashaugen, Christine Lebert, Christopher Leek, Fridtjof Lehne, Dot Leslie, Lauren Lieberman, Bård A. Lindgaard, Marjorie Magner, Martha Majors, David S.Martin, Barbara Mason, Donna Mehan, Beth Miller, Astrid Moe, Donald F. Moores, Marsha Morales, David Morrison, William A.Moses, Mogol Musa, Anne Nafstad, Hilde Nes, Maurin Nichols, Kathy Norris, Trine Noven, Debra Nussbaum, Cyndi O'Brian, Christine Peatman, Geoff Plant, Susan Powers, Julie Pratt, Charlotte Reed, Sally Revoile, Bjørg Rike, Nan Robbins, Harold Robertson, Joan Robertson, Arthur A.Roehrig, Liv Rolandsen, Lynda Samourian, Janet Sauerwein, Odd-Inge Schrøder, Gretha Seeland, Philip Franz D.Seitz; Eva Seljestad, Lynne Silverstone, Anita Simonsen, Eva Simonsen, Anne Skhakeshaft, Trygve Skomedal, Christin Sletten, Julie Smith, Robert J. Smithdas, Bob Snow, Astrid Sund, Tonje Sørensen, Sharon Stelzer, Kathleen E. Stock, Erling Storhaug, Bob Storm, Kenneth Stuckey, Jan Svendsen, Else Marie Svingen, Jeri Traub, Kurt Vinterhøj, Arnfinn Vonen, Bettie Waddy-Smith, Claire Wade, Julie Waters, David Williams, Bernadette Wynne, Mary Zatta.

My thoughts also go to all the tutors (house/residential workers; "program aids") I have worked with. Except for two or three cases; this was a successful cooperation in which I learned very much.

Last but not least; the deaf-blind students and their parents have been decisive to my learning in this very difficult subject.

The following institutions also were of major importance for my work:

The University of Oslo - Department of Sociology; Skådalen Resource Centre for Special Education of the Hearing Impaired and the Deaf-blind, Oslo; Sosialdepartementet (Royal Norwegian Ministry of Social Welfare), Oslo ; Statens Sentralteam for Døvblinde (Norwegian Central Team for the Deaf-Blind), Oslo;

Faglitterær forfatterforening (The Norwegian Non-fiction Writers and Translators Association), Oslo; Borlaugs legat (Borlaug's legacy); The National Deafblind and Rubella Association (Sense) - Sense in the Midlands, Birmingham, Great Britain; Perkins School for the Blind, Watertown, Massachusetts; Clarke School for the Deaf, Northampton, Massachusetts; Rhode Island School for the Deaf, Providence, Rhode Island; Helen Keller National Center for Deafblind Youths and Adults (HKNC), New York; Gallaudet University, Washington, D.C.; The Learning Center for Deaf Children, Framingham, Massachusetts; Research Laboratory of Electronics, Massachusetts Institute of Technology.¹

The development of education for deaf people

"Still, in those distant times when nascent civilization, having just emerged from the chaos of barbarism, sought all over for a fulcrum to lever itself up, can it be believed that the laws of Lycurgus, of Solon, and of Numan condemned deaf children to undergo the fate reserved for the retarded or deformed. A father's glance at these poor creatures was a sentence with no appeal: it was all over for them if they saw written in his look: 'I don't want you!' The unfortunate child was promptly smothered or had his throat slit or was thrown from a precipice into the waves. It was treasonable to spare a creature from whom the nation could anticipate nothing." (Ferdinand Berthier 1840, in Lane 1984b, p. 165)

From the earliest days of recorded history to the nineteenth century scarcely any record exists of persons who were congenitally deaf.

Treatment of deaf people in Egypt

The physicians in ancient Egypt, "the country of the blind", also documented an interest in deaf people. The Egyptian Ebers papyrus (1500 B.C.), which is probably based on even earlier writing (Feldman 1970 in Winzer, M.A. 1993, p. 13) woven around Imhotep, the Egyptian physician (3000 B.C.) contains a collection of ancient recipes, sober advice, and magic for physicians covering many human ailments, from abortion to tumours. The papyrus contains oblique references to mental retardation and specific discussions of epilepsy. In the Ebers papyrus the first known reference to deafness can be found (Moore's 1987, p. 33). The origin of otology² - the branch of medicine concerned with the ear - can be traced to Egypt. Some of the first descriptions of early otology are found in the Ebers Papyrus, in which Egyptian priests specialized in ear treatments. These treatments might include injections into the ear of olive oil, red lead, bat's wings, ant eggs or goat's urine (Turkington, C., Sussman, A.E. 1992, p. 148).

Does the Bible tell us anything about the attitudes towards deafness? It does.³

¹ Thanks to Norman Brown, Grete Høie, Susan Powers, Arnfinn Vonen for language improvements.

² Also called "otiatry" (rarely used), "otiatrics" (rarely used).

³ All occurrences in which the terms "deaf", "hear", "dumb", "ear", "deaf-mute", "deafmute", and "deaf and dumb" are included in both the Old Testament and the New Testament have been investigated. The occurrences in both Testaments are of two main types (as regarding blindness): Metaphoric terms and phrases - i.e. terms and phrases used, or regarded as being used, to represent something else - and terms and phrases representing objects in the ordinary way.

The Old Testament and deafness

The term "deaf" (in all connections) very seldom occurs in the Old Testament. The following passages are all of them:

Ex 4:11 And the LORD said unto him, Who hath made man's mouth? or who maketh the dumb, or deaf, or the seeing, or the blind? have not I the LORD?

Le 19:14 Thou shalt not curse the deaf, nor put a stumbling block before the blind, but shalt fear thy God: I [am] the LORD.

Ps 38:13 But I, as a deaf [man], heard not; and [I was] as a dumb man [that] openeth not his mouth.

Ps 58:4 Their poison [is] like the poison of a serpent: [they are] like the deaf adder [that] stoppeth her ear;

Isa 29:18 And in that day shall the deaf hear the words of the book, and the eyes of the blind shall see out of obscurity, and out of darkness.

Isa 35:5 Then the eyes of the blind shall be opened, and the ears of the deaf shall be unstopped.

Isa 42:18 Hear, ye deaf; and look, ye blind, that ye may see.

Isa 42:19 Who [is] blind, but my servant? or deaf, as my messenger [that] I sent? who [is] blind as [he that is] perfect, and blind as the LORD'S servant?

Isa 43:8 Bring forth the blind people that have eyes, and the deaf that have ears.

Mic 7:16 The nations shall see and be confounded at all their might: they shall lay [their] hand upon [their] mouth, their ears shall be deaf.

Ex 4:11 and Le 19:14 have not a metaphoric character as the others. A positive attitude - courtesy and compassion - towards deaf individuals is indicated in Le 19:14.⁴ Neither the metaphors nor Ex 4:11 can be interpreted as stating deafness as "curse". There are some few occurrences of the term "dumb" (KJV) in the Old Testament. Neither can they be interpreted as caused by the devil. The terms "deaf-mute" ("deafmute") and "mute", and the phrase "deaf and dumb" neither occur in the Old Testament (KJV) nor in the New Testament (KJV). (In the New Testament Mark 7:32 and Mark 9:25 might indicate a connection between deaf and dumb, or dumb and deaf - see below on that matter.)

When did a concept *hard-of-hearing* come into existence?

In the author's investigation of the question above he first believed that some terms in the Old Testament could be interpreted as "hard-of-hearing": A term in

Isa 6:10 Make the heart of this people fat, and make their ears heavy, and shut their eyes; lest they see with their eyes, and hear with their ears, and understand with their heart, and convert, and be healed.

The Hebrew term translated to "make...heavy" in Isa 6:10 is: *ḥakbēd* - ("make heavy", "make dull" - imperative).

And a term in

Isa 59:1 Behold, the LORD'S hand is not shortened, that it cannot save; neither his ear heavy, that it cannot hear:

The Hebrew term translated to "heavy" in Isa 59:1 is: *ḥābēlā* - ("heavy" (femininum, in masculinum the Hebrew term is *ḥābēd*).

⁴The Hebrew term translated to "deaf" is: *ḥēreʿ*. The Hebrew term signifies "deaf", "deaf-and-dumb". The author has not investigated if there are other Hebrew terms translated to "deaf" (KJV) in the Old Testament.

However, the Hebrew terms do not distinguish "hard-of-hearing" from (totally) deaf. They are applied as metaphors in such a way that the Hebrew term for "deaf" equally could have been applied. The Hebrew term in Isa 59:1 is also applied in connection with the eyes and mind, and also expresses emotions - "grievous", "sad" in the Old Testament.

So, people in ancient times could not distinguish "hard-of-hearing" from "totally deaf"?

Yes, they could! - And they had terms to express this phenomenon.

The Norwegian term "tung" can be translated to English "heavy". However, the English term "heavy" can not be applied in the same manner as Norwegian "tung", and Old Greek and Latin terms for "heavy".

Modern Engl.	heavy	hard-of-hearing	be hard-of-hearing	hardness of hearing
Modern Norw.	tung	tunghørt	være tunghørt	tunghørtbet
Old Greek ⁵ :	barys	baryēkoos	baryēkoos einai	baryēkoia
Latin ⁶ :	gravis	surdaster	gravius audire ⁷	gravitas audiendi

These Greek and Latin terms are terms distinguishing hard-of-hearing from deafness. E.g. in the Latin *gravius (audire)* the ending -ius shows that the meaning is "relatively" (deaf), i.e. it is comparative, the meaning can not be totally deaf.⁸

The ancient Greeks, Romans, and Germans: Infanticide, treatment, education

The ancients had one opinion and practice towards congenital deafness, and another towards adventitious deafness. Infanticide was practiced but many deaf children survived (cf. chapter on blindness).

One of the first written records mentioning deaf people is by Heraklit who lived about 500 B.C. Probably he was not acknowledged in his own time and accordingly he was also held in low esteem by his unphilosophic contemporaries. He states that people who do not understand are as the deaf, "absent when present" (fragment 34, in Skirbekk 1987, p. 29).

In the *Iliad* and the *Odyssey* Homer describes different forms of speechlessness, using the terms ἀφροσύνη (speechlessness caused by emotion) and ἀνθρωπίνης (speechlessness caused by not being a human). Dumbness, ἀφροσύνη, meaning having no voice, is described in Herodotus' *History* in the story about King Croesus' mute son overcoming his handicap by crying out for his father's life to be spared (O'Neill, Y.V. 1987, p. 40).⁹

⁵Old Greek (700 B.C - 500 A.D.)

⁶Latin (200 B.C. - 500 A.D.)

⁷Also "surdaster esse".

⁸If referred to the terms regarding hard-of-hearing, then to: Skomedal, Enerstvedt in Enerstvedt 1996.

⁹The English word "deaf" (before 900, Middle English *deef*, Old English *dēaf*) stems from old Germanic language roots (cognate with Middle Low German *dēf*, Dutch *doof*, Old High German *toub*, from a word meaning "incapable of hearing" as well as "dull", "stupid."

The Hippocratic School and deafness

One of the first thinkers touching the problem of sound was the Greek philosopher Pythagoras (582?-500? B.C.).

The ancient Greeks cared little for the scientific study of sound, but they had a great interest in music, and considered music to represent "applied number", in contrast to "pure number", the science of arithmetic. Pythagoras discovered that an octave represents a two-to-one frequency ratio and enunciated the law connecting consonance with numerical ratios. On this law, however, he built a fantastic and unscientific edifice of mystical speculation. Aristotle, in brief remarks on sound, made a fairly accurate guess concerning the nature of the generation and transmission of sound, but no scientifically valid experimental studies were made until about 1600 A.D., when Galileo made a scientific study of sound and enunciated many of its fundamental laws (Encarta 1994).

The problems of deafness and speechlessness have been mentioned very early in recorded, written history. The connection between speech and hearing was early touched upon and to some degree also correctly comprehended.

In the fifth century B.C. Greek Hippocratic physicians emphasized the connection between deafness and speechlessness. According to O'Neill, their statements were to be repeated for almost 2000 years. In the voluminous writings of the Hippocratic School there are many observations and speculations about the causes and cures of speechlessness. The writings differentiate between loss of voice and loss of speech, placing the origin of speech in the head. People make sounds because they have lungs with windpipes attached; sounds are then shaped by the lips, tongue, palate, and teeth. But if the tongue does not properly articulate the air coming out of the lung through the windpipe into the mouth, the person cannot speak properly. The proof, it was said, was that people born deaf never learn to articulate, and so, although they have voice - that is, can make noises - they have no speech (O'Neill, Y.V. 1987, p.40). Hippocrates attempted to treat hearing impairments, but he considered only the middle (e.g. otitis media, "middle ear infection") and the outer ear (Hodgson 1973 in Winzer, M.A. 1993, p. 17).

Aristotle and the "dumb and deaf"

Aristotle defined hearing positively, "to possess hearing will be to hear." (In *Topica*, Aristotle 1955, 114b, 25). He viewed deafness as a lack of hearing, as negative, as an impairment. Inasmuch as "failure to see" is a property of "blindness", failure to hear is a property of deafness, inasmuch as we have not got the hearing we should naturally have. "It is also clear that the loss of any one of the senses entails the loss of a corresponding portion of knowledge, and that, since we learn either by induction or by demonstration, this knowledge cannot be acquired." (In *Analytica posteriora*, Aristotle 1955, 81a, 35-40).

Plato touched the problem of the connection speech-hearing, but has no lasting contribution on this subject. Aristotle, however, influenced theories of speech for thousands of years and he also had sensible comments on the connection of speech and hearing.

The English word "dumb" (before 1000, Old English *dumb*) also stems from old Germanic language roots, from a word meaning "stupid" as well as "incapable of speech" [from *tumb, dumb*, not from *stum(m)*.] Cf. below.

Aristotle, who believed that speech is the distinctive characteristic of humans, wrote that for any being to have voice, it must have lungs and a pharynx. Articulate voice, he wrote, is the combination of vocal and nonvocal sounds, that is, vowels and consonants. One born deaf can make sounds but cannot articulate, an acquired skill (O'Neill, Y.V. 1987, p.40-41). Aristotle called deaf-mutes, "dumb and deaf" humans, irrational persons and regarded them as uneducable. That was, however, typical of that time, in which no speech training existed.

Celsus and Galen

In the time of Augustus and Tiberius Caesar (the first half of the first century A.D.), the medical knowledge of the world was collected and probably amplified by Aulus Cornelius Celsus (25 B.C.-50 A.D.) in *De Medicina*. Celsus described how he followed the prescriptions of his great predecessors, especially Hippocrates. "The primitive state of anatomical knowledge led Celsus to prescribe for ear problems cures and agents that could only have aggravated the damage to an ear drum already subject to chronic otitis media." (Winzer, M.A. 1993, p. 17).

Galen inherited Stoic thoughts, but also wrote of the physical bases for speech. He divided human sounds into voice, articulation, and speech, and analyzed the larynx, trachea, and cerebral nerves activating these processes. He was among the first to center the origin of speech and reason in the brain; yet he also promulgated traditional ideas: speech was the messenger of the soul (O'Neill, Y.V. 1987, pp.40-41). In treating deaf persons, Galen and later physicians often performed an operation "to cure their dumbness by an operation on the ligament of the tongue" (De Land 1931, in Winzer, M.A. 1993, p. 18), a procedure that persisted well into the twentieth century (Winzer, M.A. 1993, pp. 17-18).

Augustus and Quintus Pedius

Teaching of deaf people seems to be unknown in ancient time and in the beginning of the medieval time. However, no rule is without exception: Augustus (63 B.C.- A.D. 14)¹⁰, in deference to the will of his stepfather Julius Caesar (100 B.C.- 44 B.C.), assumed responsibility for the education of deaf Quintus Pedius; the boy was taught painting, the first recorded evidence of the education of a deaf person (H.P. Peet 1851, in Winzer, M.A. 1993, p. 15). Quintus Pedius was mentioned by Pliny as among the most eminent painters of Rome (Moore 1987, p. 36).

The New Testament and deafness

The term "deaf" (all connections) very seldom occurs in the New Testament. The following passages are all of them:

Mt 11:5 The blind receive their sight, and the lame walk, the lepers are cleansed, and the deaf¹¹ hear, the dead are raised up, and the poor have the gospel preached to them.

Mr 7:32 And they bring unto him one that was deaf¹², and had an impediment in his speech¹³; and they beseech him to put his hand upon him.

¹⁰Augustus was the first emperor of Rome (27 B.C.- A.D. 14). Originally named Gaius Octavius, Augustus was the grandnephew of Julius Caesar, whom he succeeded as ruler of the Roman state. When Caesar was assassinated in 44 B.C., Octavius was in Illyria. Returning to Italy, he learned that he was Caesar's adopted heir. He consequently took the name Gaius Julius Caesar, to which historians have added Octavianus; in English, the name is usually shortened to Octavian.

¹¹Translation of Greek ἀκούω .

¹²Translation of Greek ἀκούω .

¹³Translation of Greek μωρολογία .

Mr 7:37 And were beyond measure astonished, saying, He hath done all things well: he maketh both the deaf¹⁴ to hear, and the dumb to speak.

Mr 9:25 When Jesus saw that the people came running together, he rebuked the foul spirit, saying unto him, [Thou] dumb¹⁵ and deaf¹⁶ spirit, I charge thee, come out of him, and enter no more into him.

Lu 7:22 Then Jesus answering said unto them, Go your way, and tell John what things ye have seen and heard; how that the blind see, the lame walk, the lepers are cleansed, the deaf¹⁷ hear, the dead are raised, to the poor the gospel is preached.

Mark 9:25 can be regarded as a view on deafness as caused by the devil. However, this cannot be said to be a strong tendency in the New Testament.

A new interpretation of the Bible regarding blindness and deafness

It seems to be a common opinion held by all students of the past that ancient Hebrew tradition, which recognized each human as an entity, a unity created when God's breath entered the simple clay, taught that bodily impediments came from God. Blindness and deafness are "evils", "punishments". In a strange dualist comprehension impairments represent the will of God but are caused by Satan.

The following seems to be a typical and widely spread notion:

"With the rise of Christianity came the belief in the devil, or Satan, as the prime suspect in handicapping conditions. Although early Christianity saw itself as having vanquished a pantheon of gods, piety now conceived the notion of punishment or vengeance from a Divine Master in retaliation for the sins of the affected individual or the parents. Rampant superstition, for example, placed deaf individuals 'under the special curse of God' (Stone, 1869, p. 97). Madness signified divine punishment, and blindness was 'one of those instruments by which a mysterious Providence has chosen to afflict man' (Duncombe, 1836, p. 96)." (Winzer, M.A. 1993, p. 16).

This was also the opinion of this author until his study of all passages relating to blindness and deafness in the Old Testament and the New Testament. This study demonstrated that such a belief must be strongly modified. In the Old Testament, there is no reference to the "devil". "Satan" however is referred to, but never in a passage containing "blind", "deaf" or "dumb" (KJV). This could argue for a more monistic interpretation of religion also in the Old Testament. On the other hand, the Old Testament seems to regard impairments - including blindness but not deafness (!) - as more a "punishment" by God than does the New Testament. In the New Testament however, the "devil" comes into being (KJV). We find the "devil" in concurrence with "blind" in two passages¹⁸ (of 57), with "dumb"¹⁹ in four passages (of 13), never with "deaf". Satan is also referred to in

¹⁴Translation of Greek ἀκούω .

¹⁵Translation of Greek κωφός. Newer word with the same meaning as Greek κωφός .

¹⁶Translation of Greek κωφός .

¹⁷Translation of Greek ἀκούω .

¹⁸Mt 12:22 Then was brought unto him one possessed with a devil, blind, and dumb: and he healed him, insomuch that the blind and dumb both spake and saw.

(R.Th.E.: Notice that "dumb" is a translation of Greek κωφός . Blind is a translation of Greek τυφλός .)

Joh 10:21 Others said, These are not the words of him that hath a devil. Can a devil open the eyes of the blind?

¹⁹Mt 9:32 As they went out, behold, they brought to him a dumb man possessed with a devil. (R.Th.E.: Notice that "dumb" is a translation of Greek κωφός . The same in Mt 9:33.)

Mt 9:33 And when the devil was cast out, the dumb spake: and the multitudes marvelled, saying, It was never so seen in Israel.

Mt 12:22 Then was brought unto him one possessed with a devil, blind, and dumb: and he healed him,

the New Testament, but never in a passage with "blind", "deaf" or "dumb", although there is the heavenly curse on the sorcerer Elymas in Acts 13: 8-11.

This author (Enerstvedt) has not tried to compare the Old Testament with other written material produced at the same time. There is reason to believe, however, that Satan is not an invention of the Old Testament. The New Testament is not unequivocal, see above and below. It seems that the more serious the impairments, the more "evil" and "devil", cf. Mt 12:22. However, there are very few indications of Satan or the devil as cause of "evilness", "sin", or "punishment" regarding blindness and deafness.

On the other hand, in ancient times there are numerous examples of blindness inflicted as a punishment in classical legends and myths. Two famous examples are that of Tiresias - in one version struck blind by the goddess Athena, and that of Daphnis - who broke a vow of fidelity.²⁰ In a religious context the punishment could be the consequence of a performed sin. However, as demonstrated in chapter 2, the will of God regarding blindness is not always a punishment, and a punishment is not always a result of future or past sin. The New Testament breaks with the notion of blindness due to sin. The following is the main message in the New Testament:

Joh 9:2 And his disciples asked him, saying, Master, who did sin, this man, or his parents, that he was born blind?

Joh 9:3 Jesus answered, Neither hath this man sinned, nor his parents: but that the works of God should be made manifest in him.

The latter part of Joh 9:3 "...but that the works of God should be made manifest in him..." should probably not be interpreted as the dualist comprehension - the will of God but caused by Satan. On the contrary, a reasonable interpretation would be that this is a more monistic comprehension of religion: God is responsible for all, and the bad things are not necessarily punishments for sins.

Thus, regarding blindness and deafness, it seems more correct to assume - as is the assumption of this author - that

the Old Testament signifies the beginning of a change in the probably widely-held notions and practices regarding deafness and blindness in this period of time (1000 A.D.-1000 B.C.) ;

the New Testament indicates a Christian break with earlier comprehensions of blindness and deafness as punishment, with earlier practices of maltreatment, and the destroying and killing of blind and deaf people (a change that began before the alleged birth of Jesus), and the beginning of a new era in which pity and sympathy become central Christian ideals and the practice of organized charity comes into being.

But we can find no *teaching* of deaf people or blind people in the Bible. However, in the miracles they can be healed, cured. And in the metaphors "the blind" and "the deaf" are taught and they can learn. This is not insignificant re-

insomuch that the blind and dumb both spake and saw. (R.Th.E.: Notice that "dumb" is a Translation of Greek *ἄφωνος*.)

Lu 11:14 And he was casting out a devil, and it was dumb. And it came to pass, when the devil was gone out, the dumb spake; and the people wondered. (R.Th.E.: Notice that "dumb" is a Translation of Greek *ἄφωνος*.)

²⁰ If Monbeck is correct, the notion that the individual must have done something to deserve his loss of sight, - that blindness was regarded as a punishment for some past sin - also exists in newer history. In many areas of India, for example, organized work for the blind has been resisted because blindness is considered punishment for particularly bad sins committed during an earlier existence (Monbeck 1996, p. 49).

garding teaching and learning of the deaf and the blind, because there are no walls between phrases termed "metaphors" and other phrases.²¹ Thus, the metaphors are an indication that the blind and the deaf not only learned, they were also educated in those times, probably mostly informally as were the majority of the seeing and hearing people .

Deaf and dumb: Terms, concepts, comprehension

The comprehension of the relation between deafness and speechlessness

O'Neill points out that Mark 7:32 was often cited in later centuries as showing a connection between deafness and dumbness, but O'Neill is of the opinion that the passage itself signifies a separate treatment for separate ailments. Mark 9:25 ff. records a confrontation between Jesus and an "unclean", "dumb and deaf" spirit (notice that the reference is "dumb and deaf", not "deaf and dumb"). Although this is the only Biblical (Old and new Testament) reference to "dumb and deaf" together (with no reference to "deaf and dumb"), later commentators assumed the connection (O'Neill, Y.V. 1987, pp. 39-40). O'Neill is quite right when questioning the interpretation of Mark 7:32 that assumes a connection between deafness and dumbness. Mark 9:25, on the other hand, speaking of a "dumb and deaf" spirit, can be interpreted as indicating that the causal connection deafness dumbness in humans was known, but other interpretations are as likely as that. All other passages speaks of the deaf and the dumb as different persons. We quote the passages in Mark 7:32, 9:25 in their contexts in our text, and all passages mentioning "dumb" in the following footnote²²:

²¹A tendency in the metaphors is that a "deaf" or "blind" person is a hearing person or sighted person that might be ignorant but teachable. If the real deaf or blind persons were uneducable, such metaphors would not have been applied. (E.g. Old Testament, Isa 42:18 Hear, ye deaf; and look, ye blind, that ye may see.

²²Mt 9:32 As they went out, behold, they brought to him a dumb man possessed with a devil.

Mt 9:33 And when the devil was cast out, the dumb spake: and the multitudes marvelled, saying, It was never so seen in Israel.

Mt 12:22 Then was brought unto him one possessed with a devil, blind, and dumb: and he healed him, insomuch that the blind and dumb both spake and saw.

Mt 15:30 And great multitudes came unto him, having with them [those that were] lame, blind, dumb, maimed, and many others, and cast them down at Jesus' feet; and he healed them:

Mt 15:31 Insomuch that the multitude wondered, when they saw the dumb to speak, the maimed to be whole, the lame to walk, and the blind to see: and they glorified the God of Israel. (R.Th.E.: Notice that "dumb" is a Translation of Greek *ἄφωνος*. Also in Mt 15:30 .)

Mr 7:37 And were beyond measure astonished, saying, He hath done all things well: he maketh both the deaf to hear, and the dumb to speak. (R.Th.E.: Notice that "deaf" is a translation of Greek *κωφός*, "dumb" is a translation of Greek *ἄφωνος* .)

Mr 9:17 And one of the multitude answered and said, Master, I have brought unto thee my son, which hath a dumb spirit; (R.Th.E.: Notice that "dumb" is a translation of Greek *ἄφωνος* .)

Mr 9:25 When Jesus saw that the people came running together, he rebuked the foul spirit, saying unto him, [Thou] dumb and deaf spirit, I charge thee, come out of him, and enter no more into him.

Lu 1:20 And, behold, thou shalt be dumb, and not able to speak, until the day that these things shall be performed, because thou believest not my words, which shall be fulfilled in their season. (R.Th.E.: Notice that "dumb" is a translation of Greek *σῆμα* - "silent").

Lu 11:14 And he was casting out a devil, and it was dumb. And it came to pass, when the devil was gone out, the dumb spake; and the people wondered.

Ac 8:32 The place of the scripture which he read was this, He was led as a sheep to the slaughter; and like a lamb dumb before his shearer, so opened he not his mouth: (R.Th.E.: Notice that "dumb" is a translation of Greek *ἄφωνος* .)

Mark, "7:31 And again, departing from the coasts of Tyre and Sidon, he came unto the sea of Galilee, through the midst of the coasts of Decapolis. 7:32 And they bring unto him one that was deaf, and had an impediment in his speech; and they beseech him to put his hand upon him. 7:33 And he took him aside from the multitude, and put his fingers into his ears, and he spit, and touched his tongue; 7:34 And looking up to heaven, he sighed, and saith unto him, Ephphatha, that is, Be opened. 7:35 And straightway his ears were opened, and the string of his tongue was loosed, and he spake plain. 7:36 And he charged them that they should tell no man: but the more he charged them, so much the more a great deal they published it; 7:37 And were beyond measure astonished, saying, He hath done all things well: he maketh both the deaf to hear, and the dumb to speak."

Mark, "9:17 And one of the multitude answered and said, Master, I have brought unto thee my son, which hath a dumb spirit; 9:18 And wheresoever he taketh him, he teareth him: and he foameth, and gnasheth with his teeth, and pineth away: and I spake to thy disciples that they should cast him out; and they could not. 9:19 He answereth him, and saith, O faithless generation, how long shall I be with you? how long shall I suffer you? bring him unto me. 9:20 And they brought him unto him: and when he saw him, straightway the spirit tare him; and he fell on the ground, and wallowed foaming. 9:21 And he asked his father, How long is it ago since this came unto him? And he said, Of a child. 9:22 And oftentimes it hath cast him into the fire, and into the waters, to destroy him: but if thou canst do any thing, have compassion on us, and help us. 9:23 Jesus said unto him, If thou canst believe, all things are possible to him that believeth. 9:24 And straightway the father of the child cried out, and said with tears, Lord, I believe; help thou mine unbelief. 9:25 When Jesus saw that the people came running together, he rebuked the foul spirit, saying unto him, Thou dumb and deaf spirit, I charge thee, come out of him, and enter no more into him. 9:26 And the spirit cried, and rent him sore, and came out of him: and he was as one dead; insomuch that many said, He is dead."

The connection between "deafness" and "dumbness" really is a complicated one. However, we tend to underestimate the comprehension of people of the past. It is likely that *some* people at the time when The New Testament was written, and at the time of Jesus, observed that the "dumb" often were deaf, and the deaf also were "dumb." However, that is not the same as understanding that there might be a causal relationship between deafness and "dumbness" (deaf, and *therefore* not speaking). And a "dumb" person can also be "dumb" due to other reasons than deafness, i.e. there exists "dumb" persons who are not deaf, and a dumb and deaf person might have one etiology for the dumbness and another for the deafness. Thus, regarding the important question of the relation between speech and hearing, the most correct opinion is probably that some people very early in history understood the connection - much earlier than the emergence of the terms "sourd-muet", eng. "deaf-mute" in history - cf. the Hippocratic School, and also Aristotle. However, the world - e.g. the "scientific" world - was not then as integrated as today. Uncertainty in this question has lasted in history up to the twentieth century (cf. Galen's operations). On the other hand, the assumption of-

1Co 12:2 Ye know that ye were Gentiles, carried away unto these dumb idols, even as ye were led. (R.Th.E.: Notice that "dumb" is a translation of Greek *ἄφωνοι*.)

2Pe 2:16 But was rebuked for his iniquity: the dumb ass speaking with man's voice forbad the madness of the prophet. (R.Th.E.: Notice that "dumb" is a translation of Greek *ἄφωνοι*.)

Notice that the word "speechless" once in the New Testament is a translation of the Greek word *ἄφωνος*; in Luke 1:22 there is the following passage, using the word "speechless":

Luke 1:22 And when he came out, he could not speak unto them: and they perceived that he had seen a vision in the temple: for he beckoned unto them, and remained speechless.

ten met in literature that this connection was not understood before medieval times, e.g. first by Cardano, is incorrect.

Probably the most important reason for the uncertainty is that two questions have been mingled, blended up to our time. The first still is a matter of opinion: It is the question of the relation between speech and thinking ("spirit", "soul", "rationality"). The second is the question of the relation between speech and hearing. The point is, that there well might be an essential relation between speech and thinking but this fact is by no means identical with the assertion that a speechless person cannot think! (Cf. discussions on that matter in the seventeenth and eighteenth century, see below).

Aristotle's statement - distorted and misinterpreted

The commonly held opinion among students of the deaf that Aristotle determined the fate of deaf people for neary two thousand years and is the reason why they were treated as not only deaf but also dumb (in the meaning "stupid"), is dubious. It is much more complicated than that. An honourable exception to the dubious opinion is the view of Donald F. Moores. He correctly ascertains that Aristotle's statement - "Men that are deaf are also speechless; that is, they can make vocal sounds but they cannot speak." - taken out of context, was distorted and misinterpreted: "The quote is merely a statement of fact that holds true today: without special training, a child who is born deaf will not learn to speak." (Moores 1987, p. 33).

Above all, there is the difficult question of diagnosing deafness (and to a certain degree also blindness!). Up to our time, we have what is called the masquerade: deaf people in institutions for mentally retarded people, not because they are deaf but because hearing was not properly investigated.

Then, real life is more rich than theories.

Firstly, the experience of the author is that very few people are totally deaf (and/or blind). Most people have some residual hearing or vision. However, most of the students of deaf and blind people still write about them as if all of them are totally deaf and blind! This is a sad story, when knowing that the Justinian Code in the Byzantine (eastern Roman) Empire (see below) demonstrated that knowledge already in the sixth century A.D. The code of the emperor Justinian also distinguished between people who were dumb but not deaf, deaf but not dumb, and those who were both deaf and dumb.

Secondly, among people with hearing impairments and/or visual impairments, brain dysfunctions and other dysfunctions really are more frequent than in the general population.

With the help of the linguist Trygve Skomedal it is possible for us to give a brief account - with no assertion of completeness - of some terms that can throw light on the relation between "deaf" and "dumb".²³

²³All references to etymology regarding "deaf" and "dumb" in the following survey should be: Skomedal, Enerstvedt in Enerstvedt 1996.

About words for "deaf" and "dumb"**Greek****Old Greek**

(700 B.C. - 500 A.D.)

kōphósunsharp, cut off, stump,
powerless, ineffective

deaf

deaf-mute

dumb, speechless

still, soundless, quiet

with muddy sound,
unintelligible

insensitive, unthoughtful,

dumb, blind (for something)

meaningless

deaf-mute

eneósdumb, speechless²⁴

stupid

áphōnos

dumb, speechless

soundless

ílalos

(later Old Greek,

e.g. in New Testament)

dumb, speechless

mogilálos

(Mark, the sixties A.D.)

who has speech impediment,

stammering, stuttering

²⁴E.g. in the New Testament, Ac 9:7.

Modern Greek

(main significations)

kōphós

deaf

eneós

speechless (of surprise)

áphōnos

dumb; without voice

álalos

dumb, speechless

kōphálosdeaf-mute (translation of French *sourd-muet*)**Latin**

(200 B.C. - 500 A.D.)

surdus

deaf

not listening,

unthoughtful,

not clear, inaudible

mutus

speechless, dumb

unmentioned

soundless

where, when it is still

(about place, period)

auribus captus

with injury of ears, deaf

elinguis

dumb, lingual indexterity

poor fluency

Romance Languages

e.g.

Italian

sordo/muto

Spanish

sordo/mudo

French

*sourd/muet*The words are used very similarly to *surdus*, *mutus* in Latin.French: The composition **sourd-muet** (deaf-mute) since 1564. Later corresponding word in other Roman languages.

Germanic**Gothic**

(East Germanic, Bible translation, fourth century A.D.)

haupsdeaf (Greek ἀσπλάγχις,
Lat. *surdus*)dumb (Greek ἀσπλάγχις,
Lat. *mutus*)**daufs**hardened (Mark 8:17)
infatuated
(Greek πεπὸρῶμένος)**dumbs**dumb
(Greek ἀσπλάγχις,
Lat. *mutus*)**Old High German**

(Until 1100)

toubblunt stump, unsharp
deaf**stum(m)**

lacking speech deaf... lacking speech

tumb/dumb

stupid, foolish

Middle High German

(1100-1350)

toubdeaf
insensitive, meaningless, conceited
unthoughtful
worthless, empty**stum(m)/stumb**

lacking speech

dumb

tumb/tum(m)

stupid, foolish

unintelligible

Modern High German**taub**deaf
insensitive no good, empty
foolish**stumm**

lacking speech

unspoken

dumm

stupid annoying

embarrassing

taub und stumm (Sixteenth century)**taubstumm** (1771) (translation of French *sourd-muet*, cf.
Greek ἀσπλάγχις and English *deaf-mute*)**Old English**

(Until 1066)

dēafunable to hear
unreasonable**dumb**

lacking speech; stupid

Modern English**deaf**

unable to hear
unreasonable

dumb

lacking speech
silenced; stupid
mute (from Latin)
lacking speech,
silent

deaf-and-dumb (Middle English 1150-1200, *deaf and dōmbe*)

deaf-mute (1830-1840, translation of French *sourd-muet*)

Old Norse

(1150-1350)

dauf

deaf unsharp
 inactive

dumbr

speechless, silent
 not clear

millauss

speechless, dumb

Danish**døv**

deaf
foolish

† deaf

+ **stum** (from
 German)
lacking speech

dum

† speechless, dumb
† visually impaired
+ stupid (signification
influenced by German)

† **døv og dum**

deaf-mute (transl. of German)

+**døvstum** (1793 - translation of German)

Modern Norwegian

As in Danish

† signifies: archaic, at least in the standard language.

+ signifies: newer borrowing of word or signification from German.

Originally, the word *daufs*, *toub*, *taub*, *deaf*, *dauf* etc. probably is a derivation of a verb for smoke (reek) or steam and signified "not clear, darkened due to smoke". It is related to Lat. *fumus* "smoke" and Greek *τῆρας* "smoke; infatuation, delusion" and Greek *τυφλός* "blind".

The word *dumbs*, *dumb*, *dumbr* etc. probably is related to the words *dimme* (darkness), *dim* (Norwegian and English) "dark", *damb*, *dam* (Norwegian and Swedish) "dust", Old Norse *dumba* "cloud of smoke; fog", *dumbe* (Norwegian) "dust", formed to a verb with the signification "smoke" ("reek"), and more distantly with the word *dâm* and Indian and Slavonic words for "to blow".

Semantically these words (*daufs...dumbs*) basically remind of one another but it is not likely that they are derivations of the same basic word.

The word *stum*, previously only found in German and Dutch, is cognate with the adjective *stam*, the verb *stamme* and the verb *stemme* with the signification "hold back, dam up something". The word originally had the signification "hampered (in talking)". In German and Dutch (and later in some Scandinavian languages) it has taken over a part of the older more extensive signification of the common Germanic *dumb-*.

The gothic word *𐌳𐌹𐌸𐌹𐌸* "deaf" is cognate with a verb for "to knock off, truncate", related to Lat. *refutare* "beat off" and to Old Norse *bauta* and English *beat* ("hit"). Originally the word signified "truncated". Semantically it reminds of Greek *ἀκούω*.

According to Winzer, in educational circles in the US it was not until after 1867, when American oral schools for hearing-impaired children were established, that the term "hard of hearing" entered popular and educational jargon. Successful training in speech and lip-reading for many hearing-impaired students persuaded educators to abandon the terms "deaf mute" and "deaf and dumb" in 1887. "But even though educators, knowledgeable about the potential for speech for many deaf children, embraced new terminology, the old pejorative terms lingered and are sometimes used even today." (Winzer, M.A. 1993, p. 151).

It is interesting that people who have a stigma often themselves take the prejudiced terms and fight for a change in their connotations. Cf. the term "deaf".

According to Goffman (referring to Warfield), a characteristic task of the representatives of stigmatized people (R.Th.E.: often not belonging to the stigmatized group themselves) is to convince the public to use a softer social label for the category in question:

Acting on this conviction, the New York League for the Hard of Hearing staff agreed to use only such terms as hard of hearing, impaired hearing, and hearing loss; to excise the word deaf from their conversation, their correspondence and other writings, their teaching and their speeches in public. It worked. New York in general gradually began to use the new vocabulary. Straight thinking was on the way. (Goffman 1963, p. 37).

Currently, there is a clear tendency (in some countries at least) that neither people "hard-of-hearing" nor "deaf" people - wish to be labelled "hearing impaired". The "politically correct" terms are precisely "hard-of-hearing" and "deaf" (the latter being more deaf than the hard-of-hearing). These terms are also promoted by both hearing and deaf representatives of deaf people.

Deafness in medieval times

Augustine has been misinterpreted

The ecclesiastic Augustine (354-430) like Aristotle, however 600 years later, also called deaf persons irrational persons and looked upon them as ineducable. According to an interpretation of Augustine, he interpreted the Pauline dictum "Faith comes by hearing" to mean that "those who are born deaf are incapable of ever exercising the Christian faith, for they cannot hear the Word, and they cannot read the Word" (Ontario Institution for the Education and Instruction of the Deaf and Dumb 1895, p. 12, in Winzer, M.A. 1993, p. 22). According to Winzer,

Augustine's declarations effectively denied church membership to deaf persons; they were restricted from the celebration of mass, disallowed the sacrament of communion, and generally excluded because they were unable to express their sins (Winzer, M.A. 1993, p.22).

Moore points out that Augustine has been misinterpreted. Augustine's statement was interpreted as depriving the deaf of immortality, an interpretation Fay (1912) refuted by reference to several other statements by Augustine, among which the most famous is as follows:

"If a man and woman of this kind [deaf] were united in marriage and for any reason they were transferred to some solitary place where, however, they might be able to live, if they should have a son, who was not deaf, how would the latter speak with his parents? How can you think he would do otherwise than reply by gestures to the signs which his parents make to him? However a small boy could not do even this; therefore my reasoning remains sound, for what does it matter, as he grows up, whether he speaks or makes gestures, since both these pertain to the soul?" (Fay 1912, p. 213, in Moore 1987, p. 34).

Until the twelfth century an express dispensation of the pope was necessary to authorize the marriage of a deaf person (Peet 1851, in Winzer, M.A. 1993, p. 22).

Miracles or education?

On the other hand, the pagan habit of killing the congenitally deaf (when ascertained that they were deaf) and to some but less extent also the adventitiously deaf is likely to have been abandoned when Christianity triumphed.

Some deaf people - as some blind people - probably also received care in, or connected with, Christian monasteries in the early centuries A.D.

Attempts to provide cures are known. According to Winzer, although most references to cures are permeated by an aura of magic, "some may well point to what were valid educational attempts posing as miracles." (Winzer, M.A. 1993, p. 21). In 504, for example, Saint Severinus "healed Eululius, Bishop of Nevers, who has for some time been deaf and dumb" (De Land 1931, p. 13, in Winzer, M.A. 1993, p. 21). Saint John of Beverly in England was said to have "cured a dumme man with blessing him" (Porter 1847), the reason that Saint John later became patron saint of the deaf (Bede 1849) (Porter; Bede, in Winzer, M.A. 1993, p. 21).

The Justinian Code - denial of rights to those who were deaf and mute from birth and also illiterate

According to O'Neill, Stoic ideas permeated Roman life; the soul ruled over the tongue and any other physical components of speech. (New Testament passages attest to the belief in the spiritual origin of speech. Luke 1 describes Zacharias' temporary speechlessness because of his lack of faith that he and his wife would bear a child in their elderly years.) The soul was seen as the Creator's supreme achievement, and speech was the supreme achievement of the soul, the external logos from the internal logos of reason. In the fourth century, Nemesius wrote about the Creator's plan of an ascending ladder of communicative ability in the creation, from cows to parrots to people. According to O'Neill, there were, of course, physicians who continued exploring the physical causes of deafness and speechlessness, like the sixth-century Byzantine physician Aetius of Amida, who investigated paralysis of voice structures he thought possibly curable by therapy. Yet even he was not interested in the brain or nervous system as sources of speech (O'Neill 1987, p.41).

The Justinian Code (529 A.D.) probably reveals very much of the life conditions for deaf people, not only the legal attitudes towards deaf people and those without speech. In this codification of Roman law, a speechless person was considered a legal impediment, and speech was necessary for citizenship. A speechless child, one writer said, had not intellect, which was the truly human factor. Children were thought to develop true speech by around the age of seven. A deaf person could not make a promise in a court of law, though later such courts distinguished between those who had been deaf from birth and those who had become deaf through accident, after their speech faculties had been developed. The latter type of unfortunate could make a written will, since it was assumed he understood the meaning of language. (An aside is that blind persons might have a valid will if it were witnessed, but deaf people had to write the will in their own handwriting.) A mute might not serve as custodian of a minor. Nor could a mute or deaf person administer his own properties; a curator was appointed. Thus, according to O'Neill, it seems clear that under Roman law the ability to reason and the ability to speak were indissolubly connected. Persons deaf and mute were associated with minors or those incurably diseased or insane as being incapable of handling their own affairs (O'Neill, Y.V. 1987, p. 40).

According to Moores, the Justinian Code shows sensitivity to differential impacts of adventitious deafness and partial deafness. The Romans gave full rights to individuals who were (1) deaf and mute, but literate; (2) deaf but articulate; (3) mute but hearing; or (4) adventitiously deaf.

Rights were denied only to those who were deaf and mute from birth and also illiterate. This apparently included just about all individuals who were born deaf (Moores 1987, p. 36).

Treatment and education in medieval times

O'Neill informs us that in the writings of Eastern Christianity, the monk Meletius serves as an example of reliance on earlier scholarship; echoing previous philosophy and theology, he wrote that communication between souls was possible only through speech and hearing. Animals might communicate through voice and hearing, but speech was distinctively human. Angels, he added, communicated through intellect alone, and so did not need speech (O'Neill, Y.V. 1987, p. 41).

One of the first records mentioning teaching of deaf people is in the old Anglo-Saxon chronicles. In the eight century it is mentioned that the bishop John of Hogenstald took a dumb person into his house and taught him to lipread some words and sentences.

The Koran and deafness

The author does not here investigate terminology in the Koran as thoroughly as was done for the Bible.²⁵

²⁵All occurrences in which the term "deaf" are included in the Koran are investigated, but not the terms "hear", "dumb", "ear", "deaf-mute", "deafmute", and "deaf and dumb". As is the case for the Bible - in both Testaments - the occurrences in the Koran are of two main types (as for blindness): Metaphoric terms and phrases - i.e. terms and phrases used, or regarded as being used, to represent something else - and terms and phrases representing objects in the ordinary way.

The Online Version (Palmer's translation) is first investigated to find the passages. Then the Norwegian edition is investigated to give the passages number. Finally, the English translation by Arberry is chosen. In the investigation of the Koran, especially its terms, Abdel Magid Al-Araki was of great help. References to the Arabi

All passages regarding deafness in the Koran are metaphors. Of 11 passages²⁶ containing the terms "deaf*" 6 were clear metaphors (about hearing people who were "deaf" to the message), 5, however, are more ambiguous, equivocal. None were ordinary phrases about deaf people.

A clear metaphoric passage is the following in chapter 21:

46. Say: 'I warn you only by the Revelation';
but they that are deaf do not hear the call
when they are warned. (The Koran, volume two, p. 20; Koranen 1989, p. 318).²⁷

Another clear metaphoric passage (in context) is the following in chapter 27:

82. Thou shalt not make the dead to hear,
neither shalt thou make the deaf to hear the call
when they turn about, retreating.
83. Thou shalt not guide the blind out of their error
neither shalt thou make any to hear, save
such as believe in Our signs, and so surrender. (The Koran 1955, volume two, pp. 83-84; Koranen 1989, p. 381).²⁸

Obviously, however, the metaphors indicate attitudes towards deaf people. Some are clear ones, as above, but others are more ambiguous, equivocal²⁹ passages (indicating attitudes beyond that deaf people can not hear), as the following in chapter 8 (in context):

20. O believers, obey God and His Messenger,
and do not turn away from Him, even
as you are listening;
21. and be not as those who say, 'We hear,'
and they hear not.
22. Surely the worst beasts in God's sight
are those that are deaf and dumb and
do not understand.
23. If God had known of any good in them
He would have made them hear; and if
He had made them hear, they would have turned
away, swerving aside. (The Koran 1955, volume one, p.199; Koranen 1989, p. 172).³⁰

Although the author has not systematically investigated the Koran trying to find occurrences where deaf people might be mentioned in other terms, he has found the following passage - in chapter 16, passage 78 - about a *dumb* person:

78. God has struck a similitude: two men,
one of them dumb, having no power over
anything, and he is a burden upon his
master - wherever he despatches him,
he brings no good.
Is he equal to him who bids to justice, and is
on a straight path? (The Koran 1955, volume one, pp.294-295; Koranen 1989, p. 263).³¹

This person might have been deaf.

terms should be: Al-Araki, Enerstvedt in Enerstvedt 1996.

²⁶Some of them have the word "blind" too, but the unequivocal references to deaf *and* blind persons are counted under deaf-blindness.

²⁷The Arabic term translated to "the deaf" is "al-ṣummu". ṣ is the transcription of the Arabic letter "saad".

²⁸The Arabic term translated to "the deaf" is "al-ṣummu", to "the blind" is "al-ʿumi".

²⁹Ambiguous, equivocal not regarding the message, but as metaphors.

³⁰The Arabic term translated to "the deaf" is "al-ṣummu", to "the dumb" is "al-bukmu".

³¹The Arabic term translated to "dumb" is "abkamū". "al-bukmu" and "abkamū" have the same root. Root-consonants: b-k-m.

Summing up then: The Koran is not unequivocal regarding deaf people. It has not attitudes as positive as those regarding blind people. A risky interpretation based on the Koran indicates that blind people fared better than deaf people in the Arabic culture.

Did the Arabic people also apply a term for "hard-of-hearing"? Most likely they did but not in the Koran.³² A present Arabic phrase meaning "hard-of-hearing" is "ḥaqīl al-ṣam" (directly translation: "heavy in hearing").³³

The influence of Arabic thought on Europe was great in medieval times. From the ninth through thirteenth centuries, Arabic was the language of science and philosophy.

Rhazes (850-920), a leading Arabic physician of the period, divided deafness into three categories: impairment, curtailment, and complete loss. He believed that congenital hearing loss could be cured if treatment was initiated within two years (Moore 1987, p. 38).

However, according to Moore, despite all attainments of the Moslem world, "there is no indication of any attempts to educate the deaf." (Moore 1987, p. 39).

Medieval writers often used the classical doctrine of the four humours to explain human physiology and behaviour. These ideas were based on Greek philosophy developed into systems by Islamic writers (O'Neill, Y.V. 1987, p. 41).

Abu Ali al Husain Ibn Abdallah (Avicenna)

Avicenna (980-1037), for instance, wrote that melancholic hearts were too hot, so in combat their brains became too humid, this imbalance resulting in an inability to speak except by repeated syllables (stuttering?) (O'Neill, Y.V. 1987, p. 41).³⁴

³²In the Norwegian translation by Berg the Arabic term "waḡḡan" in the metaphoric passages 48 in chapter 17, 55 in chapter 18, and 44 in chapter 41(17:48, 18:55, 41:44) is translated by "tunghørthet" (which can be translated to English by "hard-of-hearing").

In chapter 17 (in context):

47. When thou recitest the Koran, We place
between thee, and those who do not
believe in the world to come, a curtain
obstructing,
48. and We lay veils upon their hearts
lest they understand it, and in their ears
heaviness. (The Koran 1955, volume one, p. 307; Koranen
1989, p. 274).

The meaning here and in the two passages below are metaphoric, and Arberry's chosen phrase - "in their ears heaviness", can be interpreted in that manner, i.e. as "deaf to the message", not as "hard-of-hearing". Thus, the Norwegian translation in these passages is dubious.

In chapter 18:

55...lest they understand it, and in their ears
heaviness; (The Koran 1955, volume one, p. 323; Koranen
1989, p. 288).

In chapter 41:

44...but those who believe not, in their ears
is a heaviness, (The Koran 1955, volume two, p. 189; Koranen 1989, p. 486).

The Arabic term in 17:48, 18:55, and 41:44 translated to "heaviness" is "waḡḡan". Root-consonants: w-q-r.

³³Most likely, the Arabic phrase "ḥaqīl al-ṣam" is old, however, the author has not investigated how old.

³⁴The Arabian philosopher and physician Ibn Sina (Abu Ali al Husain Ibn Abdallah), lat. Avicenna, was

Avicenna rejected Galen's idea of the brain as the source of speech. According to him, the heart was the primal organ, the agent of the soul whose intellect manifested itself in uniquely human speech (O'Neill, Y.V. 1987, p. 41).

More miracles than teaching regarding deaf people

Other medieval writers investigated the role of air in producing speech, and, according to O'Neill, wrongly linked Greek *aude* (voice) and Latin *aures* (ears) etymologically, trying to prove the unbreakable link between speech and hearing (O'Neill, Y.V. 1987, p. 41).

In the twelfth century William of St. Thierry wrote that just as the use of hands separates people from animals anatomically, speech separates them spiritually, as the soul expresses its faculty of reason through the spoken word. Thus, if a mute person could not use his hands, he did not have the reasoning faculty, and was considered subhuman (O'Neill 1987, p. 41).

According to O'Neill, although in the late Middle Ages there was increased study of speech defects and possible cures, including some surgery, reverence for ancient authority and interest in emphasizing speech as the special property of the soul prevented investigators from reliance on empirical evidence (O'Neill, Y.V. 1987, p. 41). Although also rare, religious cures indicating "miracles" seems to be more frequent than reports of teaching up to the fifteenth century. "The Life and Miracles of Saint Louis", attributed to Guillaume Pathos, confessor of Queen Margaret of Provence, and composed in 1302 or 1303, contains the story of an eight-year-old boy who had never heard or spoken but who regained his hearing at the tomb of Saint Louis (P.B. Fay 1923, in (Winzer, M.A. 1993, p.21)). Saint Elizabeth of Hungary was reported to have cured a boy's deafness and dumbness, and Saint Claire is credited with the cure of one Sister Christine (De Land 1931; H.P. Peet 1851; in Winzer, M.A. 1993, p. 21).

Understanding of human anatomy was gradually increasing, as post mortem examinations were conducted more frequently. Interest in brain dissection grew as techniques of careful dissection improved. Anatomists often used heads of decapitated criminals.

Johannes Schenk was a sixteenth-century physician who explored the aetiology of hearing impairment. He was able to describe the idea of hereditary hearing impairment by exploring the case of a family with several children with congenital hearing impairment. He also discussed how a person might lose the ability to hear following an injury (Turkington, C., Sussman, A.E. 1992, p.163).

No record of an educated congenitally deaf person has been found from the time of Quintus Pedius until the fifteenth century, when Rudolphus Agricola (1443-1485) in his book *De Inventione Dialectica* reported the case of a deaf person who had learned to read and write. Agricola was a professor in Heidelberg. The book was published posthumously in 1528. According to Moores, no details were given concerning names, place, or mode of instruction, and the report was generally dismissed on the grounds that it was impossible to instruct one

born 980 in Afchana the Persian province of Bokhara and he died 1037 at Ispahan. Avicenna became minister to the prince of Hamadan, but was imprisoned as the result of political intrigue. Having escaped to Ispahan, he became court physician in 1024 and lectured on medicine and philosophy. He died at Ispahan from overwork and riotous living. Avicenna's medical treatises were long in general use in European universities, and were still in the twentieth century text-books in the East (Hammerton vol 2, p. 808).

who lacked the organ of instruction - the ear (Moore 1987, p. 37).³⁵ According to Bo Andersson, however, the report had a great influence on Girolamo Cardano (Andersson, B. 1987, p. 93).

Andreas Vesalius revolutionizes both medicine and surgery

A real turning point came in the work of the Belgian (Flemish) physician Andreas Vesalius (1514-64), who made possible modern scientific study of the brain. He became a professor of surgery and anatomy at Padua, 1537. His dissections of human bodies, and his published works thereon, helped to revolutionize both medicine and surgery, and constitute him the founder of modern anatomical study (Hammerton vol 15, p.8363).³⁶

Although he believed in the soul, Vesalius denied that it could be found anatomically, and he entirely repudiated the theory of a thousand years that the brain function was centered in the cerebral ventricles (O'Neill, Y.V. 1987, p. 42).

According to O'Neill, among those whom Vesalius so deeply influenced was the physician Mercurialis.³⁷ The latter explained that brain injury was the cause of speechlessness, although other physical injuries, like tongue traumas, could cause lesser problems like those with articulation. He wove together classical sources and empirical observations. Congenital deafness was the major source of speechlessness, he wrote; if a child never heard anything, he lacked the stimuli necessary for the mind to instruct the bodily parts responsible for articulation (O'Neill, Y.V. 1987, p. 42).

The connection between mutism and deafness was of great interest to sixteenth-century physicians. Cures for mutism were possible if the person could hear, but the deaf person was often considered a hopeless case without divine intervention (O'Neill, Y.V. 1987, p. 42).

Girolamo Cardano - a speechless person might have language

The Milanese Girolamo Cardano (lat. Hieronymus Cardanus), whom we referred to in the chapter on blind people, however, wrote that deaf people could be taught to express themselves. One of Cardano's sons was found to have a hearing impairment (Winzer, M.A. 1993, p. 27). That probably is the reason why he became so interested in the question of deafness. Cardano denied that thought was impossible without speech, pointing out that deaf individuals could "hear" by reading, and mute persons could "speak" by writing. He asserted that sensation of an object through vision and touch could be a means to the construction of a con-

³⁵Guillaume Amontons(1663-1705) was the first deaf physicist in history. However, he was not congenitally deaf; he lost all of his hearing when he was a young boy growing up near Paris. All through his life he was very interested in the study of heat and temperature and in his early work in the 1680's he improved the design of Galileo's air thermometer. Later, Amontons invented many other instruments to measure temperature and pressure. One of his barometers survived three hundred years and is now on exhibit in a museum in Paris. Amontons is best known for his work as one of the first scientists to study the concept of "ideal gas." Almost a century passed, however, before Amontons' work became well known when Jacques Charles and Gay-Lussac repeated this deaf physicist's experiments (Lang, H. 1994, A1).

³⁶Vesalius was born in Brussels, on December 31, 1514. His chief work *De Corporis Humani Fabrica*, 1543, added much to the knowledge of the structure of the heart. He was appointed physician to Charles V in 1544, but his dissecting aroused such opposition at court that he had to leave. After a wandering life, he died at Zante, October 15, 1564 (Hammerton vol 15, p.8363).

³⁷The author of this book has not found any information on the name Mercurialis except the information that Hieronymus Mercurialis was the instructor of Casserio. Although likely, the author has not checked if the latter is the same person as O'Neill refers to.

cept of the object. He broke down the widespread ancient idea that the speechless person was without language, and so without reason or soul. Cardano was concerned about the practical problems in teaching of deaf people. He distinguishes between 1) the congenitally deaf, and 2) the adventitiously pre-lingual deaf, and 3) the adventitiously post-lingual deaf. But as far as we know, he did not perform any experiments and founded no school (Anderson, P. 1960, p. 11).

Salomon Alberti - speech an acquired skill

The sixteenth century German physician and professor at the University of Wittenberg, Salomon Alberti (1540-1600), was the first to call attention to people hard-of-hearing and attributed deafness to "some lack" in the development of the foetus. He claims to have discovered the cochlea (Turkington, C., Sussman, A.E. 1992, p. 6). Salomon Alberti wrote that impairments to speech and hearing were independent. And so Aristotle and Hippocrates had been wrong in believing that mutism and deafness inevitably went together. Alberti pointed out that for centuries investigators had relied too much on classical tradition, and so had compounded their errors. He, however, relied on empirically derived knowledge. Through dissection, one could understand anatomy, and trace the nerves of the tongue and ears as they entered the brain on their separate routes. Alberti maintained that speech was an acquired skill, not a divine gift to the uniquely human. Deaf and mute persons were, then, fully rational, fully human. As a man of his era, Alberti believed in the soul, and that man was created in the image of God, but he did not believe that damaged hearing or speech came about from a damaged soul. Congenital deafness, he wrote, was an embryonic mishap in no way separating a person from the Creator or from a full humanity (O'Neill, Y.V. 1987, p. 42).

Building on the accomplishments of investigators like Vesalius and Alberti, scholars from many different disciplines attacked the problems of individuals who were deaf and dumb. Physicians, educators, mathematicians, linguists, psychologists, anatomists, epistemologists, all had their say as Renaissance minds relied more and more on empirical evidence, leading towards an intellectual milieu popularly called the Enlightenment.

No longer was there much dispute about whether or not deaf and mute persons could be taught speech. According to O'Neill, the question was not if, but how. Different suggestions abounded, as success in the burgeoning field increased (O'Neill, Y.V. 1987, p. 42).

In 1587 the French physician Laurent Joubert wrote that one must be very patient in teaching deaf individuals to imitate the facial expressions and actions of those about them but, absorbing from their environment, children would learn to speak without hearing themselves (O'Neill, Y.V. 1987, p. 42).

Science of the ear makes progress: Eustachio, Ingrassia, Falloppio, Coiter, Plater, Casserio

Bartolomeo Eustachio (1510?-1571) was a Roman anatomist and great pioneer of otology who described the air passage from the throat to the ear now known as the eustachian tube.

Born in Recalbuto, Sicily, Giovanni Ingrassia (1510-1580) was one of the most well-known Renaissance anatomists, and a contemporary of Eustachio and Falloppio. A professor in Padua, Naples and Palermo, and adviser to the king, he was among the first to describe the tympanic cavity and the ossicles and was cre-

dited with discovering the stapes in 1546 (Turkington,C., Sussman,A.E. 1992, p. 102).

Faloppio was among the first to describe the anatomy of the ear, acoustic nerve and tympanic cavity. He also discovered the uterine tubes named after him and diagnosed ear diseases with an ear speculum.

Volcher Coiter(1534-1600) was a Dutch physician who first traced the path of sound waves from the ear canal through the eardrum and middle ear bones into the cochlea. A student of anatomy for many years in some of the most celebrated universities of Italy, Coiter also served as personal physician to the mad Prince Ludwig of Bavaria. He is best known for his book, *De auditus instrumento*, published in 1566 and the first devoted entirely to the ear. The book contained 17 chapters dealing with the various parts of the organ of hearing from anatomical and physiological points of view. His theories were generally accepted by his contemporaries.

Felix Plater (1536-1614) was a seventeenth-century Swiss physician who published a detailed study of the bones of the ear, including the way in which sound is transmitted through the bones of the head.

In his book, Plater described both sensorineural and conductive hearing impairment. He understood that the root of hearing impairment was found sometimes in the brain and sometimes in the cavity of the ears. He found that if the cause of hearing impairment is found in the brain, there is no cure. Plater is also known for his descriptions of the presence of tinnitus in many of his hearing impaired patients (Turkington,C., Sussman,A.E. 1992, pp.73, 102, 74, 50,154).

The Italian Giulio (Julius) Casserio (Casseri) was the anatomist who gave the first detailed descriptions of the organs of speech and hearing. His texts are notable for their descriptive accuracy and detailed investigation into human and comparative anatomy. Casserio was a servant of Hieronymus Fabricius, professor of anatomy and surgery at the University of Padua. Instructed in anatomical dissection by Fabricius and by Hieronymus Mercurialis, he gained such skill that he became the substitute for Fabricius in anatomical instruction in 1604 and after 1609 held the chair of surgery. Casserio was born 1552(?) in Piacenza, Italy, and died 1616, Padua). His anatomical works include *De vocis auditusque organis historia anatomica* (1601; "Anatomical Treatise on the Organs of Speech and Hearing") and *Tabulae anatomicae* ("Anatomical Tables"), published posthumously in 1627. (Encyclopaedia Britannica, Inc. 1995.)

The lesser known Spanish revolution

Ponce de León - the first systematic teaching of deaf people

It is generally considered, however, that the *systematic* teaching of deaf people had its origin in sixteenth century Spain, when the deaf children of important families were placed in the care of the Benedictine monk Pedro Ponce de León (?-1584). Because it was a legal requirement that these children should acquire speech to claim their inheritances, the prime emphasis was placed upon the teaching of speech.

Ponce de León was born in the province of León in northern Spain and entered a local monastery in 1526. Taking as his first pupil a man who had been denied admittance to the Benedictine order because he could neither hear nor speak, Ponce de León taught him to speak so he could make his confession. This

student, Gaspard Burgos, went on to write several books of his own (Turkington, C., Sussman, A.E. 1992, p.155).

When transferred to a monastery in the mountains of north-central Spain, he met the two deaf sons of the wealthy Marquis of Berlanga, Juan Fernandez de Velasco. The Marquis' family was known for hereditary deafness, probably caused by intermarriage. Becoming close to Francisco and Pedro Velasco, aged 9 and 12 respectively, Ponce de León taught them both to speak. Pedro also learned how to write, speak and read books in Latin, Italian and Spanish before his death at age 30. Ponce de León also taught about 12 other deaf people to speak, including the Marquis' deaf daughters Bernardina and Catalina (Turkington, C., Sussman, A.E. 1992, p.155).

He next established a school at the Ona monastery for teaching wealthy deaf students to talk, beginning his teaching with writing and progressing to speech. Historians believe he taught speech to his students by tracing letters and indicating pronunciation with his lips. Ponce de León applied a manual alphabet.

This alphabet is almost identical to the one used by sixteenth century deaf teachers Juan Pablo Bonet and Manuel Ramírez de Carrión, who also taught deaf members of the Velasco family.

Ponce de León is also assumed to have used signs in the education of his deaf pupils, since the Benedictines took strict vows of silence and had developed their own signs as a result. He also applied a manual alphabet.

In addition, he is said to have written a book, *Instruction for the Mute Deaf*, which was probably lost during the social upheavals common in Spanish monasteries at that time. Although books and documents from the monastery of Ona were sent to the National Archives in Spain, Ponce de León's book has never been found. (Turkington, C., Sussman, A.E. 1992, p.155).

Later Manuel Ramírez de Carrión is supposed to have applied Ponce's methods. However, he was, as not unusual at that time, secretive about his method. His three most eminent pupils - Prince Emmanuel of Savoy, the Marquis de Priego, and the second son of the Duke of Frias, Luis de Velasco - were highly literate and successful individuals (Moore 1987, p. 45).

Juan Pablo Bonet - the first published book of oral teaching methods for deaf people

Juan Pablo Bonet (1579-1623) was the author of the first published book of oral teaching methods for deaf people. He was born on July 1, 1579, in a little town in Spain, Torres de Berrellen. After serving in the army and learning Italian and French, he was hired as secretary by the Duke of Frias. Manuel Ramírez de Carrión was employed to teach Luis. Bonet spent some time watching Ramirez and took over the education of Luis when Ramirez left.

In 1620, Bonet published his renowned book, *Reduction de las letras, y arte para enseñar a hablar los mudos (Simplification of the Alphabet and the Art of Teaching Mutes to Speak)*, in which he explained the Ramirez-de León technique. The pedagogic description in this book is not original, for Pablo limited himself to an exposition of the method employed by Ramírez, which he, in turn, borrowed from Pedro Ponce. According to Jorge Perelló, this has led many investigators to believe that Pablo's book is only an edited manuscript originally written by Ponce and then lost. What is certain, however, is that 74 authors are quoted in the book, but neither Pedro Ponce nor Manuel Ramírez, from whom Pablo learned eve-

rything, is quoted. The book's censor, Fray Antonio Perez, abbot of the Benedictine monastery of St. Martin in Madrid, who authorized and recommended publication of the book, wrote in the preface that it was "Ponce de León who gave birth to this marvel of making mutes speak."

Thus it is clear from the preface that Pablo was not the originator of the pedagogic method discussed in the text (Perelló, J. 1987, pp. 263-264).

Bonet's vibro-tactile method

Perelló describes the method as follows:

The method consists of teaching the deaf pupil the correct position of the organs of articulation and the correct method of expelling air to form the sound of each letter of the alphabet. To obtain the positioning, the teacher put his fingers into the child's mouth, using a leather tongue to show the exact tongue position that the pupil must imitate. To demonstrate expiration, the teacher pressed the pupil's lips with his fingers, put the palm of his hand at various distances from the mouth to measure the intensity of the vocal emission, and made a paper strip vibrate to teach the trilled "r." Pablo does not mention the use of a mirror to allow the student to verify the exact position of his or her tongue, perhaps because the poor quality of mirrors in those days rendered them useless. His descriptions of the articulatory positions are excellent, and they have helped modern phoneticians understand the articulation of seventeenth-century Spanish. Pablo was the first writer to make a clear distinction between voiced and unvoiced sounds (later called "phonemes").

He also defended the teaching of reading and spelling. He argued that if children knew how to articulate each letter and how to join them in the expiration of voice, they could read in a loud voice in a very short time. This did not mean, though, that the children understood everything they read. Concurrently with speech instruction, which he believed should begin when the child was between six and eight years old, Pablo recommended the teaching of dactylology³⁸ or fingerspelling³⁹. He placed importance on the value of simultaneously reading, showing the pupil pictures, and fingerspelling. Interestingly, he did not teach lip-reading, which he believed had negative effects (Perelló, J. 1987, p.264).

Pablo's grammatical descriptions are remarkable. He distinguished among verbs, nouns, and conjunctions, the last including words that lack gender, number, and tense. He understood past, present, and future tenses and wrote that there are concrete and abstract nouns. The former he called "real-nouns" and the latter "non-real nouns." Pablo insisted that adjectives had to be thought of in contrasting binary pairs.

Juan Pablo Bonet died on February 2, 1623, in Madrid. Although he did not originate a method for teaching deaf pupils, his book was important in spreading the idea that a deaf child could be educated orally. He aroused in other Eu-

³⁸The term usually refers to knowledge of fingerspelling but has also been used to cover signing.

³⁹This system of communication involves spelling out words in an alphabetical language by using the letters of the manual alphabet - with handshapes and positions corresponding to each letter of the written alphabet.

There are two main types of manual alphabets: The two-handed and the one-handed. Manual alphabets exist in many countries. Fingerspelling by help of the manual alphabet can either be used by itself or in miscellaneous combinations, e.g. together with speech, manual signing or both. In manual signing languages it is generally employed to spell out proper names and terms for which there are no signs (Turkington, C., Sussman, A.E. 1992, pp. 76-77).

ropean teachers curiosity and interest in this kind of education. Jorge Perelló considers Juan Pablo Bonet not the creator but the disseminator of the oral method for the education of deaf children (Perelló, J. 1987, p.264). The historically important book *Reduction de las letras, y arte para enseñar a hablar los mudos* was eventually translated into English by Dixon in 1890, with the title *Simplification of the Letters of the Alphabet and Methods of Teaching Deaf Mutes to Speak* (Evans 1982, p. 1).

Thus, it seems that the education of the deaf started before the education of the blind. This is from the point of view today not self-evident. However, it is reasonable to hypothesize the reason is that the hearing impairment is not as visible as the visual impairment. The teachability of the deaf may at first sight seem greater than that of the blind. With the present knowledge of the gravity of the hearing impairment for the learning process, this would not be so obvious.

The development in Britain

The centre of the teaching of the deaf moved for one or other reason from Spain to England.

The influence of Kenelm Digby

The seventeenth-century English diplomat, Sir Kenelm Digby, learned to know the teaching of Manuel Ramírez de Carrión during a visit to Madrid. Back in England, Digby wrote a book in which he recounted the Spanish success in the art of teaching the dumb to speak. Digby visited Spain with the Prince of Wales, later Charles I, in 1623 and met one of Carrión's and Bonet's pupils, Luis de Velasco. According to Digby, Velasco was so deaf that if a gun were shot off close to his ear he could not hear it (De Land 1931, in Moores 1987, p. 45), but his speech was distinct and he could understand so perfectly what others said that he would not lose a word in a whole day's conversation. In exile in Paris in 1644, Digby wrote the book *Treatise on the Nature of Bodies* (Winzer, M.A. 1993, pp. 32-33). This book, published in 1644, was to be known in several countries.

Digby greatly influenced the physician John Bulwer (Moores 1987, p. 45). Bulwer was a member of the Royal Society of London, an organization of thinkers and scientists.

The members of the Royal Society and deafness

According to Winzer, with their strong emphasis on language, it is little wonder that members of the Royal Society issued so many studies of deafness. Examples are those undertaken by John Bulwer, George Sibscota, George Dalgarno, William Holder, and John Wallis. Their purpose was to learn from deaf persons the secret of what people were like before language, what their ideas were before being filtered and shaped by conversation. These philosopher-scientists elucidated their work with deaf children and adults in philosophical papers written for the society: Wallis's *De Loquella* (1653) and "A Letter to Robert Boyle Esq." (1670), Sibscota's *Deaf and Dumb Man's Discourse* (1670), Holder's *Elements of Speech* (1699). Winzer is probably right when asserting that, in concert with notions prevalent since the days of Hippocrates, "they viewed deaf people as curiosities and were more often concerned with speculations of the physiological causes and cures for deafness than with the psychological, social, and educational applications of their findings." (Winzer 1993, pp. 33-34). They were also interested in the central question about the relation between knowledge and the sensations (perceptions), and in this frame asking the question of whether it

was possible for a deaf person to learn to communicate as effectively with a sign language based on vision as with speech based on hearing.

The origin of sign language

Winzer points out that sign language is ancient. Plato mentioned that we could signify meaning by the hands and head and other parts of the body. The Roman writer Quintilian observed that sign language originated in heroic times and met with the approval of the Greeks. "Amidst the great diversity of tongues pervading all nations and people", noted Quintilian, "the language of the hands appears to be common to all men" (quoted by Pettengill 1873, p. 10, in Winzer, M.A. 1993, p. 53). Enerstvedt (in this volume) is of the opinion this cannot be interpreted as evidence of the existence of sign *language*. Gestures accompanying speech have probably existed as long as mankind. The same goes for pantomime, stylized gestures, hand signals, facial expressions, etc. The theory that a kind of sign language - in the form of gestures - preceded speech, is still a matter of opinion. The author (Enerstvedt) is not a proponent of this theory.

As an exception two persons can develop a language (cf. Luria's twins); as a rule, however, a group ("society") is a presupposition. To survive through generations a language must have a function. Perhaps secret societies, or other people who needed to communicate covertly, have developed sign languages. But then they probably had the character of a "pidgin system" that never was developed to a second generation language as a mother tongue - a creole language, which is a real language contrasted to a pidgin system, which is not. The origin of sign language is difficult to throw light on. Probably, sign language cannot exist without the existence of speech whilst speech can exist without sign language. We also know that several signs in many indigenous deaf languages are constructed by hearing people. On the other hand, the author will propose the hypothesis that

1) *the first sign language is constructed by and developed among deaf people.*

2) *where you can find a deaf community, you probably also will find a sign language.*

There can be little doubt that pidgin sign systems have existed where deaf people have existed, i.e. perhaps from the beginning of mankind. When such a system was transformed to a creole type is difficult to say. Probably, it is a long time before Desloges' observations of a sign language in Paris (see below).

The following exchange between Socrates and Hermogenes in Plato's *Cratylus* can be regarded as an indication of the existence of deaf "communities" (several deaf persons knowing of each other and interacting) and thus as indication of the existence of a sign language in ancient times:

"Socrates: And here I will ask you a question: Suppose that we had no voice or tongue, and wanted to indicate objects to one another, should we not, like the deaf and dumb, make signs with the hands, head and the rest of the body?"

Hermogenes: How could it be otherwise, Socrates?"

Socrates: We should imitate the nature of the thing, the elevation of our hands to heaven would mean lightness and upwardness; heaviness and downwardness would be expressed by letting them drop to the ground. (Levinson 1967, p. 359, in Moores 1987, p. 34).

In medieval times an indication of the existence of sign language might be the way Augustine is writing about "the signs" of deaf people (see above on Augustine).

We know that monks under vows of silence used many forms of manual communication. Wundt has described what he called a sign language in a monastery of the order of the Cistercienser. In this order - incorporated in medieval southern France in 1098 - the members gave an oath of silence for life. During certain times of the day it was forbidden to speak. Silence should also be the rule during work. A glossary of 145 signs has been found. The signs - which are characterized as created and conventional - are few but many enough to make possible a comparison with other forms of sign languages. Wundt is of the opinion that there is greater correspondence between those signs and the signs of the deaf than between them and signs of hearing people and indians. The system gives the impression of a blending of a natural sign language of the simplest kind and a completely artificial system of signs (Wundt, in Hammer 1976). This is no proof of the existence of a sign language constructed by deaf people in medieval time but an indication that the sign system of the monks could have been influenced by an existing deaf sign language.

The first great scientist - psychologist and linguist - in the world who regarded sign language as a language seems to have been L.S. Vygotsky (1896-1934). This occurred as early as in the 1930s. According to Zaytseva, in Vonen's translation⁴⁰, Vygotsky considered the development of speech-based language in the deaf as a very important, but not as the only component in the educational work, which aimed at correcting and compensating for the defect as a whole. Sharply criticizing the "pure oral method", Zaytseva points out, he revealed its main fault: what is worked out in the pupil, is not language system, but articulation. Therefore, the spoken language of the deaf "almost does not serve their development and formation, and is not an instrument for accumulating social experience and participating in social life" (Vygotsky, L. S. 1983. Collected works: in 6 volumes. Moscow. Vol. 5, p. 323, in Zaytseva 1991, p. 84).

Zaytseva informs us that,

"Vygotsky's investigations were aimed at creating a system for teaching the deaf evoked to secure a versatile development for the children and the social fostering of them. He paid much attention to analysing the structure of sign language and its role in deaf people's communicative and cognitive activity. Theoretical study of the issue, generalization of the data from experimental studies, and acquaintance with the experience of specialists abroad allowed Vygotsky to conclude that sign language was 'a genuine language in all the richness of its functional meaning' (p. 215)." (Zaytseva 1991, p. 84).

This author agrees with Zaytseva, when she asserts that,

"This claim of Vygotsky's is pioneering in world science! The acknowledgement of sign language as a developed communicative system unavoidably led him to the conclusion that the development of the deaf child under conditions of polyglossia is unavoidable, that word-sign bilingualism was fruitful for the formation of his personality. Ignoring sign language, deaf education was depriving itself of an important means of teaching and fostering deaf children...How, then, should one proceed? Vygotsky put his considerations into words in a talk at the All-Russian conference for teachers of the deaf (1930): '... we have to use all the deaf child's possibilities of linguistic activity, not relating arrogantly towards and looking down upon gestures and not treating them as an enemy, understanding that different forms of language may not only serve as competitors for each other and mutually hinder each other's development, but also as steps by which the deaf child ascends towards the mastering of language' (p. 218)." (Zaytseva 1991, pp. 84-85).

⁴⁰ Vonen's translation is made especially for this book.



Lev Semenovich Vygotsky – the great Soviet psychologist and linguist

Photo: Galina Lazarevna Zaitseva gave this drawing to Arnfinn Vonen. Zaitseva had the drawing from Vygotsky's daughter

The first serious attempt at a structural description of the basic lexical units of a sign language was made only in 1960, marked by the appearance of William Stokoe's *Sign Language Structure*, which was followed by his *Dictionary of American Sign Language*⁴¹ in 1965 and *Semiotics and Human Sign Languages* in 1972. Stokoe was the first to try to develop a workable transcription system for signs. We fall in with Klima and Bellugi asserting that the *Sign Language Structure* and the *Dictionary of American Sign Language* mark a transition point for the study of sign language in that these are the first works to investigate the internal organization of the individual signs and to make some of that organization explicit (Klima, Bellugi 1979, p. 40). In *Semiotics and Human Sign Languages* Stokoe asserts:

"It has been apparent since 1960 that the signs of American Sign Language (ASL) are morphemes, i.e. that the elements that compose them are relatively meaningless bundles of distinctive visible features distributed in the language in ways closely analogous to that system designated by the term PHONOLOGY...

Enemies of sign language - and languages as much as religious observances can arouse enmity - argue...that it is a restricted language, poor in vocabulary, and lacking in grammatical-semantic system. As a consequence of such enmity, nowhere in formal educational programs are young deaf children permitted to use what can be their native language for any learning activity...As is usual in cases of arbitrarily imposed language policy, the human costs of such misunderstanding of sign language are hard to estimate.

⁴¹American Sign Language (ASL; Ameslan) is a visual-gestural language used as a primary means of communication by a very large portion of the deaf population in the United States (estimates suggest between 100,000 and 500,000 people).

A disinterested scientific view that is comprehensive enough may reveal how a sign language can differ in many ways from all other languages and still be a language 'fully developed', as Hoijer puts it, 'in every essential aspect'..." (Stokoe 1972, pp. 20, 86).

In fact, although sign language was regarded a *language* by some few people before Stokoe's work, his works are a turning point in that sense that they changed the opinions in the leading *linguistic* mileus. After Stokoe, linguists regard sign language precisely as what it is - a sign *language*.

Van Uden obviously has a more restrictive opinion of sign language. He states that some scientists (e.g. Chomsky, Moores, De Saussure)

"think, they can distinguish between language and its formal appearances, i.e. its *codes*. Language would abstract from its code, i.e. from its spoken, auditory, or written appearance. I do not agree; certainly not if this principle was to be applied to sign-languages too, which in our opinion are not cultural languages of the same value as oral languages, not even when metamorphosed into so-called 'manual English'..." (Uden 1977, p. 22).

However, the code of a cultural language is by van Uden defined in such a manner that only oral languages can be appropriate (see footnote).⁴²

"It may be clear that only a spoken *rhythmic-melodically* organized language has all these humanizing aspects. So it is understandable that that all the human languages of earth are encoded that way." (Uden 1977, p. 22).⁴³

We close this section with a 1996 statement on sign language and bilingualism by the Norwegian linguist Arnfinn Vonen because he combines a basic opinion on sign language with a view to its problems in a hearing society:

"Linguistic research during the past decades has shown that sign languages employed by deaf people in various countries are fully developed linguistic systems, and hence, that deaf communities are bilingual communities to the extent that they make use of both a signed language and a speech-based (spoken and/or written) language. The signed

⁴² «Are there some prerequisites which condition a code to be the 'stuff' of a cultural language? The following:

The code must make *human conversation* as smooth as possible, i.e.:

(1) the code must be usable in a *successively* serial way: giving the partners alternative turns in order to participate in the 'exchange of thoughts' (i.e. conversation);

(2) the code must be as *unequivocal* as possible;

(3) the code must be usable in a quick *tempo* in order to convey messages in a time as short as possible;

(4) the code must give the opportunity to be organized in sub-units in order to enlarge the extent of the message according to the 'magic number 7±2' (Miller 1962) of *Short Term Memory* (STM)-function;

(5) the code must have sub-units which can be *exchanged* between the partners of the dialogue;

(6) the code must convey the *intentions* of the partners' messages: their assertions, questions, appeals;

(7) the code must be such that as many *partners* as possible can be reached simultaneously;

(8) the code must support abstract thinking, thinking in relations, with easy *transfer* of meaning and figuration, so that the code itself is very 'empty', i.e. arbitrary, not conveying a meaning by itself (cf. Ervin-Tripp 1966);

(9) the code must be capable of an *unlimited* enlargement.» (Uden 1977, pp. 22-23).

⁴³ «The *finger-spelled* (=the hand shapes itself to show a letter, e.g. V for victory) words have insufficient rhythm, no melody, insufficient accentuation: so rhythmic sub-units and intonations are impossible; besides the tempo is much too low; STM-function is hampered, unless re-encoded orally.

The same must be said of *sign-language*. Additionally signs are not arbitrary codes, but iconic and dramatizing ones, keeping thinking much too concrete. Also their number is much too limited. We conclude: the sign-language cannot be acknowledged as a fully humanizing language contra Stokoe 1970, only to be used when no other way of communication is possible.

The *graphic* form has its insufficiency too: no rhythmic grouping, no melody, too slow a tempo unless trained throughout...» (Uden 1977, p. 23).

language is used mainly for communication within the deaf community, while the speech-based language is needed for communication with the hearing community.

However, most of a school-child's interaction is usually restricted to family, school and neighbourhood settings. In most cases, the deaf child is the only deaf person in the family.⁴⁴ This means that parents and siblings communicate most naturally in a language that is not fully accessible to the deaf child. Learning NSL⁴⁵ as an adult is no easy task, so usually there is no common language that all family members can use with ease. Furthermore, the child's teachers are usually hearing and have limited proficiency in NSL, and the child's schoolbooks are all written in Norwegian, as there is no written standard for NSL. In most cases, too, there are no other deaf children in the neighbourhood. In short, the deaf child has to come to terms with a language that is not easily accessible to him or her in its primary modality (the vocal-auditive modality), while special measures have to be taken to ensure the child's exposure to the more accessible language (special arena such as boarding schools for the deaf, etc.)." (Vonen 1996, p. 1).

Bulwer, Dalgarno, Holder, Wallis

John Bulwer - the "lover of the language of the hand"

In *Chirologia, or the Naturall Language of the Hand* published in 1644, Bulwer used the term *chirologia* for communication on the hands "composed of the speaking motions, and discoursing gestures" (title page). To this he added *chronomia*, "or the Art of Manual Reticke" comprising the "Naturall Expressions, Digested Art in the Hand, as the chiefest Instrument of Eloquence" (title page) (Evans 1982, p. 2). He claimed that natural gestures, which he termed *chirograms*, were a form of universal language expression. He invented a system of communication on the fingers, which he called *arthrologie*. Bulwer believed it was possible for deaf people to learn speech-reading and speech, although he believed that sign language and manual alphabet were more practical.

De Land reported that Bulwer would sign himself Chiroosopher, or "lover of the language of the hand" (In Moores 1987, p. 45). Bulwer's interest in deafness resulted from his friendship with two deaf brothers, Sir William and Sir Edward Gostwicke, with whom he communicated by means of a manual alphabet (Moores 1987, p. 45). His *Philocophus, or the Deafe and Dumbe Man's Friend*, published in 1648, was the first major English book on deafness. In it, he discussed the anatomy and physiology of speech and the aetiology of deafness. He also explored the elements of phonetics, describing specific movements for each speech sound and insisting that speech is *movement* rather than *position*. He described "the Subtle Arte, which may inable one with an observant Eie, to Heare what any man speaks by the moving of his lips" (title page) (Evans 1982, p. 3). This process he called *labiall augerie*. Bulwer thus advocated the use of processes which we would now think of as signing, fingerspelling, and speech-reading (lip-reading) (Evans, L. 1982, p. 2-3). He understood the relation between hearing and speaking, saying, "...the truth is they speak not, because they cannot hear." (Bulwer, J.B. 1648, p. 10, in Farrell, G. 1956, p. 6).

According to Turkington and Sussman, Bulwer was very interested in manual communication as an orator but later became involved in its uses as a tool to educate deaf students. However, Bulwer was not a teacher of the deaf and never applied any of his theories. Although he hoped to establish a school for the deaf

⁴⁴ R.Th.E.: In general, more than 90 percent of deaf children have hearing parents.

⁴⁵ R.Th.E.: NSL, i.e. Norwegian Sign Language.

to teach communication methods to hard-of-hearing students, he never accomplished this goal (Turkington,C., Sussman,A.E. 1992, p. 39).

George Dalgarno - sight is more essential to education in the long run than hearing

A noteworthy theorist on the nature of language was George Dalgarno (1626?-1687) of Oxford.

The seventeenth-century Scottish theoretician's interest in techniques for teaching deaf students grew out of his fascination with the idea of a universal language for all people.

The headmaster of a private grammar school in England, Dalgarno discussed his theories and techniques for teaching deaf students to speak in his *Didascalocophus: or, the Deaf and Dumb Man's Tutor* of 1680, in which he explained that the senses were connected in complex ways. He believed that a person blind from birth could learn more quickly than a deaf person. However, with maturity, a deaf person would surpass a blind person in learning because, Dalgarno thought, sight was more essential to education in the long run than hearing. Although he implicitly believed that a deaf person could learn to speak and speechread, he believed that writing and his manual alphabet were more practical (Turkington,C., Sussman,A.E. 1992, p. 55). In the *Deaf and Dumb Man's Tutor* he described a primitive manual spelling system, in which letters were represented by pointing with one hand to parts of the other hand. He called his system, possibly the first to be devised especially with deaf people in mind, "dactylology", a term which has continued to be used for fingerspelling up to the present time. He suggested that deaf children should be exposed to fingerspelling from an early age, in the hope that they might learn language in a way similar to that for hearing children. Dalgarno's system was not the form of fingerspelling which later became widely used in Britain (Evans 1982, p. 3).

Wilhelm Holder - the first to teach a deaf individual in Great Britain

One of the first persons teaching deaf people in England was Wilhelm Holder (1616-1698). He was a Doctor of theology but also a natural scientist, a not unusual combination in the seventeenth century. In 1659, Holder started to teach Alexander Popham, the son of Admiral Popham and Lady Wharton. He wrote a book, *Elements of Speech*, which demonstrates great knowledge about the organs of speech. Holder was of the opinion that vision was important in the construction of images and concepts. In his teaching of language he applied articulation, reading and writing, but also so-called natural signs. He also emphasized the importance of speech-reading (Anderson,P. 1960, pp. 14-15). According to Moores, the evidence suggests that Holder was the first to teach a deaf individual in Great Britain but that Wallis was the first to present his results to the outside world (Moores 1987, p. 45).

John Wallis - was he applying sign methods earlier than L'Epée?

Another Oxford scholar of the time, John Wallis (1616-1703), professor of mathematics at Oxford, also became interested in the problems of communication. Through his close correspondence with Wallis on philosophical subjects, Digby had presented the Spanish accomplishments for him.⁴⁶

⁴⁶Wallis was born at Ashford, Kent, Nov. 23, 1616, and educated at Felsted and Emmanuel College, Cambridge. He was ordained 1640. About 1645 he became associated with Robert Boyle, and in 1649 was ap-

Wallis' book *Grammatica Linguae Anglicanae* of 1653 (usually referred to as *De Loquella*) was written as a grammar of English as a foreign language (Evans 1982, p. 3).⁴⁷

When Wallis assumed the instruction of twenty-five-year-old Daniel Whalley in 1661, *De Loquella* served as the basis for his teaching. He relied on instruction in written language, and then he used some method of signs for speech, "most likely the manual alphabet designed by his friend and contemporary Dalgarno." (Winzer, M.A. 1993, p.34). To stimulate speech, Wallis showed Whalley how the organs of speech moved for specific sounds. So proficient did Whalley become that John Wallis presented him before the Royal Society to demonstrate his speech ability (Winzer, M.A. 1993, p. 34).

According to Bébian (1817), John Wallis, having long meditated on the formation of speech sounds, about which he wrote an excellent treatise, found a way to correct all speech defects not due to congenital organic malformation, and even to teach the deaf to speak. He is, in Bébian's opinion, one of the persons who best understood the art of educating the deaf. He instructed many, teaching them to express their thoughts in speech and writing, and to read.

"He had them distinctly articulate",

he wrote,

"words of the greatest difficulty, showing them the position and movements made in the throat, tongue, lips, and the rest of the vocal apparatus. The breath leaving the lungs always produces the desired sound, whether the speaker hears or not."⁴⁸

"That is the part of their education",

Wallis adds,

"that we most love to admire, but which nevertheless is the easiest and least important and which would be for them of little use without what remains to be done; for of what utility would it be in human intercourse to mouth words like parrots without understanding their meaning?"

Thus, according to Bébian, he scorns teaching many of his pupils to speak. With the help of signs by which the deaf naturally express their thoughts, he soon succeeded in getting them to understand what they were reading and hence to acquire all the knowledge that can be transmitted by books (Bébian 1817, p. 135 in Lane 1984b).

Bébian highly estimates the role of Wallis in the history of deaf education, when saying:

"So the abbé de L'Epée is rightly regarded as the founder of deaf education. We are not attempting to conceal the fact that, before Epée, Wallis used the sign method of instruction (a fact that had not been previously remarked), Wallis simply mentions this without going into any more detail, as can be confirmed by reading his letter to Doctor Beverly..."

It is noteworthy that the English, who are so jealous of all their inventions, have so shamefully neglected Wallis's method, for the English deaf are still educated only by

pointed Savilian professor of geometry at Oxford. His *Arithmetica Infinitorum*, 1655, contained the principles of the calculus, and became a standard work; it explains the method of arriving at the quadrature of the circle. Wallis introduced the principles of analogy and continuity into mathematics, explained negative and fractional indices, and his *Algebra*, 1685, contained the first systematic use of formulae. He was also a logician and grammarian. He died October 28. 1703 (Hammerton vol 15, p. 8432).

⁴⁷John Wallis, *Grammatica linguae anglicanae, cui praefigitur de loquela sive de sonorum omnium loquelarium formatione tractatus grammatico-physicus*. Translated by J. Greenwood (London: Beltes-Worter, 1729).

⁴⁸Letter from John Wallis to Thomas Beverly, 30 September (1698), *Philosophical Transactions of the Royal Society* (1698) 20:353-360

means of speech, which Wallis himself recognizes as inadequate."(Bébian 1817, p. 139 in Lane 1984b)

Literature on deaf people

As the British philosophers and teachers laboured to discover causes and cures for deafness, their efforts touched the lives of very few people. However, in 1720, the year following the publication of *Robinson Crusoe*, Daniel Defoe made the hero of one of his tales a deaf man (Winzer, M.A. 1993, p. 36). *The Life and Adventures of Mr. Duncan Campbell* was based on a real person, a deaf seer who had captivated London society. In this first popular exposé of the problems of deaf people, Defoe pointed out that "a great many more believe it impossible for persons born deaf and dumb to write and read", a myth he punctured by interweaving the pedagogy of John Wallis with his tale of Duncan Campbell (Winzer, M.A. 1993, p. 36). Other writers treated deaf people with less kindness; some, like Oliver Goldsmith, made them fools, buffoons, and the butt of jokes.

According to Winzer, in literature deaf persons often had their place in comedies; the blind, often in tragedies. (Winzer, M.A. 1993, pp. 10, 11).

Deaf people in art and science

Also known as "El Mudo" (the mute), Juan Fernandez de Navarrete (1526-1579) was born in Spain and became deaf at age three and a half from unknown causes. As a child, he began to draw as a way of communicating and received his first art lessons in his hometown of Logrono. Eventually he was sent to study art in Italy upon his teacher's recommendation.

He toured the primary cities of Italy, studying art as he went, until King Philip II of Spain summoned him to Madrid, where he became the most important of the group of Spanish and Italian painters commissioned to work in the famed monastery and royal palace of the Escorial.

A member of the Madrid school, El Mudo painted during a time of transition in the Spanish art world. He was the first to abandon the mannerist movement, which had begun in the sixteenth century, and was the bridge to the naturalists of the seventeenth century. Almost all of his paintings are religious in nature; those that remain at the cloister of the Escorial hang in the gallery of the upper cloister.

El Mudo died on March 28, 1579, in Toledo, Spain before completing his commission to paint the pictures for 30 altars in the Basilica of the Escorial (Turkington, C., Sussman, A.E. 1992, p.137).

Charles Bonnet (1720-1793) was one of the earliest naturalists and philosophers to propose theories of evolution. He lost his hearing while he was a young child and his father hired a private tutor to teach him at home. He quickly developed a love for science and began to correspond with a famous scientist named René Reaumur who encouraged him to experiment with insects. Bonnet was only twenty years old when he made the very important discovery that aphids are born without fertilization of the female. This scientific principle is known as parthenogenesis.

Bonnet was one of the first scientists to study photosynthesis in plants. He very carefully studied the movements of leaves and their position on the stalk of the plant and he published his observations in a book titled *Usage des Feuilles dans les Plants*.

Bonnet wrote many books. After he lost much of his vision as well as his hearing, he stopped experimenting and began to further develop his theories on the formation and evolution of life on Earth. He also proposed the idea of artificial insemination in dogs. For his great work as an experimental entomologist, he was elected to the French Academy of Sciences and the Royal Society of London (Lang,H. 1994, A3).

Martha's Vineyard

In the history of deaf people Martha's Vineyard is worth mentioning. For two and a half centuries, from 1690 to 1950, a high rate of hereditary deafness appeared in the population of the island of Martha's Vineyard, Massachusetts.⁴⁹ Hereditary deafness is one of the most common of all inherited disorders. That means that other such communities might have existed around the world. However, little is known about them. It was not the number of deaf individuals in the population, but the linguistic and social adaptation to their deafness that makes the Vineyard a significant part of deaf history. According to Groce, from the mid-seventeenth century to the early years of the twentieth, the island population was bilingual, almost all hearing members of the community being fluent in both English and sign language. Most Vineyarders began to learn signs in early childhood. Even if no immediate member of one's family was deaf, the probability that a playmate, neighbour, or friend would be, made the almost daily use of sign language a necessity.

The sign language was probably based on a regional British sign language. It is known that a sign language was in use during the 1630s and 1640s in some of the villages of the Weald from which individuals who later settled on the Vineyard came. It is also known that the first deaf islander was fully able to express himself in sign language.

As written and oral history indicate, from earliest childhood deaf Vineyarders were full participants in all aspects of their society. Deaf men were fishermen, farmers, or boatbuilders; deaf women tended farms and raised families. Their incomes were identical to those of their hearing counterparts, most making a comfortable living and a few becoming wealthy by island standards. They married at the same rate and had the same number of children as their hearing neighbours. They regularly attended town meetings, voted, and held town offices.

In only one aspect were deaf Vineyarders slightly different. After the American School⁵⁰ opened, many deaf Vineyarders were sent to Hartford, Connecticut, to take advantage of what was then considered an outstanding educational opportunity. Since there was state assistance for those who attended Hartford, some were able to receive several years of education beyond that of their hearing siblings. The result was that, on the island, deaf people as a group were considered unusually well educated. An indication of this was that they were sometimes asked to interpret newspaper accounts and legal documents for their less literate hearing neighbours (Groce,N.E. 1987, pp.43-44).

⁴⁹Martha's Vineyard is an island, Dukes County, southeastern Massachusetts, separated from Cape Cod by Vineyard Sound. It measures 32 km (20 mi) from west to east and 16 km (10 mi) from north to south. It is noted as a summer resort. Edgartown, the chief town, was a whaling center. The island, which still shows traces of colonial life, was settled in 1642. Population of Dukes County (1980) 8942; (1990) 11,639 (Encarta 1994).

⁵⁰R.Th.E.: The American School for the Deaf - the first permanent school for deaf children in the United States.

Evaluating Martha's Vineyard, however, it is important to emphasize that the deaf people there also were a minority. There is no example in history where deaf people have constituted the majority of a society.

Amman, Baker, the Braidwood family

Johann Konrad Amman - one of the founders of oral methods

In 1694 the Swiss Johann Konrad Amman (1669-1724 in Amsterdam published the book *Surdus loquens s. methodus, qua, qui surdus natus est, loqui discere possit* (The speaking deaf, or Method by which he who was born deaf can learn to speak).

However, about 25 years earlier than Amman, but 50 years later than Bonet, Franz Mercurius van Helmont (1618-1699) published a book (1667) in which he reported observations of phonetics and anatomy aiming to demonstrate that the letters in the Hebrew alphabet in their form represented an attempt to copy the positions of the tongue and larynx in the expression of different sounds in the language. Obviously, Helmont was of the opinion that his new knowledge about the holy language could be made use of in educating deaf people in speech and comprehension (Andersson, B. 1987, p. 106).⁵¹ Franz Mercurius van Helmont was born in 1618 at the estate Vilverde by Brussels (since 1831 capital of Belgium) and died 1699 in Berlin. He was son of the famous philosopher and physician Johann Baptista van Helmont. Franz was educated by his father. Probably, he was deeply influenced by his father's speculative philosophy.⁵²

In his book Amman describes the method of teaching the deaf to speak. He describes the anatomy and functions of the organs of speech and how they are applied in the articulation of different sounds and their connection to words in the language. Amman is among the first to point to the deaf's ability to perceive the movements of the speech organs (the kinaesthetic sensations) and thus to remember the linguistic sounds (cf. also Bonet, Wallis). Like many others at that time, Amman cloaked much of his methods in secrecy. His book was translated into German and English and became influential for the teaching of deaf people in several countries (Anderson, P. 1960, pp. 16). Amman also published *Dissertatio de loquela* (1700).

Amman was born in Schaffhausen, Switzerland, and studied medicine in Basel. After moving to the Netherlands he worked as a physician and teacher of the deaf in Amsterdam and Haarlem. He died at his mansion Warmond by Leyden in 1724. His book was later used as a foundation for the teaching of deaf by speech before the teaching of deaf people in schools.

Harlan Lane emphasizes the pioneering influence of Pedro Ponce de León. He is of the opinion that, although León's means and accomplishments have proved difficult to reconstruct, since his manuscript describing them was lost, there is reason to believe León indirectly has guided the three men generally considered to have founded oral rehabilitation: Jacob Pereira in the Romance-speaking coun-

⁵¹ An indication of that is the long title of his "brief sketch": *Kurzer Entwurf des eigentlichen Natur-Alphabets der Heiligen Sprache: Nach dessen Anleitung man auch Taubgeborene verstehend und redend machen kann.*

⁵² His father's philosophy - in which "magnetism" was a basic term - was further developed by (cf.) Mesmer.

tries, John Wallis in the British Isles, and Johann Konrad Amman in the German-speaking nations (Lane 1984b, p. 4-5).

Henry Baker - the first professional teacher of deaf persons

In England, however, Henry Baker (1698-1774), a naturalist and a fellow of the Royal Society, read Defoe's book (and married his daughter, Sophia) and thus learned about the methods of Dr. Wallis there enumerated. According to Winzer, Baker's interest in deafness and its implications originally developed when he visited a relative who had a deaf daughter. Jane Forester was Baker's first pupil. After succeeding with her, he became a visiting teacher. He had no school, but lived with his pupils (Oxley 1930, in Winzer, M.A. 1993, p. 36). Baker is remembered more as the first professional teacher of deaf persons than for any methodological or psychological insights (Winzer, M.A. 1993, p. 36).

The Braidwood family

The Braidwood family claimed to use an exclusive oral method in the early British schools.

Thomas Braidwood (1715-1806) was a pioneer Scottish educator of deaf people also known for his refusal to pass on his methods in oral instruction to anyone outside his own family. Thomas Braidwood taught his first deaf pupil in 1760 and was so pleased with his success in helping the boy speak and understand language that he decided to concentrate on teaching deaf students.

His first school, the Academy For the Deaf and Dumb, opened in Edinburgh in the early 1760s. This is about the same time as L'Epée opened his school in Paris, but the latter is recognized as the first school for the deaf.

The most famous account of the Braidwood establishment is given in *The Journey to the Western Isles of Scotland* by Samuel Johnson, written in 1773:

"There is one subject of philosophical curiosity to be found in Edinburgh, which no other city has to shew; a college of the deaf and dumb, who are taught to speak, to read, to write and practice arithmetick, by a gentleman, whose name is Braidwood. The number which attends him is, I think, about twelve...The improvement of Mr. Braidwood's pupils is wonderful. They not only speak, write and understand what is written, but if he that speaks looks towards them and modifies his organs by distinct and full utterance, they know so well what is spoken, that it is an expression scarcely figurative to say, they hear with the eye...It is pleasing to see one of the most desperate of human calamities capable of such help..." (In Lysons, K. 1987, p. 148).

By 1779, the academy had 20 pupils who were taught to speak, read and write. Although his exact methods were not divulged, it was known that he based his methods on the articulation theories of educator Thomas Wallis. This was an oral method, but the use of natural signs and the manual alphabet was not forbidden.

One of the few records of a congenitally deaf or very early deafened person in the eighteenth century is that of John Goodricke (1764-1786). He was an extraordinarily precocious English astronomer. Goodricke was profoundly deaf and unable to speak intelligibly. The exact cause of his deafness is not known. He either was born deaf or lost his hearing in early infancy from illness. His parents realized that special provisions needed to be made for his education and, when he was eight years old, sent him to the famous Braidwood School for deaf children in Edinburgh, Scotland.

Before his nineteenth birthday John Goodricke discovered the periodicity of the variable star Algol and correctly hypothesized the reason why the star varied

in brightness. At age 19 he received the Copley Medal from England's Royal Society. He also discovered the regular variations of the stars Delta Cephei and Beta Lyrae, publicizing his discoveries in four papers published in the *Philosophical Transactions of the Royal Society* between 1783 and 1786. He died at 21 (Cleve, J. 1987c, pp. 472-473).

In response to an offer from King George III to set up a school for deaf students in London, Braidwood opened Grove House in 1792 and then a separate school for needy deaf children, where Braidwood's nephew Joseph Watson was headmaster.

Braidwood's schools were successful. Some say that the Braidwoods did not want to share their knowledge or at least only with people who wanted to study with them for a long time. If this is correct, the "oath of secrecy" kept by the Braidwood family probably had important consequences for the future of deaf education in the *United States*. (Turkington, C., Sussman, A.E. 1992, p. 36). We will turn to that later.

Evaluating the question of "secrecy" the considerations of Moores should be recognized:

"The development and dissemination of effective methods of educating the deaf was hindered by the secrecy employed by so many of the leading practitioners. At a time when there was no universal education and illiteracy was widespread, a teacher of the deaf could survive financially only through the support of well-to-do parents of deaf children. Under such circumstances it is not surprising that educators were reluctant to share their knowledge." (Moores 1987, p. 54).

However, after the death of the first Thomas Braidwood, his nephew, Joseph Watson at the school in the Old Kent Road, London, published his *Instruction of the Deaf and Dumb* (1809) in which he implied that the Braidwoods's success was based upon similar principles to the method used by Wallis - the use of natural gesture, written language, and speech (Evans, L. 1982, p. 4).

Deaf education in France

The philosophers of the French Enlightenment created the climate and influenced the development of deaf education in France.

In 1751 Diderot wrote a paper concerning deaf people, a "Lettre sur les sourds et muets à l'usage de ceux qui entendent et qui parlent." The paper counts among the first scientific studies of deaf people.

Rodriguez Pereira - the first teacher of deaf students in France

The early teacher of the deaf, the eighteenth-century Portuguese Rodriguez Pereira (1715-1780), is known as the first teacher of deaf students in France. Born in Berlanga, Portugal, Pereira moved to France. He was twenty-six when he taught speech to his first deaf pupil - his own sister. His second pupil was a thirteen-year-old apprentice tailor born profoundly deaf. The achievement in educating him led to his teaching of Azy d'Avigny, the eighteen-year-old son of a wealthy family, who had been born deaf and treated by the leading physicians of Europe to no effect.

Pereira adopted the manual alphabet used by Bonet but modified and augmented it in such a way that the hand formations represented not only the letters of written French but also the sounds (later called "phonemes") of spoken French. Similar to Cued Speech⁵³, this alphabet was used as a pronunciation aid.

Cued Speech is a one-handed supplement to spoken language devised by Dr. R. Orin Cornett to clarify the phonemes of language that are ambiguous or invisible in lipreading. (BATOD definition) (Fitt and Mason 1986).

This method of communication was developed in 1966 by Dr. Orin Cornett as a speech-reading support system that, in English, uses eight hand configurations and four hand positions near the mouth to supplement visible speech.

The hand cue signals a visual difference between sounds that look alike on the lips, such as "p" and "b". These cues enable the hearing impaired person to see the phonetic equivalent of what others hear.

Each cue (hand placement or configuration) identifies a special group of two to four speech sounds. The combination of cues and mouth movements makes all the essential speech sounds appear different from each other, so that the spoken message is clarified.

The hand configurations and locations are called cues, not cued speech, which is the combination of the cues with speech (the cues are not readable alone).

Each hand configuration identifies a group of consonants; vowel sounds are shown by position of the hand in one of four ways, all within a few inches of the mouth (the side of the face, throat, chin and corner of the mouth).

Cued Speech can also be used to indicate approximate voice pitch for each syllable uttered, which is important in tonal languages (such as Thai, Cantonese and Mandarin). For example, in Cantonese, the syllable "ma" can mean "mother", "scold", "horse", or "right?" depending on the pitch.

Tone cueing is also helpful in speech therapy. In order to cue tone, a person changes the inclination of the cueing hand to indicate changes in pitch.

Cued Speech has been adapted to many languages, and audiocassette lessons designed for self-instruction by hearing persons are available. The system is generally the same in all languages (Turkington,C., Sussman,A.E. 1992, pp. 54-55).

The phonetic system, for which Pereira adopted the term *dactylology*, may be viewed as an early forerunner of the nineteenth- and twentieth-century systems of phonetic fingerspelling and manual cueing of speech-reading (lip-reading). Advocating a low student-teacher ratio, Pereira accepted payment for his work depending on how quickly his pupils progressed (Turkington,C., Sussman,A.E. 1992, p.152; Evans,L. 1982, p. 4, Lane 1984b, pp. 4-5). In 1746 the father of Azy drew up a year's contract: Pereira would closet himself with the son at the abbey where the boy was attending school and would receive a handsome sum in three payments, each contingent on the boy's progress. At the abbey Pereira found his pupil to be an intelligent youth who could read and write, having received instruction in French through sign language from a deaf monk.

"In eight days Pereire (R.Th.E.: Pereire=Pereira) had the boy saying 'mama' and 'papa', and in a month, fifty words. In a year he spoke over a thousand words and a few

⁵³ According to Dr. Cornett, Cued Speech was developed primarily because some congenital deaf persons do not become good readers because they don't have an easy way to learn spoken language as young deaf children (Turkington,C., Sussman,A.E. 1992). Proponents believe Cued Speech makes spoken language visually clear and solves the communication problem and also help youngsters learn a spoken language more easily. According to Turkington and Sussman, Cued Speech is an easily learned system, taking only about 12 to 20 hours to master. It is most successful when used consistently from childhood.

Turkington and Sussman ascertain that initial research suggests that Cued Speech does help make the spoken language clear, but the long-term effectiveness of the language is not known. One of the recent advances used in conjunction with Cued Speech is the Autocuer, a device invented by Dr. Cornett, which contains a miniature computerized speech processor that automatically analyzes speech input and produces cue-equivalents through light signals.

There was a great deal of initial interest in Cued Speech after it was introduced in the 1960s, but it was overshadowed by the spread of total communication at about the same time. Cued Speech tries to clear up some of the problems with speech-reading. However, it has not been widely adopted in schools, and is not widely popular among the deaf population (Turkington,C., Sussman,A.E. 1992, pp. 54-55).

sentences - which reflected, however, the grammar of his sign language. The contract ended, the father withdrew his son, but the boy's speech deteriorated rapidly and Pereira was called in again. This time he took the boy to live with him in Paris; after a month he displayed him before the most prestigious scholarly body in the land, the Academy of Sciences, which called Pereira's efforts worthy of the strongest encouragement..." (Lane 1984b, pp. 5-6).

The duke of Chaulnes, head of the Academy, gave Pereira charge of his deaf godson, Saboureux de Fontenay (Lane 1984b, p. 6).

Saboureux, born hard-of-hearing, was thirteen when he joined Azy d'Avigny in Pereira's home. Saboureux spent five years with Pereira. Then he continued his education on his own, becoming the most famous of Pereira's half-dozen pupils (Lane 1984b, p. 6). In 1767 Pereira incorporated speaking trumpets into his instruction to demonstrate how residual hearing could be effectively stimulated to improve speech production. Before Pereira, stimulation of the auditory mechanism of deaf persons had been attempted by Archigenes in the first century, Alexander of Tralles in the sixth, Guido Guidi in the sixteenth, and probably by Bonet. Pereira's innovative approach to auditory training anticipated methods still employed by teachers of very young deaf children today (Winzer, M.A. 1993, p. 48).

Pereira was also secretive about his method, but an account written in 1764 by Saboureux de Fontenay suggested that he also used signing, fingerspelling, and writing.

Saboureux de Fontenay - the most famous of Pereira's pupils

In his mid-twenties Saboureux wrote the autobiographical letter, "Lettre de M. Saboureux, sourd et muet de naissance, à Mademoiselle***, Versailles, le 26 décembre 1764". It was published in the *Suite de la Clef ou Journal historique sur les matières du temps* (Journal de Verdun) (1765): 284-298, 361-372, "making him the first deaf person whose writings appear in print." (Lane 1984b, p. 15).⁵⁴ In this letter Saboureux tells:

"We can readily assume that deafness is just an impediment to hearing the sounds as they should be heard, entailing no difference in intelligence or inclination, and that all we need do is, for the ears, substitute the eyes, and for sounds, written or fingerspelled letters, and then to apply to the deaf the universal system by which normal children learn through hearing, and they will learn language through usage, the way hearing children and foreigners settling in Paris learn French, that is, through ordinary conversation. By this means, the deaf experience the same effects, emotions, mental processes, and so on, that we note in children who learn through hearing. To this end, the only method possible is practice and the kind of education given to young people of both sexes. Hence the truth of the Latin epigram that means *practice is the ruler of languages*. This education must, I would add, take into account the nature and development of reason and the mind.

That is why, consistent with the way a child learns French, M. Pereira, seeing I was nearly thirteen, went about teaching me common words and phrases, for example, 'open the window,' 'close the door,' 'light the fire,' 'put out the fire,' 'get a log,' 'set the table,' 'give me some bread,' and so on. Deciding that I was sufficiently well versed in everyday dialogues, which we fingerspelled with his enlarged and improved Spanish manual alphabet, he shunned the use of gestures...

I believe I can, without fear of grave error say that throughout my experience in studying French, it was by practice, aided by first principles, that I actually learned the

⁵⁴English speaking people are indebted to the editor Harlan Lane and the translator Franklin Philip for the edition and translation of writings by Saboureux de Fontenay, Pierre Desloges, Charles-Michel de L'Épée, Jean Massieu, Roch-Ambroise Sicard, Roch-Ambroise Bébien, and Ferdinand Berthier in Lane 1984b.

language, and that my education did not seem mechanical. We used - and still use - three methods to encourage my constant use of French: writing, spelling in the Spanish manual alphabet, and signs in the usual manual alphabet...

I gave up the idea that it was impossible for the congenitally deaf to become as knowledgeable, educated, capable of reasoning and thinking as others...The manner by which I achieved an understanding of language and of various topics is nothing other than a continual repetition of the same words, phrases, and ways of speaking, applied in every conceivable manner, at every opportunity, and in every encounter...

As for the method of teaching language and religion by gesticulations and other signs, I must tell you, mademoiselle, that Father Vanin used signs and drawings to teach me the sacred history and Christian doctrine and in this way explained the words and phrases found in the captions. I thought that God the Father was a venerable old man residing in the sky, that the Holy Ghost was a dove surrounded by light, that the Devil was a hideous monster who lived beneath the earth, and so on. So my ideas about religion were concrete, physical and mechanistic. But after I left Father Vanin, M. Pereire found me fairly advanced in the understanding of everyday language, and so he refrained from using these sorts of signs, making it a fortunate necessity to pay precise attention to the meaning of nouns, verbs, participles, prepositions, sentences, and the import of the order of phrases. He had me express myself in French without my usual signs, and informed me that he had no trouble understanding what I was trying to say, even without these signs. Thereafter, finding me well versed in everyday French, the brothers Pereire and my uncle spoke to me either aloud or, to explain themselves better, with gestures assisted by fingerspelling, in a way much like that of talking with speech sounds. Moreover, they and other persons concerned for my educational progress were pleased to talk with me informally in their homes or the homes of acquaintances, in the street, in public buildings, on walks, at fetes, and so forth, and to have me converse with others. In this way I came to realize how inadequate is the method of religious instruction through signs, above all when it comes to intellectual, abstract, and general ideas, and how cumbersome is the system of assigning a given sign to a given word, which would consequently give us as many signs as there are words and word endings." (Saboureux 1765 in Lane 1984b, pp. 18-26).

Saboureux's opinions on signing are of great historical interest. However, Lane's comment on Pereira and Saboureux is to the point: "The writings of both the pupil and the teacher indicate that they at first used what signing the boy already knew, but they minimize its importance." (Lane 1984b, p. 15).

When the author interpreted the whole of Saboureux's letter⁵⁵ he came to the conclusion that Saboureux did not emphasize speech, neither the teaching of it, nor the use of it. This corroborates Lane's assumption that although Saboureux first gained fame as a deaf person who could speak, "reports of his later life indicate that once his lessons with Pereire was over, he ceased speaking and communicated with pen and paper." (Lane 1984b, p. 15).

The influence of Pereira regarding special education

Pereira was to become very influential for the development of not exclusively deaf education but of special education in general. Édouard Seguin (1812-1880) had studied medicine and surgery under Itard and Esquirol (1782-1840). Seguin's reports and textbooks became the standard references in the field of mental retardation. Like Itard, Seguin acknowledged his debt to Pereira. "I am not unaware", said Seguin, "that the problem of educating deaf-mutes was attacked and even solved in the last century for the wider stand point, that of Pereire⁵⁶,

⁵⁵In the slightly abridged version, Lane 1984.

⁵⁶R.Th.E.: Notice that some authors write the name Pereira with and e (Pereire) instead of an a.

which is strikingly analogous to that which I have used to solve the problem of healing mental defect" (quoted by Lewis 1960, in Winzer, M.A. 1993, p. 68).

According to Lane, "in his later years Pereire became bitter and disappointed, he abandoned the cause to which he had devoted his life, for he witnessed the birth, development, and success of an entirely different conception of the deaf..." (Lane 1984b, p. 6). Lane is probably very right in asserting that the early oralist education was primarily the educating of the sons (sic! not the daughters!) of some very few rich aristocrats and that the conception of emphasizing manual sign language in the education has a social aspect: it was the start of a more democratic, public education of deaf people (Lane 1984b, p. 5-6).

Thus, what was to be called oralism⁵⁷ seemed to be a forerunner of what was to be called manualism⁵⁸ in the history of a more systematic education of deaf people.

The first school for deaf people - Charles Michel de L'Epée

The serious study of sign language and signing systems began with the work of Abbé Charles Michel de L'Epée in Paris. Charles Michel de L'Epée (1712-1789) is the founder of the first school for deaf people. It is recognized as the first school in the world teaching only deaf children. Today the school is known as the "Institut National des Jeunes Sourds" (Turkington, C., Sussman, A.E. 1992, p. 72). The school is often referred to as "Paris Institute" or "National Institute for the Deaf" in English languages.

L'Epée was born in Paris. He became a priest but had many controversies with the Catholic hierarchy. A meeting with some deaf persons apparently changed his life. Called on business to a house on Fossés-Saint-Victor, he noticed young twin girls absorbed by their sewing work. When their mother revealed that they were deaf and mute, he was deeply disturbed. He learned that their private tutor was teaching them by means of pictures. Unassigned to specific clerical duties because of his theological beliefs, L'Epée decided to try to save the souls of those persons who were excluded from a faith transmitted by the sense of hearing. He believed that adherence of the soul to religion was not dependent upon the sense of hearing or the mastery of language. For his deaf students, signs would convey ideas. To achieve his goals, L'Epée founded the first free public educational school for deaf people. There seems to be some uncertainty about exactly when. According to Turkington and Sussman it was founded in Paris 1760 (1992, p. 72), according to Lane it was "founded in the 1760s" (Lane 1984b, p. 6), according to Bernard it was founded in 1771 (Bernard, R. 1987, p. 416). In his publications (1776; 1784) L'Epée described his teaching approach. In the preface to the 1784 edition, he states that his work *La Véritable Manière*

⁵⁷Oralism as a method of teaching is the planning of structured processes or sequences, involving the application of systematic intervention, understanding that oral language can, and needs to be, taught. Structuring of oralism would apply to

- the acquisition of speech
- the full use of residual hearing
- the acquisition of speech-reading skills
- the acquisition of reading and writing.

Throughout the application of this method there is an expectation of oral communication. Cf. the definition of "structured oralism" by the British Association of Teachers of the Deaf (BATOD).

⁵⁸Manualism is the theory and practice of education for deaf people employing and promoting the use of sign language as the primary means of communication.

d'instruire les sourds et muets, confirmée par une longue expérience (Paris 1784), properly speaking, is a second edition of a book that appeared in 1776 with the title *Instruction des sourds et muets par la voie des signes méthodiques* (In Lane 1984b, p. 51).



Charles Michel de L'Épée – the founder of the world's first school for deaf people

Photo: NTB-photo

L'Épée conscientiously studied the works of Amman and Bonet; he learned Spanish to read the latter. He also based his teaching upon the philosophical theories of Locke, Diderot, Condillac and Rousseau, and upon theories of the special nature of childhood (Winzer, M.A. 1993, p. 49).

In addition to speech and speech-reading (lip-reading), he made early use of the manual alphabet, based upon Bonet's publication. He considered the language of signs to be the natural language for deaf people but set about to modify and expand it into his *signes méthodiques* - systematic signing of the French language. This was a forerunner of the modern systems for signing in the exact word order of spoken language. With the aid of his pupils, "he undertook to choose or invent signs for all the word endings in French, for all the articles, prepositions, and auxiliary verbs, and so on, until virtually every French sentence had its counterpart in this manual French, could be transcribed into it, and could be recovered from it." (Lane 1984b, p. 7).

However, L'Épée obviously also had a deep understanding of teaching that should not be forgotten. In Appendix I we quote a small part of L'Épée's first chapter in the book of 1784, "How the Instruction of the Deaf is to Begin", in Franklin Philip's translation and Harlan Lane's edition.

Where the oralists sought to replace sign language with spoken French, L'Épée, according to Lane, sought to convert it into a kind of manual dialect of the national language. Still, Lane gives L'Épée the following honour:

"In L'Épée's lifetime he had seen a dozen schools for the deaf founded by his disciples throughout Europe - from Rome to Amsterdam, from Madrid to Vienna. During his successor's career that number would grow fivefold. In the end L'Épée is recognized as the founder of deaf education not so much because of his method, which would rapidly evolve in the hands of others, but because of his humility: he started by learning the language of the deaf, and was thus able to learn some of what they have to teach hearing people about themselves, their observations, their language, the nature of oppression, the condition of man." (Lane 1984b, p. 7).

It seems that L'Épée's main goal was to teach the deaf people *French language in a manual version* and secondly also to teach them *the art of speaking*. He seemed to have been one of the first persons in history acknowledging also the deaf's own signing as a manual *language*. However, if Sicard is right, L'Épée, following Condillac⁵⁹, meant that every language was "just a collection of signs." (Sicard 1803, p. 92 in Lane 1984b). Evidently then, he was merely interested in words/signs and not in the question of syntax. Here it is appropriate to make an important digression: Present advocates of deaf people and of deaf sign language often seem to be embarrassed by the question of "syntax". There is an underlying inference that if a language has no syntax in the meaning of *a fixed word order* it is not a language. This is a serious mistake. In linguistics there still is a discussion concerning syntax. For example, it is asserted that the Finnish-Ugric Hungarian language has no fixed word order. *No one, of course, has questioned if Hungarian is a language*. Presently the dominant view seems to be that every language has *some* kind of word order restrictions, (e.g., also Hungarian) but that the degree of fixation varies - from very loose to very fixed. It should also be said that a "collection of words" with a loose word order may have other more fixed structural elements or another type of structure making it a system, precisely a *language*.

Important in the present discussions on methods in educating deaf people is that L'Épée meant that the instruction had to start in what he looked upon as the deaf's own language.⁶⁰ That was also the opinion of Desloges in his polemic against Abbé Deschamps:

"From the abbé Deschamps's own practice, we must conclude that the chief instrument in the education of the deaf must be sign language and that, like it or not, we will always come back to this method for the compelling reason that sign is their natural language, the only one they can understand until with its help we have taught them another one. So it was a great deal of trouble for nothing to make so much hullabaloo against this poor language of signs!

⁵⁹Abbé Étienne Bonnot de Condillac (1715-1780) was a devoted follower of Locke. He held the notion that all learning arises primarily from the senses. Condillac viewed humans as intelligent beings, capable of reflection, because of the gift of language. In the question, also a matter of present debate, regarding whether gesture is the natural antecedent of speech, or whether gesture and speech are completely unrelated in evolution, Condillac suggested that sounds were initially added to a natural gesture language (Winzer, M.A. 1993, pp. 45-46).

⁶⁰The term "the deaf's own language" is not accepted by everyone. Another term is "the natural language of the deaf". A third term is "the indigenous sign language", then in contrast with the general term "sign language". The latter can have miscellaneous denotations. The term "the natural language of the deaf" should be avoided, because no language is natural, although the term "natural" is used by many linguists to signify a difference between the ordinary language of human beings and "artificial" languages, like computer languages, etc. The latter use of "natural" also should be avoided since it can be - and really is - mixed with dubious linguistic theories about congenital linguistic structures.

The abbé Deschamps too often forgets that the abbé de l'Epée's goal is not exactly the learning of sign language. This language is the means, not the end of instruction." (Desloges, p. 40 in Lane 1984b).

In striking contrast to the oral pioneers, l'Epée did not shroud his work in secrecy but, rather, welcomed the curious, the critical, and the cynical (Winzer, M.A. 1993, p. 51).

L'Epée's teaching methods were to influence the teaching of deaf children in many countries, e.g. in the first schools for the deaf in Denmark (1807), Sweden (1809), and Norway (1825).

From controversy to the skirmish of "war"

Although neither Pereira nor L'Epée, as we have shown, should be seen as pure oralist and pure manualist respectively, the skirmish of "war" between oralism and manualism seems to have started with Pereira and Saboureux on the one side and L'Epée on the other, if L'Epée is right. In the preface of the 1784 book, he says:

"M. Pereire, the teacher of the deaf ... and his ablest disciple, neither of whom I had any knowledge of, were soon informed of my method. They deemed the project that I had conceived impossible, and the idea I was attempting to realize more likely to obstruct than to facilitate my pupils' progress.

Because this skepticism gained some public support from M. Pereire's reputation, I felt it was necessary to combat the prejudice against my method of teaching when it was published, as I believed myself commanded by Providence to render the unfortunate deaf every service within my power for the benefit of current and future generations.

I therefore argued that these gentlemen's reasoning was invalid, and even ventured to show that although M. Pereire's system for teaching - called dactylology or fingerspelling - could lead the deaf to speak, it was nevertheless utterly worthless for teaching them to think.

M. Pereire responded in the newspaper that he would answer my allegations as soon as his leisure permitted. Although he lived for several years after offering to take up the challenge, he never replied. Indeed, he never, in my opinion, had any real intention of doing so. His ablest disciple remained equally silent." (L'Epée 1784, in Lane 1984b, p. 52).

Pierre Desloges - the first defence of the sign language of the deaf

Pierre Desloges (1747-?) was the first person to publish a defense of the sign language of the deaf. In 1779 he published the book *Observations d'un sourd et muet sur 'Un Cours élémentaire d'éducation des sourds et muets,' publié en 1779 par M. l'abbé Deschamps* (Amsterdam and Paris 1779). Desloges, glue worker and bookbinder, is the author of perhaps the first book published by a deaf man, according to the editor Abbé Copineau, canon of the Church of Saint-Louis-du-Louvre, in the editor's notice to the book (Lane 1984b, p. 29). Desloges "became deaf and mute following a dreadful attack of smallpox at the age of seven." (Desloges 1779, p.31 in Lane 1984b).

His first language therefore was French. Based on his life and the language of a deaf community, Desloges' observations indicate that a large deaf community of artisans and unskilled labourers existed in Paris in the eighteenth century and that they communicated among themselves with a highly structured sign language. The French Sign Language was therefore already the principal means of communication among deaf people, well before the founding of the Paris Institute and the invention of the Abbé de l'Epée's "methodological signs". (Moody, W. 1987, p. 301). In Desloges' own words:

"Indeed, once Epée had conceived the noble project of devoting himself to the education of the deaf, he wisely observed that they possessed a natural language for communicating to each other. As this language was none other than sign language, he realized that if he managed to understand it, the triumph of his undertaking would be assured. This insight has been justified by success. So the abbé de l'Epée was not the inventor or creator of this language; quite the contrary, he learned it from the deaf; he merely repaired what he found defective in it; he extended it and gave it methodical rules." (Desloges 1779, p. 34 in Lane 1984b).

Desloges' first exposure to sign language was when he met the deaf servant of an Italian actor on tour in France. Desloges never attended the Paris Institute and there is no evidence that he ever met Abbé de l'Epée. However, he was aware that there was a growing controversy between the Abbé de l'Epée in Paris, who was advocating methodical signs for educating deaf students, and the Abbé Deschamps in Orléans, who argued that gesturing could never be a viable teaching tool. (Moody, W. 1987, p. 301). It was that controversy which inspired Desloges to speak out in the preface:

"...a new teacher of the deaf, the abbé Deschamps, publishes a book in which, not content to condemn and reject sign language as an instructional medium, he advances the oddest paradoxes and most erroneous criticisms of it.

As would a Frenchman seeing his language disparaged by a German who knew at most a few words of French, I too feel obliged to defend my own language from the false charges leveled against it by Deschamps and at the same time to justify the abbé de L'Epée's method, which is entirely based on the use of signs." (Desloges 1779, in Lane 1984b, p. 30).

Roch Ambroise Cucurron Sicard - "complete ignorance of the natural language of the deaf"?

De L'Epée undertook the preparation of a dictionary of signs, which was eventually completed and published as *Théorie des Signes* (1818) by his successor as head of the Paris Institute, Abbé Roch Ambroise Cucurron Sicard (1742-1822). Sicard was born near Toulouse on September 28, 1742. Little is known of his early life. Sicard succeeded Abbé L'Epée as head of the Institut National des Jeunes Sourds. He studied for the priesthood. At the age of twenty-eight he was ordained and assigned to the cathedral of Bordeaux. His archbishop, Champion de Cicé, had visited the school for the deaf founded by L'Epée and decided to found a similar school in his own diocese, calling on Sicard to direct it. Sicard, now forty-three, was sent to Paris to be trained by L'Epée because of his educational gifts. He spent a year studying L'Epée's teaching methods in Paris, one of dozens of disciples who had come from throughout Europe. Returning to open his school in Bordeaux, Sicard was seconded by Jean Saint-Sernin, who by all accounts did the actual teaching of the deaf pupils, while the priest presided at public demonstrations of their achievements, acquired with the Abbé de l'Epée's "methodological signs." (Lane 1984b, p. 81).

On the death of L'Epée in 1789, Sicard published a memoir critical of L'Epée's methods which, he claimed, made the deaf pupils into automatic copyists of signed French into written French without any understanding of what they were writing. To replace L'Epée, Sicard suggested a public competition of teachers of the deaf. Sicard won the contest, with his famous pupil, Jean Massieu (1772-1846), "as his prize exhibit." (Lane 1984b, p. 81).⁶¹

⁶¹Massieu, Jean, this brilliant, outgoing educator, together with the Abbé Roch Ambroise Cucurron Sicard, helped develop the manual method of education taught at the famed Paris Institute.

Sicard ran the school "with an iron hand", according to Turkington and Sussman (1992, p. 168) for 32 years.⁶²

"Sicard proved to be a zealous and highly visible spokesman for the cause of the deaf: as a member of the French Academy, where he helped initiate their dictionary, and as a faculty member of the National Teacher Training College, where he gave courses in deaf education and philosophy of language." (Lane 1984b, p.81).

On his deathbed in 1789 L'Epée learned that the revolutionary Assembly was to take his school under its protection and thus to ensure the continuation of his work. Sicard guided the school through great adversity in the tumultuous years of the French Revolution. On more than one occasion it nearly cost him his life. As a cleric he was unsympathetic to the popular overthrow of the established order, maintaining a secret correspondence with the deposed royal family, as well as publishing a politico-religious newspaper. As a result of these activities, the government ordered him deported to Guiana in 1800 and for a time he went into hiding in the outskirts of Paris (Lane 1984b, pp. 50, 82).

Often dictatorial and unyielding, according to Turkington and Sussman (1992, p. 168), Sicard's strength and popularity helped him lead his institution through the stormy years of the French Revolution, a time when many clerics were imprisoned as potentially monarchistic. Sicard took advantage of his retreat to write an extended account of how he educated Jean Massieu, published as *Cours d'instruction d'un sourd-muet de naissance*. This was "...the first comprehensive textbook ever written for educating the deaf." (Lane 1984b, pp. 81-82).

Sicard's educational method was based on a combination of writing and the system of "methodical signs" developed by L'Epée. This system borrowed some signs from French sign language and invented some others to represent the grammatical structure of French, which represented the first effort at linking a sign and spoken language. Sicard also emphasized extensive grammar drills for his students. In fact, Sicard was widely recognized in France for his excellence as a grammarian, winning him faculty appointments, book contracts and a role as a

Born in 1772 near Cadillac, France, Massieu was one of six children, all deaf, who communicated among themselves in the family's own system of manual signs. Sent to a school for deaf children in Bordeaux, Massieu met Abbé Sicard, who taught him how to read and write (Turkington,C., Sussman,A.E. 1992, pp.119-120). After some three-and-a-half year with Sicard in Bourdeaux, Massieu accompanied him to Paris when the priest succeeded the abbé de l'Epée as director of the Paris Institute in 1790. Shortly thereafter Massieu was appointed to the post of teaching assistant, a post he held for thirty-two years. In the course of his career he taught French to the young Laurent Clerc (Lane 1984b, p. 73). Massieu and Clerc both helped teach Thomas Hopkins Gallaudet their manual method of education.

Nearly fifty at the time of Sicard's death in 1822, Massieu was the natural choice to be appointed as Sicard's successor. The administrative board of the school, however, saw fit to deny him the position and in fact forced him into retirement (Lane 1984b, p. 73). The alleged reason was sexual indiscretions. After a few years living at his original home, Massieu was called to the southern town of Rodez as a teacher of a small school for the deaf. There he married a young hearing woman, the couple had a son, and in time Massieu became the director of the school. In 1834 the couple moved from Rodez to the northern city of Lille, where they founded a school for the deaf with Massieu the director and his wife the matron (Lane 1984b, p. 74). He retired in 1839 and died in Lille in August 1846.

⁶²In 1800 Sicard created the position of resident physician at the Institution Nationale des Sourds Muets, and Jean Marc Gaspard Itard (1775-1838) joined the medical staff. Itard was first a military surgeon and then a specialist in ear diseases. He was to be famous for his work (1800-1804) with the so-called feral Victor. Victor was placed in the school for the deaf because of his muteness (Winzer,M.A. 1993, pp. 65-66).

leader of a committee to revise the *Dictionary of the French Language* (Turkington, Sussman 1992, p.168).

Sicard generally thought "that every language had two essential parts that make up the whole and render it suitable for representing thoughts: the catalogue of words making up its lexicon, and the relative value of the words which constitutes its phrasing and syntax." (Sicard 1803, in Lane 1984b, p. 93).

In this quotation we clearly see the difference between l'Epée's and Sicard's view on language: For l'Epée the first part of Sicard's definition seems to be sufficient. Sicard therefore to a higher degree than L'Epée had an *equivocal comprehension of deaf people's own sign language*. He viewed the deaf's signing as a language (as also L'Epée). He also points to what he sees as advantages of manual signing (e.g. not merely better expressing affections) compared to oral language. However, he obviously views the deaf's own language not as a fully developed language since it does not contain the second criterion of his definition of language.

He also - conversely to l'Epée it seems - does not understand that the deaf's own language in fact already at his time was a conventional one: "The difference in communicating ideas with signs or with spoken sounds is that sounds get their meaning only from convention while signs have real meaning by themselves. So sign language (I must be forgiven for not concealing any of its advantages) is truer, richer, and imitatively more accurate." (Sicard 1803, p. 98 in Lane 1984b).

It is correct that manual signs often have an iconic element which we will not find in the phonetically based language. That does not mean, however, that the sign is not conventional - a misunderstanding also existent at the present time.

The deaf student of Sicard, Ferdinand Berthier, says of Sicard that "instead of recognizing his errors, he thought it unnecessary to confess frankly his complete ignorance of the natural language of the deaf." (Berthier 1840, p. 168 in Lane 1984b).

Sicard viewed the constitution of the uneducated deaf as "inferior to that of animals...he is not even the equal of primitive man in morality or in communication." (Sicard 1803, in Lane 1984b, p. 85).

This sounds strange, and Berthier views it as a contradiction to other statements by Sicard (Berthier 1840 pp. 166-167 in Lane 1984b). However, the meaning seems to be that the deaf child because of his deafness is "nature" before he is educated. The hearing child is from birth drawn into a communication process that is lost on the deaf child. Therefore he needs special instruction. "...it is a grave mistake to lump the deaf together with normal children or to think that deaf children need no special training to do what normal children can..."(Sicard 1803, in Lane 1984b, p. 84).

However, when deaf children were educated in this special instruction they would be able to express "metaphysical ideas" by manual signing, not merely use signs reflecting concrete things. Thus Sicard believed it possible to express a highly developed thinking in manual signs although he believed the structure (grammar) of the manual language should be based on oral language (e.g. French). Although dubious from the point of view of present research, his assertion "I think it proven that from the beginning man had two ways to express his ideas, that instead of sonorous imitation he could have decided in favor of manual signs." (Sicard 1803, in Lane 1984b, p. 99), demonstrates that Sicard primarily

regards being deaf not as a pathological condition, but as a "difference." Thus, Sicard is initiating a tradition leading to the stance of viewing the deaf as a minority with their own language and culture.

A turning point in the comprehension of the deaf's own language and in deaf education

Roch-Ambroise Bébien - criticism of the teaching and use of "methodological sign"

With Roch-Ambroise Bébien (1789-1834?), there began a gradual reversion to the use of indigenous sign language or "natural" signs (deaf's own language) at the National Institute in Paris.

Roch-Ambroise Bébien was born in the Caribbean colony of Guadeloupe in 1789. His parents had been friends of the Abbé Sicard, director of the National Institute for the Deaf, whom they designated as the boy's namesake and godfather; they entrusted their son to Sicard's care when the youth went to Paris to be educated at the prestigious Lycée Charlemagne. While living at the institute, Bébien took the opportunity to attend classes there, made friends with the students, particularly Laurent Clerc, and acquired fluency in sign language. (Lane 1984b, p. 127). Upon his graduation from the lycée, he was named instructor at the school for the deaf. Sicard credited Bébien with the fullest grasp of his own instructional methods.

At the age of twenty-eight, Bébien published the *Essai sur les sourds-muets et sur le langage naturel* (Paris: Dentu, 1817) in which he criticizes the teaching and use of "methodological sign". More than any other man, according to Lane, "...Bébien was responsible for ending the world-wide practice of teaching the deaf in a manual version of the national language rather than in their own language." (Lane 1984b, p. 127).

During Sicard's declining years Bébien's protests against the disorganized instruction and mismanaged finances of the school so displeased the board of directors that they forced him to resign. Nonetheless, the board recognized that the school's educational program was deficient in overall design. To obtain a manual for teachers, they applied to Bébien. The book he then wrote promulgated the use of sign language for instruction rather than spoken language (Lane 1984b, p. 127). Bébien also created a system of written characters for signs, naming it *mi-mography* (Publication 1825).

As I began to understand the deaf better, he said,

"...I came to the bitter realization that only a few of the thousands of these unfortunates were restored by education to religion and society. This fact is particularly deplorable as the ignorance and inexperience of the many deaf without education who are thus condemned to vegetate, make it easy to pervert their happy natural character. On the other hand, the deaf accepted for instruction cannot, as you know, do much studying by themselves, for they have no dictionary or elementary text, having as yet learned none of our languages." (Bébien 1817, in Lane 1984b, p. 131).

This twofold disadvantage became the chief object of my reflections, Bébien tells us. I thought it could be righted if a way were found to get their signs on paper, as we do with speech. To this end I investigated the elements of gesture, which are few, and I gave each its own printed character. In view of the simplicity and ease of this procedure, Bébien modestly adds, its invention reflects no great merit of the author (Bébien 1817, in Lane 1984b, p. 131). In *Essai sur les sourds-muets et sur le langage naturel* Bébien writes that he had been led to discuss the

inadequacies of spoken languages, but, as he expressed it, I am far from agreeing with Vossius, that we should renounce the use of speech and express ourselves solely by gestures. (Bébian 1817, in Lane 1984b, p. 129). However, he was of the opinion that

"the education of the deaf cannot be based on speech, but speech can and must complement this education." (Bébian 1817, in Lane 1984b, p. 138).

Bébian is not only a forerunner in the question of the deaf's own language, his remarks on the educational methods are very thought-provoking and related to the discussion of methods concerning both blind, deaf and deaf-blind people.

If speech education for the deaf is still held in some favour, it is due to the genuine successes obtained by Pereira, Bébian says. But, he also says, how few children find themselves in circumstances as happy as those of his pupil, Saboureux de Fontenay - in the constant presence of an excellent teacher, in the bosom of a family all of whose members and all of whose friends, as he himself tells us, contributed to his education with a compassionate interest which was increased by the novelty of the undertaking. What we can reasonably conclude from this, according to Bébian, is that the able instructor exclusively devoted to the training of one or two deaf persons will by dint of care, time, and patience triumph over all obstacles.

But we should notice Bébian arguments, that for this education to be ultimately something other than parrot-like training, it must necessarily begin with the language of gestures - the only means of communication that in principle exists between the teacher and student because only signs are directly related to the idea. And we can dispense with gestures only when the deaf person is already advanced and has a large enough vocabulary to understand definitions of unfamiliar words.

Although this method - tedious for the teacher, irksome for the pupil, uncertain in its results - can be effective in private instruction, its use has unfortunate effects in a public institution where the teacher is obliged to divide his efforts among a great many pupils. Bébian concludes as follows:

"The aim of education must be not the learning of words, but the accurate expression of ideas, not the training of a sense organ or a single faculty like memory, but the unfolding of the totality of the intellectual faculties to form correct and certain judgment." (Bébian 1817, in Lane 1984b, p. 137).

Discussing *l'Epée*, Bébian acknowledges his educational efforts. However, Bébian was of the opinion that sign language, being quite different from all other languages, had to be distorted to conform to French usage, and it was sometimes so disfigured as to become unintelligible. That is the result observed, he says, of the attempt to mold signs to fit the composition and etymology of French words.

The forms of true sign language are extremely simple, according to Bébian; it faithfully represents thoughts, and leaves out all inessentials. Sign language lacks the luxury of the different grammatical forms abounding in spoken languages where the expression for the same idea can in turn become a noun or adjective or adverb without any of the modifications changing the basic idea. But it is still imperative to make these forms known and understood so that the deaf can use them as we do.

According to Bébian, Abbé Sicard brought these signs to a quite satisfactory level of perfection. This kind of translation is genuine, comprehensive grammatical

analysis that reveals the categories of words as parts of speech, their composition, inflections, and interconnections forming the sentence.

But, one senses, Bébien continues,

"...the more profoundly these signs decompose the sentence - thus revealing the structure of French - the further they get away from the language of the deaf, from their intellectual capacities and style of thinking. That is why the deaf never make use of these signs among themselves; they use them in taking word-for-word dictation, but to explain the meaning of the text dictated, they go back to their familiar language." (Bébien 1817, in Lane 1984b,p.148).

In his educational theory Bébien emphasizes two theses. The first, already found by l'Epée, is that all deaf people should be educated, not exclusively an elite. The second is that indigenous language is a complete developed language (also anticipated by l'Epée). He therefore concluded that, because teaching should have a common language between teacher and student, the methodical signs must be abandoned since they were unconceivable for the students.

Bébien - a genuine product of the French revolution

Bébien was a genuine product of the French revolution. Both the means and ends of deaf education were in the spirit of the revolution: Teacher and student should learn mutually (cf. Buber's I and You) and the aim of education was the development of all the intellectual and ethical properties by the deaf. According to Andersson⁶³, this broke not merely with deaf teaching at that time: religious education was central in all teaching at that time (Anderson,L. 1993, p. 160).

What was the results of Bébien's teaching? Andersson points out that one must be impressed by the high level of the literature studied by his students. Bébien's deaf pupils read all the French classics, Molière, Voltaire, Rousseau, etc.. They read the same literature as hearing pupils. Some of his students became well known personalities at that time, e.g. Allibert, teacher of the deaf and author; Benjamin, teacher of the deaf; Richardin, teacher of the deaf; Lenoir, teacher of the deaf and author; Forestier, teacher of the deaf, debater, and author; Berthier, (see below).

Bébien's deaf students applied his methods in the time that followed. Bébien himself was well aware that his educational methods made it possible for deaf people to become teachers of the deaf. This he saw as a great advantage of his methods (Andersson,L.1993, pp. 161-162).

Bébien - the first person dealing with the problem of syntax of sign language

Bébien was probably the first hearing person with a profound comprehension of distinctive characteristics of the deaf's own sign language and the first dealing with the problem of its syntax: "The syntax of signs, which people are scarcely aware of, will perhaps yield new and intriguing observations." (Bébien 1817, in Lane 1984b,p.150).

He uses the question of translation to elaborate his view:

An excessively literal translation is, as we know, often unintelligible, because of the difference in spirit of any two idioms. A literal translation in sign language is utterly incomprehensible, Bébien asserts, for in the absence of grammatical forms it inserts between the various parts of the sentence artificial, abstract signs

⁶³Lennart Andersson, Institutionen för Lingvistik, Göteborgs Universitet.

that cancel out the relations and that make the scattered parts of the thought unrecognizable!

Constant attention and acumen are therefore needed to prevent the deaf person from writing what is in fact perfectly correct French, but still meaningless gibberish to him, much as a schoolchild writes Greek. The ideas dictated are not above the pupils' heads and could be perfectly understandable if stated in the schoolchild's native language or the deaf child's natural language (Bébian 1817, in Lane 1984b,p.149).

The following statement must be one of the first dealing with the syntax of sign language:

"In representing the impression that an object produces in us, the gesture first designates some essential feature of the object and then indicates its effect on a particular sense - the resting face livens up, becomes animated, and reflects the occurrence of the impression. Simultaneously, we see whether the sensation is pleasant or unpleasant." (Bébian 1817, in Lane 1984b,p.151).

Bébian was of the opinion that the signs, to be exact, must be taken from some essential and distinctive feature of the thing signified. However, in this he saw a great problem, in fact, he saw as a problem, as an imprecision, what really makes sign language a language in our twentieth century conception: the arbitrariness of signs. Maybe the most remarkable observation by Bébian was that the signs in the deaf's own sign language are *arbitrary*.

"When they had to represent an object for the first time, the feature that first struck them determined the sign. To determine whether this sign was distinctive and essential to the thing required knowledge as yet unavailable to them. So it sometimes happened that the feature was transitory and accidental, and when the same object was represented from a new angle or the idea had to be viewed differently, the initial sign was no longer appropriate, but it was preserved because it had already been adopted and was understood..."

There is another, less important but still noteworthy source of imprecision in the language of the deaf. An event occurs before their eyes or is reported to them; by allusion the most salient feature is used to characterize all similar facts; tradition passes the sign from one generation to another; once the anecdote giving rise to the sign is forgotten, it becomes nearly impossible to grasp the thread of the analogy leading from the idea to the sign, and the sign appears purely arbitrary. We can compare these signs to the idiomatic expressions of all languages in frequent use by the common people. The deaf with good taste and education employ these kinds of signs as little as possible, not just because of their imprecision but because of their apparent triviality. They are to true sign language what high-school slang is to correct French." (Bébian 1817, in Lane 1984b,pp. 152-153).

Bébian was right in his observation of the arbitrariness of signs in the deaf's own language. L'Épée saw that too. However, Bébian also observed, or rather sensed, that the deaf's own language had *another structure* than oral language. Sign language was not a chaos contra the cosmos of oral language.

Bébian was wrong, however, in his evaluation of the arbitrariness. In fact, interpreting Bébian in the terms of modern linguistics would demonstrate that he observes two matters: the development making a kind of *iconic signs conventional* - one of the most crucial criteria of a language. In the development they also become *arbitrary*. However, other signs can remain iconic and in a defined and restricted sense be non-arbitrary but conventional.⁶⁴ Therefore, he makes the

⁶⁴Defined and restricted, because iconic signs and onomatopoeic words also have a certain degree of arbitrariness, they are *chosen*, not "natural." They therefore also differ from language to language (e.g. the pig says

mistake common in his and present time. The most appropriate vehicle for reaching the goal of a universal language appeared to him, as it did to Vossius and the Abbé de l'Epée, to be sign language. That may be so. It was and is not correct, however, that sign language "already functions that way for the deaf; they all understand each other - that fact no longer needs proof." (Bébian 1817, in Lane 1984b, p. 158).

There is something common among all languages of the world: the arbitrariness and the conventions of signs (manual or oral) and one or other kind of structure. In addition, sign languages are likely to have some common features that oral languages do not have, e.g. an iconic element in some signs. Maybe other similarities can be found, e.g. in structure. The discussion of the "international aspects of sign languages" still goes on.

The first deaf person dealing with the structure of indigenous sign language - Jean-Ferdinand Berthier

Jean-Ferdinand Berthier (1803-1886), a political leader of the French deaf "nation", and, according to Turkington and Sussman, the most outstanding advocate for deaf people in nineteenth-century France, appreciates Bébian as follows:

"No one was capable of grasping the whole of Epée's thought and of making it fruitful. Eventually, the man appears. After silently devoting his whole youth to the study of the language of the deaf, M. Bébian rid the curriculum of all the excess intellectual baggage that merely slowed down the student's progress, and he brought teaching back to the simplicity and truth that Epée had never diverged from for an instant. Through much devoted effort, Bébian managed to dethrone the old method and restore more ingenious and truer methods to their rightful, primary role." (Berthier 1840, in Lane 1984b, p. 185)

By some accounts, Berthier was deafened at the age of four. He himself said that he was born deaf.

Berthier's writings include research into the history and heritage of deaf persons; biographical research on the lives of Bébian, the Abbé de l'Epée, and Sicard; defenses against attacks on the moral and intellectual capacities of deaf people; and even the Napoleonic code translated into simple French to allow deaf people to understand clearly their rights and duties as French citizens. According to Moody, his writing style was clear and penetrating, honest, and elegant. His signing style, according to contemporaries, was even more elegant (Moody, W. 1987, p. 142).

Among his prodigious activities on behalf of the deaf was the creation of the first social organization for the deaf, which promoted legal reform and adult education (Lane 1984b, p. 161).

Berthier also touches the distinctive characteristics of the deaf's own language and argues much in the same way as Bébian, demonstrating it with the ex-

"nøff-nøff" in the Norwegian language and "khru-khru" in Russian). Iconic signs are not essential in any language either. *The essence of language is not founded in the conventions but in the arbitrary conventions because only they make possible the double articulation - i.e., a restricted number of phonemes distinguishing words but not carrying meaning in themselves, and elements with meaning (e.g. words) based on the phonemes - and the creativity - an infinity of expressions in language.*

We do not know much about the degree of iconicity in sign languages. Klima and Bellugi are probably right when stating:

"Certainly the vocabulary of ASL (R.Th.E.: American Sign Language) - and, to our knowledge, that of other primary sign languages - is a great deal more iconic than are the morphemes of spoken languages." (Klima, Bellugi 1979, p. 21).

ample of translations. In the essay *Les Sourds-muets avant et depuis l'abbé de l'Épée* (1840) he writes:

"To prove that mimicry is no more similar to any instructional language than poetry is to geometry, I need only consider one point of comparison. My explanation proceeds by analogy, and I choose randomly two among many possible examples. The Latin *morem gerere alteri*, is translated literally as 'carry the custom to another' instead of 'defer to this person's wishes'; *Lacrymas dilectae pelle Creusoe*, -literally, 'hunt the tears of the beloved Creuse' -really means 'Hold back the tears you are shedding for your dear Creuse.' Now, if we stuck to the literal translation, would we be shedding any new light on the matter? No, obviously not. So, with mimic syntax or expression, why not stick to the underlying meaning rather than the external form in the translation of, say, some figurative Latin expressions into another language, French for example? The need for clarity in translation requires the choice of an equivalent French expression, not a slavish copy of the original." (Berthier 1840, in Lane 1984b, p. 186)

Berthier seems to be the first *deaf* person dealing with the structure of indigenous sign language. Desloges (see above) has some statements on structure - about order and connections (Desloges 1779 in Lane 1984b, p. 36). However, it is unclear if he speaks of the oral structure or the indigenous sign language structure. He can be interpreted as touching the latter without fully comprehending this himself.

The great godfather of oralism - Samuel Heinicke

The approach to teaching based upon the use of signing, fingerspelling, and written language, in addition to speech and speech-reading (lip-reading), became known widely as the *French method* in contrast to the *German method*, which was the name given to the pure oral teaching advocated in German countries by Samuel Heinicke (Evans, L. 1982, p. 5).

L'Épée is seen as the father of *manualism*. Heinicke has his great forerunners in de León, Pereira, Amman, Wallis. However, Heinicke might be seen as the father of *oralism* but maybe it is more correct to signify him as a great godfather.

Samuel Heinicke (1727-1790) was born in the town of Nautschütz in the Electorate of Saxony (now Germany). In 1768 he obtained the positions of sexton, organist, and schoolteacher in Eppendorf near Hamburg. Already in 1754 or 1755 he acquired his first deaf pupil, a boy whom he taught by means of a manual alphabet, but in 1769 Heinicke had the occasion to teach the deaf son of a local resident in Eppendorf and, soon thereafter, other deaf pupils came to Heinicke. At first he used the written language to teach them but, dissatisfied with the results, he gradually came to believe that he could achieve far greater success by means of spoken language (Harmon, R. 1987, pp. 35-36). Heinicke developed his methods at the same time as L'Épée but he based his method on the approach of speech-teaching developed by Bonet and Amman.⁶⁵

⁶⁵Although L'Épée believed that signs, together with some fingerspelling were adequate to instruct deaf people in all forms of language, he claimed to have success in teaching speech and speech-reading (lip-reading). In fact, he said he based his teaching

"on the work of Bonet and Amman as well as my own thoughts." (L'Épée 1784, p. 53).

L'Épée recognized the importance of speech and taught it to some of his pupils.

According to Cleve, however - and he is probably right - the teaching of speech and speech-reading, was never very important to L'Épée, for he believed that they were not essential to opening the minds of deaf persons (Cleve, J. van 1987a, p. 53).

Heinicke initiated the methods controversy (sign language controversy) in a series of letters, first with Abbé Stark of Vienna, who had studied L'Epée's methods in Paris, and then with L'Epée himself.

The heart of the controversy between Heinicke and L'Epée emerged from their differing views of the connection between sound and thought. L'Epée believed that there was no natural connection, that sounds were arbitrary designations for thoughts or ideas, and that ideas were of primary importance. Heinicke insisted on the transcendent significance of sound, arguing in a letter to L'Epée that sounds are "the dark mainsprings which play upon our faculties of desire, bringing about random notions, and lifting our reason to what is grounded in these, namely, universal, abstract, transcendental forms of thought in which throughout our lives we must think, judge, and reason, but always in a tonelike manner." (Cleve, J. van 1987a, p.54).

According to Cleve, Heinicke even claimed that people dream, not in terms of objects or ideas themselves, but in terms of sound, a spoken language. Consequently Heinicke denounced signs as useless and claimed to employ pure oral methods to instruct deaf pupils. Although his pupils could not be influenced by spoken language in the same way as hearing people, Heinicke insisted that they grasped sounds through the means of another sense. This other sense L'Epée interpreted to mean the feelings caused by movements of the tongue, throat, and mouth in speech (Cleve, J. van 1987a, p. 53-54).

Heinicke wished to found a school for deaf children but realized that this had to be located in a large city. In 1775 his wife died. Promised economic support by electoral prince Friedrich August of Saxony, Heinicke in 1777 returned to his native country (Saxony) with his four children, new wife and 9 deaf pupils. In accordance with his wish he was allowed to establish his new home in Leipzig. Here, the first school for the deaf in German countries was founded in April, 1778. This also was the first school for the deaf in the world based on oral teaching. It was a state school and Heinicke led the school as long as he lived, i.e. 12 years (Anderson, P. 1960, p. 25).

According to Cleve, Heinicke argued that neither writing nor signs were adequate for instructing deaf people, because these methods could not convey abstract thought. Moreover, he believed that written or signed words could not be remembered and that signs could not convey subtleties of meaning (Cleve, J. van 1987a, pp. 53-54).

According to Moores, however, in his teaching, Heinicke was opposed to the use of methodical signs but not to natural signs and the manual alphabet. According to Garnett (1968, in Moores 1987, p. 51), this was not clear to L'Epée because of difficulties in the translation of Heinicke's letters.

Some aspects of the development of deaf education in Europe

At first it seems that the method from L'Epée was most widely spread and used.

The Scandinavian countries

Peter Atke Castberg - the founder of the first school for deaf people in Scandinavia

In the Scandinavian countries Peter Atke Castberg (1779-1823) opened in 1807 the first school inspired by L'Epée in Copenhagen in the kingdom Den-

mark-Norway⁶⁶. Castberg was born in Flekkefjord (Norway), the son of a minister (priest). At 17 years of age he went to Copenhagen to study theology and after that medicine. At 22 years of age he received his Ph.D. As a physician, professor of Medicine, and researcher Castberg came in touch with deaf people. He had read about a method denoted as galvanism in German periodicals. It was said that this method could restore the hearing of the deaf. Castberg was in touch with foreign physicians and knew that their results was unsuccessful. Still, he wished to test the method. He made an attempt with 33 hard-of-hearing, then with 8 deaf people. He passed electricity through the patients. The deaf were held tight in the chair and their bodies were shaking. The experiment in Copenhagen lasted 14 days. After the experiment seven patients heard less than before, one heard better. Castberg, however, did not lose his interest in deaf people. Between 1803 and 1805 he visited schools for the deaf in German countries, Austria, Switzerland, and France. In other words, he learned to know both the German and the French methods. Back in Copenhagen he started teaching two deaf children living in a poor house. In 1806 he published a reading book for the deaf and opened a private school with 8 deaf pupils. In 1807 this became a state school, the Royal Institute for the Deaf-mute.⁶⁷ Castberg drew the conclusion that the teaching should be based on the natural sign language. Through this language the pupils should learn the Danish language. Sign language, manual alphabet, writing, and (some) speech, were parts of Castberg's method. He preferred the French methods, not the German, but he was not in favour of L'Épée's version of sign language, i.e. the artificial part of it. The "natural" sign language should be the primary basis, but if necessary he applied also the manual alphabet and writing. A presupposition for the deaf's comprehension of the word was to demonstrate the "identity" between the manual sign and the written word. It is, however, worthy of notice, that Castberg was of the opinion that deaf people could not learn to read books written for hearing people (Skjølberg 1989, pp. 19-22). There also is reason to believe that the communication between teacher and pupil based on sign language was rather limited in topics.

Castberg was offered several higher positions. He chose to stay by his deaf students. The school had economic problems - and the accounts were not as they should be. Castberg became depressed and also addicted to opium. His wife left him and, not older than 43 years of age, he died on April 30, 1823 (Skjølberg 1989, p. 24).

Thanks to Castberg's efforts Denmark, as the first country in the world, in 1817 got a Law Act stating school as obligatory for deaf children. The next countries that got such laws were some German states and the Netherlands. In Norway such a law came in 1881, and in Sweden in 1889 (Anderson, P. 1960, p. 42).

Andreas Christian Møller: The first teacher of the deaf in Norway

One of Castberg's students was a 14-year-old boy with the name Andreas Christian Møller (1796-1874). Born in Trondheim, the Norwegian Møller, son of a shoemaker, came to the school for the deaf in Copenhagen in 1810. The number of students had then increased to 26. Møller was a student at the school for 5 years and returned to Norway when he was 19 years old.

⁶⁶Denmark and Norway was one kingdom up to 1814, when Norway was forced into a union with Sweden. In 1905 Norway became an independent state (kingdom).

⁶⁷ ("Det Kongelige Institut for Døvstumme").

When Møller was two years old he had become ill with smallpox. His parents understood relatively soon - after some months - that he had become hearing impaired. His speech deteriorated, and after a while he stopped talking. At the age of 5 he became completely deaf. It is told that he could be angry when somebody tried to talk to him.

Back in Trondheim Møller began to teach three deaf boys and one deaf girl in his father's home. Two years later Castberg asked him to return to Copenhagen as a teacher at the school for the deaf. Castberg had seen Massieu in Paris and also other deaf teachers in Vienna and Berlin. He was of the opinion that deaf teachers could apply the natural sign language better than hearing people. Møller worked 5 years as a teacher at the school for the deaf in Copenhagen. In 1822 Møller had returned to Trondheim. That is the reason why the first institute for the "deaf-mutes" ("døvstumme") was founded in Trondheim and not in the capital of Norway - Kristiania (presently Oslo). November 1, 1824, the royal ministry decided ("kongelig resolusjon") that a teaching institution for deaf-mutes was to be founded in Trondheim. In fact, in this ministerial decision the leadership of the school was handed over to the family Møller: The father of Andreas Christian - Johannes Møller - was appointed the economic leader of the school, and Andreas Christian and his younger brother were appointed teachers. The school was to be opened from the beginning of the year 1825. The school was opened as a residential state school on April 1, 1825 (Skjølberg 1989, pp. 9-77). As in Copenhagen, the aim of the teaching was to give the students knowledge of the oral language through writing and manual alphabet. But since Andreas Christian was appointed as the leading force, the teaching should be based on the deaf's own signs. In the daily life at the residential school the family Møller (the father, the two brothers and their sister) applied sign language in their communication with each other and with the students as also the students did among themselves. The next school for the deaf in Norway was opened in 1848. But this school and the two next were based on the oral philosophy and method.

In 1809 the first school for the deaf was opened in Stockholm, Sweden.

Other European countries

The Netherlands

When Henry Guyot founded a school for deaf children at Groningen in 1790, he based his teaching on the work of de l'Épée, but he was anxious to give greater prominence to speech and developed a combined oral and manual approach which became known as the *old Dutch*, or *mixed method*.

Britain

De l'Épée and Sicard also had an influence in England. Louis du Puget from Switzerland, who was familiar with the French method, was appointed head of the school at Birmingham and introduced signing and fingerspelling. When Charles Baker, who had trained under du Puget, opened the school at Doncaster in 1829, he developed a method which started with natural signing, was followed by fingerspelling, and led on to writing. William Neill, who had worked under Baker, was appointed head of the school at Newcastle upon Tyne, and he in turn introduced a combined method. His successor, Andrew Wright, placed a greater emphasis upon speech. By 1891, he advocated a combined method using natural signs and the manual alphabet, leading to written language and the teaching of articulation and speech-reading (lip-reading) for those children who showed anti-

tude - surely an early forerunner of total communication, according to Evans (Evans, L. 1982, p. 5-7).

We should not forget that the people mentioned above worked in another atmosphere than at present time. Ferdinand Berthier, when dealing with the laws and the deaf in history, states: "While touching on the subject, I cannot contain my outrage at seeing that the laws of England still uphold a provision classifying the congenitally deaf among those individuals incompetent to leave their goods by will, and this in the nineteenth century, at a time when French law has long ago at least tacitly repealed these outdated edicts!" (Berthier 1840, in Lane 1984b p. 165).

The Bell family

In the first half of the nineteenth century, however, there was a man in Britain (Scotland) who had taken an interest in deaf people and worked on speech training and remedial applications of phonetics. His contemporaries and he himself did not know at that time that he later was to be the grandfather of a person who has played a very prominent role in working with deaf people. His name was Alexander Bell (1790-1865), the grandfather of Alexander Graham Bell (Robins, R.H. 1979, pp. 202-203). Still today, at the end of the twentieth century most people in Europe and the US only know Bell as the inventor of the telephone. Perhaps they have heard the words that changed the world of communication: "Mr. Watson - Come here - I want to see you."

Alexander Graham Bell spoke those words to his assistant over the first working telephone on March 10, 1876. Thus, Bell has made a contribution of great value for blind people too, since the telephone is an excellent communication device for them.

For two generations the Bell family was recognized as leading authorities in elocution and speech correction in Britain. The son of Alexander Bell - Alexander Melville (1819-1905) - studied at the University of Edinburgh under his father, and served as a lecturer in elocution there from 1843 to 1865. He then taught at the University of London until he moved to Canada in 1870. Alexander Melville Bell's *Standard Elocutionist* has passed through nearly 200 editions in English. His main work, *Visible speech: the science of universal alphabets*, was published in 1867. This became the basis for the international phonetic alphabet. Each phonetic symbol indicated a definite position of the organs of speech such as lips, tongue, and soft palate, and could be used by the deaf to imitate the sounds of speech in the usual way. Alexander Melville Bell developed a system for teaching the deaf to speak. His influence, however, became perhaps even greater in the USA than in the UK. He moved to Washington, D.C. in 1881.

German countries (Deutsche Länder)

After the death of Heinicke, also in German countries signs were more and more applied in the schools for the deaf, in the beginning not so much in teaching the deaf in which miscellaneous methods were applied, but among the students outside the classroom. Then sign language also was applied in teaching and in the course of time it was not easy to see a difference between the "German method" and the "French method". This was the case in Berlin, where Heinicke's son in law was director, and the school was supposed to represent the speech method.

During the period of greatest French influence, John Baptist Graser (1766-1841) opposed the use of the French method and continued his efforts to expand the use of the oral method. He maintained that the two greatest deficiencies in education of the deaf were the use of manual communication and the isolation of deaf children in institutions and residential schools (Gordon 1885, in Moores 1887, p. 52). Under Graser's influence, teachers were instructed in the education of deaf children so that they could be integrated into regular classes with hearing children. "In 1821 Graser initiated an experimental school along these lines, thus anticipating mainstreaming... by 150 years." (Moores 1987, p. 52). Influenced by Graser, the deaf were integrated into the public school programmes in several German countries, but the system was abandoned after a few years because of the difficulties the children encountered in academic progress (Bender 1970, Gordon 1885a, in Moores 1987, p. 52).

Friedrich Moritz Hill: The great German reformer

A turning point in German countries, and in Scandinavia as well, came with the great German reformer Friedrich Moritz Hill (1805-1874) (Anderson, P. 1960, p. 27).

Hill was born in Breslau on December 8, 1805, where his father was a military musician. The boy showed talents for music but his mother was of the opinion that he was going to be a teacher. At the teacher seminary Hill became influenced by students of the famous educator Pestalozzi. He passed his examinations and came with a scholarship to Berlin. Hill also played several instruments, especially he was gifted in the playing of the violin. He had no plans of becoming a teacher for the deaf but was in 1829 ordered by the Prussian ministry to the school for the deaf in Berlin to be trained as a teacher. "A dark shadow fell over my life", Hill is supposed to have uttered when informed of the decision. Driven by the well-developed Prussian feeling of duty ("Pflicht"), however, he threw himself into a lifelong work for deaf people. In 1830 he was appointed the leading (1.) teacher at the school for the deaf by the teacher seminary in Weissenfels. According to Anderson, Hill was the first that really went into the teaching problems of the deaf. Hill was of the opinion that drilled questions and answers might impress observers but to acquire spontaneous speech, really to apply speech as an expression of the inner life, it was necessary that language became an integral part of the daily life of the deaf. Hill wrote articles in periodicals and in 1840 he published a book about the teaching of deaf-mute children. This book totally broke with the methods in language teaching mostly applied in German countries up to that time - the training of language through the rules of grammar. Hill's main thesis was that the acquisition of language in deaf children had to follow the same path as for hearing children in that language was to become a drive, a need necessary in mastering the interests and problems of daily life. According to Anderson, Hill totally reformed the teaching of the deaf on the basis of the speech method, and it is above all due to him that the speech method (the oral teaching) in the last half of the nineteenth century superseded the manual method in most of the European countries (Anderson, P. 1960, pp. 27-31).

The deaf Norwegian, Andreas Christian Møller, remained teacher at the school in Trondheim to 1855. However, after the retirement of his father in 1838, the question of the leadership of the school became more and more a matter of opinion. The school granted a scholarship to cand.theol. Lars Smith in 1842 who

at that time studied under Moritz Hill in Weissenfels. In 1844 Smith returned to Trondheim and from that time a new chapter in the teaching of deaf in Norway began as Smith started at once to make plans for changing the teaching in an oralist direction.

The Norwegian Fredrik Glad Balchen and Moritz Hill

Smith became teacher at the school in Trondheim in 1845 and director in 1846. In fact, Smith had as early as 1844 proposed to move the school to the capital and to base the teaching on the speech method. This did not happen, because the Norwegian parliament was opposed to it, but the parliament granted a scholarship based on Smith's ideas to the person who wished to found a private school for the deaf based on the speech method in the capital. This scholarship was given to cand.philos, teacher at Nissen school, Fredrik Glad Balchen (1815-1899) (Anderson, P. 1960, pp. 59, 65). Balchen visited schools for the deaf in several countries in Europe, also Moritz Hill in Weissenfels. He became convinced that the speech method was the best teaching method and Hill was to be his friend for life. In 1848 in Oslo, Balchen, supported by state means, founded his private school for the deaf with 2-3 pupils, in official document named "Kristiania Døvstummeanstalt", in daily-life language "Balchens Døvstummeinstitut" or "Balchens skole for døve" (present name: *Skådalen Resource Centre for Special Education of the Hearing Impaired and the Deaf-blind*). Balchen was originally opposed to residential schools but the number of students, who came from all over the country, increased very fast and in 1857 the school moved and became a residential school. He was not a fanatic and he applied signs when necessary in teaching of concepts. Balchen was to become very influential in the development of schools for the deaf in Norway. The two next private schools were founded in 1850, one in Bergen, and one in Kristiansand, both based on the educational ideas of Balchen. Later schools founded in the last part of the nineteenth century in Norway all practiced the oral method and the founders had either been teachers at Balchen's school or studied the teaching at his school (Anderson, P. 1960, pp. 67, 68, 106).

However - as we have seen - the first teacher of the deaf in Norway, Andreas Christian Møller, was himself a deaf person, and the first philosophy and method in Norwegian teaching of the deaf was that of manualism based on the deaf's own sign language.

"Abnormal" children.

The term "abnormal" has been known in England at from least 1850-55.⁶⁸ In Norway the term "abnormal" has also been known since the midst of the nineteenth century. The first official use of the term "abnormskole" (School for the Abnormals) in Norway seems to have been 1877 when the Norwegian Parliament (Norw. "Stortinget") appointed a Royal Commission to propose an act for the schools of the deaf and dumb, the blind, and the feeble-minded, the three branches of the "Abnormskole", as they termed it (Feiring 1994, p. 12). Schools for deaf, blind (see above) and feeble-minded children already existed at this time. However, they were not compulsory as were the schools for "normal" children (Norw. "Almueskolen"). Until the 1950s the term "normalization" had

⁶⁸Ab+normal. "Abnormal" is replacing "anormal" from Medieval Latin *anormalus*, variant of ML, Late Latin *anomalus*. English "anomalous" is known from 1640-50. Abnormal is influenced by Latin *norma*. See "normal."

never been heard by most workers in human service areas. Today, it is a captivating watchword standing for a whole new ideology of human management. However, this ideology had its roots in the Scandinavian countries as early as the nineteenth century. In the first paragraph of the Act proposal of the Norwegian Royal Commission in 1879 we can read as follows:

Deaf and dumb, blind, and feeble-minded children shall in regard to this act be directed to the Institutions of Special Education and Fostering. The goal of these schools for abnormal children shall be to raise the pupils as close as possible to the level of Christian and civic enlightenment set by the public act of the 'Almueskole' through fostering and education and train them especially in practical work. (O.prp. No. 2 1879. Indst O. No 12 1881. In Feiring 1994, pp. 13-14).

The Act passed in the Norwegian Parliament in 1881 and was implemented for the deaf and dumb in 1883, the blind in 1885, and the feeble-minded in 1891 (Feiring 1994, p. 17).⁶⁹ A further step in the direction of "normalization" was taken in 1915, at which time the term "abnorm" (abnormal) was removed from official documents. In the same year, the Act of the School for the Abnormals ("Abnormskolen") was replaced with the "Act for the Deaf, Blind and Mentally Retarded" (Feiring 1994, p. 18).

The term "normal" emerged in the sixteenth century (as early as 1520-30) and has the same root as norm, which comes from Latin *norma*, "carpenter's square." Latin *normalis*, then, designating "made according to a carpenter's square." Historically, then, the connotations of "normal" were always in reference to "correct," "good," "right," as compared to something "incorrect," "bad," "wrong", i.e. the abnormal, the deviance, the deviant.⁷⁰ This is worth remembering since there is no rule forbidding us to mean something positive by the term "abnormal." Historically, however, the connotation is negative. Norms (the English term has been known since 1815-25) are good, and normalize (1860-65) is good too.

Contribution to world culture of congenitally deaf persons in the nineteenth century

Nearly all records of congenitally deaf persons until the twentieth century in Europe and the United States are of deaf painters (lithographers, etc.).

Of the few records of congenitally deaf persons in Europe should be mentioned:

René Pierre Charles Princeteau (1843-1914), a popular nineteenth-century painter of equestrian and military scenes, made his most enduring mark on French art as Henri de Toulouse-Lautrec's first teacher. He was born deaf at Libourne, France, in 1843 (Mannes, J.P. 1987, p. 299).

Valentín de Zubiaurre (1879-1963) was born deaf on August 22, 1879, in Madrid, and became one of Spain's foremost painters of the twentieth century. His father, also named Valentín de Zubiaurre, was a Basque musician and director of the Royal Chapel of Music in Madrid, and always retained a family residence in the northern province of Viscaya.

Zubiaurre's brother Ramón (1882-1969), also deaf from birth, was a well-known artist whose most successful paintings reflected themes rooted in his pro-

⁶⁹Children who had a physical impairment, "the crippled" ("vanføre") were not included in the Act. The first school for them was founded in 1892 - the Work School for the Crippled ("Arbeidsskolen for vanføre"). (Feiring 1994, pp. 10, 18).

⁷⁰The term "deviant" - referring to a person (or a thing) that departs markedly from the accepted standard - has been known since the fourteenth century.

vincial Basque background. Accepting neither the landscape methods of his contemporary Joaquín Sorolla y Bastida nor Picasso's cubism, Zubiaurre often was criticized for being old fashioned and out of step with modern artistic trends. Politics, too, interfered with the acceptance of his works, for in the 1950s, when he returned to Spain after 10 years in Latin America, he was suspected of communist allegiances. During his lifetime he achieved more fame outside of Spain - in Latin America, France, and Italy - than in his native country.

In addition to his artistic endeavours, Zubiaurre was active in Spain's deaf community (Loe,E.F. 1987, pp. 349, 351).

Alfred Reginald Thomson (1894-1979) was born in Bangalore, Mysore, India. His father, George Thomson, was an inland revenue paymaster for the British army stationed there and held the rank of major. An army doctor pronounced Alfred born deaf when he failed to respond to his father's voice. Alfred was brought to England to be educated. He was early interested in drawing and he became a famous painter. Thomson was the first painter in history allowed the subject of the interior of the House of Commons and of the House of Lords. He painted both houses in session. This involved visits of many famous people to his studio, including Winston Churchill, Clement Attlee, and Harold MacMillan. These two large pictures branded Thomson as one of the greatest specialists in the difficult art of composite groups (Dimmock.A.F. 1987, pp. 291-292).⁷¹

The origin of modern otology

In the nineteenth century modern otology began, with the surgical advances of Sir Astley Cooper in London who cut into the eardrum to ease certain cases of

⁷¹Although not congenitally deaf, we mention Konstantin Tsiolkovsky's, Charles Henri Nicolle's and Gustinus Ambrosi's contribution to world culture.

Konstantin Eduardovich Tsiolkovsky (1857-1935) received many honours in his lifetime for his extensive research on rocket engines and other astronomical work. He was born in Russia and lost his hearing from scarlet fever when he was ten years old. As a child, Tsiolkovsky was always dreaming about flying, long before the first dirigible or airplane lifted into the sky. He studied science and mathematics at home and began to experiment in designing airships.

Tsiolkovsky wrote many books about rockets and space travel, including *Free Space* and *A Change in the Earth's Relative Gravity*. He also wrote science fiction such as *On the Moon* and *A Dream of the Earth and the Sky*, which helped popularize his technical work on rocketry.

Tsiolkovsky was one of the first scientists to describe in detail the effects of weightlessness in space. He developed the mathematical formula to calculate the velocity a rocket needed to escape the Earth's pull of gravity. This deaf scientist is a hero in Russia. His statue is in a museum in Moscow and a crater on our Moon is named in his honour (Lang,H. 1994, A24).

Charles Henri Nicolle (1866-1936) was the first deaf person in history to win a Nobel Prize. He was profoundly deafened while he was a teenager.

Among his many discoveries was that influenza is caused by a virus.

During an outbreak of typhus fever, Nicolle investigated the louse as a possible carrier of this disease. His extensive research on the microorganism *Rickettsia* saved thousands of lives and he was awarded the 1928 Nobel Prize for Physiology or Medicine for this discovery. In 1932, Nicolle was appointed the chair of experimental medicine at the College de France, one of the greatest honours for a physician in his country. He was also made a commander of the Legion of Honour in 1920 and received the Orisis Prize of the Academy of Sciences in 1927 (Lang,H. 1994, A21).

Born in Eisenstadt, Austria, Gustinus Ambrosi (1893-1975), the talented musician and sculptor, was best known for his classic sculptures in bronze and marble. He lost his hearing at the age of six after a bout of meningitis and smashed his treasured violin when he realized he could no longer hear. Ambrosi was a gifted poet, graphic artist and philosopher, although he was known primarily for his lifelike busts. He committed suicide on July 1, 1975, in Vienna (Turkington,C., Sussman,A.E. 1992, p. 8).

deafness. Gaspard Itard explored the diseases of the ear while Marie-Jean-Pierre Flourens discussed the action of the semicircular canals and realized that the acoustic nerve has branches for hearing and for balance. In 1851 Alfonso Corti (1822-1888), an Italian anatomist, published studies about the organ that now bears his name. With the aid of a powerful compound microscope, Corti traced the basilar membrane attached to the lamina and detected thousands of tiny hair cells that rest on the membrane. Now known collectively as the organ of Corti, these cells make up the actual hearing organ and are linked to the brain through the auditory nerve (Turkington,C., Sussman,A.E. 1992, p. 52). In 1861 Prosper Ménière (1799-1862), a French physician, reported the case of a girl with vertigo, nausea and tinnitus (Turkington,C., Sussman,A.E. 1992, p.148). Later, the suffering in the inner ear - paroxysmal labyrinthine vertigo - had the name Ménière ('s) disease.⁷²

Some aspects of the development of deaf education in the United States of America

Of the few records of congenitally deaf persons from the eighteenth century should be mentioned that of the painter William Mercer (1765-1839), and John Jr. Brewster (1776-1854), one of New England's most accomplished folk artists (i.e. painting) (Turkington,C., Sussman,A.E. 1992, p. 38).

The French method influenced education of deaf people in the United States from its beginning.

William Thornton, Francis Green, the Bolling family

The first work on deafness in America, was an essay published in 1793 by William Thornton, more famous as the architect of the original National Capitol building in Washington: "On the mode of teaching the surd or deaf, and consequently dumb, to speak", appended to *Cadmus: A Treatise on the Elements of Written Language* (Winzer,M.A. 1993, p. 86). In the late eighteenth century Boston-born Francis Green(e) (1742-1809), who had a son that was found to be deaf at six months of age, began his work for deaf people. He wrote about the Braidwood school and, under a pseudonym translated works of L'Epée into English. Although he judged his efforts to be a failure, he is still remembered as the first man in America to advocate the oral method of instruction for deaf children (Winzer,M.A. 1993, pp. 87-88).

The first person to work with the deaf in a capacity other than that of private tutor probably was John Stanford, chaplain to the almshouse of New York City, who in 1810 undertook the education of several deaf children he encountered in his ministry.

Colonel William Bolling, whose three deaf siblings had been educated in Edinburgh, himself had two deaf children, William Albert and Mary. In 1812 the Colonel learned that John Braidwood, grandson of Thomas Braidwood, was in the United States and invited him to Virginia to establish a school. In 1815 Colonel Bolling turned over a family estate to Braidwood and paid him a salary in return for teaching four or five students. This school did not become permanent; Braidwood disappeared from Virginia in 1817 and went to New York (Moore 1987, pp. 57-58).

⁷²A disorder characterized by recurrent prostrating vertigo, sensory hearing loss, and tinnitus, associated with generalized dilation of the membranous labyrinth (*endolymphatic hydrops*).

The Gallaudet family

Thomas Hopkins Gallaudet and the Cogswell family

In 1815, the founders of the first public school for deaf children sent Thomas Hopkins Gallaudet to Europe.

The inspiration behind the establishment of the first permanent school for deaf students in the United States was Alice Cogswell (1805-1830). She was born in 1805 in Hartford, Connecticut, the third daughter of Dr. Mason Fitch Cogswell and his wife, Mary.

Co-founder of the American School for the Deaf, the Connecticut surgeon and Yale University professor Mason Fitch Cogswell (1761-1830) first became interested in deafness when his daughter Alice became deaf. Unable to find a school for the deaf in the beginning of nineteenth-century America, Cogswell sent Gallaudet to Europe to learn how to teach deaf children. When Gallaudet returned with Laurent Clerc, Cogswell - together with Gallaudet and 10 Hartford city fathers - founded the American School for the Deaf in Hartford (Turkington, C., Sussman, A.E. 1992, pp. 49-50).

When Alice was two years old, she contracted cerebrospinal meningitis and lost her hearing before she had completely learned to speak. Whatever speech she had at that point was almost gone by the time she was four, and she could hear very little. Although bright and eager to learn, she fell behind other children her age in spite of the efforts of her family to teach her.

Fortunately for Alice, her neighbors were the Thomas Hopkins Gallaudet family. Alice played with Gallaudet's children and communicated with them using her own code of gestures.

One day, when Gallaudet spelled "hat" for Alice on the ground, using his hat as an illustration, Alice immediately understood that objects had written names and demanded to learn the names of other objects. This was the beginning of real communication between Gallaudet and a deaf child and the start of a lifelong interest for Gallaudet.

When Gallaudet subsequently opened the American Asylum for the Deaf and Dumb in 1817 (now the American School for the Deaf), Alice was first in line to attend, carrying a slate with her to communicate with those who did not know sign language.

Alice, who believed she could not live without her father, died 13 days after he had succumbed to pneumonia in 1830. She was 25 years old (Turkington, C., Sussman, A.E. 1992, p. 49).

Gallaudet's intention was to observe the oral method in London and the French method in Paris. However, difficulties, which probably were linked to the unwillingness of the Braidwoods to share their knowledge, prevented him from studying their oral method. It is also said that Gallaudet discovered that the founder of the English method demanded payment in return for sharing his knowledge of deaf education. Unable to pay, Gallaudet continued on to France. A reason could also be that John Braidwood at that time was establishing a school in Virginia, and the family was not anxious to train a rival in the United States (Moore 1987, p. 59).

Gallaudet and Laurent Clerc

According to Lane, Gallaudet had recourse to the Abbé Sicard who, as it happened, was then in London presenting his "stars" Massieu and Laurent Clerc to members of Parliament and large crowds of interested spectators. Sicard invited Gallaudet to Paris (Lane 1984b, p. 9). Anyway, Gallaudet travelled to Paris in 1816 to observe with Sicard. He returned to the United States, accompanied by Laurent Clerc, a teacher for the deaf at the Paris Institute. Laurent Clerc was

himself deaf and he was educated by Massieu who, as we know, was a student of Sicard.⁷³

At the Institute, Clerc, as we know, met Thomas Hopkins Gallaudet, who convinced Clerc to return with him to the United States for three year to help establish a school for deaf students.

Gallaudet and Clerc travelled on the same ship. On the fifty-two-day journey Clerc taught Gallaudet sign language, and Gallaudet taught him the English language. Once in the United States, Gallaudet and Clerc raised \$5,000 at presentations and special programmes they conducted throughout New England, an amount that was later matched by the Connecticut General Assembly.

The first school for the deaf in the United States of America: The American School for the Deaf

With this money, the American School for the Deaf opened its doors in 1817 in Hartford, Connecticut with seven pupils. The next year, Clerc married one of these, Eliza Boardman, and decided to remain in America. He returned to France to visit only three times (Turkington,C., Sussman,A.E. 1992, p. 45).

A number of earlier attempts had been made to educate deaf children in the United States, since it was expensive and distressing for families to send their deaf children to Europe for an education. Around 1811 the Reverend John Stanford attempted to teach a group of deaf students in a New York City almshouse. A year later John Braidwood, an alcoholic member of the English Braidwood family, tried to launch a programme in New York and later in Baltimore. Both attempts were shortlived (Garretson,M.D. 1987, p. 26).

The American School for the Deaf (originally known as the American Asylum for the Education and Instruction of Deaf and Dumb Persons) opened its doors April 15, 1817, with a class of seven students.

Immediately successful, it became the first recipient of state aid to elementary and secondary education in the United States when the state government awarded the school a legislative grant in 1819.

Since then, almost 5,000 students have graduated from the school in Hartford, which has evolved from a small educational institution for deaf children to a multifaceted organization offering more than 75 different programmes and services to the deaf community and the general public (Turkington,C., Sussman,A.E. 1992, p. 11).

Gallaudet worked out the first teaching method at the new school probably with much help from Clerc. They were in favour of the early use of manual signs. Fingerspelling was also introduced early, followed by written language. The form of fingerspelling used was based upon the one-handed alphabet used in France at that time (Evans,L. 1982, p. 7).

Although Clerc could not speak, he had great political influence and could write fluently in French and English. With these skills, he was able to convince Americans that deaf children could be educated and that sign language was the best type of communication to use while teaching them. At the age of 73, Clerc retired after 50 years of teaching. He died on July 18, 1869, and was buried beside his wife in Hartford (Turkington,C., Sussman,A.E. 1992, p. 45).

⁷³Clerc, Laurent (1785-1869),the leader in education for deaf people, was born in LaBalme les Grottes, the son of a family noted in local politics.

Deafened at age one after an infection following a facial burn, Clerc was taken to the Paris Institute. By the age of 20 he had completed his education and was teaching classes at the institute.

It seems to be the opinion of everyone concerned with the American Sign Language that it is based on the French sign system imported by Clerc. However, there were deaf people using signs in the United States at that time, and Sacks is probably right saying that the French system "amalgamated with the indigenous sign language here...to form a uniquely expressive and powerful hybrid, American Sign Language (ASL)." (Sacks 1989, 1990, p. 23). After that and up to the end of the twentieth century ASL has developed on its own. This language is as its name states *American*, not French, although there still are significant similarities between the two languages.

It is asserted that the manual alphabet is more applied in ASL than e.g. in Norwegian Sign Language.

More schools for the deaf in the United States of America

More schools for the deaf were to come, e.g. in 1818 the New York Institution for the Deaf and Dumb. This was the second school for the deaf, however, the first day school for the deaf in the United States, although it soon evolved into a residential school. The third school was established in Philadelphia, Pennsylvania, in 1820. In 1822 came the first state school for deaf children in Kentucky. With the opening of further schools the use of manual communication in teaching remained dominant until the founding of the Clarke School at Northampton, Massachusetts, dedicated to pure oral teaching. The experiences of the schools in New York and Philadelphia were similar in that each was established independently, experienced difficulty, and then turned to the American School in Hartford for a principal to organize the school and establish a curriculum. As a result, the schools had common curricula, teacher-training procedures, and educational philosophies. According to Moores, these three schools, with the American School as first among equals, were to provide the leadership for education of the deaf for generations. Later schools were based on their model, and they provided a great share of the leaders in the field until well after the Civil War (1861-1865) (Moores 1987, p. 61). A significant contribution of the American School was also the publication of the oldest professional educational journal in the United States, *American Annals of the Deaf* - at present published jointly five times a year by the Convention of American Instructors of the Deaf (CAID) and the Conference of Educational Administrators Serving the Deaf (CEASD). The journal was first published in 1847 by the faculty of the American School (Turkington, C., Sussman, A.E. 1992, p. 9).

Many people believe that the Clarke School was the first permanent oral-only school for the deaf in the United States. Moores informs us that this is incorrect, the first oral-only school was the New York Institution for Impaired Instruction, now the Lexington School for the Deaf. The New York school, not to be confused with the New York Institution founded in 1818, grew out of a private oral school started in 1864 by Isaac and Hannah Rosenfeld. The Rosenfelds wished to extend the benefits of the training to children whose parents could not pay. Reorganized with substantial philanthropic support, the school opened on March 1, 1867, seven months before the Clarke School (Moores 1987, p. 69).

In the fifty years after 1817 twenty-four institutions for deaf students were established in the United States. By 1880 the country boasted fifty-five schools (Winzer, M.A. 1993, p. 102).

In the course of history deafness had been viewed as a more severe handicap than blindness. The schools for the deaf demonstrated the learning possibilities of deaf children. At first, however, emphasis very much was laid on teaching ethics and religion - but it should not be forgotten that religion at that time was

regarded as most important to learn also for hearing children. The dominant opinion was that deaf children could - and should - only learn and be taught very simple handicraft work. At first, schools for the deaf generally taught carpentry and shoemaking. Later, sloyd (Norw. "sløyd") woodwork was widely taught both for hearing and sighted children and also for deaf and blind children. With industrialization the teaching of manual work was somewhat extended, but the characteristics of "carpentry" remained (The Germans have a good term: "Handwerkerei"). A study of graduates of the Ontario Institution for the Deaf and Dumb (Canada) found that many pursued school-taught trades. In 1883 only two trades - carpentry and shoemaking - were taught at the Ontario Institution. Yet, of 47 males graduated, 53.3. percent were employed in these businesses. Females seemed to have less occupational options than males (Winzer, M.A. 1993, p. 182).

Thomas Hopkins Gallaudet married one of his deaf pupils, Sophia Fowler, in June 1821. With her he had eight children, four sons and four daughters. As Thomas Hopkins dominated the education of the deaf in the first half of the nineteenth century, so his sons, Thomas, the eldest, and especially Edward Miner (1837-1917), the youngest, assumed leadership in the latter half.

Thomas Gallaudet founded the first American Church for the Deaf in 1859, the Church Mission for Deaf Mutes in 1872, and the Gallaudet Home for Aged and Infirm Deaf Mutes in 1875 (Kent 1922, in Winzer, M.A. 1993, p. 123).

Edward Miner Gallaudet

Edward Miner Gallaudet, the youngest son of Thomas Hopkins, became deeply embroiled in the agitation to provide college facilities to deaf persons. On April 8, 1864, degree-granting rights were conferred under an act to authorize the "Columbia Institution for the Deaf and Dumb and the Blind" to confer degrees. The National Deaf Mute College became the highest department of the Columbia Institution, under the care of the national government, with Gallaudet at the helm and Abraham Lincoln as *ex officio* patron. In honour of Thomas Hopkins, the name was changed to Gallaudet College in 1894 and is today known as Gallaudet University (Winzer, M.A. 1993, pp. 124-125). The method of communication for instruction at that time included signing and fingerspelling with speech and speech-reading (lip-reading). Edward Miner Gallaudet described this approach as the *combined system*.

Gallaudet University in Washington, D.C. is the only deaf university in the world.

Edward Miner Gallaudet became central in the development of oral education in the United States.

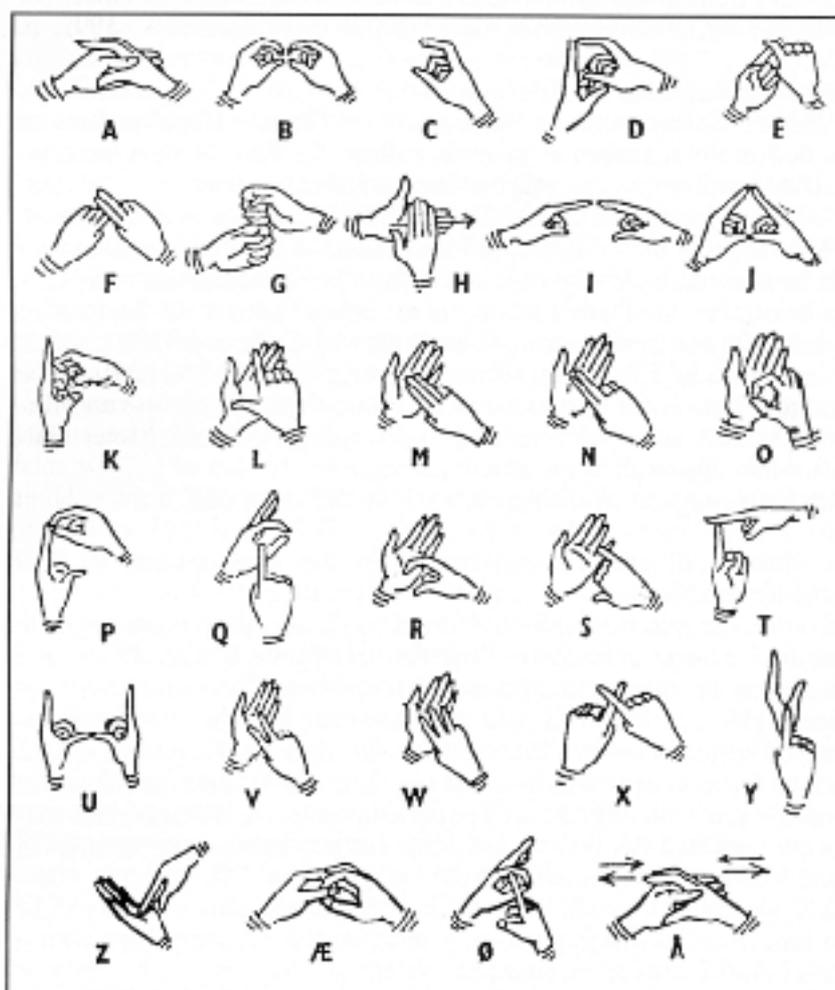
"Undoubtedly," according to Moores, "E.M. Gallaudet played the key role in establishing oral education in schools for the deaf in the United States, and he was instrumental in gaining acceptance of a combined oral-manual philosophy." (Moores 1987, p. 75). Gallaudet advocated the introduction of articulation as a branch of learning in all schools for the deaf in the United States. Moores refers to Jones (1918) who pointed out "that Gallaudet's position was consistent over the years: In 1868 he was in opposition to the the prevalent manual-only system, and in 1899 he was speaking out just as strongly against the dominant wave of the oral-only method." (Moores 1987, p. 75).

Gallaudet's philosophy should not sink into oblivion at a time - the end of the twentieth century - in which pure oralism is still alive competing with a kind of manualism hostile to all teaching of speech.

The Convention of American Instructors of the Deaf and Dumb

As for blind education, the nineteenth century was the century of the emerging professionalization of deaf teaching. Being first on the scene in American special education, teachers of deaf persons were the first to form a permanent professional organization. The Convention of American Instructors of the Deaf and Dumb, founded in 1850 at a meeting at the New York Institution for the Deaf and Dumb, was the first formal national group of special education teachers in North America and is among the four oldest national educational organizations in the United States (Winzer, M.A. 1993, p. 228).

Manual alphabets



The Norwegian two-handed manual alphabet

Photo: Døves Forlag A/S, Bergen

The system of communication called "fingerspelling" involves spelling out words in an alphabetical language by using the letters of the manual alphabet - with hand shapes and positions corresponding to each letter of the written alphabet .

Conversations can be entirely fingerspelled, but among deaf individuals, fingerspelling is more often used in conjunction with sign language for proper names and terms for which there are no signs. The manual alphabet can be modified for use with deaf-blind people by making hand shapes and movements on the palm of the receiver of the message.

Fingerspelling alone is used more often among people who are both deaf and blind, presented either at close distance or inside the hand. It takes only a few hours to learn the individual hand shapes, but becoming fluent as a fingerspeller is quite difficult. The drawback to the fingerspelling as the only mode of communication is its relative slowness. According to Turkington and Sussman, for people very experienced in its use, the average fingerspelling rate is about 60 words a minute, which is only about 40% as fast as the normal speaking rate.

Although very rarely used as the primary mode of communication in schools for deaf students today, fingerspelling combined with spoken English is known as the Rochester Method (Turkington,C., Sussman,A.E. 1992, pp. 76-77).

There are two main types of manual alphabets: The two-handed and the one-handed. Manual alphabets exist in many countries. Fingerspelling by help of the manual alphabet can either be used by itself or in miscellaneous combinations, e.g. together with speech, manual signing or both (Turkington,C., Sussman,A.E. 1992, pp. 76-77).

Winzer states that there is evidence of the use of manual alphabets dating from preclassical times that probably owe their origin to the development of manual signs for numbers. Dactylology or fingerspelling is a borrowed art, formulated neither by deaf persons nor by their teachers (Winzer,M.A. 1993, p. 53).

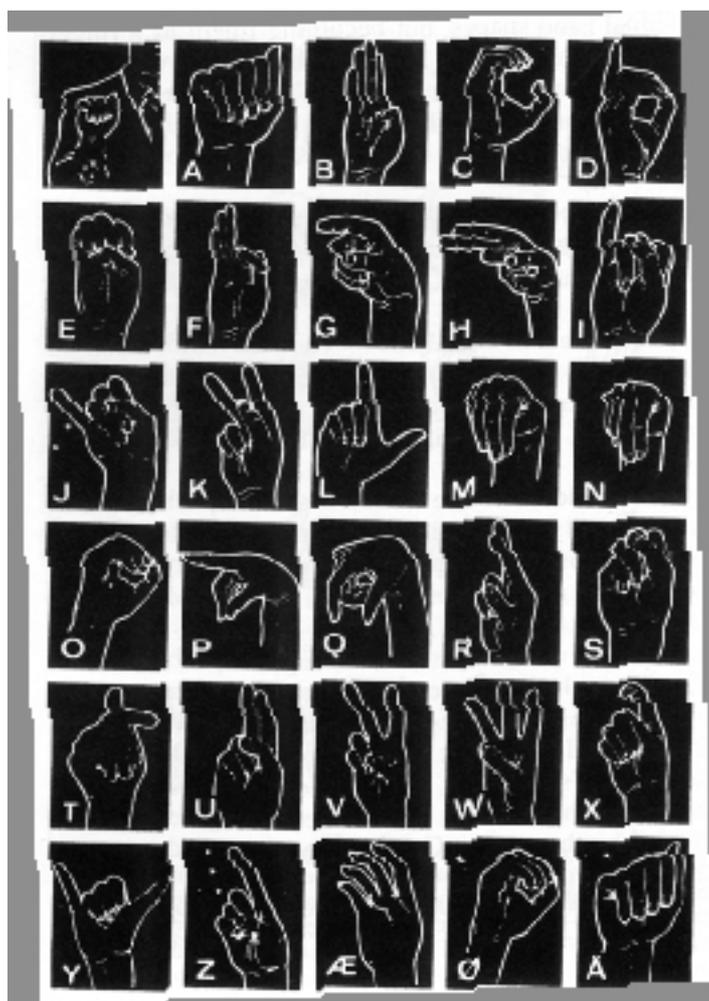
According to Winzer, evidence of the existence of finger alphabets can be traced from Assyrian antiquity to the seventeenth century, and there are numerous references in the literature to single- and double-handed alphabets (Winzer,M.A. 1993, p. 53). The earliest finger alphabet is contained in a later production of the Venerable Bede's *Historia Ecclesiastica Gentis Anglorum* (History of the Anglo-Saxon Church) of 731, which refers to three different forms of manual alphabets used by the ancient Greeks, Egyptians, and Romans.

"Early Vatican manuscripts show the hands making numbers to one million; European paintings, from the late fifteenth to the seventeenth century, also depict manual rhetoric. There is evidence, that two-handed or mixed alphabets of various forms were in use among school boys in Spain, France, and England centuries ago, and monks under rigid vows of silence and other scholars who had special reasons to prize silent, secret methods of communication doubtless used many forms of manual communication." (Lane 1976, Plann 1991, in Winzer,M.A. 1993, p.53).

The present American one-handed alphabet is very similar to the old French manual alphabet. Nowadays, we know the reason for this - cf. Clerc. However, this was a strange discovery for the author of this book. When discovering this he did not know anything about ASL, but he used himself an alphabet called the "International manual alphabet".⁷⁴ By coincidence he some years ago saw a pho-

⁷⁴A manual alphabet devised by the World Federation of the Deaf and used primarily in Scandinavian countries (Turkington,C., Sussman,A.E. 1992, p. 105).

tograph of the American one-handed manual alphabet and observed the almost total identity with the international one. Then he read Evans (1982), and there found an old drawing of the French manual alphabet and, of course, then observed the similarity between the American and the French one. Thus, many one-handed alphabets nowadays seems to have their origin in the French one - also the "International hand alphabet". The French one is based on a Spanish one which in turn perhaps is based on an older Spanish one.



The International manual alphabet with the additional three Norwegian letters æ, ø, å

Photo: Døves Forlag A/S, Bergen

Historians suspect that the manual alphabet Ponce de León used was probably the same one published by the Franciscan monk Melchior de Yerba in 1593. In 1593 Yerba published *A Refuge for the Infirm*, which contained prayers for sick people, each accompanied by a sketch of hand configurations that the author attributed to Saint Bonavente (Winzer, M.A. 1993, p. 53).

According to Perelló, Bonet's famous book has nice pictures of the finger positions for each letter, copied from a book by Melchior de Yerba that appeared in 1593. This finger alphabet is the same as the one-handed alphabet in use in many countries today. (Perelló, J. 1987, p.264).

According to Evans, it is likely that Bonet's alphabet was an adaptation of existing systems, possibly one of the earlier Italian manual alphabets. Evans points to one published already in Rosselius's *Thesaurus* of 1579 (an illustration appears in Savage, Evans, and Savage, 1981) (Evans, L. 1982, p. 2).

Of historical interest is Saboureux's description of what Pereira called "dactylogy":

"I ought to explain the manual alphabet used by M. Pereire to spare himself the inconvenience of holding a pen and to avoid the slowness of handwriting, and used by my uncle to teach me about religion.

This kind of Spanish manual alphabet involves the fingers of one hand; it consists of twenty-five signs for the letters of the alphabet, excluding *k* and *w* which are not used in French, and of the signs invented by M. Pereire to make it conform to the rules of French pronunciation and spelling. Hence there are as many speech sounds (thirty-three or thirty-four) and as many clusters in normal writing (thirty-two or more, each cluster making a single speech sound) as there are signs in the manual alphabet, which for this reason I call *dactylogy*, the term adopted by M. Pereire. It is true that some letters and clusters vary in sound depending on the words in which they occur. In dactylogy, all these different sounds are expressed with a single letter or with a cluster of letters; altogether, the system includes more than eighty signs. The hand is used like a pen for making drawings in the air of the periods and accent marks and to indicate the capitals and small letters and abbreviations. The finger movements mark the long, medium, short, and very short pauses observed in speech. Dactylogy includes the signs for numbers and arithmetical operations. It is rapid and convenient as speech itself, and as expressive as good writing. Other signs can be added freely to accommodate the rules of prosody, music, poetry, and the like." (Saboureux in Lane 1984b, p. 26).

Traces of the Spanish/French one-handed alphabet can still be seen in many of the one-handed alphabets used today throughout the world. Even countries that do not use the Latin alphabet - such as Israel, which uses the Hebrew alphabet, or the former Soviet Union, which uses the Cyrillic alphabet (e.g. Russia) - still use a manual alphabet related to this old one. Unrelated to the old Spanish/French alphabet is the British two-handed system (Turkington, C., Sussman, A.E. 1992, pp. 76-77). The earliest version of the British two-handed fingerspelling system dates from the pamphlet *Digiti Lingua* (Finger language) of 1698 which, with modifications, has evolved as the present day two-handed manual alphabet (Evans, L. 1982, p. 3). With few changes, it is employed by deaf people in Great Britain and many Commonwealth countries (Winzer, M.A. 1993, p. 53).

A third type is the Swedish manual alphabet invented by Per Borg and exported to Portugal. It is the parent alphabet of the Swedish and Portuguese manual alphabets used today. Other types of manual alphabets developed in countries without written alphabetic systems, such as Japan and China. Japan uses a fingerspelling system based on syllables instead of single sounds, and although a Chinese manual alphabet is being developed, most deaf Chinese draw the outline of the Chinese characters in the air or on palms. (Turkington, C., Sussman, A.E. 1992, pp. 76-77).

Howe's remarkable comprehension of internal language and of touch

A generation before the establishment of the Clarke School, the teacher of blind people and of the deaf-blind girl Laura Bridgman, Dr. Howe, had some astonishing comments on the education of deaf people in his report for the year 1841 on Laura Bridgman. Howe seems to have anticipated one crucial aspect of the oralist stance. Although Howe does not really understand the essence of *manual sign language*, evaluating it as "natural", "wild", "gestural", "pantomimic", "non-arbitrary", his findings in fact demonstrate the possibility of another mode than hearing/speech to not only comprehend and express *another language than the phonetically based one, but also to very effectively comprehend and express the phonetically based language*. His comprehension, opinions and findings are of great historical interest and we quote him extensively in Appendix II.

Howe expresses some points which have relevance also 150 years later:

(1) He highlights and emphasizes one crucial aspect of oralism: The favouring of teaching the phonetically based language, the language of the vast majority of society. But:

(2) He does not only argue against sign language, he also argues against teaching of speech in achieving this goal and demonstrates the possibility that phonetically based language can be expressed effectively by another sense activity, by touch through fingerspelling.

(3) He presents - almost 100 years ahead of Vygotsky - a theory of "internal language" and of the connection, the interaction between internal language and vocalized language, and between the audible signs and reading.

The two latter parts of Howe's opinion are of great importance and his arguments against sign language - right, partly right or wrong (mostly wrong!) - should not lead to ignorance of what evidently is valuable in his comprehension. So, when the anti-oralist Oliver Sacks refers to Howe with contempt and calls him an "egregious example" of an oralist "reformer" (see later), he is throwing out the baby with the bath water.⁷⁵

The struggle between oralism and manualism goes on - the bells are ringing

Moore is right when stressing that oral education in the United States has its roots in two quite disparate movements. One movement favoured the addition of oral elements to the existing manual methods to produce a combined oral-manual system (cf. also the position of Edward Miner Gallaudet, above). The other focused on the establishment of an oral-only system, in which manual elements were not employed (Moore 1987, p. 65).

Horace Mann, one of the most influential early American educators, and Samuel Gridley Howe played an important role in the development of oralism in the United States. They brought into serious question the belief that attempts to teach oral communication to the congenitally deaf were doomed to failure in the majority of cases. In 1844 Mann and Howe returned from a tour of German schools for the deaf convinced of the superiority of the German (oral) method. Mann, as also Howe, fought for equal rights for all humans. Mann was a leader in the anti-slavery movement (Moore 1987, p. 65).

⁷⁵By the way, if it is of interest, we can supply the reader with more "discrediting" material: Howe was also very much interested in phrenology. His daughter, Laura (named after Laura Bridgman) tells from one of his travels to Europe, when he was in Rome, he visited together with some friends "the Roman galleries, measuring and discussing the *crania* of famous statues and busts..." (Richards, L.E. 1935, p. 140).

Gardiner Greene Hubbard and the Clarke School.

The establishment of the Clarke School in 1867 was due primarily to the efforts of Gardiner Greene Hubbard (1822-1897), a prominent Boston attorney. Hubbard had by age 35 also successfully introduced systems for gas lighting and for a fresh water supply in Cambridge, Massachusetts. In addition, he had built one of the earliest streetcar lines in America, connecting Cambridge with Boston. However, according to Mattingly, he would be best remembered for his early grasp of the profit and public service rendered by a properly run telephone system (Mattingly, P.H. 1987, p. 49). Hubbard was the father of Mabel, deaf due to an attack of scarlet fever at the age of five. The Hubbards taught deafened Mabel with limited success. Hubbard knew that deaf students in German countries were taught to speak and read lips. He was determined to establish a school in the United States using the German method (Blevins, B.G. 1987, p.188). When the effort to establish a school with state support was defeated, Hubbard founded a private school in Chelmsford, Massachusetts, under the leadership of Harriet B. Rogers, the tutor of the deaf Fanny Cushing (daughter of the governor of Rhode Island). Rogers was sister of one of the instructors of Laura Bridgman. When educating Fanny, Rogers combined speech and fingerspelling. However, Rogers became convinced that the two methods were counterproductive, and dropped fingerspelling in favour of teaching speech. Hubbard persisted in his efforts at the state level, and in 1867 he was successful. With the help of the endorsement of the governor of Massachusetts and a generous endowment by the merchant John Clarke the oral-only school in Northampton, Massachusetts, was established. Harriet Rogers was appointed the first principal (Moores 1987, p. 69). John Clarke, who was experiencing a progressive hearing loss, donated \$50,000 to start the first *permanent* purely orally school in the US. The Chelmsford School moved from Chelmsford, Massachusetts, to Northampton, and was incorporated as Clarke School in 1867 (President's Report 1991-1992, p. 7). Harriet B. Rogers was principal from the beginning to 1886. In 1886 she was succeeded by Caroline A. Yale who was principal to 1922.

The Clarke School is still (1993) employing the oral method for instruction and still is the oralist stronghold in the United States.

Hubbard became interested in Alexander Melville Bell's "visible speech". He sensed the possibilities of Bell's method for deaf people and had him visit the Clarke School. Hubbard's warm support of Bell and his science of recording sound began the successful challenge to the dominance of "sign" instruction, the mode which Gallaudet had made the traditional American norm a generation earlier (Mattingly, P.H. 1987, p. 50). Other oral schools followed Clarke School. By 1880 eleven oral schools were in operation, and in 1882, 9 percent of American deaf children were being taught by oral methods. By 1893 the ratio rose to 24.7 percent, and ten years later it was 48.4 percent (Winzer, M.A. 1993, p. 129).

One significant attempt to modify the pure oral approach was made at the Rochester School for the Deaf in New York state. Zenos Westervelt proposed the use of fingerspelling, but only in conjunction with speech and in the correct grammatical word order of English. This became known as the *Rochester method* which has seen revivals from time to time (Evans 1982, p. 8).

By the later part of the nineteenth century, there were in the United States two broad educational philosophies, one advocating exclusive oral teaching and the other supporting the use of combined oral and manual media.

During this period the views of Thomas Arnold and Alexander Graham Bell (1847-1922) were to the fore. Their work significantly influenced the educators of their day.

Alexander Graham Bell

Born on March 3, 1847, in Edinburgh, Scotland, to Melville and Eliza (Symonds) Bell, Alec (as the younger Bell was known) showed early signs of exceptional intelligence and creativity. He produced his first invention before the age of 13, a device for husking wheat. Alexander Graham Bell's work significantly influenced the educators of his day. Such experiments continued throughout his life, including not only the telephone but such things as kites, gliders, boats, metal detectors, respirators, an improved phonograph, and even designs for a heavier-than-air flying machine. (Winefield,R. 1987, p. 135).

The father of Alexander Graham - Alexander Melville - used his "visible speech" method in Washington, D.C. from 1881. His system gave success in teaching the deaf to speak. The system included the development of graphic diagrams, which were symbolic alphabetical characters representing the positions and motions of the vocal organs. Alexander Graham had already in 1871 in Boston, spending several weeks there, demonstrated his father's system. In 1872 he opened his own school in Boston for training teachers of the deaf, edited his pamphlet *Visible Speech Pioneer*, and continued to study and tutor. In 1873 he became a professor of vocal physiology at Boston University. Bell used fingerspelling and signing and had extensive contact with deaf people. He had an almost totally deaf mother, Eliza Bell. She could hear only with the aid of a rubber ear tube. One of Bell's students was Mabel Hubbard, who had been among the first pupils at the Clarke School. She had learned to lip-read, which was very rare at that time, and with the help of Bell she improved her speaking. Bell also tutored a young deaf boy by the name of George Sanders, and he lived with Sanders in the home of the boy's grandmother, where he conducted his experiments. Despite several years of tutoring, Sanders developed no proficiency in speech or speech-reading. In 1882 Bell conceded that George might benefit by enrolling in Gallaudet College. Bell became an USA citizen in 1882. Although Bell was an outstanding inventor, he considered his work with deaf people to be of primary importance. Towards the end of his life, Bell commented that "recognition of my work for and interest in the education of the deaf has always been more pleasing to me than even recognition of my work with the telephone." (In George,J. St. 1992, p.p. 22-23).



Alexander Graham Bell

Photo: NTB-photo



Edward Miner Gallaudet

Photo: Gallaudet University Archives

Bell received the patent for the telephone in 1876, at the age of 29, whereupon the Hubbards withdrew their opposition to their daughter's marrying a still young but no longer impoverished inventor. In July 1877 Bell married Mabel. Always inspired by her, Bell worked in the interest of deaf people all his life. According to Moores, however, Bell was forced to devote much of his attention to other questions, the most time-consuming and draining being a series of legal actions necessary to verify his claim upon the invention of the telephone (Moores 1987, p. 76).

The same year as Bell married he also began his campaign to establish day schools for deaf children. According to Winefield, at that time, almost all schools were residential. Bell felt that residential schools prevented students from developing good relationships with members of their families, or with hearing people in their own communities. He was able to put these feelings into practice when a Scottish businessman asked his assistance in starting a day school in Greencock, Scotland. Bell not only organized the school, but was also one of its first teachers. While it opened in 1878 with only three pupils, it was seen by Bell as a pilot project, and did much to whet his enthusiasm for establishing such schools in North America. His next involvement with day schools came five years later, this time in Washington, D.C.. He limited his class to six pupils, and arranged for a kindergarten class of normally hearing children to occupy the first floor of the building. Bell hoped that the children would mix at certain times of the day, thus enhancing the deaf children's desire and ability to speak and to read lips. In addition, a class for parents and friends of deaf children was formed in order to help them support what the children had learned. Despite Bell's enthusiasm over the results of the

school, it lasted only about two years. Problems in retaining a teacher, added to heavy demands upon Bell's time, forced the closing (Winefield,R. 1987, p. 136).

In 1879, when Bell moved to Washington, D.C., he met E.M. Gallaudet. In 1980 Bell received an Honorary Ph.D. from Gallaudet College.

The reason why he is so much in favour of English (in general: oral language) is that he sees English as the key to integration, and integration is the great goal for Bell. If a deaf person merely could sign, he would never be integrated in society. According to Winefield, Bell did approve fingerspelling with young children, and accepted nonformalized gestures. It was the formal gestures that, to Bell, were harmful, specifically the sign language developed in France by the Abbé de l'Épée. Winefield points out that Edward Miner Gallaudet claimed that the sign language of l'Épée was the natural language of the deaf. Bell disagreed, stating that sign language is no more natural to the deaf than English is natural to all hearing children.

"It is natural only in the same sense that English is natural to the American child. It is the language of the people by whom he is surrounded."

Bell never argued that sign language was a poor teaching tool. In fact, he admitted "the ease with which a deaf child acquires that language and its perfect adaptability for the purpose of developing the mind." (Bell, in Winefield,R. 1987, p. 138). The split between Bell and Gallaudet was above all due to Bell's comprehension of the relation between the methods of education and inheritance (see below on that matter). Another source of friction was the relationship between the American Association to Promote the Teaching of Speech to the Deaf and the older Convention of American Instructors of the Deaf (and Dumb). The efforts to merge them into one organization were not successful. Disagreements also in other matters made, in the course of time, Gallaudet and Bell very hostile toward one another.

How did a man like Bell work? From a scientific point of view his way of problemsolving is interesting. For example, he tells:

"A number of years ago I visited a large school for the deaf, and taught all the pupils to use their voices. In a few cases the effect was decidedly unpleasant, the voice resembling somewhat the cry of a peacock. The effect, indeed, was so unnatural and distressing to the ear that some of the teachers expressed the opinion that the vocal cords had been affected by the disease that had caused deafness. They thought, therefore, that it would hardly be worth while attempting to teach these children to speak. Knowing that the quality of the voice is chiefly determined by the shape of the passage through which it is passed, I did not consider it necessary to assume a defect in the vocal cords, but rather sought the cause of the peculiarity in some constriction of the passage-way higher up than the vocal cords.

I was careful to avoid discouraging the pupils by any expression of disapproval, so they were entirely unconscious of the fact that their voices were unpleasant. They had no hesitation, therefore, in repeating the disagreeable sound as often as I desired; and I encouraged them to repeat it a great many times, so that I might study the effect and become familiar with the sound. I then found it possible to imitate the effect myself. This was proof positive that the existence of the peculiarity was quite consistent with the possession of perfect vocal organs. Having acquired the ability to repeat the effect, I set myself to work to find out what I did with my mouth during the production of the sound. I could feel a constriction somewhere in the back part of the mouth, and therefore examined my vocal organs in a hand mirror while I depressed the tongue so as to exhibit the whole of the pharynx. At once the cause of the peculiarity became manifest. The muscles constituting the side walls of the pharynx were seen to be forcibly contracted, and they were approximated so closely together as almost to touch. After a little practice I found myself

able to move these muscles at will without making any sound. Then I tested the effect of the motion upon the quality of the voice. When the muscles were relaxed and the cavity of the pharynx expanded the quality of the voice was good, but the moment the side walls of the pharynx commenced to approach one another..., the character of the voice changed. It acquired a peculiar metallic ring, somewhat like the tone of a brass musical instrument. The effect became more and more disagreeable as the side walls approached, until the peculiarly distressing effect was produced, which I have likened to the cry of a peacock. Having gained this information I attempted to improve the voices of the children. For this purpose I gave them hand mirrors and taught them to depress their tongues so as to render visible the soft palate and back of the pharynx. I then made them look into my mouth while I silently contracted and expanded the pharynx. After some practice they were able to imitate the action." (Bell,A.G. 1911, pp. 19-20).

Bell's views sometimes were presented in an extreme form. Though he studied signs and acknowledged l'Épée's system, he presents English as an achievable and desirable alternative. According to Kyle, Arnold(1885, in Kyle), like Bell, knew the answer to the manual signing of children to be in showing children the more desirable alternative of spoken English as an attainable goal (Kyle,J. 1982, p. 26).

Thus, for the anti-oralists Alexander Graham Bell is the main enemy. Oliver Sacks refers to him, his predecessors and followers with contempt:

"There had been a rash of 'reformers' - Samuel Gridley Howe and Horace Mann were egregious examples - who clamored for an overthrow of the 'old-fashioned' sign language asylums and for the introduction of 'progressive' oralist schools. The Clarke School for the Deaf in Northampton, Massachusetts, was the first of these, opened in 1867. (It was the model and inspiration of the Northampton School in England, founded by Reverend Thomas Arnold the following year.) But the most important and powerful of these 'oralist' figures was Alexander Graham Bell, who was at once heir to a family tradition of teaching elocution and correcting speech impediments (his father and grandfather were both eminent in this), tied into a strange family mix of deafness denied (both his mother and his wife were deaf, but never acknowledged this) and, of course, a technological genius in his own right. When Bell threw all the weight of his immense authority and prestige into the advocacy of oralism, the scales were, finally, overbalanced and tipped..." (Sacks,O. 1990, p. 27).

Oralism and manualism: The triumph of oralism in the United States of America

By the opening decades of the twentieth century the great majority of deaf children in North America were educated by speech and lip-reading alone. By 1905, 96 percent of American schools for deaf students were designated as oral schools (Crouter 1907, in Winzer,M.A., p. 243). According to Winzer, the use of sign language was now considered a lower-class dialect and was forbidden in the schools (Winzer,M.A. 1993, p. 243).

For the last 200 years the most ardent dispute among educators of deaf persons and among deaf persons themselves has been over communication methods - the so-called "methods controversy" or "sign language controversy". The *manualists* - proponents of sign language - argue that sign languages are natural to deaf people, since they are based entirely on readily visible gestures, movements, and facial expressions. The extreme position of manualism defends sign language in all contexts and for all purposes. Therefore, according to manualists, deaf people should be encouraged to use signs. Opponents of sign languages are often called *oralists*. In its most extreme position oralism rejects all use of sign language, denying that sign languages are languages and that signing is natural to deaf people. According to the oralist position deaf people should communicate orally,

expressing themselves with speech and reading speech from the lips to receive information.

The tendency by some proponents of manualism (cf. Sacks) to question the motives of the oralists is dubious.

For example, Bell was in favour of what is called "eugenics", i.e. that the human species would improve by mating adaptable persons and make mating of not adaptable persons more difficult. A humanist reader of present time will often then associate this with a fascist opinion and - when applied - a fascist policy. Historically, however, there is no link between fascism and the eugenic movement, although eugenics became a part of fascist policy. It seems more to be a rule than the exception that persons in favour of eugenics at the same time were active in the struggle for equal rights for all humans. But since Bell meant that it was better to hear than to be deaf - both for the individual and the species - he was against marriages of deaf people, because he was of the opinion that it was more likely that deafness occurred when two deaf people married than when one deaf and one hearing person married. His studies of hereditary deafness convinced him that this was a fact. Bell was of the opinion that the U.S. system of education of the deaf had the effect of isolating deaf people from society and increasing the number of marriages of deaf people with other deaf people. Acknowledging the doubtful advisability of legislative interference, Bell recommended the elimination in programmes for the deaf of (1) educational segregation, (2) the "gesture language", and (3) deaf teachers (Moore 1987, p. 77).

Scepticism against deaf persons marrying other deaf persons was not exclusively an attitude of Bell and Howe, also some deaf people shared this opinion.

With financial support from Bell's own Volta Bureau, Fay (1843-1923) decided to test the validity of Bell's suppositions by examining all the marriages of deaf persons in the United States about which he could find information.⁷⁶

Cleve informs us that Fay set for himself four goals in his study of marriages, to find "true answers" to the following questions:

1) Are marriages of deaf persons more liable to result in deaf offspring than ordinary marriages?

2) Are marriages in which both partners are deaf more liable to result in deaf offspring than marriages in which one of the partners is deaf and the other a hearing person?

3) Are certain classes of the deaf, however they may marry, more liable than others to have deaf children?

4) Aside from the question of the liability of the offspring to deafness, are marriages in which both of the partners are deaf more likely to result happily than marriages in which one of the partners is deaf and the other is a hearing person?

He analyzed 4471 marriages of deaf people in the United States between 1801 and 1894 and concluded that Bell's fears, in general, was misplaced. Deaf people, through intermarriages, were not producing a deaf race, for only 8.67 percent of the children born to two deaf parents were deaf. With characteristic

⁷⁶Edward Allen Fay was a teacher, editor, administrator, and scholar at Gallaudet College from 1865 to 1923. According to Cleve, Fay's scholarship was impressive in quantity and breadth. *Marriages of the Deaf in America* was perhaps his most important publication. *Marriages* was Fay's response to a paper A.G. Bell first delivered in 1883 titled "Memoir upon the Formation of a Deaf Variety of the Human Race." (Cleve 1987b, pp. 426-427).

intellectual honesty, however, Fay did write that marriages between two deaf partners were "far more liable to result in deaf offspring" than marriages between hearing partners. Nevertheless, the most important factor in genetic deafness, Fay concluded, was the presence of deaf relatives in the family of one or both of the marriage partners, whether the partners were hearing, adventitiously deaf, or congenitally deaf.

Fay's fourth goal in his study of marriages reveals a great deal about his attitude toward deaf people. Despite the fact that *Marriages* is crammed with numbers, Fay was interested in deaf people as individuals. While admitting that his data for divorces and separations were limited, he reached the significant conclusion that marriages between two deaf individuals were happier than those in which one partner was hearing and one deaf (Cleve 1987b, pp. 426-427).

In the struggle for equal rights for all humans, oralists, broadly spoken, seems to have played a more active part than manualists. Howe's and Mann's struggle for freedom of all people is mentioned and Alexander Graham Bell and Gardiner Green Hubbard, his father-in-law, supported and fought for equal rights for women. In 1852 there were fourteen schools for deaf students in North America, only two of them employing women, for a total of three women. By 1868 there were fifty-one women teachers, or 34 percent of the total teaching corps. By 1895 women constituted 68 percent of the teachers, and in 1920 77 percent (Winzer, M.A. 1993, pp. 239, 246). This was the tendency also in common schools. In the case of deaf education, however, female numerical dominance was directly related to the rapid rise of oral modes of instruction. Bell and Hubbard worked actively for the employment of women as teachers of the deaf. In contrast, Edward Miner Gallaudet was cool, if not downright hostile, to the mounting numbers of women entering the profession. In accordance with that, the female numerical dominance in the later half of the nineteenth century was much greater in oral schools than in schools applying the manual method and the combined method. According to Winzer, the triumph of oralism in the United States at the dawn of the twentieth century is largely due to the struggle of the oralist female teachers of the deaf: "It was this articulate and dedicated group of women teachers who put manualism to rout and finally convinced legislators, parents, and other educators that the oral modes were the most suitable for the instruction of all deaf students." (Winzer, M.A. 1993, p. 243).

Howe and Bell fought for integration of *all* humans, people without impairment and with impairment, including deaf and blind people. They were in abstracto in opposition to residential schools because they believed they contributed to cultural isolation and could also contribute to more hereditary defects by encouraging marriages of like people. Segregation in residential schools or day schools could be a necessity - and therefore be promoted - but segregation should never be regarded as desirable. But day schools were preferred compared to residential schools.

Oralism - by Howe in its special version adapted to blindness and deaf-blindness - was the means to integration in the common human culture because the oral language was the core in this culture.

On the other hand, there seems to be a clear connection between the oralist ideology and the decline of deaf teachers. In the early schools for the deaf in several countries many deaf teachers were employed, as a rule with less salary and

lower status than hearing teachers. The importance of deaf teachers for the education based on sign language is obvious. However, deaf teachers have other contributions too. One of the first printed systems to help deaf children learn to speak, read and write syntactically correct sentences was devised in 1883 by a deaf teacher named Georg Wing. It used numbers and letters to represent the different parts of speech in written language ("Wing symbols").⁷⁷ Another example of the significant contribution by deaf teachers is the Fitzgerald Key - a printed system to help deaf children learn to speak, read and write syntactically correct English sentences.⁷⁸ The Fitzgerald Key was developed in 1929 at the Texas School for the Deaf by Edith Fitzgerald, a deaf supervising teaching.

Although oralists believed it was possible to teach deaf people to speak, a dominant opinion among them also was that deaf people could not teach other deaf people articulation, e.g. this was the opinion of Bell. Therefore deaf people had to be excluded from teaching.

In the United States by 1865 41 percent of the teachers of deaf students were deaf, by 1880 29 percent, by 1890 26 percent, by 1900 18 percent, by 1905 17 percent (Winzer, M.A. 1993, p. 246).

In the last half of the nineteenth century oralism probably was promoted by the promise of the coming of hearing aids. A hearing aid may be defined as any device to bring sound more effectively to the ear (Berger, K.W. 1987, p. 6).

The history of hearing aids

The history of hearing aids may be divided into three eras: pre-electric instruments, electric (carbon microphone) instruments, and electronic instruments. Electronic instrument history may further be divided chronologically into two-piece vacuum-tube hearing aids; one-piece vacuum-tube wearable aids; transistor aids; and hearing aids with integrated circuits.

The first (pre-electric) hearing aid - likely to have emerged with the origin of human beings - was the hand behind the ear. It is supposed that sea shells or animal horns with the ends cut off came next. Many centuries later ear trumpets were introduced. The first known printed mention of an instrument specifically designed for assisting impaired hearing is in a book published by Sir Francis Bacon in 1627. In a single short paragraph Bacon describes a simple funnel-type ear trumpet and mentions that in Spain there is an instrument "in use to be set to the ear, that helpeth somewhat those that are thick of hearing." (Berger, K.W. 1987, p. 7).

Ear trumpets were most typically of conical shape. One of the popular later trumpet types was in the shape of a dome. For mild hearing losses, a trumpet could be flattened at the side and held at the ear by a headband. This type of instrument often is referred to as an ear cornet. Another non-electric device that was popular and is still made in limited quantities in Europe is the speaking tube. This has two bell shaped speaking ends and is in the middle connected to the hearing impaired persons ear. The speaking tube is efficient in one-to-one communication because the speech goes directly from the speaker to the listener, thereby providing a good signal-to-noise-ratio.

⁷⁷Specifically, Wing placed number and letter symbols over words, phrases and clauses. The symbols were grouped into the "essentials," "modifying forms," "correctives" and "special symbols." There were eight "essential" symbols: subject, transitive verb, intransitive verb, passive verb, object, adjective complement, noun and pronoun complement (Turkington, C., Sussman, A.E. 1992, p.196).

⁷⁸Its set of six words and symbols help children analyze the relationships between units of connected language, enabling them to write good sentences and correct their own errors. Under the system, a child places individual words under the headings of subject, verbs, and predicates, indirect and direct objects, phrases and words telling where, other word modifiers of the main verbs and "when" words and phrases.

According to Turkington and Sussman, the system is still widely used today (Turkington, C., Sussman, A.E. 1992, pp. 77-78).

One interesting bone-conduction instrument, popular around the early 1900s, was the hearing fan. The person with a conductive-type hearing loss could clasp the top edge of the fan blade between the teeth and pull a series of strings to hold the body of the thin vulcanite fan taut. Sound was picked up by the fan blade and delivered to the teeth. The acoustic fan made use of the phenomenon that sound travels efficiently from the teeth through bone to the inner ear (Berger, K.W. 1987, p. 8).

The Volta Bureau and the American Association to Promote the Teaching of Speech to the Deaf

In the last half of the nineteenth century, the artificial conduction of sound made big progress. Although Alexander Graham Bell did not directly invent any new hearing aid, his research and other inventions (telephone, audiometer, photophone, graphophone) contributed to the development of it.

Effective hearing aids belong to the twentieth century. The same can be said of effective assessments of hearing loss. A true audiometer⁷⁹, providing accurate parameters of hearing loss across frequencies and intensity levels, did not emerge until the 1920s, although Alexander Graham Bell in 1886 used an audiometer of his own invention to test school children (Winzer, M.A. 1993, p. 151). *Audiology*, the study of hearing disorders, including evaluation of hearing function and rehabilitation of persons with hearing impairments, emerged as a new science in the middle part of the twentieth century (Evans 1982, p. 9).

The unit of loudness of sound is the Bel⁸⁰, which was named in honour of A.G. Bell. With some of the royalties from his inventions Bell financed and founded (1887) the Volta Bureau. With Bell's support, a journal called *Association Review* (now the *Volta Review*) was first published in 1889. In 1890 the American Association to Promote the Teaching of Speech to the Deaf (since 1956 the Alexander Graham Bell Association for the Deaf⁸¹) was established supported by an endowment by Bell (Moores 1987, p. 79).⁸²

⁷⁹ In the development of the audiometer, Georg von Békésy (1899-1972) - the Hungarian-born inventor of the modern theory of basilar membrane resonance - played a significant role. He developed the automatic audiometer called after him.

⁸⁰ The unit of loudness of sound is the Bel. Since this unit may be rather too large for convenience, it is divided into tenths, or decibels (abbreviation: dB).

The loudness of sounds is measured in decibels. The decibel scale increases logarithmically, which means that the difference between two points is greater the higher one goes up the scale. This form of scale is necessitated by the physical nature of sound, since the pressure of a very loud sound is ten million times that of a very quiet sound. By using a logarithmic scale, in which each point is a multiple of a previous point, these numbers are reduced to manageable proportions. Any scale of this kind must have a reference point from which to start, and the reference point used is approximately that of the quietest sound audible to healthy young ears.

As a rough guide to the significance of decibel values, a whisper at 5 feet has a sound pressure of about 20 decibels, a conversational voice at 3 feet has a pressure of about 60 decibels, a motor car horn at 3 feet has a pressure of about 120 decibels, a jet plane at take-off (at a distance of 80 feet) has a pressure of about 130 decibels, and the threshold of pain, at which sounds begin to be painful, has a pressure of about 140 decibels (Fitt and Mason 1986, p. 9).

In an audiogram the decibel values are given at the levels of different frequencies, Hertz (abbreviation: Hz). The unit of vibration, frequency, cycles per second, is named in honour of the German physicist Heinrich Rudolph Hertz (1857-1894).

⁸¹ A.G. Bell Association for the Deaf

3417 Volta Place, NW, Washington DC 20007-2778, USA

⁸² The Volta Bureau is the headquarters of the Alexander Graham Bell Association for the Deaf. The bureau houses the association's extensive library containing literature on deafness. Bell envisioned the bureau as the best way to increase and publicize information about deafness and presented the bureau to the association in 1909.

The bureau was created and endowed by Alexander Graham Bell from money he received from France. In

On May 8, 1893, Bell's 13-year-old prodigy, Helen Keller, participated in the ground-breaking ceremonies for the new Volta Bureau building - today an international information centre relating to the oral education of the deaf (Encyclopædia Britannica, vol. 2, p. 827).

Congenitally deaf persons and some other prominent deaf people in the nineteenth century

Of the few records of congenitally deaf persons in the United States should be mentioned Albert Newsam (1809-1864), born deaf on May 20, 1809, in Steubenville, Ohio. He became an outstanding engraver and lithographer (Higgins, F.C. 1987, p. 241).

Thomas Meehan (1826-1901) was born deaf in England. He was the son of a gardener and he learned to love plants as a child. He was only fifteen years old when he published his first scientific study related to the stamens of the flower named "Portulaca." Meehan immigrated to the United States when he was twenty-two years old. He found a position at a nursery in Philadelphia and began to do much research on plants, publishing many articles and books.

Meehan's book, *The American Handbook of Ornamental Trees*, was published in 1853. Meehan lost everything during the Civil War, but after the war he was able to expand his nurseries and begin editing several magazines about plants.

Meehan corresponded with Charles Darwin about his research on plants. His great book, *The Native Flowers and Ferns of the United States*, was published in four volumes between 1878 and 1880. He was elected to the Academy of Natural Sciences in Philadelphia and the American Association for the Advancement of Science. He is remembered for his many contributions to the study of flowers and plants in the United States (Lang, H. 1994, A19).

Theophilus Hope d'Estrella (1851-1929) was born (de Rutte) February 6, 1851, in San Francisco. Presumably born deaf, he chose not to learn to speak. Nevertheless, d'Estrella became a teacher, specializing in art, at the California School for the Deaf, Berkeley (CSDB); a lecturer (using American Sign Language and pantomime); a writer; a world traveller; a naturalist; a mountain climber; and an outstanding amateur photographer (Albronda, M. 1987, pp. 305-306).

Although not congenitally deaf, we mention James H. Logan's, George T. Dougherty's, Douglas Tilden's, Cadwallader Washburn's, Granville Redmond's, and John Louis Clarke's contribution to world culture.

James H. Logan (1843-1917) was four years old when he became deaf from scarlet fever. He studied at the Pennsylvania School for the Deaf in Philadelphia and graduated from Gallaudet College in its first class (1869). Logan became very interested in microscopy and he presented his graduation speech on this subject in 1869. His patent for a microscope was published in the *Scientific American* magazine in July of that year. Logan was the first superintendent of the Western Pennsylvania School for the Deaf (Lang, H. 1994, A16).

George T. Dougherty (1860-1938) was an industrial chemist whose work has appeared in many reference books around the world. He was deafened by typhoid fever when he was two years old and he studied at the Missouri School for the Deaf and the Polytechnic School of Washington University in St. Louis, Missouri. Around 1885, Dougherty worked as a chemist for the St. Louis Sugar Refining Company and over the

1880 France bestowed on Bell the 50,000-franc Volta Prize for his inventions.

Much of the archival collection belonging to the association is still housed at the Volta Bureau (Turkington, C., Sussman, A.E. 1992, p.195).

next ten years he became very interested in the chemistry of steel. He soon advanced to the title of Head Chemist in the American Steel Foundries Company and he published many reports on his scientific research over the years.

Dougherty's analyses of nickel in steel were excellent and many scientific journals published his reports. In 1921, Dougherty developed a procedure for determining how much vanadium there is in a sample of steel and this work helped industry to develop a much better automobile axle.

Dougherty was also very active in the deaf community. He served as a president of the National Association of the Deaf for several years (Lang,H. 1994, A6).

Douglas Tilden (1860-1935) was the first native California sculptor to win recognition outside the United States. The acceptance of the plaster model of his *Baseball Player* in the Paris Salon, 1889, was a remarkable achievement for a young man who had lost his ability to hear and to speak following an attack of scarlet fever in early childhood. Although Tilden's total output was small, many of his monuments are recognized today as "the most original and exciting sculptures, based on allegorical or genre themes, ever produced in California." Tilden also published several articles about educating deaf people in the *American Annals of the Deaf* and he devoted much of his energies toward promoting a better understanding between deaf and hearing people (Albronda,M. 1987, p. 293).

Cadwallader Lincoln Washburn (1866-1965) was born in Minneapolis, Minnesota. He became deaf from scarlet fever and spinal meningitis at age five. Cadwallader was famous for his etchings and his works have been exhibited in important art galleries and museums (Sonnenstrahl,D.M. 1987, pp. 339-340).

Granville Redmond (1871-1935) was born March 9, 1871, in Philadelphia, Pennsylvania. He was totally deaf from age two and a half years following a bout of scarlet fever. Granville Redmond became a successful US American painter (Albronda,M. 1987, p. 364).

John Louis Clarke (1881-1970) was born on January 20, 1881, in Highwood, Montana. At the age of two, John Louis was afflicted by a severe attack of scarlet fever. When the disease subsided, he was deaf. His Indian ancestry and environment provided him with the background that ultimately led to his fame as a master wood sculptor (Hilton,C. 1987, p. 187).

What has Lon Chaney to do with deaf history?

In fact, Lon Chaney is a part of deaf history in a manner he shares with a lot of other hearing children.

One of the author's best memories from his childhood is his father telling him about the terrific actor Lon Chaney - "man of a thousand faces". Later he could himself verify the truth value of his father's statements - watching old films with Chaney playing.

Lon Chaney (1883-1930) was an American, best known for his so-called horror films, in which he appeared in gruesome and grotesque makeups of characters warped by psychological or physical deformities. Chaney was born in Colorado Springs, Colorado. His parents were deaf, and the pantomimic skill Chaney learned as a child in order to communicate with his parents served him well in his acting career. He first performed in vaudeville and in 1912 appeared in his first film. He played the title roles in *The Hunchback of Notre Dame* (1923) and *The Phantom of the Opera* (1925), two of his most important films, which are often revived (Encarta 1994).⁸³

⁸³The author has been told that Leonardo da Vinci used deaf people as models because of their ability to express feelings (emotions). The author has not been able, however, to corroborate this assertion.

George William Veditz - strenuous advocate of sign language

The author would like to mention George W. Veditz (1861-1937) because he is a legacy of the past still alive, since a deaf teacher 1994 in Maryland very proudly told the author that Veditz still inspired her work.

Veditz was one of the pioneer institution builders of the USA's deaf community. When he was almost nine years old he contracted scarlet fever, which left him profoundly deaf. In 1904 and again in 1907 he was elected president of the National Association of the Deaf (NAD). Veditz was very concerned about the preservation of sign language, and throughout his life he would be one of the deaf community's most vocal, strenuous and acerbic advocates of sign language as the best communication medium in schools for deaf children. Becoming NAD president during the years when sign language was under attack by Alexander Graham Bell and various professional organizations, Veditz lashed back. He was particularly critical of Bell, whom he termed "the most to be feared enemy of the American deaf." In 1911 Veditz described the attempt to force deaf children to give up sign language as "wickedness" and "evil", whereas he praised sign language as "the noblest gift God has given to deaf people." (In Cleve, J. 1987d, pp. 333-334).

Donald F. Moores: The educational "dark age"

The pure oral method never achieved the same hegemony in the United States as it did in Europe. Edward Miner Gallaudet was the individual most responsible for the survival of combined oral-manual education, albeit in very reduced circumstances. However, educators of the deaf split into two warring camps, the oral-only and the combined, with each faction having its own professional organization, journal, and parent affiliate. According to Moores, the spirit of excitement and involvement that had prevailed throughout most of the nineteenth century disappeared, as the field became increasingly isolated from general education and lost its capacity for growth. In Moores' opinion, "the split between Gallaudet and Bell precipitated an educational 'dark age' that lasted well past the middle of the twentieth century." (Moores 1987, p. 80).

The triumph of oralism in Europe

The International Congress of Teachers of the Deaf at Milan in 1880

In European countries, due largely to the influence of the International Congress of Teachers of the Deaf at Milan in 1880 (the Second International Congress for the Amelioration of the Condition of Deaf Mutes), a more general adherence to pure oralism prevailed (Evans 1982, p. 8). In Germany oralism had a stronghold long time before that. The oral teaching was introduced in Norway before it emerged in the other Scandinavian countries (cf. Balchen) in 1848. In the latter half of the nineteenth century, however, the oral method was the only teaching method for deaf people in Norway. It prevailed up to the 1960s.

Kyle indicates that the Milan resolution in 1880 banishing signs had a colossal effect. Deafness did not mean dumbness and deaf children with residual hearing could lead a normal satisfying life in the hearing world. The Royal Commission on the Blind, the Deaf and Dumb in Britain, investigated the merits of the oral system (1889) and its findings were almost unanimously welcomed in schools for the deaf. However, in August, 1889, the editorial in the *Deaf Mute* vigorously

contested the commission's findings. By April 1890 the British Deaf and Dumb Association was founded and its first resolution was:

That this congress of the British Deaf and Dumb Association...indignantly protests against the imputation...that the finger and signed language is barbarous. We consider such a mode of exchanging our ideas as most natural and indispensable, and that the combined system of education is by far preferable to the so-called Pure Oral...(In Kyle,J. 1982).

And so, according to Kyle, the foundation for the polarization of educators' views and deaf views occurred and remains very obvious to the present day in the UK (Kyle,J. 1982, p. 26).

The most influential Milan resolutions stated:

"The Convention, considering the incontestable superiority of speech over signs (1) for restoring deaf-mutes to social life, (2) for giving them greater facility for language, declares that the method of articulation should have the preference over the signs in the education of the deaf and dumb."

"Considering that the simultaneous use of signs and speech has the disadvantage of injuring speech and lipreading and precision of ideas, the Convention declares that the oral method must be preferred." (Brill,R.G. 1987, p. 87).

It was only the American delegates, led by Edward Miner Gallaudet, who dissented when the Milan congress decided "the incontestable superiority of speech over signs" and that "the oral method must be preferred."

Winzer is right, stating that the conference in Milan "probably did not change the minds of most European practitioners - it merely ratified their practice." (Winzer,M.A. 1993, p.197). On the other hand, the congress hardened the struggle between manualism and oralism. In 1878 delegates to the First International Congress for the Improvement of the Condition of Deaf-Mutes voted a preference for speech and lip-reading, though they still advocated the retention of natural signs as an auxiliary, arguing that the oral method was unsuitable for all deaf persons ("Resolutions" 1900, in Winzer,M.A 1993, p., 197). Milan two years later witnessed an uncompromising avowal of the oral methods (Winzer,M.A. 1993, p. 197).

The sign language controversy - a brief summary

These were the traditions which persisted into the twentieth century, according to Evans (Evans,L. 1982, p. 7-9). The sign language controversy has, as mentioned above, involved a variety of intermediate positions between those of oralists and manualists. Some persons have favoured the use of fingerspelling, but not sign language. Fingerspelling may occur alone, or it may be accompanied by speech and speech-reading (lip-reading). Other intermediate alternatives are various mouth-hands systems. In these a person speaks, thus permitting speech-reading (lip-reading), while using a variety of handshapes held next to the mouth to clarify the precise meaning of words or sounds expressed on the lips. Proponents argue that mouth-hands systems assist both in speech-reading (lip-reading) and in teaching speech to deaf children. Many schools for deaf children in the United States tried to resolve the sign language controversy through another intermediate position, called the combined system (cf. E.M. Gallaudet). This system had numerous variations, each involving a combination of oral and manual approaches. Speech and speech-reading (lip-reading) generally were taught to all children in the school, but those who failed to make progress after a trial period were segregated into manual sign language classes. Yet another position is the simultaneous method, wherein a person speaks and signs at the same time.

Usually the sign vocabulary is borrowed from the national sign language, but the signs are arranged in the same word order as the spoken language. American Sign Language (ASL) sometimes is modified further by the addition of grammatical indicators to the signs, such as the verb endings *ed* and *ing* (Cleve, J. van 1987a, p. 53). Combined systems exist in several varieties in the US.

According to Kyle, in the twentieth century, the major educators in the UK all supported the oral tradition, though accounts of the schools in Bristol and Derby by two former teachers of the deaf (in interview with Kyle, Glass and Glass, personal communication) support the conclusion that the pure oral system never had a complete hold on its pupils, nor was it used wholeheartedly by the staff in schools. In the thirties extreme positions on speech teaching also came into existence, for example by Ewing and Ewing (1938). Their approach dismissed sign language altogether and their ideas were very powerful. Their view was that, "...without the use of words, thinking must be both hindered and limited...".

Kyle states that from that point on the climate of opinion became more polarized than at any time virtually in the 200 years or so that his brief review had covered. Hearing aid development helped to support the Ewings' ideas and put a new emphasis on rigorous speech and lip-reading training (Kyle, J. 1982, p. 26-27).

The struggle between manualism and oralism: A struggle between deaf people and hearing people?

Some writers present the struggle between manualism and oralism as a struggle between deaf people (manualists) and hearing people (oralists). This is a too simplified notion. Deaf people - as hearing people - were and are divided on this matter. On the other hand, it cannot be disputed that for a deaf person sign language is the language based on the perception directly available to him: vision. The major point, however, is that there is no direct way to the world of technology and culture. As a consequence, manualists in the nineteenth century as a rule did not put the same high goals for their education as the oralists. The latter, right or wrong, realistic or unrealistic, tended to - as an ideal - state the same goals for deaf students as for hearing students. When deaf people acquired "language" (this is the term since they did not regard sign language as a language) - speech and writing, they would compete at the same level as hearing people.



Oralist teaching of geography for deaf children at Christiania offentlige Skole for Døve (later Skådalen School), Oslo, Norway, in 1915

Photo: Skådalen Resource Centre for Special Education of the Hearing Impaired and the Deaf-blind

The question of hearing aids

The improvement and the raised general availability of hearing aids can not, in the opinion of the author, be regarded as an argument for pure oralism. However, it *is* important to recognize that the development of hearing aids has meant a change in the population of the school for the deaf, with a significant group able to develop more satisfactory communication in speech. This seems also to be the opinion of Kyle.

Hearing aids in the twentieth century

The era of electric hearing aids made its appearance about 1899 in the shape of the carbon hearing aid, a table-sized instrument. By 1902 the first wearable carbon hearing aids were placed on the market in the United States and several years later in Germany. Typically, these consisted of a carbon microphone (or transmitter), an earphone, and a battery.

The electronic era started in 1921 when the first vacuum-tube hearing aid appeared. Maybe it is fair to assert that this is the first really effective hearing aid. However, it had little more power than the previous carbon models, and it was portable but not wearable. It was not until the late 1930s that wearable two-piece vacuum-type hearing aids appeared and gradually replaced the carbon types. In the 1940's the vacuum-tube hearing aid became a monopack, that is, the amplifier and batteries were housed in a single metal or plastic enclosure.

In the 1950's the transistor era ushered in smaller units (now called body aids, or pocket aids) as well as several new types: eyeglass, barrette, behind-the-ear, and, somewhat later, models built entirely in the shell of an earmold, the in-the-ear aid. Sales statistics for the period 1950-85 showed a definite decline in the popularity of body- and eyeglass-type hearing aids. At the same time, the behind-the-ear and in-the-ear types have increased in popularity. Much of the reduction in size has been made possible by inte-

grated circuits, which replace transistors and other circuit components. At the same time there has been a dramatic improvement of microphones (Berger, K.W. 1987, pp. 8-9).⁸⁴

One of the pioneers of the audiological era was Dr. Max Goldstein, who founded the Central Institute for the Deaf at St. Louis in 1914. He developed a scheme for training of residual hearing, named the *acoustic method*, which he distinguished from earlier oral and manual methods (Goldstein 1933, in Evans 1982, p. 9).

Some aspects of the development of deaf education in Russia and the Soviet Union

In spring 1996 the Norwegian linguist Arnfinn Vonen went to Moscow to attend a conference and to meet with experts on deaf education. Vonen and this author (Enerstvedt) were especially interested in the traditions of Russian and Soviet deaf education. Really, what was the role of speech, of fingerspelling and of sign language in theory and practice? At the conference Vonen met Galina Lazarevna Zaytseva, a well-known Russian expert on deaf education and author of the book *Daktilologiya. Zhestovaya rech.* In her book, Zaytseva informs us about the issues mentioned above. An extensive reference to two sections of Zaytseva's book follows, in the translation of Vonen:

The spreading of the "pure oral method" in Russia at the end of the nineteenth and the beginning of the twentieth century

According to Zaytseva, the appearance of the "pure oral method" in Russia is connected with the name of the director of the St. Petersburg school for the deaf, A. F. Ostrogradsky, and with the activity of P. D. Yenko, N. M. Lagovsky, and other famous teachers of the deaf in the late nineteenth and the early twentieth century. At the end of the 80s, the teaching of the spoken language became the main task of the school; the spoken language was acknowledged as the only means of education. This found its reflection, in particular, in the new statutes of the school, worked out under the leadership of Ostrogradsky (1900).

"Fingerspelling and sign language were denied any role in the teaching and fostering process. Discussing the issue of sign language in their works, Lagovsky, Yenko and others strove to give reasons for the position they took. Thus, Lagovsky analysed the characteristics of 'natural' and 'artificial' gestures and came to the conclusion (as opposed to V. I. Fleri) that the sign language system had no grammatical forms and grammatical rules. True, Lagovsky, who had much experience with deaf people, could not fail to acknowledge that sign language provided deaf children with an enormous advantage as a means of mutual communication. With its help it was possible, within certain limits, to implement teaching, esthetical fostering, etc., i.e., sign language would have been useful as an auxiliary means. So what was the matter then? Even though sign language, in Lagovsky's opinion, was a limited and unreliable means of communication, it was still difficult to keep it 'within the limits admitted to it', and the deaf would not experience the need of the spoken language. Consequently, sign language had to be withdrawn from use during lessons as well as in the pupils' communication among themselves.

The views of Lagovsky, as well as of other Russian teachers of the late nineteenth and the early twentieth century, found their reflection in the discussions of issues of educating and fostering the deaf during the first congresses of Russian teachers of the deaf. Thus, in her paper 'About gestures', read at the congress in 1903, Ye. G. Lastochki-

⁸⁴The benefit of hearing aids was and is a matter of opinion among deaf people. For an outsider it is difficult to understand that the benefit could be disputed. But the use of hearing aids implies many educational and practical problems (e.g. in childhood). And in the end it is a question of identity. The hard-of-hearing people - a much larger group than the totally deaf group - is falling in between the deaf and the hearing society. Their choice - sometimes perceived as compulsory - is painful and difficult. And the choice very often includes use or non-use of hearing aids. Cf. also the recent discussions regarding cochlear implants.

na formulated the conclusion that sign language had to be expelled from the schools not only as a method of explaining the teaching materials, but also as a means of communication among the pupils." (Zaytseva 1991, pp. 82-83).

Zaytseva informs us that by far not everybody thought like this. For example, a great consistent ideologist of the "pure oral method" such as Yenko claimed that it was harmful to suppress and eradicate the sign language that the pupils used in conversations with each other, since it would then turn out to be impossible for the older children to have positive influence on the younger. And the most progressive-minded educators objected even more sharply. In this connection, Zaytseva points out that

"I. A. Vasilyev's speech (on the 1903 congress) is characteristic: 'The (forced) eradication of the sign is not a necessary condition for success in language. The deaf-mute person can master gestures and at the same time master language well. Everything has to serve in the teacher's hands, and the sign can serve for success, when the teacher uses it to re-establish forgotten words in order to save time, so precious in the teaching of the deaf-mute. '...'" (Zaytseva 1991, p. 83).

According to Zaytseva, criticism of the "pure oral method" was also expressed by Ye. S. Borishpolsky, E. Radzishvsky (who defended, in particular, the appropriateness of using fingerspelling in teaching), and others. They showed that setting up the teaching of the spoken language as the main task implied that work on conveying general knowledge and developing thinking was ignored, in short, that it slowed down the intellectual development of deaf children. Leading teachers of the deaf demanded a review of the tasks and content of the educational process and a widening of the system of linguistic means to include fingerspelling and sign language in the teaching and fostering of deaf pupils.

Zaytseva states that the progressive traditions of Russian deaf education were developed further with the working out of a theory, and the appearance of a practice, for the teaching of children with a hearing impairment, after the Great October Socialist revolution (Zaytseva 1991, pp. 83-84).

The significance of the decisions of the All-Russian convention of teachers of the deaf in 1938

According to Zaytseva, the radical transformations in the area of popular education in the country, the inclusion of the educational institutions for the deaf in the general governmental system of enlightenment, and the work on the tasks of fostering pupils with a hearing impairment as active and equal members of society, required the formation of a new type of special school. In the process of many specialists' theoretical and experimental work, and the synthesis of the experience of the best educational teams, a conception of Soviet deaf education gradually developed. It was revealed that the "pure oral method", according to which most of the schools in the country worked during the first decade after the revolution, was unacceptable for working on the new issues.

Zaytseva points out that L. S. Vygotsky made a big contribution to the theoretical foundation for the need of a review of the content, methods and linguistic means for the teaching and fostering of the deaf (Zaytseva 1991, p. 84). She states that,

"Vygotsky's theoretical theses, and also the results of studies by R. M. Boskis, N. G. Morozova and other specialists, were laid down as the basis for the decisions of the All-Russian convention of teachers of the deaf in 1938. This convention was the outcome of many years of investigations by specialists in our country. It put an end to the factual sovereignty of the 'pure oral method' and served as the base for a restructuring of the whole

educational process. Starting from the goals and tasks of fostering pupils with a hearing impairment, the convention formulated the main didactic principle: versatile development of the child's personality, teaching of the foundations of the sciences on the basis of the development of speech-based language and speech-based and logical thought. To meet the requirements of this principle it was suggested to use a system of linguistic means which included basic means – the spoken and the written form of the speech-based language – and auxiliary means – fingerspelling (from 3rd grade) and sign language.

In this way, as from 1938, *in Soviet deaf education, fingerspelling and sign language are considered as auxiliary means of communication and teaching of deaf children*. But what does this signify – auxiliary means? On this question, different points of view have been put forward during the decades following the time of the 1938 convention. Different opinions exist nowadays, too." (Zaytseva 1991, p. 85).

The Tadoma method

Very generally speaking it seems justified to say that one form or other of oralism dominated the education of the deaf people in many countries in the first half of the twentieth century. The deaf-blind Helen Keller learned to speak following in the tradition of a Norwegian deaf-blind girl. We will later corroborate this statement.

Caroline Yale - a link to Hofgaard?

The Tadoma method is also called the "Hofgaard method." However, it was Miss Caroline Yale (1848-1933) at Clarke School that first presented what was later termed the "Tadoma method."

Caroline Yale was only twenty-two years of age when she came to Clarke School, after having spent two years at Mount Holyoke Seminary and some time teaching in her native Vermont. For sixteen years Yale taught under Harriet B. Rogers, the first principal; for thirty-six years she was herself principal (Winzer, M.A. 1993, p. 130).

Did Miss Yale continue the tradition from the Norwegian teacher of the deaf, Hofgaard, who taught the Norwegian girl? The author has tried to find a link between Miss Caroline Yale and Norway but has not succeeded. He has investigated the autobiography of Miss Yale (1931). Although both Hofgaard and Miss Yale visited the oralist stronghold Germany - Miss Yale several times - Miss Yale has scarcely any mention at all of "touch" as a method in her autobiography. She also met Helen Keller and Miss Sullivan once. They visited Niagara Falls at the same time as Miss Yale and some of her pupils were there, but it is very unlikely that she learned the method at this meeting (Yale 1931, p. 206). American scholars should make a further investigation regarding this problem. Before that is done, it is fair to assert that Miss Yale was the originator of the Tadoma method. Before a link between Miss Yale and Hofgaard is corroborated, it does not seem justified to term the method the "Hofgaard method."

Sophia Alcorn: The founder of the Tadoma theory and methods for the deaf and the deaf-blind

The name "Tadoma" stems from Sophia Alcorn. If Miss Yale can be said to be the "grandmother", then it is correct to say Sophia Alcorn is the "mother", since her practical and theoretical work really laid the basis for the later Tadoma education. However, we should always give credit where credit is due, and Sophia Alcorn does that:

"The basic work of the Tadoma Method is from the lectures I received from Miss Caroline Yale while I was a teacher in training at Clarke School. Superimposed on that work is what I developed after teaching two deaf-blind children for a number of years." (Alcorn, S.K. in "Tadoma Method of Teaching Speech to Deaf Children", p. 1).

Thus, the Tadoma method came into existence at Clarke School for the Deaf, and already before 1920⁸⁵ it was practised in the education of a deaf-blind girl by Sophia Alcorn - also in a school for the deaf. We will later turn to the Tadoma method in deaf-blind education. We mention the deaf-blind girl here, since there is a mutual influence of experiences between deaf and deaf-blind education. After working with this deaf-blind girl and somewhat later a deaf-blind boy with success, Sophia tells:

"For sometime it had been my conviction that the deaf child, given the same opportunity could accomplish as much, if not more than the blind-deaf. I decided to adapt the tactile method to the deaf child, and began conducting some experiments. For two years I had a class of small deaf children. The results really amazed me. My original intention was to develop better voices, but I soon found that this was only one of the benefits. When the child learned that voice accompanied the lip movements of his teacher, it gave a new impetus to speech reading and made him more eager to learn the names of people and things around him." (Alcorn, S.K. in "Tadoma Method of Teaching Speech to Deaf Children", p. 1).

Sophia Alcorn tells more about her experiences in *The Volta Review*, 1932. In 1926 she accepted a position in the Day School for the Deaf in Cincinnati:

"As there were only thirty pupils enrolled, strict grading, of course, was impossible. In the beginning class, there were seven pupils: a girl nine years of age, who had been in school for two years, but whose speech-reading was confined to three or four words; another child eight years old, who had been deaf about two years; a third with defective sight who had become deaf when he was four years old; two bright children, each five years old; and two normal deaf children, each six years of age. This seemed an ideal class for the purpose of trying my experiment in developing the tactile sense as a foundation for speech and speech reading. After I had unfolded my plans to the principal, Miss Virginia Osborne, she immediately saw the possibilities of the work, and I was given all the freedom necessary for the experiment. The results were quite surprising and gratifying. These children, of varied ages and different degrees of mental capacity, worked together as a unit. Their enjoyment of the vibration periods made working with them a real pleasure. The improvement in speech-reading amazed me and the usual language difficulties seemed much easier for them than was generally the case with deaf children." (Alcorn 1932, p. 195).

In the autumn of 1927 Sophia Alcorn transferred her work to the Detroit Day School. They begun the training in the kindergarten with their three-and-a-half and four-year-old children. The author is impressed by the theoretical thinking of those first "practitioners", that of Anne Sullivan and Sophia Alcorn. The following demonstrates that Alcorn also goes in the footsteps of Anne Sullivan. It is very likely that Alcorn knows the work of Anne Sullivan, but she uses her insight in a very creative manner. She uses the tactile sense not for fingerspelling (which, however, does not contradict other uses) but in the teaching of *speaking*, and using the same *methodology*:

"Instead of attempting voice immediately, we are endeavoring to develop it in accordance with the way a hearing baby learns to talk. He hears words over and over again for months and months before he attempts speech. So why attempt the impossible with a deaf child and expect satisfactory results?"

Keeping continually in mind the learning process of the little hearing baby, we do not allow the deaf child to attempt voice until he is thoroughly saturated with the way the voi-

⁸⁵We have not found the exact year when Sophia started to teach this deaf-blind girl (Oma); we have drawn the conclusion from other sources of information. However, there is an uncertainty here. The author will assume that Sophia Alcorn started to work with Oma between 1915 and 1920.

ce of the teacher feels, and woe to that teacher if she speaks in an unnatural or strained voice!" (Alcorn 1932, p. 196).

Speaking of the Tadoma method it is important to understand that what is called "method" is in fact *one theory*, but *two methods*: it is one method for deaf, and one for deaf-blind people. Sophia Alcorn was the main developer of both. In the process there are many similarities, but it is easy to understand that the process also must be different when a person in addition to being deaf also is blind.

The Tadoma method was further developed at Perkins Institution for the Blind in the thirties for deaf-blind persons.

Sophia Alcorn's description of her method with the deaf has historical interest.

A little deaf child enters school with no conception of articulation, says Alcorn, but we notice that when he laughs or cries, his tones are much like those of the hearing child. Then why shouldn't he use the same tones in his speech? I believe, Alcorn says, it is because he hasn't felt the faces of people while they are talking. The method usually followed is to attempt to get voice from the small child almost from the first day he is in school. The child's response is a most unnatural, forced voice, that he will carry with him through life. Is this normal development? Alcorn asks. Her answer is: Most emphatically it is not. The hearing child is talked to incessantly for months and months before he attempts speech. Then why should we undertake to do the supernatural with the deaf child?

Having given the tactile method a thorough trial and getting satisfactory results, we have reached the conclusion, Alcorn says, that if properly presented, it can develop the deaf child along more normal lines than any other method of teaching the deaf (Alcorn, S.K. in "Tadoma Method of Teaching Speech to Deaf Children", pp. 1-2).

The Tadoma method is of great theoretical and practical interest. However, we know that traditional oralist teaching is inappropriate for many deaf people. What about the failures in teaching by the Tadoma methods? We do not know very much about that. Thus, the possibility exists that it might still be appropriate for some deaf children.

The fascinating story of Howard Tracy Hofsteter

In a description of aspects of deaf education, the story of Hofsteter is of great theoretical and practical interest.

A metacomment is necessary: Through the work of Anne Sullivan with Helen Keller - presented later - the author became convinced of the potentialities of fingerspelling for developing competency in reading and writing the phonetically based language. He did not then know the story of Hofsteter. He searched for material that could either falsify or corroborate his assumptions. Then he heard of Hofsteter's story.⁸⁶ Now, the reader himself can compare the theoretical basis⁸⁷, process and results of the education of Hofsteter and Helen Keller presented in this book.

Howard Tracy Hofsteter was the only child born to Howard McPherson Hofsteter and Ollie Tracy, both deaf and themselves teachers of the deaf. He was

⁸⁶Thanks to: Director Knut Arnesen, Skådalen Resource Centre, and Research and Bibliography Librarian Carolyn Jones, Gallaudet University.

⁸⁷See also Sophia Alcorn's theoretical assumptions.

born on November 22, 1909, in Alabama, USA. Up to the time he was eight or nine months, his parents observed many indications of normal response to sound stimuli, ranging from loud noises to tapping a glass with a spoon, and so forth. It was then he contracted a cold. Immediately after his recovering, his parents noticed that he no longer responded to any sound. A familial predisposition had struck again.⁸⁸

Then this remarkable story starts: "I do not know how long it took my parents to reach a decision as to how they were going to educate me - but once their plan was formulated, they stuck to it stubbornly in the face of considerable criticism, derision and abuse." (Hofsteter 1959, p. 8).⁸⁹

It is always difficult, and maybe also wrong, to try to find single causal relationships in social science. What is most important in explaining Hofsteter's later achievements, is not easy to say. His statement, "I was born into a determinedly academic and ambitious atmosphere." (P. 7)., should not be forgotten. However, it cannot be wrong to fall in with Richard G. Brill, when he, in a short introduction to Hofsteter's autobiographical case study, asserts the following.

"The fact that Howard Hofsteter as a deaf adult is able to analyze the educational programme carried on with him in his preschool years, and more important, the fact that this analysis and this report is but a small sample of Mr. Hofsteter's mastery of the English language and of his scholarly powers, is the best possible evaluation of the success of this experiment." (Brill, in Hofsteter 1959, p. 3).

"The process used by my parents"

Hofsteter's parents argued that if a normal hearing child effortlessly acquires spoken language by hearing it and imitating it, a deaf child should be able to do exactly the same by seeing it used. They saw no psychological - nor physiological - difference between a baby's using its vocal cords, tongue, and lips to imitate spoken language and a baby's using his hands to imitate the movements of finger-spelled words. Furthermore, they maintained that

"since I had become totally deaf at so early an age that I might as well be considered congenitally deaf, sound would for me be forever only a hazy, mental concept instead of the vivid thing it is to hearing people and to those who lose their sense of hearing at around ten years of age and to those with considerable residual hearing. Therefore, speech and speechreading would be an entirely foreign and artificial means of mental development for me. Carrying their line of reasoning still further, it occurred to them that, since they had committed themselves to some form of manual English, they might as well go the whole hog and use nothing but English through the medium of fingerspelling." (Hofsteter 1959, pp. 10-11).

His parents then decided upon this course of action, Hofsteter says. They would

"(1) begin at once to talk casually and constantly to me on their fingers, just as hearing people do vocally to their babies -*whether or not I was paying any attention*; (2) talk

⁸⁸Although both his parents became deaf due to accidents around the age of two, there must have been some genetic predispositions for deafness, since there were deaf relatives in both his father's and his mother's families.

⁸⁹The article, "An Experiment in Preschool Education" (An Autobiographical Case Study), was first written by Howard T. Hofsteter, M.A. for a term paper in a class in Education at the University of Illinois. Some years after the article was written, Stephen Quigley was responsible for a rather extensive circulation of the paper after he became a member of the staff at Gallaudet College in the fall of 1958. The paper was also published in *The Silent Worker*, Berkeley, California (ed. Dr. Byron B. Burnes). Hofsteter was graduated from Gallaudet College in 1929. He became a member of the faculty at the Illinois School for the Deaf, in Jacksonville, Illinois (Hofsteter 1959, p. 5).

to me just as naturally as hearing people do when attending to my physical needs, pausing only to emphasize key words tied to my bodily wants and interests; (3) use only fingerspelling between themselves when I was consciously present; and (4) in general, raise me as if I were a normal hearing baby with the sole exception of using the manual alphabet instead of speech." (P. 11).

Here, we call attention to the thinking of Anne Sullivan (see later). We find a convincing resemblance. Hofstater continues,

"So, instead of spelling only the word 'milk' to me at feeding time, they said something like 'Here is your milk -m-i-l-k,' or 'Howard, it's time for your milk -m-i-l-k,' and so on. Apparently from all reliable accounts, the results were astoundingly quick.

Miss Eugenia Thornton, in her letter discussing my early education, writes, 'The first vivid recollection I have of you was when you were very young. I am sure I saw you, before that time and many times when you were still a baby, but no other incident stands out clearly. You were lying in your crib. Your mother brought a bottle of milk to you. You reached for the bottle and at the same time spelled 'm-k' several times, just as spontaneously and naturally as a hearing baby of the same age would have attempted to say 'milk,' and perhaps have said 'mik.'... This is not a story that I have heard about you but an occurrence that is clearly remembered.' " (Pp. 11-12).

Then, Hofstater states, followed *w*, *w-t*, *w-t-r*, water; *p*, *p-d*, *pdy*, puddy (custard pudding of which he was inordinately fond throughout his childhood), *c-t*, cat; *pa*; *ma*; *s-g-r*, sugar; *b-n*, banana; *a-pl*, apple; and so on.

"My parents are authorities for the foregoing information as regards the first few words I learned. While I was stumbling through the spelling of the words that appealed to me right off, the deluge of natural, everyday English continued unabated." (P. 12).

Anyone who knows the manual alphabet, Hofstater asserts, appreciates the fact that consonant letters are much more distinctly formed than the vowels. So he believed it was only natural for him to omit vowels at first. He reports that Miss Thornton compared this tendency to "lispings" among hearing babies (P. 12).

The following is, as we will see, emphasized:

"My parents assured me time and again they never had to resort to formal teaching procedures to get me started in free, idiomatic language. I used more and more everyday English because I saw it used all the time and because I wanted to participate. Dad and Mother repeatedly emphasized to me this point: - never did they physically force me to look at their fingers when they were talking to me; nor did they insist on my 'copying' consciously or memorizing words or phrases or expressions. They, of course, helped me along when I struck out on my own to imitate.

The idea that whenever they manipulated their fingers in my direction would in some way affect my well-being must have percolated through somehow, for I developed at a rather early age the faculty of *concentrated visual attention* - subject, of course, to my fluctuating desire to listen.

Another interesting thing is this: - I learned the proper sequence of the letters in the alphabet some time after I could spell many words. That is in keeping with good, modern psychology." (Pp. 12-13)

Hofstater tells, he was naturally introduced to picture books at about the same time as he began to manipulate building blocks intelligently. He became familiar with the printed symbols for various letters through the informal play with the blocks. His parents saw to it that he could identify each block with its equivalent on his fingers. They began to tell him stories shortly before they moved to Birmingham (in Alabama), when he must have been around 3 years of age (since they moved in 1912). He quickly slid into the phase in which a child insists on a bedtime story as well as stories at various times of the day:

"When I asked for a story, Dad or Mother would always drop everything else to gratify me, and my appetite for stories became a great drain on their time and energy. I was pretty badly spoiled in that connection. They would ask me what story I wanted and,

unless Dad had brought home a new book, I would ask for one of my old favorites for a repeat just as all children do. Then they would get the book and, with me comfortably snuggled in their laps, 'spell aloud' the story. They would hold their hands pretty close to the pages and spell." (Pp. 13-14).

Of great interest is Hofstater description of the way he learned (learned!, not "was taught") to read:

"I was about four and a half years or so old when I received such a shock that I can remember every detail of the event. I asked Mother one day to read me the story of Silver Paw - which I knew by heart and which always caused me to cry. It was a very sad story about a puppy that got lost. I got impatient with the rate at which Mother was spelling it out and turned a page before she had finished it. She stopped spelling, but I kept right on and sobbed and bawled through to the end. The next day when I asked for another story, she flatly refused, telling me to go read it myself. I was very much hurt, but I did retire into a nook and read the story. That evening when Dad came home, I rushed to him and asked him to read me a story, only to be rebuffed likewise. That was how I was abruptly weaned away from having stories read to me.

Several interesting points come to light in the foregoing account of how I learned to read.

It was only to be expected that I skipped entirely the 'oral reading' phase of the standard learning process. It would have been silly for me to spell out the words, too, while my parents were spelling the stories to me. It would have slowed down the reading so much as to make it tedious and uninteresting. I could follow the story and the spelling at a more rapid and natural speed.

It was very easy for me to stop my parents at any time for explanations or for them to pause and ask me if I knew the meanings of words they were pretty sure were new to me.

I have a theory that, in addition to the concepts I was establishing all along through ordinary conversations and observations, this fast reading contributed a great deal to my unconscious acceptance of the fact that words can have different contextual meanings.

Another important point in regard to my readings is that I dearly loved to dramatize the stories I read. I learned to pretend in a big way from my association with the children on 50th street. We pretended we were Indians, played cops and robbers and so forth. "Bang!" and we'd fall down dead, and so on. But it was only with Dad and Mother that I dramatized stories. We had quite a lot of fun, although it must have been tiresome at times for my parents." (Pp. 14-15).

Hofstater's everlasting contribution

Hofstater concludes as follows:

" (1) It is possible to *spell* on one's fingers to a deaf baby and gradually to attract sufficient attention from it for educational purposes.

(2) It is possible for a deaf baby to *identify* important letters and words formed on the hands and, later on, to imitate them.

(3) Sound is by no means the *sine qua non* of the very foundation of a deaf infant's acculturation.

(4) It is easier for a deaf infant to identify and understand something he can see very clearly than something he has to guess at.

(5) It is possible for a congenitally and totally deaf child to achieve through spelling approximately the same amount of 'language absorption' that a normal hearing child does, and at the same pace - other factors being equal.

(6) The process used by my parents was exactly like that followed by most educated parents of hearing children except that fingerspelling was substituted for hearing and speech.

(7) It is during the formative, preschool years of a child's life - hearing or deaf - that he should be started on language" (Hofstater 1959, pp. 15-16).

Hofstater emphasizes that the deaf child who is trained by a medley of signs and finger-spelled words is in a much better position, both mentally and linguistically, to begin school work than one who starts from scratch. He also

emphasizes: *"If the signs and words are uniformly used in the same grammatical order as spoken language, the child is vastly that much better prepared."* (Pp. 17).

This assertion is very disputed. However, true or false, Hofstater's everlasting contribution to the theory and practise of deaf education is not rooted in this statement. The reason why is simply that this is the view of all advocates of all versions of the signed phonetically based language (e.g., Signed English). The importance of Hofstater's contribution simply lays in the role of fingerspelling in his education, revealed to us through his own description.

The Soviet Union - the land of fingerspelling?

For this author (Enerstvedt), the real spreading and use of fingerspelling in the Soviet Union after the All-Russian convention of teachers of the deaf in 1938 is difficult to assess. However, the discussion on the matter of fingerspelling, as referred by Galina Lazarevna Zaytseva, is very suggestive. We quote a portion of it in the translation of Vonen.

According to Zaytseva, the issue of fingerspelling became the object of special study in the fifties and sixties, when a new conception of teaching language to deaf children was formed.

Zaytseva informs us that,

"In Korsunskaya's (1969) system, early use of fingerspelling was assumed. In Korsunskaya's opinion, fingerspelling was the only means which ensured the formation of speech-based language in the deaf infant specifically at the early stages, not only during special lessons, but also – and primarily – in communication. Utilising fingerspelling, as the easier (in comparison with speech) type of speech-based language for deaf children, made it possible for them to accumulate a significant vocabulary of words and phrases in a relatively short period, to master the sound-letter constitution of the word, and, subsequently, analytical reading.

The principles embedded in Korsunskaya's system defined the sequence of the educator's employment of the different linguistic means. The basic means was the written language: ready-made tablets with written words. Naturally, when presenting the children with a new object, the teacher of the deaf first pronounced the word naming the thing, i.e., the spoken language forebodes all subsequent communicative acts. The adult's spoken language also accompanied the presentation of the card with the word to the children. However, the spoken language is very difficult for the children at this stage, for them it is much easier to achieve the nominative and signal function of the word which appears as some globally perceived graphic structure. It is specifically in this sense that the written language is basic. Afterwards the educator begins to use fingerspelling (as you remember, dear reader, fingerspelling is always accompanied by speech). The children learn to relate the dactyloemes to the letters on the tablets, and gradually master the techniques of fingerspelling. At the next stage the teacher more and more often speaks orally-dactylically. The children perceive the linguistic material from the hands and read from the lips (as much as they can), and learn to independently form fingerspelt words and phrases. While doing this, they use spoken language to the extent that they already master the pronunciation skills. Of course, from the very beginning one carries out systematic work with them to develop spoken language. And finally, the teacher addresses the children only orally (using familiar linguistic material, of course). The children, too, gradually move from oral-dactylic to oral language, and the latter occupies more and more permanent positions in the preschoolers' independent communicative activity. In this way, in the system developed by Korsunskaya and her collaborators, fingerspelling is not only a support in the work on spoken language, but also an auxiliary means that is evoked in order to teach spoken and written language as efficiently as possible.

Dactylology is utilised as an auxiliary means also in the system for teaching and fostering that is adopted by Soviet preschool institutions for children with a hearing impairment nowadays...

The system used today was created in the late seventies and early eighties, when principally new possibilities for the development of language in young deaf children were discovered. From the first days they are in preschool, intensive work on the development of their residual hearing is carried out with the use of sound-amplifying technology. Under these conditions, spoken language, developed on the basis of the development of residual hearing, is utilised as the basic and leading medium during the first year of the teaching of three-year-old children. The educator addresses the child orally – expecting a global (visual or auditive-visual) perception of the spoken language by the infant. As an auxiliary means written language form is utilised (global reading of printed words). The expressive language of the deaf infant during this period is extraordinarily approximate pronouncing (vocal reaction, single vowels or syllables, rendering of the contour of a word, etc.) and choosing of the appropriate tablet. Then one begins to teach the children analytical reading and the construction of words from a paper alphabet, i.e., they begin to master literacy. As you have already understood, dear reader, fingerspelling is not yet evoked. Why not? Noskova presents the following arguments. In the beginning of acquiring the language system, the deaf infant must master it on the basis of a holistic, global perception of language. This holism or fluency has to be preserved also in his expressive language, even at the price of a pronunciation that is, as yet, approximate. For these processes, dactylology cannot help. Rather to the contrary: 'It is hard to consider that, even if the requirements on the utilisation of dactylology are observed ideally, the spoken language will not suffer concerning its tempo, fluency, and rhythmical character.' (L. P. Noskova, 1982, p. 55.) But then from the second year, dactylology is added to the children's language development process (not earlier than the age of four years). Appearing in the role of 'auxiliary means No 2', dactylology ensures that the transfer of word structure is precise, that the perception of linguistic units is analytical, etc. Noskova's arguments present themselves as very logical, don't they, dear reader? Some of the 'minuses' of fingerspelling that Noskova speaks about, have been uncovered experimentally in the research of N. D. Shmatko, who has established that, during the initial period of teaching language, fingerspelling may have negative influence on the acquisition of the skill of fluent rendering of the word.

But the following question is timely: how does dactylology influence the language of four-year-old deaf children, who have already been taught the language system with the help of spoken and written language for a whole year? In what way are chains of the following type formed: sound – letter – dactyleme, spoken word – written word – fingerspelt word, etc.? Will no specific difficulties arise in connection with the fact that the child has to master a new code, and establish new relationships? Will this not slow down the process of linguistic development? And will not those 'minuses' of fingerspelling which we strove to avoid when we 'postponed' dactylology, appear at the next stage? Let us say that the child has already learned how to pronounce a word fluently, at a certain tempo. When dactylology is added, will not language be spoiled? Unfortunately, this kind of experimental data are still only to be awaited, and only then can we with complete foundedness answer the questions posed. And maybe it will turn out that fingerspelling is not needed at all? Of course, such an opinion exists, too. E. I. Leongard holds it..." (Zaytseva 1991, pp. 86-88).

Dr. A. van Uden: The last great oralist?

Van Uden worked and taught in the residential school for the deaf at Sint Michielsgestel. He had a great influence on deaf education - and also on education of children with multi-impairments, e.g. deaf-blind children - in many countries of the world up to the 1970s. He was also the teacher of J. van Dijk - the well-known educator of deaf-blind children.

According to van Uden, it is possible and indeed happens very often that a normally-hearing child of say three years old who *loses its hearing* (without

contracting an additional handicap, thus a '*postlingually deafened child*'), does not lose its rhythmic speech, although it may forget the auditory effect of that speech in a rather short time. This child can be educated so well that, notwithstanding a delay in its development, it controls its mother-tongue perfectly at an age of about 10-12 years, which may be concluded from its intelligible speech, smooth lip-reading, correct reading and writing. I have met many of these children.- In which *form* would the cultural language appear to such a child? This seems to be a mainly non-auditorily oral and visually lipread form, albeit that vibration-sense and hearing-remnants play a relatively important supporting role (Uden 1977, p. 24).

Uden points out that the same may be said of such so-well-educated *pre-lingually deaf people*⁹⁰

"who possess a perfect rhythmic control of the oral language and behave in an analogous way as the deafened child just mentioned. The number of these people may still be rather small, there are, however, more and more deaf people who - by better and better methods and educational training, last but not least by their own efforts - approximate this ideal very well, even get a better control of language than many hearing. I have met so many of this type of deaf people, both intelligent ones and not so intelligent ones. Failures, apart from multiple handicaps, are usually due to organizational and didactic factors. - The *form* in which the cultural language learned appears to such deaf people seems to be again mainly the non-auditorily oral form. The 'stuff of thinking' in language will imply its articulatory coding. All the prerequisites of a cultural language, except its melody, are essential fulfilled, although of course not to the same extent as in hearing people." (Uden 1977, p. 24).

Van Uden makes an important distinction between oral and verbal forms. There are formal appearances of a cultural language that are not mainly oral, but *verbal* in a non-oral way. Thus the term verbal is not quite identical with oral. According to van Uden, all oral appearances are of course verbal, but not all verbal appearances are oral.

He refers to Alexander Graham Bell who succeeded in teaching a congenitally deaf boy, George Sanders, the English language, without any speech, in a graphic way: he conversed with him graphically. Bell treated Sanders from 5 to 7 years of age. According to van Uden, it has been acknowledged that his language-control was superior to that of other deaf children when he entered a school for the deaf (Uden 1977, p. 25).⁹¹

Regarding the manual alphabet, van Uden refers to Helen Keller and Hofsteater.

⁹⁰ Uden states that by 'prelinguality' is meant

«...below the age of 1 yrs 6 months; because from 1;6 years of age the symbolic function develops in a hearing child...At about 3;0 years of age a hearing child has already the main structure of the language of the hearing environment...So we distinguish a period of pre-, inter- and post-linguality. The period of pre-linguality is that period of life in which the child has not yet a symbolic system.» (Uden 1977, p. 20).

⁹¹ According to Moores, Bell also resorted to Dalgarno's work

«using a finger alphabet in which the letters were written on a glove. Messages were spelled by pointing to the appropriate spot on the hand with the index finger of the other hand. By 6 years of age, Sanders had mastered English to the extent that he was able to communicate effectively with hearing persons by writing.» (Moores 1987, p. 251).

On the other hand, the "success" of Bell is a matter of opinion:

"Despite several years of tutoring, Sanders developed no proficiency in speech or speech-reading. In 1882 Bell conceded that George might benefit by enrolling in Gallaudet College..." (Bruce in Moores 1987, p. 76).

Van Uden's conclusion is: "From all this may be concluded that it is possible to learn verbal languages in different forms." (Uden 1977, p. 25).

However, van Uden is an extreme oralist, or in respect to his elaborated methods (e.g. of rhythmic training, individual speech lessons, etc.) he should be named by his own words as a "pure oralist". He is very sceptical of graphic methods and fingerspelling. In his own words:

"It may be clear that the spoken auditory form of language of the normal hearing is the most essential and complete form and that all other forms are either participations or derivatives.

The non-auditory rhythmic spoken form seems to approximate this essential form nearest of all, as a real participation (=taking a satisfying part of it). The graphic form is only a derivate. It may limit the interaction with the environment very much, and there are reasons to suspect that the development of speech and lipreading may be hampered, which inhibits the social interaction once more (cf. Yale 1931). The function of abstraction may be preserved, but the STM-function (R.Th.E.: Short Term Memory function) is not developed to its full extent. Brill (1953) found that the memory-function for written words in deaf children, not rhythmically trained, was limited to 5 words. It may be predicted that the graphic method can be successful with respect to perfect language-control in very *gifted* deaf children only, because only these can compensate in memory-difficulties and in the slowed down process of automation. The same must be said of the visual finger-spelled form of the manual alphabet. (As far as I know, no researches have been done on the STM-function of tactile manual language of the deaf-blind.)

It may be concluded that these non-oral forms of verbal languages should be used in exceptional cases only, as a last escape where the purely oral form is not possible for some reason, for instance because of brain dysfunctions.

The purely oral way remains the ideal for the prelingually deaf children: more deaf children can be brought to the full culture of language, and this can be done on the average, better and sooner than by any other means, provided that the right methods are followed by qualified teachers." (Uden 1977, p. 26).⁹²

The emergence of total communication

In the 1960s there came a turning point. The concept *total communication* emerged. Although the term "total communication" may have different denotations and connotations it is justified to say that it contains all means of communication. That means body posture, mime, gestures, speech, reading, writing, manual signing, fingerspelling, the use of residual hearing and vision. It also means a method using these means appropriate to the individual possibilities and needs.

Also Conrad points to the fact that the traditions of the early teachers had never really been lost in the USA. He refers to Garretson (1976) who showed that by 1976 almost 75% of all school programmes for deaf children with an enrollment of 100 children or more had reported the introduction of Total Communication (Conrad, R. 1979, p. 289).

Van Uden states that two characteristics seem to distinguish 'Total Communication' from the 'Combined method':

"its systematization, aiming at a coordinated bilingualism of 'High Version sign-language' and 'Oral language, included finger-spelling';

its totality of linguistic codes for, in principle, all the deaf from early childhood, claiming that this integration of so many aspects and modalities of communication does not deteriorate but enhances oral abilities..." (Uden 1977, p. 196).

⁹² van Uden gives the following definition of the 'purely oral way for deaf children':

"The monolingual education of prelingually deaf children in such a way that rhythmic speech and lipreading with sound-perception become their directly automatized way of conversation." (Uden 1977, p. 22).

Van Uden criticises the philosophy of total communication for several reasons:

"A first bad consequence of using sign-language is that the deaf are educated solely for a deaf community or *ghetto*... This means a real isolation within the hearing world, a kind of 'apartheid' with all its resentments and other repercussions...

It is said that sign-languages keep the deaf further from social isolation when conversing *with each other*. According to my experience, however, there is a lot of misunderstanding among the signing deaf, unless the content of the conversation is kept down to very concrete situations." (Uden 1977, p. 198).⁹³

Today there seems to be a worldwide trend towards total communication in the education not only of the hearing impaired but also of the visually impaired and the multi-sensorily impaired. There are many "tricky" problems concerning the ideology of total communication. Is it an ideology favoured for *the individual*, for *everybody* or is it an ideology for a *programme*, *a frame*, *a tool*, which is meant to be of help in deciding what is the best mode of communication for the individual? Since the 60s there has been much confusion concerning this vital question. It is important, therefore, when confronting the term or the philosophy of total communication, to ask: Is the meaning

a) simply that all means of communication are used in a general *programme*; and/or

b) that all means of communication are used in the education of the individual?

Further

a) does the denotation comprise that the means are implemented in different ways, e.g. going from one mode to another, etc.; or

b) does the denotation comprise the practice of combining, e.g., listening (with the use of amplification); speaking; speech-reading (lip-reading); signing; fingerspelling; all or some of them, *simultaneously*; also termed "simultaneous communication"?

It is also worth recalling what J. van Cleve is pointing out concerning the United States, because his statements probably are valid for many, perhaps most, of the countries in the world:

"Despite numerous attempts to compromise, the methods controversy (R.Th.E.: the sign language controversy) prevails among educators, parents, school administrators, and deaf persons. It has involved government bodies, professional groups, and organizations of deaf people. It was not until the 1960s that studies of the effectiveness of various communication methods began to reduce the emotions and invective of two centuries." (Cleve, J. van 1987a, p.53).

There seem to exist in many countries of the world two main types of signed language, the deaf's own language (indigenous) and a signed version of the (main) oral language of the country. In the US, there is American Sign Language (ASL, also called "Ameslan") and signed English (with the vocabulary mostly from ASL), in Norway Norsk tegnspråk (Norwegian Sign Language) and Tegn-språk norsk (Signed Norwegian)⁹⁴. In the US there are at least four major sys-

⁹³ According to van Uden, there are of course a few deaf children who because of multiple handicaps need a sign-education. These are deaf children with subnormal intelligence; deaf children with a pathologically bad memory; deaf children with asymbolia for words.

The same happens in a few normally hearing children. These are the overloaded 'image-thinkers', which we would like to call 'iconic children' (and adults). (Uden 1977, p. 204).

⁹⁴Tegnspråk norsk (Signed Norwegian) seems to have disappeared. Varieties of signs supporting speech

tems of the signed English. They are called Signing Exact English, Seeing Essential English, Linguistics of Visual English, and Signed English. The four systems differ in several ways, primarily in the extent to which they incorporate traditional signs and in the method for forming the auxiliary verbs, pronouns, articles, etc. (Meadow 1980, p. 24).

Although total communication seems to be the dominating teaching strategy in many countries, we also find defended and practiced two extremes, pure oralism on the one hand (only teaching by speech), pure signing (only teaching in the deaf's own language) on the other. However, the author has never heard of a school without speech training at all. Therefore the "extreme" manualists with some right call their position that of "total communication". The extreme oralist position is not quite comparable with extreme manualism. Extreme oralism is against the use of indigenous sign language. The most extreme manualism was never - as clearly demonstrated in history - against the phonetically based language, e.g., as reading and writing. It was and is against the teaching and learning of *speech* by deaf people.

A position sometimes named a "middle position" is the favouring of both the oral and the signed version of (the oral) language. In fact, this is no middle position at all, since the indigenous sign language does not exist in this teaching. We also find a lot of other views and teaching strategies, e.g. the advocacy of first (preschool) education in the deaf's own language ("first language", "primary language", "mother tongue")⁹⁵, later other variants. We also find the parallel or contrast teaching (contrasting the indigenous sign language with the phonetically based one). These are different versions of what is called "Bilingualism". Also still existing is the Rochester method (see above); and the method of so called "cued speech", i.e. a system utilizing hand shapes representing specific sounds which are formed at the time spoken words are produced. A term sometimes used is "Pidgin English", meaning either an oral spoken very simplified English or a very simplified manual signing of the phonetically based English.

Real life, however, is always richer than theories. In those countries committed to emphasize the indigenous sign language in teaching, there normally are a lack of teachers that really master indigenous sign language. In real life, therefore, there also seems to come into existence a very interesting new form of sign language, the *fluent contact signing*, meaning a real new construction of manual signing based on a blending ("meeting"?) of the phonetically based language and the deaf people's own sign language. We still know too little about these linguistic tendencies to term this language a Pidgin language. It can be that the latter term does not cover fluent contact signing.

Summing up⁹⁶: The predominant approach to deaf education for most of this century was the "oral method", or "Oralism". Oralism is based upon the assumption that deaf children are best prepared for adult life in society by extensive training in producing and comprehending the spoken language - speech, reading,

and speech supporting signs remain.

⁹⁵Since more than 90 percent of deaf children have hearing parents, the deaf's own language can never be the mother tongue (in its strict sense) of the majority of deaf people.

⁹⁶This summing up is based on an unpublished paper by the author's colleague Arnfinn Muruvik Vonen, Senior Research Officer, Skådalen Resource Centre for Special Education of the Hearing Impaired and the Deaf-blind, Oslo (Vonen 1995).

writing. Today, a considerable number of schools for the deaf around the world, still adhere to the philosophy and practice of oralism.

An alternative approach called "Total Communication" (TC) was first implemented around 1960-70. Although ambiguous, the basic assumption of this alternative is that any communicative code (speech, signing in the deaf's own language, simultaneous speech and signing, etc.) is appropriate in deaf education as long as it serves the purpose of "getting the message across". Today, probably most schools for the deaf adhere to this approach. For example, this is the case in the United States. In practice, the prevailing medium of instruction, at least in group settings, is so-called "Simultaneous Communication" (SimCom) or sign-supported spoken English. Many TC schools (or about one third of the total number of schools for the deaf in the US) have adopted one of the existing specially designed systems for representing English manually while speaking; the best known of these systems is Signing Exact English (SEE-2).

Since the 1980s, "Bilingualism" has been promoted as an alternative to earlier approaches. The bilingual approach seems to be the dominant approach in Sweden where sign language has the status of a minority language. In Norway this approach is made the basis of the new curriculum (1995), although the teaching up to present time was dominated by SimCom. The new bilingual approach is based on the idea that the medium of instruction should be the language which is accessible to the students without any additional inventions and adaptations, i.e. in the US, American Sign Language (ASL), in Norway, Norwegian Sign Language (NSL). The oral language (respectively English, Norwegian) should then be acquired as a second language. The attitude towards SimCom as an auxiliary medium of communication seems to vary among proponents of bilingualism. Furthermore, some proponents emphasize that the education should be "Bilingual-Bicultural" ("bi-bi"), stressing the awareness of a relationship between a deaf minority culture (characterized partly but not exclusively by the use of the indigenous sign language, e.g. ASL, NSL) and a "hearing" majority culture, while others, while not in disagreement with the bi-bi philosophy, give the main priority to the linguistic aspects. As of 1995, only 3 schools for the deaf in the United States seem to have implemented a bilingual programme with ASL and English as elements in all classrooms (although the idea is being seriously considered by a larger number of schools, at least one of which is running a pilot programme):

- The Learning Center for Deaf Children, Framingham, Massachusetts,
- Indiana School for the Deaf, Indianapolis, Indiana,
- Maryland School for the Deaf, Frederick, Maryland.⁹⁷

Both in the United States and in other states of the world the policy towards deaf people is equivocal. On the one hand bilingualism is promoted, on the other hand there exists a dominating ideology of "normalization", of "inclusion", "mainstreaming". In Norway deaf people had to fight for their schools (for the deaf) since the main policy towards all kind of "deviants" is inclusion.

⁹⁷The term "bilingual" is also found in the descriptions of some TC programmes. Here, however, the term seems to be used as a synonym of "bimodal", corresponding with the widespread use of the term "sign language" to mean simply "language represented in the gestural-visual modality".

In all countries it is difficult to evaluate the number of deaf children that in some or other way is in the "normal" school. Obviously that depends on definitions and criteria of deafness.⁹⁸

The question of deaf people's self-organizing

In every country where deaf people exist, they have to deal with hearing guardians. So also do they on the international level.

For the past century, international meetings have been held to discuss education for deaf students, although early meetings rarely involved deaf educators or deaf persons at all. The *International Congress on the Education of the Deaf* was up to the present time an association for people working for the deaf not an association of the deaf.

According to Brill, although the international congresses were concerned with the education of deaf people, full participation by deaf individuals was minimal until recent years. There were several reasons for this. People who attended the earlier congresses, particularly those not from the host country, were predominantly heads of schools for the deaf, and during those years there were probably no schools headed by deaf persons. Another factor was that there were almost no deaf teachers in European schools between 1878 and 1925, and seven of the first eight congresses were held in Europe during that time period. The first official record of deaf participants was at the Fourth International Congress held in Chicago in 1893. There were many deaf teachers in the United States at that time and many attended the Chicago Congress. The participation of deaf people varied from very few to relatively many in the next congresses. A great change came about at the International Congress in Hamburg in 1980 when deaf people presented papers at various panels and took leading roles in presenting major addresses in plenary sessions (Brill, R.G. 1987, pp. 87-89).

The *World Federation of the Deaf* is, contrary to what the *International Congress on the Education of the Deaf* traditionally has been, an association of deaf people.

This organization, formed by conference members during the 1951 World Congress of the Deaf, provides, according to Turkington and Sussman, international visibility for deaf people and serves as an information exchange for deaf experts from around the world. Members of the federation have developed Gestuno, an attempt to create an international sign language. Gestuno is made up of 1,470 signs appropriated from existing sign languages. The federation, which hopes to have Gestuno accepted in other settings in addition to the annual congresses of the federation, now uses French and English sign languages and Gestuno at its plenary sessions (Turkington, C., Sussman, A.E. 1992, p.196).

According to Anderson, the number of international meetings of deaf persons is unknown. As several international meetings were known to have been held prior to World War I, the number of such meetings must have exceeded 10.

In 1880 deaf individuals in the United States formed the National Association of the Deaf, which later was reorganized as a federation of state deaf associations.

⁹⁸E.g., the term "deaf" seems to be used with a wider extension in the US than in Norway. The author has heard the statement that more than 70% of US deaf children are not in a deaf school, i.e. they are in a "normal" setting.

This was the first association founded by deaf people in the United States. It was founded by a group of deaf leaders concerned that deaf people were not included in the decision-making processes affecting their own lives (Turkington, C., Sussman, A.E. 1992, p.131). It is said to be "the first organization in the United States founded by disabled persons." (Schein, J. 1987, p. 220).

Local clubs in European countries were united under new national federations mostly during the 1920s and 1930s, according to Anderson. Although their interest in international co-operation was clearly demonstrated prior to World War II, the low socioeconomic conditions, limited job opportunities, restricted civil rights, and inadequate educational levels among deaf people delayed their establishment of an international organization.

Government grants and a strong encouragement from the Italian government enabled Ente Nazionale Sordomuti (the Italian deaf association) to take the initiative to unite the national deaf associations of the world. The first congress after World War II was held in Rome during September 19-23, 1951. National deaf associations representing 16 countries, including the United States, agreed to send their deaf representatives to the world congress. Other countries were represented by observers (usually hearing) and diplomats. At their first assembly, the representatives reached an agreement to establish an international organization called the World Federation of Deaf-mutes (WFD), later replacing "Deaf-mutes" with "Deaf."

The World Congress of the WFD usually attracts over 2000 persons from at least 50 countries. "It is an event where deaf and hearing people can interact and share mutual concerns." (Anderson, Y. 1987, pp. 344-346).

Thus, the WFD assembles both deaf and hearing people.

What has been achieved?

Can we speak of a substantial, a real progress in education, employment and income of hearing impaired people? Of course, as for blind people, it will be impossible to give a general answer to that question valid for the whole world. But statistics have been collected in the United States of America.

Education, employment and income of hearing impaired people today - United States of America as an example

There is a great study of the deaf population of the United States published in 1974 (Schein, J.D., Delk, M.T. 1974).⁹⁹ It was conducted by the National Association of the Deaf in cooperation with The Deafness Research & Training Center, New York University.¹⁰⁰ It is called the National Census of the Deaf Population (NCDP).

Schein and Delk have some very interesting introductory comments on the education of deaf people, saying that less than half a century after the opening of the first permanent public school for deaf children in Hartford, 1817, the first college in the world for deaf students began in Washington, D.C.. The United Sta-

⁹⁹This is twenty years ago. However, the more recent studies *known to the author* do not have the high quality of Schein and Delk's study.

¹⁰⁰To estimate the size of the hearing impaired (including the deaf) population they used a combining of methods (compiling a list of deaf persons, in addition using a sample, a certain measurement using both sources giving the estimate). To estimate the characteristics (education, etc.) of prevocationally deaf persons they drew a sample not from the total US population, but from their list of deaf persons. Knowing the great problem of collecting such information, the author is impressed by the attempt at achieving a high validity.

tes maintains a benign position of international leadership in the education of the deaf citizen, according to them. Gallaudet College continues to be the world's only liberal arts college for deaf students, for example. Accordingly, one would expect the demographic picture of the deaf community in the United States to reflect this enlightened attitude towards the education of deaf citizens (Schein, J.D., Delk, M.T. 1974, p. 47). It is of great interest to compare deaf with blind persons concerning education, employment and income. Especially for education this is difficult. Deaf children attend one of four types of schools: residential schools, day schools, day classes (in regular schools), and regular classes. This will be the same for blind, but the author supposes the patterns are different; more deaf children will be in residential schools and day schools than blind children, more blind children will be in day classes and regular classes than deaf children.¹⁰¹

Schein and Delk's data on pre-vocationally deaf persons [i.e. persons who could not hear and understand speech and who had lost (or never had) that ability prior to 19 years of age] demonstrate that half of the persons covered, 25 to 64 years, obtained all of their education in a residential school. Somewhat more than 1 in 5 attended both regular and special schools, and nearly 1 in 11 never attended a school or class for hearing impaired children (Schein, J.D., Delk, M.T. 1974, p. 51). Of these pre-vocationally deaf persons (=100%) 28.4% completed the grades in the range 1-8, 24.9% the grades 9-11, 34.7% the grade 12, 5.6% the grades 13-15, 2.7% the grade 16, and 3.7% the grades 17+. That means that more than one third of the deaf population have completed high school (twelfth grade), and 12 percent have gone to college for one or more years. Of the latter, half have earned baccalaureate degrees (Schein, J.D., Delk, M.T. 1974, p. 51).

This, however, indicates a dramatically lower frequency of higher education among deaf people not only compared to the normal population, but also compared to the blind population. And that is not all: Educators have questioned the equivalence of grades, in terms of the inferred educational attainment. The Annual Survey of Hearing Impaired Children and Youth has gathered achievement-test data on large numbers of deaf students. Grade equivalents based on these examinations placed the average deaf student several years behind his normal hearing peers. These studies should, according to Schein and Delk, be borne in mind when comparing deaf and general populations with respect to highest grade completed (Schein, J.D., Delk, M.T. 1974, pp. 51, 53).

Then we should ask if these data reflect the (Schein and Delk) "enlightened attitude toward education of deaf citizens." (op.cit. p. 47), or if it is really true that the United States "maintains a benign position of international leadership in the education of the deaf citizen..." (op.cit. p. 47),

What is then the situation like in other parts of the world? There seems to be a main obstacle for deaf people concerning education: the core of almost all teaching and education, the main, crucial instrument is *conversation* in one or other form. Without mastering this, it is difficult to learn on higher levels. This is not

¹⁰¹According to Meadow, referring to several studies, in the United States in 1976, approximately 45,000 children were enrolled in 671 special schools and classes for the deaf, with an additional 6,000 deaf children receiving education in regular classrooms. The Bureau of Education for the Handicapped estimates that there are 52,000 deaf children and 350,000 hard-of-hearing children, of whom 80,000 are served in special education programmes. This compares with an estimated 875,000 children receiving special education for the mentally retarded. Deaf children comprise less than 1 percent of the total school-age population (Meadow, K.P. 1980, pp. 1-2).

that much of a problem for the blind person, therefore he completes the higher education almost at the same level as the sighted. The deaf person has a greater problem here, but he can see and therefore he can perform working activities much more easily than the blind. Many people ask the question: What is worse being blind or deaf? You might answer "both", but a precise answer demands more: it depends upon which domain, which task to solve. The blind person can *learn how to perform* almost every activity or job, but he cannot *perform* many of them because he is blind. The deaf person can *perform* almost every activity or job, but he has not *learned how to perform* them because he is deaf. However, we would expect a different pattern in the relation work-to-deafness than in the relation work-to-blindness. There are probably more jobs depending heavily on vision than on hearing. What then does the data on employment and income demonstrate?

Based on Schein and Delk's sample of prevocationally deaf people we can construct the following table:

Percent Distribution of Labour Force Status and Employment Status by Sex, Respondents 16-64 Years of Age: United States, 1972. Prevocationally deaf and hearing people.

Respondent's Sex	N	Labour Force Status			Employment Status		
		Not In Labour Force	In Labour Force		Employed	Unemployed	
	Deaf	Deaf	Deaf	Gen'l Pop.*	Deaf	Deaf	Gen'l Pop.*
Males	2707	17.3	82.7	79.7	97.1	2.9	4.9
Females	2552	50.6	49.4	43.9	89.8	10.2	6.6

*Source: Employment and Earnings, U.S. Department of Labor, Bureau of Labor Statistics (Vol. 20, 9), March 1974. (Schein, Delk 1974, p. 75).

The data are very interesting: Approximately 83 percent of deaf males are in the labour force and approximately 50 percent of deaf females are. For both sexes this is slightly more than for the general population. Less than 3 percent of deaf males were unemployed in 1972. That is less than for the general population. Approximately 10 percent of deaf females were unemployed. This is more than for the general female population.

Schein and Delk's sources are not identical with Kirchner and Peterson's data on the employment of people with visual loss. Kirchner and Peterson's data were from 1976, these data are from 1972. That excepted, the criteria for the crucial terms employment, unemployment and labour force seem to have been used in an identical or similar way.¹⁰²

¹⁰²Schein and Delk, following The United States Bureau of Labour Statistics, define employed, unemployed and labour force as follows:

Employed. Employed persons comprise all civilians 16 years old and over who were either (a) 'at work' - those who did any work at all as paid employees or in their own business or profession, or on their own farm, or who worked 15 hours or more as unpaid workers on a family farm or in a family business; or (b) were 'with a job but not at work' - those who did not work during the reference week but had jobs or businesses from which they were temporally absent due to illness, bad weather, industrial dispute, vacation, or other personal reasons.

Unemployed. - Persons are classified as unemployed if they were civilians 16 years old and over and:

Comparing the proportion of persons with visual loss with the corresponding proportion for deaf people *we find a dramatically different picture: While 82.7 percent of deaf male people are in the labour force, only 43 percent of people with visual loss are; the rate for deaf females is 49.4 percent compared to 20 percent for females with visual loss.* In other words, our hypothesis on this matter was corroborated. *Very exaggerated then: Deaf people have an occupation, but no education; blind people have an education, but no occupation.*¹⁰³

In which principal occupations do we find deaf people?

Based on Schein and Delk we can construct the following table:

Percent Distribution of Principal Occupation of Employed Respondents 16 to 64 Years of Age, by Age at Onset of Deafness: United States, 1972. Prevocationally deaf people.

Principal Occupations	All ages	Ages at Onset			
		Born Deaf	0-3 Years	3-5 Years	6-18 Years
All occupations	100.0	100.0	100.0	100.0	100.0
Professional and Technical	8.8	10.0	5.6	9.6	12.5
Nonfarm Manager and Administrators	1.4	1.6	1.0	.5	2.9
Sales	.5	.9	-	-	1.5
Clerical	15.0	14.3	16.7	15.5	11.7
Craftsmen	21.3	18.4	25.5	20.9	19.8
Operatives Nontransit	34.7	35.9	36.3	34.2	26.4
Operatives Transit	1.2	.7	.7	2.1	2.9
Laborers Nonfarm	6.2	6.8	3.2	9.1	8.1
Farmer and Farm Managers	.8	.9	.7	1.1	-
Farm Laborers	.8	1.1	.5	.5	.1
Service Workers	9.2	9.0	9.8	5.9	13.5
Private Household Workers	.2	.2	-	.5	-

(Schein, Delk 1974, p. 88).

Looking first at the differences related to age at onset of deafness, the statistics are difficult to interpret. Schein and Delk point out that the born-deaf group

(a) were neither 'at work' nor 'with a job, but not at work' during the reference week, (b) were looking for work during the past 4 weeks, and (c) were available to accept a job. Also included as unemployed are persons who did not work at all during the reference week and were waiting to be called back to a job from which they had been laid off.

Civilian labor force. The civilian labor force consists of persons classified as employed or unemployed in accordance with the criteria described above (Schein, Delk 1974, pp. 73-74).

¹⁰³Those are the sentences making people famous, quoted everywhere. The reader will not find many of those in this book. The reason why is that they very often are wrong. For example, in this case there are many things that can change this picture: It might be that it is primarily those blind people *without* education who are those with no occupation. While discussing the problem of unemployment among blind and deaf people the effect of other impairments should also be scrutinized. We know that the rate of other impairments among blind and deaf people is higher than that in the general population since the cause of visual/hearing impairment sometimes also has other impairments as an effect.

has a more favourable occupational distribution than the remainder of those who are prelingually deaf (Schein, Delk 1974, p. 83). In general we see that deaf persons are employed in all principal occupations from professional to domestic. The largest proportion are nontransit operators; i.e. they run machines of various kinds.

We might draw the conclusion from the table that deaf persons are disadvantaged in attaining higher prestige (generally, higher income) occupations. In the top categories above the line in the table, which correspond generally to "white collar" occupations, deaf persons are underrepresented compared to the rest of the U.S. population. In the remaining "blue collar" categories, deaf persons are overrepresented. One can make a very risky comparison between Kirchner and Peterson's data and Schein and Delk's data: the rate of employed persons with visual loss¹⁰⁴ in "white collar" occupations is higher than the rate of deaf persons in such occupations, accordingly the rate of employed deaf persons in "blue collar" occupations is higher than that of persons with visual loss. That is no surprise, but the reasons are likely to be complex. For example, there might coincide both higher education by blind people and at the same time lower ability among visually impaired to perform many "blue collar" occupations compared to deaf people.

In coherence with our other assumptions we will then hypothesize that (a) the average income among employed deaf people not only should be lower than the average in the general population but also (b) than for employed visually impaired people.

Based on Schein and Delk's data we have constructed this table:

¹⁰⁴Remember the much lower rate of persons with visual loss than of deaf persons in the labour force!

Percent Distribution of Personal Income from Wages and Salary of Respondents 16 to 64 Years of Age: United States, 1971. Employed prevocationally deaf.

Income	Percent	Median	
	Deaf	Deaf	General population ^{a,b}
Total	100.1	\$5915	\$8188
Less than \$30	20.1		
\$3000-4999	20.2		
\$5000-6999	21.3		
\$7000-9999	23.8		
\$10,000-14,999	12.6		
\$15,000- & over	2.1		

a) Source: U.S. Bureau of the Census, 1983b) Includes persons 14 and 15 years old and 65 and older (Schein, Delk 1974, p. 102).

Deaf earnings are approximately 72% of those in the general population. The first part of our hypothesis above would seem to be corroborated. However, with all care in the risky comparison with Kirchner and Peterson's data, deaf people seem to have a higher average income than blind people. It would seem that the last part of our hypothesis is disproved. There might be a lot of reasons for such findings. These would, however, be very speculative, since we do not have comparable data on other parameters (e.g. hours of work per week). However, the findings also emphasize the problems for blind people in the working sphere.

In fact, Schein and Delk mention that some other surveys of deaf samples have found their earnings to be higher than the earnings in the general population (Schein, Delk 1974, p. 101).

It is very risky hypothesizing about the situation at the end of the century based on our data and also about the situation in other countries. The rate of unemployment seems generally to be higher in many highly developed countries. We would imagine greater problems then, both for deaf and for blind people in the labour market.

Appendices

Appendix I

L'Épée (1784), "How the Instruction of the Deaf is to Begin", in Franklin Philip's translation and Harlan Lane's edition:

"...The instruction begins with a manual alphabet, such as schoolchildren use to communicate from one side of the classroom to the other. The letter shapes make a strong visual impression on the deaf, who are no more likely to confuse them than we confuse the various sounds we hear.

Next we write (I say 'we' because with my deaf pupils I often have assistants) on a blackboard the words 'the door,' and show them the door. The pupils immediately fingerspell each letter of the word five or six times, impressing on their memory the number and order of the letters. Once they have done this, they erase the word, and taking the chalk themselves, write it out, no matter how well-formed or ill-formed the letters. Then they write it out each time you show them the same object.

They do the same with everything else that is pointed out, the name being written down beforehand, first in large letters on the blackboard, then in normal-sized letters on different cards. When these cards are handed to the pupils, they take pleasure in examining each other's proficiency and in ridiculing errors. Experience has shown that a deaf person of normal intelligence will, with this procedure, acquire upwards of eighty words in less than three days.

Take some card with the appropriate letters, and give them one by one to your pupil. He will point successively to each part of his body corresponding to the word on the card. Shuffle the cards as you like, and he will never make a mistake. Or if you write one of these words on the board, you will see him point to each object named, proving that he understands the meaning of the name.

With this procedure the pupil will in just a few days learn all the words for the different parts of the body, from head to foot, as well as the words for various objects in the environment, as you point to names written on the board or on cards in his hand.

Even at this early stage, however, we do not limit ourselves to just this one type of instruction, entertaining as it is to the pupils. From the very first day or so, we write out the indicative present of the verb 'carry' and explain it by signs as follows.

With several pupils seated around a table, I place a new pupil on my right. I put the index finger of my left hand on the word 'I,' and explain it in signs: pointing to myself with my right index finger, I give my breast two or three gentle taps. Then, with my left index finger on the word 'carry,' I pick up a large book and carry it under my arm, in the skirts of my soutane, on my head, on my shoulder, on my back, walking about with the expression of someone carrying a heavy burden. None of these actions escapes the pupil's notice.

I return to the blackboard. To explain the second-person singular, I put my left index finger on the word 'you,' and ..." (L'Épée pp. 54-55 in Lane 1984b).

Appendix II

In Howe's report for the year 1841 on Laura Bridgman

"Some philosophers have supposed that speech, or the utterance of thought by vocal signs, was a human invention, - a selection by man's wisdom of this particular form of communicating thought, in preference to any other form, as that of motions of the hand, fingers, etc.; and they suppose that a community might be formed with a valuable language, and yet without an audible sound. The phenomena presented by deaf mutes, however, contradict this supposition, if I rightly understand them. So strong seems the tendency to utter vocal sounds, that Laura uses them for different persons of her acquaintance whom she meets, having a distinct sound for each one. When, after a short absence, she goes into the sitting room, where there are a dozen blind girls, she embraces them by turns, uttering rapidly, and in a high key, the peculiar sound which designates each one; and so different are they, that any of the blind girls can tell whom she is with. Now, if she were talking about these very girls to a third person, she would make the sign for them on her fingers without hesitation; yet I am inclined to believe that the thought of their vocal sign occurs first, and is translated, as it were, into the finger language, because when she is alone she sometimes utters these sounds or names of persons. She said to me, in answer to a question why she uttered a certain sound rather than spelled the name, *"I think of Jennette's noise, - many times, when I think how she give me good things; I do not think to spell her name."* At another time, hearing her, in the next room, make the peculiar sound for Jennette, I hastened to her, and asked her why she made it; she said, *"Because I think how she do love me much, and I love her very much."*

This is not inconsistent with the opinion which I advanced at first, - that she associates her thought *immediately* with her finger language; it only shows that the natural tendency of the human mind is to express thought by some kind of symbol; that audible signs by the vocal organs are the first that suggest themselves; but that, where this avenue is blocked up, the natural tendency or inclination will be gratified in some other way.

I do not doubt that I could have trained Laura to express her thoughts, to a considerable extent, by vocal signs; but it would have been a most rude and imperfect language; it would have been indeed a foolish attempt to do, in a few years, what it took the human race generations and ages to effect.

Some persons, who are familiar with teaching the deaf mutes, have expressed their opinion that Laura already uses language with greater precision than children who have about the same degree of knowledge, but who are merely deaf and dumb. I believe this is true; and it confirms what I think might be inferred *a priori*; viz., that the finger language should be used as much as possible in teaching the mutes, rather than the natural signs, or pantomime. I am aware that I am treading on delicate ground; that the subject involves very nice metaphysical considerations, and has an important bearing upon the whole subject of deaf mute instruction, of which I by no means pretend to be a competent judge; nevertheless, I trust I shall not be deemed presumptuous, if I throw out such thoughts as Laura's case has suggested, in the hope that they may be of some service to others.

The language of natural signs is swift in the conveyance of meaning; a glance or a gesture will transmit thought with lightning-like speed, that leaves spoken language a laggard behind. It is susceptible, too, of great improvement, and, when highly cultivated, can express almost every variety of the actor's thought, and call up every emotion in the beholder's mind; it is like man in his wild state, - simple, active, strong, and wielding a club; but spoken language, subtle, flexible, minute, precise, is a thousand times more efficient and perfect instrument for thought; it is like civilized man, - adroit, accomplished, welltrained, and armed with a rapier.

But it is too late do discuss the comparative merit of vocal language, and the language of natural signs, or pantomime; all the world, except the deaf mutes, use the first; the mutes are clearly in the minority, and must yield; the majority will not talk to them in the language of natural signs; they must, therefore, make themselves as familiar as possible

with arbitrary language, in order to commune with other minds; and to enable them to have this familiar communion, is, I believe, the principal object aimed at in all good schools for the deaf and dumb. But I understand that the educated deaf mutes, generally, are little disposed to talk in alphabetic language; that there are very few of them who, after they leave school, make much use of it; and that moreover, they are not fond of reading, although they have learned to read, and understand what they read, pretty well; they prefer to use the natural signs as a medium for the reception and communication of thought, *because they are most intimately associated with, and suggested by, the thought*. If a deaf mute wishes to say to you, "*He is my friend*", he hooks his two fingers together; the thought of his friend instantly and spontaneously connects itself with this sign; and if he is obliged to express it to you, he can do so only by *translating* this sign into the finger language, and spelling the words, "*He is my friend*." Now, it seems to me both feasible and desirable to make the finger language so familiar to him, so perfectly vernacular, that his thoughts will spontaneously clothe themselves in it. Why are words in the finger language so familiarly connected with thought by Laura Bridgman? Because she could use but few natural signs, or but little pantomime; and she has been prevented by her teachers from using even that little, so that the current of her thoughts, forced in a different direction, has worn for itself a channel, in which it flows naturally and smoothly.

Common children learn a spoken language from their mothers, brothers and sisters, and companions; and it becomes their vernacular. They go to school, and learn to substitute for these audible signs certain printed characters, so that, when they see them, they shall suggest the audible signs, that is, they learn to read; but they never read with pleasure until the sight of the printed words suggests easily, and without effort, the audible signs. Persons who have learned to read, late in life, or who are little accustomed to read, pronounce every word aloud as they go along; if they are a little familiar with reading; they merely move the lips without uttering the audible signs; and it is only when very familiar with the mechanical process that the eye glances along the page, and the mind takes in the sense rapidly; but even then it is doubtful if the sight of a word, for instance, *horse*, does not immediately suggest the audible sound, rather than the picture of the animal. At any rate, it is very important that a familiar use of the written signs of audible sounds should be had early in life, in order that reading may be pleasant or profitable afterwards.

Deaf mute children, of their own accord, make a few natural signs; they learn some others from imitation, and thus form a rude language, which, on going to school, is amplified and systematized, and which is used with their companions and teachers, until it becomes their vernacular. They learn, at the same time, to use common language in their classes; that is, they learn to read, to write, and to make sentences by spelling words with their fingers; *but this does not come to the vernacular*; they are like seeing children learning a foreign language; they read, write, and speak in it to their teacher, but the moment they are out of the school they resort to the language of natural signs, - of pantomime. When they go away from school, they will not speak in the arbitrary language of signs any more than common children will speak in French, when they can make themselves understood by others; they will not read common books any more than other children, imperfectly acquainted with French, will read French books. Now, as, to oblige a common child to learn French, I would place him in circumstances where he would be required to use it continually, so I would place the dumb child in such circumstances that he would be obliged to use the finger alphabet, writing and reading, until the language should become to him *vernacular*; until the thought of a *horse*, for instance, should instantly be associated in his mind, not with the motion of his two fore-fingers imitating the ears of the animal, but with the word *horse*. Laura has been thus placed by nature; were she only deaf and dumb, she would acquire by imitation the natural signs used by others, and use them herself; but, being blind, she cannot see them, and her teachers carefully abstain from giving her any." (Howe 1849, pp.53-58).

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