Historical perspectives on the care of children with language impairment in Scandinavia

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Introduction

For speech and language clinicians and researchers specialized in child language impairment it is obvious that a number of children, in particular within the preschool age range, have language impairments of varying degrees. It is less self-evident, however, that such impairments have been recognized in earlier years. If they have been identified, they have not always been looked upon in the same way as today. In order to understand how clinical work with child language impairment has changed over time it is necessary to adopt a historical perspective. Apart from studying the establishment of institutions, professions and professional organizations, it is also important to analyze the change of theories over the years, since the descriptions of impairment highly depend on contemporary theories. This
The article will focus on how clinical work with language impairment has evolved within Scandinavia.

**Pre-scientific approaches**

There is a lot of anecdotal evidence that human beings for many centuries have been fascinated by language learning and language impairment (O’Neill, 1980). In the Bible, Moses describes himself as:

I am not eloquent, neither heretofore, nor since
Thou hast spoken unto Thy servant; but I am
slow of speech, and of a slow tongue (Exodus, 4: 10-12)

There are also examples of children being deliberately locked up in extreme deprivation, such as the famous case of Caspar Hauser, who was discovered at the age of 16 in the city square of Nürnberg in 1834. Subsequent development of such ‘wild children’ after discovery has been carefully analyzed in order to explore the prerequisites for a normal language development (Skuse, 1993). In Scandinavia, the Danish linguist Otto Jespersen (1909) describes the language development in two twin boys, brought up in an extremely poor environment in northern Zealand.

*The first scientific period - a medical-articulatory approach*
The earliest known example of a scientific description of child language impairment dates back to 1835 when the Austrian physician Franz Gall in a general textbook on neurological disease mentions language impairment. It is interesting to note that Gall differentiates between mental retardation and language impairment, and also highlights the central nature of the disorder. (Gall, 1835:24):

There are children who know not how to speak, although they are not idiots, and understand nearly as well as other children, who speak. In these cases, the fault does not lie in the vocal organs, as the ignorant sometimes persuade themselves.

It was not, however, until the last three decades of the 19th century that child language impairment became established as a topic in its own right. This is evidenced by a surprisingly large number of publications, written almost without exception, by German or Austrian physicians, specialised in the newly established discipline of otorhinolaryngology: Leopold Treitel (1894), Albert Liebmann (1898) Hermann Gutzmann (1894) and Raphael Coën (1886). This group of physicians referred to themselves as 'die Sprachärzte' (=language doctors) indicating that they constituted a new
profession specialised in child language impairment (Weiner, 1986). It is worth noting that in the early years of the study of normal child language many authors were physicians, for example Kussmaul, Preyer and Sigismund (Bar-Adon & Leopold, 1971). In Scandinavia, some publications on child language development appear in the beginning of the 20th century, mainly by philologists: V. Tarkiainen, (1913); Axel Koch, (1901); Otto Jespersen, (1918/1923/1941) and Matias Skard, (1908).

It is important to point out that Speech institutions and Speech clinics specialised in the assessment and treatment of speech and language impairments were established during the same time, i.e. at the end of the 19th century. In Scandinavia the establishment of Logopedics was initiated in Denmark. The national Speech institute 'Taleinstitutet' in Hellerup, Copenhagen, was founded already in 1898. (A few years later, a Speech institute in Aarhus was established.) Like most Speech clinics or Speech institutes on the Continent the Danish Speech institute originated from the Institute of the Deaf. Some of the European Institutes of the Deaf were founded already during the 18th century. In Sweden the first Speech clinic was established by the female physician Alfhild Tamm, within the Stockholm school system in 1914 (for details, see Nettelbladt & Samuelsson, 1998a,b; in Samuelsson, 1997 an analysis is made of Tamm’s patient records). In Norway the Granhaug special school for children with
speech disorders was founded in 1919 (Preus, 1998). In Finland the first speech clinic was founded in Turku not until 1948 (Siirala, 1982).

In Finland, there is a fairly large number of early publications on deaf (or 'deaf and dumb' as was the contemporary term); many are written in Swedish, e.g. Argillander (1771) and Alopæus (1873). (For details, see the bibliography made by Matti Lehtihalmes.) There is also evidence that phonetics became established early in Finland. In his presentation of the 19th century phonetician Europæus (1857), Aulanko (1993) makes the interesting comment that the early Finnish phoneticians, including Europæus, had a practical purpose in mind in teaching speech to the deaf. The close links between teachers of the deaf and the young discipline of logopedics is also evident in the early Norwegian history. The pioneers Jacobine Rye and Hans Eng had both worked as teachers of the deaf before they became specialized in logopedics (Meen, ms.; Karlstad, 1998). Alfhild Tamm (1938-39) suggested that speech clinicians should learn their clinical methodology from teachers of the deaf, but the links between the deaf care and speech therapy do not seem to have been so close in Sweden as in the other Scandinavian countries.

Creating terms which characterize the object for study is an important part of the establishment of a new professional field. The first proof of the
generic term 'speech disorder' in Danish, 'talelidende', dates back to 1895 in a book 'Om offentlig forsorg for talelidende børn' (On public care of children with speech impairment) by the physician and dentist V. Haderup. The first proof of the Swedish term 'talrubbning' is found in a textbook in psychiatriy for nurses, published in 1907 (The dictionary of the Swedish Academy). The first proof of the term 'speech disorder' in Finnish is 'puhevika' and is given by H. Klemetti in 'Musikin historia' (History of music) part I, p 86 and refers to the monk Notker, often referred to as 'Notker Balbulus ' (Notker the Stutterer, Fibiger, 1990).

Now, from where came the sudden interest in child language impairment as evidenced by these new professionals at the end of the 19th century? Important developments had been made within medicine in general, of particular importance was the establishment of otorhinolaryngology. The establishment of Phonetics at the end of the 19th century has clearly played a significant role in offering tools for describing speech and language impairment. The International Phonetic Association was founded in 1886 (Malmberg, 1967). The history of Phonetics and the history of Phoniatries and Logopedics have been strongly intertwined. (Eldridge, 1967; Panconcelli-Calzia, 1957). This period is characterized by viewing speech impairment as a deviant, bodily behaviour and focus was, and continued to be for a long time, on defects of articulation. There were natural and close
links between articulatory based phonetics and physiologically-medically made classifications. Psychology was also established as an academic discipline during the same time. Tests for measuring cognitive ability were first created by Alfred Binet in 1905 as an instrument for selecting children suitable for higher school education (Sutherland, 1984). Changes within society, such as industrialization and urbanization, also played an important role. It is likely that the introduction and expansion of the compulsory school, where many children were brought together in an institutionalized context, led to the identification of children with speech and language impairments (Nettelbladt & Samuelsson, 1998).

_A developmental approach to language impairment in children and the establishment of professionals_

During the first half of the last century, the study of child language impairment was strongly influenced by the newly established disciplines of developmental psychology and pediatrics. Influential theories had been presented and became applied on a large scale, e.g. the theories of Piaget and Vygotsky. Developmental stage models were created to capture and interpret the general development of children. There were also important changes within society where child welfare systems were developed. Child development was measured in various ways, scales were invented for measuring bodily development. In line with this, large scale measurements
of different linguistic abilities were made, especially speech sound inventories and active vocabulary (Templin, 1947). No detailed linguistic analyses were made. Language impairment was defined broadly - children with other handicaps as mental retardation, cerebral palsy and hearing impairment were included in the textbooks on language impairment that appeared (see for example, Morley, 1972).

The role of the professionals became more firmly established as reflected in the foundation of professional organizations and programs for training professionals. In Scandinavia, a Danish Association was first founded in 1912, the so called 'Selskabet til udbredelse af Eduard Engel's stemmedannelseslære' (Society for the spreading of Eduard Engel's method for voice care). After years of internal conflicts concerning whether Engel's method was the only one to be allowed to be practised by the members of the sociey, it was incorporated into Talepædagogisk Forening (the Danish Association for Speech Therapy; today called Audiologopædisk Forening, Audiologopedic Association), founded in 1923 (Fibiger, 1998). This is considered to be the oldest, still existing professional organization of logopedics/speech and language pathology in the world. For matter of comparison, IALP, International Association of Logopedics and Phoniatriecs was founded in 1924, and ASHA, the American Speech and Hearing Association, was founded in 1925
(Eldridge, 1967). An early society for voice care was established in Norway already in 1911, but similar to the situation in Denmark, internal conflicts arose, and already in 1924 another society was founded which also specialised in voice care. A general, still existing association, including all parts of speech and language pathology, Norsk Logopedlag (the Norwegian Association of Logopedists) was founded in 1948 (Preus, 1998). In Sweden an attempt was made to establish Svenska sällskapet för röst- och talvård (Swedish society of voice- and speech care) in 1938 (Tamm, 1938). Svensk Förening för Foniatri och Logopedi (Swedish Association of Phoniatriecs and Logopedics) was founded in 1959. The Finnish and Swedish Associations, Suomen puheterapeuttien liitto (Finnish Association for speech therapists; Sovijärvi, 1982) and Svenska Logopedförbundet (Swedish Union for Speech and Language Pathologists) were not founded until 1966.

Already in 1908 an attempt was made in Denmark to initiate a training program for voice therapy; another attempt was made in 1912. In 1934 a general training program started at the Danish School of Education (Liisberg, 1939-40). In addition, a master's program in 'audiologopedics' at Copenhagen University was initiated in 1982. In this program, both speech and language pathologists and audiologists are trained. Currently, there are plans to extend the program at the Danish School of Education into a
master's program (Fibiger, 1998). Following a suggestion by Bering Liisberg, head of the Speech Institute in Copenhagen, a training program at the Granhaug special school was established in Norway in 1948. In 1961 the program was incorporated into the State School for Special Education, which in 1991 was moved to the Department of Special Education at Oslo University (Fibiger, 1998). In Finland an informal training course for speech therapists started already in 1940. Finska talinstutet' (Institute for speech) was founded in 1947 with a focus on esthetical aspects of voice care (Autti, 1958), similar to the Engels institute in Denmark. A formal educational program for speech and language clinicians was established in 1962; the program was extended into a university program at master’s level in 1980 in Helsinki, and in 1981 in Oulu (Sovijärvi, 1982). In Sweden a university program in speech and language pathology at bachelor’s level was established at Karolinska Institute in 1962. At the same time, a speech therapy course for teachers started at the Teachers' College in Stockholm. In 1992 the program for speech and language pathologists was extended into a master's program. Today there are four programs, apart from Stockholm, also at Lund, Gothenburg and Umeå Universities.

In the process of gradual professionalization, the exchange of ideas and experience between colleagues is an important issue, for instance, joint conferences and publications, such as textbooks or journals. Again, the
initiatives came from Denmark. In 1936 the IALP had its 7th international congress in Copenhagen. From the end of the 19\textsuperscript{th} century, Scandinavian conferences had been held, the so called \textit{Særforsorgsmøde}, (a Scandinavian organization for teachers of the deaf, blind, mentally retarded and epileptic). The Danish professionals had a strong influence on the organization of these conferences and on the publication of the journal \textit{Psykisk utvecklingshämning} (Graninger & Lovén, 1997). Bering Liisberg suggested, that a special section on speech disorders should be organized during the next \textit{Særforsorgsmøde} in Copenhagen (Karlstad, 1998). The first official Scandinavian meeting on speech disorders was thus held in 1931. One important result of the meeting was the initiation of the journal \textit{Nordisk Tidskrift for Tale og Stemme}, usually abbreviated to \textit{Tale og Stemme} (Scandinavian Journal of Speech and Voice). The first editors were Bering Liisberg, Denmark, Hans Eng, Norway, Alfhild Tamm, Sweden and Ebba Jacobson-Lilius, Finland. Another Danish initiative was the preparation of the first large textbook in the field, \textit{Nordisk Lærebog for Talepædagoger} (Scandinavian manual for speech therapists). It was not published until 1954.

During the first half of the 20\textsuperscript{th} century Scandinavian textbooks and articles on language impairment in children start to appear. A developmental perspective can be traced, but the theoretical background is still that of the
early Sprachärzte, that is an articulatory-based view on language impairment. A large proportion of these papers were published by Alfhild Tamm; her textbook *Talrubbningar hos barn* (Speech disorders in children) appeared already in 1916. (For an in-depth presentation of Tamm's work, see Nettelbladt & Samuelsson, 1998a, b; Samuelsson, 1997; 1999) Articles and bookchapters on child language impairment from the same period are Danell, 1942, Eng (1938-39), Bjuggren, 1958, Kågén, 1955, Meen 1955.

*The linguistic period - language as system*

An important change occurred after the 1950's. Linguistics was now becoming established and provided important theoretical frameworks and tools for analysis of linguistic phenomena, which was an important complement to the earlier focus on speech and articulation. The first linguistic theory to become applied to child language impairment was the theory of phonological acquisition presented by Roman Jakobson (1941/1968). Earlier labelled defects of articulation could now be analyzed more systematically in terms of lack of phonemic contrasts. The view held by Jakobson that the babbling stage is distinct from the emerging language marks the change in focus from speech (=babbling) as behaviour to language (the emergence of the first words) as system. An important differentiation is now made between articulatory (=speech) impairment and
phonological impairment. Jakobson's book was not translated into English
until 1968; after this point in time there is a significant rise in research
interest for child phonology. David Ingram made an important contribution

In the beginning of the 1970's, Chomsky’s transformational, generative
grammar was applied to data both from children with normal language
development and from children with language impairment, e.g. Roger
Brown (1973) and Paula Menyuk (1978). Generative grammar provided a
new view on child language development. It offered the possibility to
analyze grammatical impairment more systematically and in greater detail
than before. Utterances from small children were no longer considered as a
poor copy of adult language but as an interlanguage, reflecting a language
system in its own right. In a widely adopted system for analysis, created by
the Reading linguists David Crystal, Paul Fletcher and Michael Garman, a
developmental view on grammatical development is integrated with a
systematic syntactic and morphological analysis of different kinds of
language impairment, in particular grammatical impairment (Crystal,
Fletcher & Garman, 1976). The Reading linguists, with David Crystal as
the promotor, have been invaluable in making linguistically oriented
clinical research academically respectable (Nettelbladt, 1997).
Technological advances, in particular the introduction of the tape recorder, offered new possibilities for analysis of the more unintelligible speech of the much younger children studied compared to earlier periods. During the 1970s and onwards a large number of studies have been published, aiming at detailed, linguistically adequate descriptions. Focus was on spontaneous production data. Terminology reflects this reorganization: language impairment, phonological impairment and grammatical impairment are introduced as terms and substitute earlier medically-articulatory defined terms.

In Scandinavia, there were important changes in society. Social reforms that had been planned already during the 1920's were now being executed when the economic situation after the world wars had been stabilized (Abrahams, 1966; Edelbalk, 1996). The welfare state was established, child health care was extended and children within the preschool age range started to come into focus. Preschools expanded greatly and there was a significant expansion of the education of preschool teachers. The establishment of the Swedish logopedutbildning (the program for speech and language pathologists) in 1964 could partly be viewed as an example of the introduction of new child care professions like developmental psychologists, health care physicians and pediatric nurses.
It is important to note that, again, Denmark was first in Scandinavia, presumably one of the first also internationally, in introducing Jakobsonian thinking to logopedics. Already in the 1950's the Danish pioneers Henrik Abrahams (1955) and Vibeke Bloch (1959; 1996) made a decisive contribution in applying the theory to intervention with children with language impairment and for differentiating between speech and language impairment. A. G. Epstein (1969) takes a somewhat different research direction in introducing American psycholinguistic research in Denmark. In contrast to Abrahams and Bloch, Epstein analyzed grammatical development and language comprehension. He also developed tests for children. Two other Danish textbooks from this period are 

*Talevanskeligheder hos børn* (Speech disorders in children) by Egil Forchhammer (1943) and *Sprog- og talehæmmede småbørn. Deres problemer og behandling* (Language- and speech-retarded small children. Their problems and intervention) by Rigmor Knudsen (1950). (For a more detailed analysis of the early development in Denmark, see Nettelbladt, 1998.)

There has been a long Finnish tradition in phonetics with close links to the developing logopedics discipline. The educational program in Helsinki is still based in the Department of Phonetics. In 1984, Eila Alahuhta was appointed as the first professor in Logopedics in Scandinavia at Oulu.
University. In her research on child language impairment, Eila Alahuhta combined a linguistic research direction with new trends in psycholinguistics and special education (see for example Alahuhta, 1980).

In Sweden, professor Bertil Malmberg at Lund University, introduced linguistic theory to the study of language development and language impairment. Under the supervision of Malmberg, two licentiate's dissertations by Britt-Inger Bergendal (now Bibi Fex) and Ewa Söderpalm Talo were submitted at the Department of Linguistics, Lund university in the same year, 1969. Bergendal analyzed phonological impairment in relation to reading and writing ability; Talo made phonological analyses ad modum Jakobson on the speech production from children with language impairment. Following the same line of phonological analyses but introducing contemporary child phonology research, Eva Magnusson and Ulrika Nettelbladt submitted their doctoral dissertations at the Department of Linguistics in 1983. In Finland, Matti Leiwo, submitted a doctoral dissertation on grammatical impairment in Finnish children with language impairment (Leiwo, 1977). Some of the studies included in the doctoral dissertation by Kristina Hansson (1998) could be viewed within this tradition. A primary aim of the earlier linguistic studies of child language impairment was to give a very detailed description of phonological and
grammatical impairment in order to achieve a broad characterization of language impairment in general with a focus on production data.

Current and future views on language impairment

During the 1990s, the direction of research has changed towards hypothesis-driven, deductive studies. Experimental designs have been introduced where language comprehension is starting to become an important issue (Bishop, 1997; Leonard, 1998; Nettelbladt, 1998b) A doctoral dissertation which early took on the new trends is Birgitta Sahlén's work from 1991. She combined earlier methods with theories and methodology from psychology, in particular neuro- and cognitive psychology. Language comprehension and semantic development become highlighted as critical clinical factors in severe language impairment. Lately, a process-oriented, dynamic approach to child language impairment has been adopted. In the doctoral dissertation by Christina Reuterskiöld Wagner (1999) different types of contextual influence on language performance in children with language impairment was studied in a variety of tasks: repetition of nonwords, narration, understanding of idioms and picture naming. A process-oriented approach is also applied in Kristina Hansson’s doctoral dissertation (Hansson, 1998): in the analysis of mazes (false starts, filled pauses and revisions), the relationship between comprehension and production in experimental tasks and, finally, the
impact of different conversational partners on the speech production in children with language impairment. By focusing of the important role of context, the above studies point towards a new kind of clinical research direction. This could best be described as a dialogistic perspective on human communication (Linell, 1998). In dialogistic theory, all communication is viewed as situated and as reflecting joint practice between the participants of a conversation. This theory has particular relevance for the study of pragmatic language impairment in children, which in recent years has received much attention (Bishop, 1997). During the last decade, there has been a strong immigration in Scandinavia, in particular in Denmark and Sweden. In a current research project (Salameh, Nettelbladt, Håkansson & Gullberg, ms; Håkansson, Salameh & Nettelbladt, ms) language impairment in bilingual children is addressed both from an epidemiological and a linguistic perspective.

Conclusion

It is interesting to explore possible differences in the development of logopedics and care of children with language impairment in Scandinavia. (The dates of the first occurrence of important events are shown in a table at the end of this paper.) There are a lot of similarities between the countries. The first concerns the languages. Apart from Finnish, which belongs to an entirely different language family, Finno-Ugric languages,
Danish, Swedish and Norwegian are very closely related. There are also similar standards of life and socio-economic status of the populations, the countries are relatively egalitarian with a firm base of solidarity. The latter is expressed by a well developed system of social care for individuals with handicaps. Given these similarities, it is interesting to try to interpret the differences shown above.

A comparison between the professional programs in the Scandinavian countries shows that Denmark and Norway have a strong tradition of training within remedial teaching whereas Finland and Sweden early on have an academic training at university level. However, there is also a difference between the programs in Finland and Sweden in terms of faculty affiliation; in Finland in the Faculty of Humanities, in Sweden in the Medical Faculty. There seems to be a dividing line between ‘educationally based speech therapy’ (in Swedish ’talpedagogik’) in Denmark and Norway, and ’speech pathology’ with a focus on diagnostic and medical aspects in Sweden, in particular, but presumably also in Finland.

It is evident that logopedics in general as well as clinical work with children with language impairment, first was introduced in Denmark. It is likely that this is related to the organization of care for individuals with handicap in general, which was also initiated in Denmark during the last decades of the 19th century. The early establishment of the national Speech
institutes also gave the emerging discipline a strong position in Denmark. In describing the early development of logopedics in Scandinavia, Karlstad (1998) states that "Denmark is the big brother in Scandinavia". The vicinity to the continent made it possible for the Danish speech therapists to easily go to Germany for further education. The professional training of the early Danish clinicians has also played an important role. All of the influential child clinicians: Henrik Abrahams, Vibeke Bloch, A. G. Epstein, Egil Forchhammer, Rigmor Knudsen had an academic training at master’s level in philology. The Norwegian pioneer Hans Eng had a similar academic background. The training enabled the early pioneers to read professional literature in foreign languages, to participate in international conferences, and is also reflected in their publications. In order to make applications of current theories to the clinical practice, it is, accordingly, necessary to have an academic training at a certain level in order to have a direct access to current theories. It is evident that the longstanding philological tradition in Denmark has been an important source of inspiration. Prominent scholars during the 20th century like Jespersen, Diderichsen and Hjelmslev provided a base of making analyses of Danish (Nettelbladt, 1998).

The close links between Denmark and Norway are obvious. In both countries there has been a strong educational tradition. Interestingly, early Norwegian child language research has had a strong orientation towards
educational psychology (Tetzchner et al., 1993). To our knowledge, however, no further research and doctoral dissertations on child language impairment have been pursued in these countries. Probably this is a reflection of that there has not been a tradition for research at Schools of Education. What is also notable is the long interruption in Sweden; the early dates could almost exclusively be ascribed to the pioneer work by Alfhild Tamm. After her retirement nothing happened until the first national association was founded in 1959.

To conclude, we have tried to answer the question, however briefly, why the study of child language impairment started in a particular time, and why and how the ways in analyzing language impairment have changed as time has passed. The appearance of child language impairment can both be seen as a reflection of current scientific theories and also of the social valuations within the contemporary society. History can provide us with an important key to the understanding of the present time and maybe give indications of fruitful paths to enter into the future.

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A comparison of first events in Scandinavian logopedics

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