

Sweden

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Taken from Gutzmann-Festschrift (1980), with an updated abstract by the same author (1999)

Abstract

In Sweden, the medical care for children with speech, language and voice disorders began during the first decades of the 20th century. Karl Weinberg and Alfild Tamm, MDs, studied the field in Berlin and Vienna and brought it back to Sweden. A clinic for school children with speech disorders was started in Stockholm in 1914. In 1929 the first phoniatic hospital polyclinic was opened in Stockholm.

In 1931 phoniatics was officially recognized and acknowledged as an independent medical specialty of its own standing, by the Swedish Medical Association, which was the authority granting certificates of specialization at the time. From the beginning the care of individuals with speech, language and voice disorders in Sweden has been a joint affair with close cooperation between medical doctors, educators and therapists of various kinds.

Today, Sweden has eight hospital departments of phoniatics, where all kinds of patients with communication disorders are taken care of and MDs are trained to become specialists of phoniatics. There are training programmes in logopedics at Karolinska Institutet (The medical school in Stockholm), and at the universities of Lund, Gothenburg and Umeå. The duration of this university training is 4 years and may be followed by training in research leading to a doctor's degree.

Research in voice disorders has a stronghold in Stockholm with close cooperation between the departments of phoniatics at the Huddinge University Hospital and at Karolinska Sjukhuset and the Centre for Voice Research at the Royal School of Technology. In Lund research on language disorders in children is prominent. In Gothenburg research on cleft palate and on dysarthria are the special features.

In 1991 a nationwide multidisciplinary organization was started, "Röstfrämjandet", which means the society for the promotion of voice. It has now 500 members and a journal appearing twice a year.

Text from Gutzmann-Festschrift

In Sweden, the medical care for children with speech, language and voice disorders began during the first decades of the 20th century. In 1914 the first private clinic for patients with these disorders was started in Stockholm. In 1929 the first phoniatic hospital clinic was opened, also in Stockholm. And in 1931, phoniatics was officially recognized and acknowledged as an independent medical specialty of its own standing, by the Swedish Medical Association, which was the authority granting certificates of specialization at that time.

From the beginning, the care of individuals with speech, language and voice disorders in Sweden has been a joint affair. with close cooperation between medical doctors, educators and therapists of various kinds. The first medical

pioneers, Weinberg and Tamm, were both working as medical doctors in the schools of Stockholm, being responsible for the health of the school children. They became involved in the training of teachers in speech and voice therapy, as have Swedish phoniaticians ever since phoniatics and logopedics have grown together, in recent years with increased stimulation from phonetics-linguistics, communication technology. and many other sciences related to ours.

Karl Vilhelm Weinberg (1862-1935) studied medicine in Stockholm, and after graduating in 1891, he devoted himself to pediatrics for a number of years. During 1898 and 1899 he studied otorhinolaryngology abroad. There is reason to believe that he visited Hermann Gutzmann in Berlin at that time. After his return to Stockholm he established himself as a practitioner of ear, nose and throat surgery.

During 1909-1912 Weinberg made the first systematic study of stuttering in Sweden, gave stuttering therapy and trained a number of teachers to do the same, according to the „Gutzmann method“ (1). In his survey he found 256 stutterers among a total of 25,513 children in the schools of Stockholm, a prevalence of 1% Among the stutterers, 70 were boys and 30% were girls. Each stuttering child and its teacher was called to an interview. Information was obtained about the speech problems and school achievements, and an examination of the child was made with regard to its stuttering.

Weinberg was interested in the relation between stuttering and intelligence. Although he noted that stuttering children are often intelligent and gifted, he stated that his data did not permit any definite conclusions. Nor could he rely upon his information on the occurrence of stuttering among the relatives. He was confident in his findings about the onset of stuttering, however. In the majority of cases it started at the age of 2 or 3, rarely after the child had begun school. There was rather a tendency for stutterers to improve during the first years in school, „since teaching reading according to the phonetic method is a sort of stuttering therapy in itself“.

Weinberg observed that more than 75% of the children exhibited concomitant movements during stuttering, movements caused by contraction of muscles which are normally not used for speech, and these movements were sometimes „of a very grotesque kind“. The stuttering was considered severe in 97 cases and moderate or slight in 159 cases at the time of the interview. As to stuttering and age, there were most stutterers in the age groups 8 and 9, a somewhat lower but stable number through 10-11-12-13, and then a definite decrease. However, he found the most severe cases among girls in the upper grades and highest age classes. Weinberg was also interested in social factors and their relation to stuttering. He noted that stuttering did not seem to be related to poverty.

Weinberg gave stuttering therapy according to „the Gutzmann method“, slight modified and he also wrote a book of speech exercises to be used with this method (2). He sent questionnaires to parents and teachers to evaluate the therapy results. He reported no real cures but improvement in the vast majority of cases. When he finished his project on stuttering in 1912 he had also trained 30 teachers to give stuttering therapy.

Weinberg continued his studies of the school children in Stockholm by examining their voice organs (3) He reported on an investigation of 800 children between 7

and 14 years of age, with 50 boys and 50 girls at each age level. All children were thoroughly examined with respect to ear (in the meaning of auditory perceptual ability), speaking voice, singing voice, articulation, respiration, the speech organs, and health in general. In his report he dwelt particularly on „range and register“ and on „laryngoscopy, in which the chronic hoarseness and the occurrence and forms of mutational voice change are demonstrated“. The report is very rich in details and figures. The proportion of speech disorders across all age levels amounted to more than 50% lispings being by far the most common deviation (40%). Chronic dysphonia was found in 27%, i. e. laryngoscopy had demonstrated vocal fold pathology of a chronic nature. Among the many other details, two are selected here to illustrate the diligence of the author and the general health situation and philosophy of the time. Thus, Weinberg reported that among the 800 children there were 300 with a crooked back, and 15 with ozena.

In his attempts to study the voice registers, he noted that there was a great variety of opinions in the literature and little agreement between authors. For children's voices he recommended Flatau's concept of three registers: a principal register, with the same quality as the speaking voice; below this: the chest register; and above: the head register. In his examination of the children, he found among other things, that many girls could use the chest register, but that boys were often unable to phonate in the head register. As to the growth of the epiglottis, he found that many girls already at the age of 10 had acquired an adult form of the epiglottis, while the boys, with few exceptions, still at 12 had an infantile form. The laryngoscopic mutational voice changes were of two types, one more violent with swelling and reddening of the vocal folds and the mucous membrane in general, with considerable succulence and secretion of viscous mucus; and another' less violent, less wet type, with moderate reddening.

Weinberg did not discuss voice therapy for children. He noted, however, that children's voices exposed to dangers in school, such as the spread of upper airway infections, high noise levels in the school yards during recesses, gymnastic lessons in which marching was often trained during singing (!), and the extreme use of hard glottal attacks in reading according to the phonetic method. Weinberg pointed out that the teachers were not aware of the harmful effects and had not been trained to use their own voices properly.

Strangely enough, Karl Weinberg and his work is virtually unknown to the present generation of phoniaticians and logopedists in Sweden. The celebration of Hermann Gutzmann, senior, offers a very welcome opportunity to revive the memory of our first pioneer in phoniatics.

Anna Alfhild Tamm (1876-1959) graduated from the Karolinska Institute in Stockholm in 1905 and went into psychiatry and neurology. Like many other Swedes at that time, she went abroad to perfect her training, and thus she studied in Munich (1908), Berlin (1909) and Vienna (1913). She returned to Vienna periodically during 1924-1930.

Alfhild Tamm was from the beginning concerned with the mental health of children and made outstanding contributions in this field. She introduced Binet-Simon intelligence testing into Sweden, persuaded the Stockholm school authorities to start a special school for mentally retarded children, studied reading and writing disabilities over a number of years and insisted on special

pedagogical training techniques for children with these problems, and she was one of the very first pioneers of psychoanalysis in Sweden and remained throughout her life a fighter for psychoanalytic ideas.

In 1914 she started a private clinic for speech, language and voice disorders. Two years later this clinic was incorporated in the health care system of the elementary schools of Stockholm. In 1916 she published the first Swedish textbook in phoniatics (4). She was a highly esteemed speaker and a prolific writer. From a phoniatic point of view it is interesting to note that, in her writings, she demonstrated an early interest in the feed back systems of speech and wrote articles on „The importance of sensory mechanisms for the development of speech“ (5) and on „The muscle sense and the organs of speech“ (6).

For today’s phoniaticians and logopedists in Scandinavia, however, Alfild Tamm is best known for her psychotherapeutic work with stuttering children. By means of analytic therapy she was able to relieve many stuttering children of their speech problems at an early age (7, 8)

Bertil Borg (1894-1931) was probably the first Swede who called himself a phoniatician. Like many of his followers in Sweden, he was interested in singing, and for a time he considered a professional career as a singer (9). He studied phoniatics in Berlin, Munich, Vienna, Hamburg and Aarhus in 1927-28. In April 1929, the first hospital clinic for phoniatic patients was opened at Sabbatsberg’s University Hospital in Stockholm, within the Department of Otorhinolaryngology. Borg became the head of this unit. He was particularly interested in voice therapy (10) and obturator therapy for cleft palate patients. Unfortunately, he became acutely ill and died suddenly in 1931, only 37 years old.

In 1931, the Swedish Medical Association acknowledged phoniatics as a medical specialty of its own standing. No doubt this was due to Gunnar Holmgren, holder of the first professorial chair in otorhinolaryngology in Sweden. He had sent Borg abroad to learn phoniatics and established the first phoniatic clinic in his department.

Bertil Kågén (1905-1978). also a singer. was designated as Borg’s follower and sent abroad for studies. He went to Berlin, Vienna, Munich and Paris and studied with Gutzmann, junior, Trendelenburg (11) Froeschels, Stern, Nadoleczny and Tarneaud. From 1935 he was the leading phoniatician in Sweden for a couple of decades.

Kågén began with much energy and enthusiasm, and with him the field of phoniatics expanded. He developed the hospital unit and trained doctors, nurses and other personnel in phoniatics and logopedics. With Aina Börjeson, a teacher and a speech therapist. who had trained with Froeschels, he revived the Stockholm school organization for children with speech disorders, and he soon also became involved in reading and writing disabilities. He started a private practice, where he became a favorite medical doctor for the Stockholm opera singers and actors. In 1942 he was active in starting the Swedish Red Cross Home for cleft palate children in Stockholm.

In his scientific endeavors he soon settled on language problems in children and started an extensive longitudinal study of such disorders. He collected a large

amount of material over a number of years. He became ill, however, and was never able to finish the analysis of his data and carry through the work he had started. A minor report was published in 1953 (12).

Kågén trained a number of colleagues to become specialists in phoniatrics, and some of these trained others. Elly Ohlsson-Edlund, (Gothenburg, and later Stockholm), Jan Bratt (Gothenburg) and Bengt Andreas (Malmö) were the early ones, and they went into private practice. The clinical services were thus extended, but there was not much research done.

In the 1950's a few phoniatricians appeared. Gunnar Bjuggren (Stockholm) became involved in a study of language development in hard of hearing children (13), and he also designed a camera for laryngeal photography (14). However, he was soon fully engaged in making plans for the future phoniatric care in Sweden on behalf of the national health authorities. A committee was appointed to plan an official training for speech therapists. Until then the training of speech therapists had consisted of short part time courses only, or had been completely informal. Gunnar Bjuggren and two speech therapists, Aina Börjeson and Märta Mörling, formed this committee. They proposed two types of training, a one-year program for teachers within the college for special education, and a three-year academic program in phonetics, pedagogics and logopedics. The first of these, for teachers, started in 1961. The second academic training began in 1964. Since that time, there have been two official kinds of speech therapists in Sweden, one serving mainly within the schools, and the other primarily in medical hospital settings.

After the second world war, electronic techniques had appeared in medicine and gained wide-spread use. Electromyography became an important tool in clinical neurophysiology, and soon speech researchers discovered its usefulness for studying the physiology of speech. The doctoral dissertation of the Danish otolaryngologist Knud Faaborg-Andersen on laryngeal electromyography in 1957 stimulated a new era of research in motor speech production, a field in which Swedish phoniatricians also began working.

Björn Fritzell (Gothenburg. and later Stockholm) became interested in palatal muscle function and presented his doctoral dissertation in 1969 (15), a monograph on the function of the velopharyngeal muscles in speech, with a report on electromyographic and cinéradiographic investigations.

RoIf Leanderson (Stockholm) also used EMG for his major work. He was enrolled in a speech research group at the Department of Speech Communication at the Royal School of Technology in Stockholm and studied lip muscle function by means of EMG. A number of reports were published leading to Leanderson's thesis in 1972 (16).

At the University of Lund, the anatomist Bertil Sonesson initiated research interests in larynx and voice by his work on laryngeal anatomy and physiology.

Thus, Sören Fex (Lund) has concentrated his research interests on the neuromuscular mechanisms of the larynx. After a series of basic studies on the implantation of nerve in muscle, he conducted animal experiments to demonstrate that bilateral recurrent nerve paralysis could be successfully treated

by the implantation of the phrenic nerve in the posterior cricoarytenoid muscle, leading up to his doctoral dissertation in 1971 (17, 18).

Peter Kitzing (Lund and Malmö), also specializing in larynx and voice, has studied vocal fold vibrations by various means (19, 20, 21), and in his doctoral dissertation in 1979 he described procedures for routine clinical determination of fundamental frequency and range of voice by means of electroglottography (22).

Cleft palate speech has also intrigued many of the Swedish phoniaticians, and thus Kagén (23), Fritzell (24), Hans Lindholm (25), Gärda Ericsson (26, 28), Leanderson (27, 28) and Fex (29) have published papers in this area. Studies on stuttering have been reported by Fritzell (30, 31) and Leanderson (32, 33). Recurrent nerve paralysis was the subject of Fex's dissertation, as mentioned. and other reports on this topic have been published by Fex (34, 35), Rune Stenborg (36) and Fritzell (37).

After the scientific endeavors of the first Swedish pioneers in the beginning of the 20th century, research and writing within the field slowed down. Beginning in the 1950s and 1960s there has been a gradual increase of activities again. Official plans were made for phoniatic care, training programs in logopedics were started, and research projects were beginning to appear. During the recent decade that development has been rapidly accelerating.



Bibliography

A selected list of publications by Swedish phoniaticians (referred to by figures in the text)

- (1) Weinberg, K.: Redogörelse for undersökningar rörande stammande barn i Stockholms folkskolor och deras behandling 1909-1912. (Account of studies concerning stuttering in the elementary schools of Stockholm 1909-1912). Skolhygieniska undersökningar, II, 1915.
- (2) Weinberg, K.: Övningsbok for stammande barn. Till folkskolornas tjänst. Stockholm: P. A. Norstedt 1911.
- (3) Weinberg, K.: Studien fiber das Stimmorgan bei Volksschulkindern. Aus einer schulhygienischen Untersuchung. Archiv f. Laryngologie u. Rhinologie vol. 30 (1916), S. 175-199.
- (4) Tamm, A.: Talrubbningar och deras behandling (Speech disorders and their treatment). Stockholm: P. A. Norstedts 1916. (210 p.)
- (5) Tamm, A.: Känselns betydelse for talets utveckling. Nyt Tidsskrift for Abnormvaesenet vol. 19 (1917), S. 193-204.
- (6) Tamm, A.: Muskelsinnet och talorganen. Psyke vol.15 (1920), S. 74-90.
- (7) Tamm, A.: Zwei Fälle von Stottern. Ztschr. f. psychoanalyt. Pädagogik (1927-28) .
- (8) Tamm, A.: Stamning och psyke. Synpunkter pa behandlingen av stamningslidandet. Nordisk Lærebog for Talepædagoger. Speciel del, 176-190. Copenhagen: Rosenkilde og Baggens Forlag 1955.
- (9) Tamm, A. Till Bertil Borgs minne. Nord. Med. Tidsskr. vol. 3, (1931),S. 604.
- (10) Borg, B.: Principes physiologiques du langage en vue du traitement de certaines parésies laryngées. Acta Otolaryng. vol. 16 (1931), S. 317-322.

- (11) Kågén, B.; Trendelenburg, W.: Zur Kenntnis der Wirkung von künstlichen Ansatzrohren auf die Stimm-schwingungen. Archiv für die gesamte Phonetik. Bd. I, 2. Abt. (1937), S. 129-150.
- (12) Kågén, B.: Le retard de la parole; ses relations avec l'alexie et l'agraphie. In: La Voix, Cours International de Phonologie et de Phoniatrie. Paris: Librairie Maloine 1953. S. 105-126.
- (13) Bjuggren, G.: A method to test the intelligibility of the speech of preschool children with severe hearing impairment. Acta Otolaryng., suppl. 110 (1954) p. 83-86.
- (14) Bjuggren, G.: Device for laryngeal phase-determinable flash photography. Folia Phoniatica vol. 12 (1960) p. 36-41.
- (15) Fritzell, B.: The velopharyngeal muscles in speech. An electromyographic and cineradiographic study. Acta Otolaryng., suppl. 250 (1969) p. 1-81.
- (16) Leanderson, R.: On the functional organization of the facial muscles in speech. Stockholm: Karolinska Institute 1972. (A dissertation based on 4 papers in Acta Otolaryngologica, 1971 and 1972.)
- (17) Fex, S.: Functioning remobilization of vocal cords in cats with permanent recurrent laryngeal nerve paresis. Acta Otolaryng., vol. 69 (1970) p. 294-301.
- (18) Fex, S.: Experimentell re-innervation av skelettmuskel och dess tillämpning vid larynxpareser. Univ. of Lund 1970.
- (19) Kitzing, P.; Sonesson, B.: A photoglottographical study of the female vocal folds during phonation. Folia Phoniatica vol. 26 (1974) p. 138-149.
- (20) Kitzing, P.; Löfqvist, A.: Subglottal and oral air pressures during phonation. Preliminary investigation using a miniature transducer system. Medical and Biological Engineering (1975) p. 644-648.
- (21) Kitzing, P.; Helmer, N.-G.: Ultrasonic investigation of the larynx, Chapt. 8-10. In: Helmer, N.-G.; Lindström, K.: New Methods in Medical Ultrasound. Academic Thesis. Lund/Malmö 1978. LUTEDX/ (TEEM-1001) /1-420/ (1978) .
- (22) Kitzing, P.: Glottografisk frekvensindikering. Univ. of Lund 1979.
- (23) Kågén, B.: Phoniatrisk behandling av kluven gom. Svensk Tandläkaretidning vol. 29 (1936), S. 436-446.
- (24) Engström, K.; Fritzell, B.; Johanson, B.: A study of speech improvement following palatopharyngeal flap surgery. Cleft Palate J. vol. 7 (1970) p. 419-431.
- (25) Lindholm, H.: Phoniatrie speech evaluation after velopharyngoplasty. A clinical study of 82 cleft palate patients. Scand. J. Plastic and Reconstr. Surg. vol. 5 (1971) p. 47-52.
- (26) Ericsson, G.; Fant, G.; de Serpa-Leitao, A.: Acoustical and perceptual evaluation of speech training in post-operative cleft palate patients. Speech Transmission Laboratory - OPSR 1 (1973) p. 25-28.
- (27) Nylén, B.; Körlof, B.; Arnander, C.; Leanderson, R.; Barr, B.; Nordin, K.-E.: Primary early bone grafting in complete clefts of the lip and palate. A follow-up study of 53 cases. Scand. J. Plast. Reconstr. Surg. vol. 8 (1974) p. 79-87.
- (28) Leanderson, R.; Körlof, B.; Nylén, B.; Ericsson, G.: The age factor and reduction of open nasality following superiorly based velo-pharyngeal flap operation in 124 cases. Scand. J. Plast. Reconstr. Surg. vol. 8 (1974) p. 156-160.
- (29) Bergendal, B.-I.; Fex, S.: On glottal and pharyngeal articulation and nasality. Nord. Tidskr. f. logopedi og foniatri vol. 2 (1977) p. 16-20.
- (30) Fritzell, B.; Petersén, I.; Selldén, U.: An EEG-study of stuttering and non-stuttering school children. De therapia vocis et loquelae vol. I (1965) p. 343-347. (13th IALP congress in Vienna).
- (31) Fritzell, B.: The prognosis of stuttering in school children. A 10-year longitudinal study. Proc. 16th Int. Congr. Logopedics and Phoniatics. Interlaken

1974. Basel: Karger 1976. S. 128-131.

(32) Leanderson, R.; Levi, L.: A new approach to the experimental study of stuttering and stress. Acta Otolaryng., suppl. 224 (1967), S. 311-316.

(33) Leanderson, R.; Levi, L.: Stuttering, stress and psychotherapeutic drugs - a clinical and experimental study. Proc. 14th Int. Congr. Logopedics and Phoniatics. Paris, 1968. p. 52-61.

(34) Fex, S.: Judging the movements of vocal cords in larynx paralysis. Acta Otolaryng. suppl. 263 (1970) p. 82-83.

(35) Fex, S.; Elmqvist, D.: Endemic recurrent laryngeal nerve paresis. Correlation between EMG and stroboscopic findings. Acta Otolaryng. vol. 75 (1973) p. 368-369.

(36) Stenborg, R.: Cases of recurrent nerve paralysis in Gothenburg from 1968-71. Acta Otolaryng. vol. 75 (1973) p. 364-365.

(37) Fritzell, B.; Hallén, O.; Sundberg, J.: Evaluation of teflon injection procedures for paralytic dysphonia. Folia Phoniatica vol. 26 (1974) p. 414-421.

Professional state

- independent specialty of its own standing yes
- official subspecialty to ENT no
- official subspecialty to others no
- number of university departments 6
- number of doctors working in the field around 15
- 10 full positions at hospitals among those "about 15" active and 4 retired,
- 10 have produced doctoral dissertations and two more are well on the way.

Education and training

-program and examination for specialization

All present members are specialists also in ENT. There is a specified program for education in phoniatics, independent of other specialties and approved of by the authorities.

-phoniatics in the frame of ENT, program and examination
No formal requirement

-postgraduate programs
are not many but we are working on it. Mostly international courses.

Associations

-*Scientific*

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-*Professional*

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Research, main topics

Voice, Cleft Palate Speech are the main areas.

A full description requires too much time but basically, in the Voice area there are Roland Rydell and Lucyna Schalen in Lund, Hans Dotevall in Gothenburg, Stellan Hertegård, Per-Åke Lindestad and Riitta Ylitalo in Huddinge and Gunnar Björck at Karolinska, Stockholm. In cleft palate there are Hans Dotevall in Gothenburg and Stellan Hertegård in Huddinge who are engaged in research.