

Fax: 212-956-2764  
(The Hampshire House)  
Phone: (212) 333-6133  
150 Central Park South  
New York, New York 10019

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August 10, 1993

Mina Roth-Dornfeld  
9-21-93  
10:00 am

Carol Rascoe, Assistant to the President of the United States  
for Domestic Policy  
The White House  
Washington, D.C. 20500

Dear Carol Rascoe:

I am Chairman for National and International Liaison for ACEA, the American Conductive Education Association, its goal the establishment in the United States of a Conductive Education Institute based on the Petö Institute, Budapest, Hungary rehabilitative method for neuro-motor disordered children and adults. 70% of the Petö Institute's conductive educated neuro-motor disordered children become self-sufficient, learn to walk and attend regular school with their peers.

A great admirer of President Bill Clinton's initiatives and acquaintance of Vice President Al Gore, when I read Jason de Parle's New York Times article, "At Home with Carol Rascoe," about your advocacy, devotion and hard work which resulted in remarkable achievements for your son Hamp, I phoned your scheduling officer Roslyn Kelly to request a meeting with you to discuss Conductive Education.

My special interest in Conductive Education stems from the fact that my son and his wife have four year old twin children -- boy and girl -- who were diagnosed as having Cerebral Palsy. Neither child can walk unassisted or speak.

Roslyn Kelly advised me, when we spoke, that you would be unable to meet the week of July 19 due to prior scheduling and family commitment. She cordially suggested I request a later meeting date. My hope is that in the near future, you will be able to meet with me and Dr. Frieda Spivack, the President of the American Conductive Education Association. Dr. Spivack is the Founder of Conductive Education in the United States, Professor at Queens College/CUNY, Director of HCHC, Kingsbrook Jewish Medical Center, Brooklyn, New York and Director of the HCHC Kingsbrook Jewish Medical Center Conductive Education Program for Neuro-motor Disordered Children.

Dr. Spivack and I will be available to meet on a date which is convenient for you. Please advise.

Thank you very much.

Sincerely, with best wishes,

MINA ROTH-DORNFELD

Mina Roth-Dornfeld, Chairman  
Committee for National  
and International Liaison of  
American Conductive Education  
Association for the Motor  
Disabled

Note: I attach Conductive Education documents, for your interest.



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## P R E S I D E N T ' S   R E P O R T

I am indeed honored to serve as the first president of the American Conductive Education Association for the Motor Disabled. This being our first year, we look forward to making great strides in strengthening our organization and in promoting quality conductive education in the following ways:

1. Recruiting interested and able members and supporters
2. Excellent programming, with our first conference in March, 1993.
3. Strong links with related organizations, e.g., working with DEC.
4. Developing a conductive education resource.
5. Encouraging the dissemination of conductive education ideas throughout the Americas. We are in touch with interested members in South America and Canada. Our Canadian members will be having their first conference in May, 1993.

We are eager to promote high quality conductive education for all children with neuromotor disorders and their families. However, the concepts developed by conductive educators can be applied to children with other handicapping conditions. These concepts include:

1. Orthofunction - the principle that the child can achieve a close to normal function through overcoming his sense of purposelessness and immobility. The primary aim of conductive education is to promote maximum independence and function as close to normality as possible. This is what is meant by

orthofunction.

2. Conductive education is delivered in a group program, not in individual, separate sessions, but with peers to support, reinforce and encourage all participants. Conductors are given special training in psychology, speech therapy, occupational and physical therapy and special education in an integrated way.

3. Parents and caregivers are directly involved from the start. Adaptive equipment is brought home. Parents start in parent/child classes.

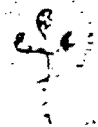
4. Learning is stressed rather than treatment. The children teach themselves to walk by means of learning how to manage their bodies through space. The learners are in control of their own programs. When they succeed they know that they are primarily responsible for what they can do.

In the past, special education was dominated by teachers and therapists. Conductive education allows the child to participate in rehabilitation together with the parent as they both learn to understand and develop the orthofunctional process.

Dated: January 24, 1993

Respectfully submitted,

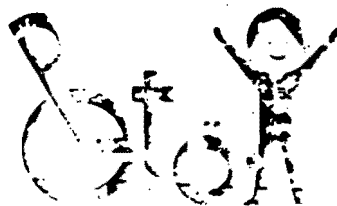
Frieda Spivack, Ph.D.



THE INTERNATIONAL PETO ASSOCIATION  
FIRST WORLD CONGRESS  
- 1990 -

Conference  
Proceedings

November 29 - December 1, 1990  
BUDAPEST, HUNGARY



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Prof Z Tomic  
Miss A Vodnik



Dr Maria Hári



Mr Arpad Göncz  
President of the Hungarian Republic

## THE OPENING OF THE FIRST WORLD CONGRESS

I extend my cordial greetings to Arpad Göncz, the President of the Republic of Hungary, as a great patron of human ideas and individuals. I also extend my cordial greetings to you on behalf of the International Peto Foundation, the coordination committee of the Peto Institute and on my own behalf. I believe it is of great significance that we are holding the First World Congress on Conductive Education here in Budapest where Dr Peto built up a completely new approach to the integration of children and adults in society. Through his focus on education and as a result of his philosophy, many people got to know something which is described as Conductive Education and which is worth acquiring knowledge of.

The idea of holding this Congress was raised about one year ago as a result of the great interest displayed in this method. I greet the representatives of the medical areas contributing and cooperating with Conductive Education, the European, Japanese, Israeli, Hungarian, Australian and American friends who are going to make presentations at this Congress. May I also say thank you to the Chairperson of the Organising Committee who made it possible and pressed me hard to organise this Congress, which is being attended by educators, teachers, medical doctors and other experts, representatives of social organisations and parents from 37 countries. We welcome them all here. Thank you also to the outstanding scholars and scientists of other special disciplines for being prepared to make presentations in different areas and different fields. We are concerned with human issues from different angles, but what is common to all of us is that we seek a solution to human problems.

I am very happy indeed that I can call upon the President of the Hungarian Republic to honour us by opening this World Congress.

It is indeed a great honour and privilege for me to be the chief patron of the Peto First World Congress and to greet the international experts of Conductive Education here in Budapest, the researchers of the Peto method and the people who implement the method in practice – the conductors, in the sphere of international relations we are unprecedented witnesses and participants of the developments over the past few years. As a result of the peaceful revolutions in East Central Europe, ideological and political obstacles that have been separating people and countries have been removed.

Hungary takes pride in being the initiator and that barbed wire is longer an obstacle to the free flow of people and ideas. This is only a relic which will be a warning for the future. The freedom of the German people came with the removal of the Berlin Wall exactly a year ago. The nations of East and West Europe took the significant steps in an effort to remove a confrontation based upon militant forces, to radically reduce the arms level and to replace all the confrontations with a new system of relations. Hungary is seeking her own future, position and happiness in this new developing world and in a Europe which is on the road to unity.

In the atmosphere of new unity, new opportunities are opened up in the broad relations between the representatives of science. You here, scientists and experts, have with your endeavours been giving evidence, even at a time when the world was separated into blocks, that the distortions of ideology and political hurdles could not be an obstacle to the development of culture. The international scientific community raises its voice consistently against the trampling of law underfoot and also against the repression of creative efforts and forces. We know that because of the outstanding character of science, regular relations were flourishing between scientists and cultural representatives and exchanges were flourishing along with cooperation, even at a time which was not favourable. I am convinced that this new world order will offer an unprecedented opportunity for joint efforts in the interests of the future of mankind.

It is an especially important and responsible task to exploit such long-term scientific cooperation which can provide status and a full life in the future. This is what the Peto method tries to promote. There are approximately 20 million people suffering from motor diseases. The complex personality development rehabilitation method which was elaborated by Dr Peto became well known and applied in practically all countries of the world. Hungary takes pride in assuming the responsibility which was given to us by possessing the spiritual value of the Peto method.

Through the International Peto Foundation, which was established in 1968, the spreading of the educational method, and the training of conductors with international joining of forces, we wish to serve the interests of those who are badly in need of this assistance. We are prepared to share our experience, interests and knowledge with the leading experts on the international scene; at the same time we hope to learn from the creative contribution to broaden the theoretical and practical development of the Peto method.

Your Congress which is now beginning is an outstanding event in this field. I believe that your commitment and your efforts will yield a great result – this is the smile on the faces of children following the very uncertain steps in the initial stages and then the pleasure from the steps which become firmer, and this is the spirit in which I wish you much success and a good exchange of views.

Dr Maria Hári  
Professor, Director of the Peto Institute

## SETTING THE SCENE

On behalf of the International Peto Foundation, the Organising Committee and the Peto Association I wish to extend to all of you a warm welcome to this first international conference. Thank you for coming.

Nowadays there are many international meetings which deal with subjects related to ours, but this one is an exceptional undertaking.

Firstly, because it is the first time that very esteemed scientists, outstanding representatives of a diversity of fields, orientation and of professions have been willing to give effort and time to conductive education, this exceedingly complex discipline. Perhaps because it deals with important human questions: it is a field of motivation, intention, learning, and in its educational system every person is unique, whole, self-willed and experiencing. This can be interesting from different aspects. Different areas have something in common, which is essential: this is the trend towards the solution of human problems.

Secondly, because the fifth decade has brought something new in our life and also in other professionals' lives - according to a proverb "life begins at forty": there is a quick-spreading, through which C.E. has been extended. We are facing this new situation as the full impact of the switch to an educationally based system and its results have begun to emerge. However, as it irradiated, it did so without its educational base, and these irradiations became fundamentally different from its very essence. There is a change in other professionals, scientists, institutions of several nations about something called "Conductive Education". Some want Conductive Education as it is, or they are inspired by it. Today the question is, how can it be transferred? What should one do to transfer it?

A little learning is a dangerous thing said, Alexander Pope in the seventeenth century, and according to another proverb, a door must either be shut or opened.

The idea of trying to organise a conference came one year ago as a result of this interest.

Some countries and institutions are supposed to be provided

with C.E. and there are some interpretations of C.E. which stem from misunderstandings. The term is used to mean very different things. This results in total confusion.

We think it is desirable to explain in what sense to employ the term and C.E. itself, providing careful explanations of key concepts. This will also make it understood that C.E. cannot be applied by everybody, for everything. However, it is hoped that those who are not providing true Conductive Education, will not pretend to do so, because concepts are not interchangeable.

I am grateful to the valuable contributions of the following: Professor Szentagothai, who worked the most to detect the structural secrets of functioning; Professor Feuerstein, who is the most famous teacher of people who would be ineducable without him; Monsieur Michel de Métyer, who is an internationally known teacher of medical and paramedical professionals and the most excellent representative of successful therapeutic education; Professor Cochrane, who is the first psychology professor who was interested in working with us; Professor Haskell, who was the first educationalist who made the effort to represent C.E. in a fair way in his scientific work; Dr. Berger, the only neurologist outside Hungary interested in C.E. and all the representatives of special fields of medicine (whose cooperation is essential to the Institute), especially Professor Vízkelety, who has given the enormous help of his orthopaedic clinic to the Institute for more than two decades.

Naturally, I warmly welcome all our friends, and those who cooperate closely with our institute.

I hope that this conference will serve science and will promote understanding and collaboration. We decided to do our best to bring the volunteers together by teaching and helping. Therefore our association will help those who really want the conductive educational system and want to promote C.E. abroad.

I want to thank the organising committee, through which it has been possible to organise this conference to which teachers, psychologists, and doctors from several countries could be invited and could have the opportunity to exchange their professional experiences.



Dr. Maria Hari  
Professor, Director of the Pető Institute

## THE HISTORY OF CONDUCTIVE EDUCATION AND THE EDUCATIONAL PRINCIPLES OF THE PETŐ SYSTEM

I would like to give some information about Pető's life work, about the origin and history of the international Pető Institute, and about its structure and relationships. My purpose is also to describe our educational process and the results that are possible. My lecture introduces this conference, one of the major objectives of which is to disseminate information.

### History

To begin I would like to emphasize that Pető's great achievement was not only the construction of the system, but the fact that he took up a challenge and won through. Noody since has done the same.

Pető's work with Conductive Education began in 1945. Earlier he had worked in Hungary from 1938, and earlier still in Austria. The State Institute was opened in 1950.

I will come back to the history after explaining some principles, because the history of the Institute and its struggles cannot be separated from fundamental issues or basic principles.

At the time it became a state institution it could have only an authorised name. It could not use immediately its present name because neither the word dysfunction nor the word conduction were understood. Instead of dysfunction the words 'movement impairment' and instead of conduction 'conductive pedagogy of movement' had to be used. Neither was the institute what the given name indicated. Despite opposition conductive education came into being. This life work matured over 22 years. Pető coined the term Conductive Education from the beginning, but only after functioning for 25-28 years has it been accepted.

The term 'conductive education' itself covers the basic principles. One point in the basic philosophy of Pető was that "one has to complete what one has begun". (He was deeply aware of the ethical side in every respect.) This principle means that any function or action, even any thought, cannot be broken off, it must be carried out; one has to complete what one begins.

This also applies to people with disabilities caused by structural alterations, who begin to learn and seem not to be capable of finishing it. The way has to be found to do it. This also concerns those who are not able to find it themselves, and conduction helps here.

The history of the establishment of the C.E. Institute is connected also with this principle: not to break up action. Pető realised this idea even though it was against traditions and argued for it.

The terms education and dysfunction will be explained by the second principle. The meaning behind the terms reflects a conviction against the traditional force of habit. This habit is to think primarily in a reductionistic way - that certain alterations of neurological origin are irreversible. In this way of thinking the special impairment is important primarily in an analytical way.

Thus disability originating from these alterations is lasting, and therapy can be only compensation and substitution. If communication in the nervous system is cut, control cannot be replaced, because we do not know how the original system works. This means that instead of speech one is using another communication system; instead of handwriting, electronic accessories have to be used and so on.

The terms education and dysfunction indicate that the question is not a static and local one, that change is possible, and that

disability appears through an organisational disorder. A better organisational process can be learned.

I come back to the history by contrasting the situation of today with that at the beginning: today, 45 years after the starting of our work, we have a situation where several people are interested in Conductive Education and the term is known more and more. Pető knew that it would become known. Conductive Education has broken down barriers between professional experts and between children with and without disabilities. As a response to the interest in Conductive Education we planned to set up an international association which can give some help to national associations.

The situation was different when, after World War II in 1945, the Institute came into being on the recommendation of the People's Welfare Ministry as an experimental department for movement therapy. Then it was not financed. The work was an attempt to solve the problems, an attack on the problem of chronic disabilities, which had not been answered till that time. The building in the Alkotás u.53, now belongs to the factory MOM, but at that time belonged to the Special Education College as a separate building, where two empty rooms and a corridor were placed at our disposal and a bath, which was used also for washing up. Pető began the work there with four medical students. The leader of the children's state almshouse, L. Focher (1882-1975), placed 14 children in the Institute. (Focher worked there from 1938 and in 1946 became the first children's neurologist, as head of the first children's neurology department of the newly built Heim Pál Hospital.)

In 1947 Pető became the professor of a special department at the College for Special Education.

On 14 February 1950 Prof. Kapus, as a leader of a group of experts, wrote a report on behalf of the paediatrician's society based on the research on achieved results.

On 22 February the State Movement Therapy Institute was established; on 23 February Pető was appointed its director retroactively from 1 September 1945 by the People's Welfare Minister.

By this time the proper building at Villányi ut was finished and its state financing initiated. From this time on there was a steady progression in the development of the Institute, which passed through several phases. Its results have been proven several times, first by those who benefited from its work and later Prof. Zinner and Prof. Gegesi acknowledged the value of its achievements.

The next period until 1953 was the golden age of creation, which was followed by a period of struggle. The battle against the unusual is natural. One may quote aphorisms about the discovery of Pythagoras and what happens whenever a new truth is unveiled. There is also a saying about the stages of a discovery: first it is said not to be valid, then not to be significant and at the end, not to be new.

Originally teachers in ordinary schools were not willing to teach cerebral palsied children. The special educators wanted to teach them only and were unsuccessful. The children fell off their chairs.

An integrated programme had to be begun if we wanted the children to improve.

Originally the special education students were directed to learn Conductive Education, but they were not permitted to follow its integrated, complex content. In 1963, after 18 years, Conductive Education's educational character was recognised and the conductor qualification decided, which had a special complex content. This teacher qualification, given after a 4-year degree course, enabled teaching in primary schools for the motor handicapped. The 4-year teacher training course began in 1968 (Earlier in 1965 and 1968 a 2-year academic course was permitted for those who had learnt many years before illegally.

One of the main properties of Conductive Education being continual development, as all open systems do, it developed

Further since its composer's death. The system widened with a state register of brain-injured and other neurologically impaired children with neuromotor dysfunctions between the ages of 1 to 14 years, being reported by the local pediatricians (in 1968). Connections with the child neurology departments and some hospitals and departments for premature infants developed. Departments were set up in a provincial town, in the state rehabilitation hospital and conductors were helping at the state institute for young handicapped workers. At the end of the 1970s the demand arose for conductor training in Hungary. In 1985, after the opening of the new building, conductor training developed, having more room with a regular teaching staff of 15, later reaching over 30, and the number of trainees grew steadily from 60 to 260.

Since 1985 the conductor-teacher diploma has enabled teaching to take place in every primary school. The institute contains a school and a kindergarten besides the training college.

I promised to say some words about the origin of the basic ideas. Naturally they originated somewhere. When Pythagoras discovered the theorem of the right-angled triangle the Babylonians had already been applying the mathematical rule for centuries, and who knows if one would not find something similar some twelve hundred years ago, for example in the Maya culture. Some resemblances to Peto's ideas can be found in many different periods. For example, emphasis on the daily life, struggle against scholasticism (that is, exercise without meaning); the new pedagogy of active learning, humanistic psychology, philosophy and education; urge for self-development, self-esteem, spontaneity. The Gestalt, the structuralism and ideas about the brain as a whole, the ideas of coordination mistakes, the interrelatedness and the significance of imagination, ideas and their connection with discrete actions, the emphasis on environments suitable for learning. One cannot know how the different ideas were built into Peto's sphere of thought. His intellectual education was of a high level, including philosophy, religion, literature, mathematics; his education was European. He received a scholarship to Vienna to study for a career in journalism. During his medical training (1911-21) the Viennese psychological school was flourishing; schools of modern psychology were psychoanalysis, Gestalt and Behaviourism. Peto became involved early on in the running of a war hospital. He specialised in internal medicine and tuberculosis (1916-19), became experienced in neurology and psychiatry (1919-21 and 1929-30 - Wagner Jauregg), in orthopaedics (rheumatology 1922, Hecht), and in natural ways of therapy. His teacher was Jagic and his friend Aschner, who chose him to edit *Biologische Heilkunst*, and Moreno, with whom he played Steggruftheater (Spontaneity theater).

Although his basic ideas can be traced back to some extent to these experiences and although the roots of Conductive Education can be found in Peto's earlier life, before and after World War I, nevertheless Conductive Education - the system of its ideas, their application and results - are of very recent origin. They seemed to be well ahead of their time for many years. Many results seemed to be beyond explanation too, for example the results of *acquisition* and the self-organising process, which today have become more understandable, but at the beginning C.E. was an infant prodigy and heretic in the full sense of the word.

From 1946 C.E. is 46 years old; from the appearance of Peto's ideas written in his periodical it is 80 years old. In what respect was Conductive Education a shocking infant prodigy, in what respect had revolutionary changes occurred through Conductive Education? What makes the place special? Why did it have a profound impact on practice?

### **The person. The value system. The conductor.**

It has a radically new foundation for the value system, in that its attainment target is educational, centred on the personality, in education - though assessment is exact when treatment has to be based on it - there is a new qualification system. Symptoms are considered primarily as the whole person's activity and as a continuous process. The specific attainment targets which would serve to define a treatment directly are approached indirectly through the person. Although a direct way to a specific movement or function abstracted from the person seems shorter and much more simple and logical, this abstraction is very difficult to realise in life because of the interconnections and because of the person behind his or her functions who wants to be appreciated.

### **The scientific content. Training. The programme.**

This in turn means that instead of dealing with separate functions directly in different ways and in isolation, the programme has to be absolutely multidisciplinary, but unified and complex all the time: a programme for the person (not for a function). It should be known today, that the brain receives data from large segments of the world, a complete representation, and that it responds to more complex shapes. The simultaneous, integrated occurrence of several functions is known - however, in practice this knowledge causes alarming stress, because although one knows that the approach which addresses this structure, all its components and their connection at the same time, is essential, it is hard to implement, moreover, it seems impossible to professionals. This knowledge and skilled planning must be prepared through several years' special training. This training is not the sum of several different areas of knowledge but serves to provide the complex programme realised through conduction.

### **Conduction. Control through conducted action. Task series.**

According to more advanced views for achieving appropriate functions, one has to provide the right experiences (not just stimulated exercise using various facilitations based on neurophysiology, nor conditioning suitable for taming rats, dogs, pigeons, geese and apes) but through controlled input. This is Bobath's view, very similar to Peto's, and there was great empathy between the two giants.

According to this view, it is essential in developmental disabilities to choose the suitable inputs in time and controlled input is given for gaining the right coordinated outputs through handling and reflexes, by manipulation. Looked at another way, one is choosing targets, in the subject's mind only the target, the goal, is conscious, but his actions will imply the controlled input, because the target can be reached only through the desired coordination. The experience gained through this action and its success will act as a suggestion, leading to the adoption of the new-found way of anticipating and acting. (This anticipation idea differs totally from the popularised false idea of rhythmic intention: see Maier 1931)

### **The person's cognitive operation. Intention.**

Reaching the target is a result of problem solving. The educator's goal is not the learning of a function through exercise, but he comprehends the coordinated function as a problem of coordination to be solved. The key question is problem solving, a creative process. The educator has to provide a growing capacity for problem solving, rather than to give direct therapy and exercise.

Repetitions are always problem-solving repetitions in combinations, which imply creativity and construction. Spontaneity is an absolutely essential quality in the discovery of a solution. Therefore exercise patterns, rigid methods of extinction, desensitisation, etc. are less valuable.

Discovery of the solution of a problem means to find the connection between separate things and the construction of the solution (Poival).

### **Continuity: a question of utmost importance. Timetable. Intention.**

The meaning of the timetable in conductive education is totally different from that attributed to it. The continuity of reasoning and problem solving is primary, even if the task to solve seems to be different and has apparently nothing to do with the impairment. Although creativity has appeared extensively in literature since the 1950s, it did not have much impact on teaching. Mostly the apparently totally different tasks that dominate the timetable are misunderstood. With functionalistic views they would serve multidisciplinary and the transfer effect of problem solving would be neglected as well as the continuity of consciousness, self-esteem, creativity, which are superior in human learning in our timetable.

Although Dewey, Montessori, Decroly and other advocates of active learning stressed the personal interest, motivation and the experience of learning, it was new to stress all sorts of motivating factors in the education of the so-called handicapped and to shift the focus onto learning situations that meet the needs of children.

Mostly children are supposed to wait for therapy and their time is not organised to be used for experiences, through multidisciplinary activity and intercommunication.

In our opinion, one has to look for situations that awake activity, participation, readiness, innervation, and emotional involvement.

Awaking interest is essential. To go through the same skeleton of the programme with or without having "a decorating ribbon knot" in it makes a great difference. The aesthetic, activating decoration is even more essential than the present content. It is very characteristic of Conductive Education to pay attention to motivation, which is not a motivating sentence given before starting to work. There is increasing evidence that it is not impossible to do something willingly, consciously and nevertheless in a coordinated way.

We know that voluntary action of the person is different from reflexes. Conscious and wilful actions provide different experience than reflex responses on stimulation. While some people think it necessary to prevent diverting attention, our line of thinking attaches importance to awakening interest.

We think it is unlikely that somebody will respond willingly to taming, verbalism, mechanical exercise, loneliness, which provides insecurity and a sense of failure.

Any stimulation is good only to provide activity, not to evoke responses, because the person's brain – being an organ of survival – must have real goals, which are of interest.

#### **Programme. Anticipation. Intention.**

It is a basic idea, a vital one, that the best therapy does not help if it is not set in every detail of the daily life of the daily schedule. One has not only to learn how to speak or to move, but one has to use the learnt way the whole day long. The different problem solving occasions in life are also occasions to use the learnt rule for tackling problems, which is more general than one movement pattern. Continuity in guidance means helping to use the learnt anticipation method. This form of coordination is the same in several actions, being an equal rule for tackling problems. In this case anticipation or intention has nothing to do with any mechanical explanation used widely with the name rhythmic intention. It is a learnt conscious way of performing actions that would otherwise be automatic.

The unified program means using the learnt way every minute

#### **Integration. Individual points. Normalisation.**

One is aware of the problems and difficulties that interfere with academic progress in ordinary school. Is there any break-through? The integration/normalisation philosophy argues that it is not true that children cannot profit from ordinary education, and that isolated individual treatment alone can insure the subject against an inappropriate way of functioning. The integration philosophy claims also that social adaptation has to be learnt and integration is a means to learn it.

Conductive Education shares the view that social environment helps learning through interaction, intercommunication and through being together in a community.

The environment must be stimulating; social context is necessary. Conductive Education ensures integration. The program ensures active experience of a normal timetable, a normal yearly programme, a regular school programme with normal requirements, ensures personal relations. Conductive Education provides normalisation. It does not require a special person and special equipment in the normal environment. It individualizes, it ensures that everybody is active at the same time and yet in a useful way without direct help through understanding the task and through help to overcome the obstacles.

#### **To summarise**

The keystone of the educational process is to activate the person, using close contact to lead to conducted action, which is an intended cognitive operation. Through learning orthofunctionality and orthofunction one is prepared splendidly to cope with the requirements of ordinary schools. This implies knowing the primary aim and how it is achieved through suggesting without being involved in the product, i.e. fostering creativity.

The precondition of success is the integrated knowledge, the integrated planning and the special structure of this highly organised work. The knowledge of the conductor is gained by theoretical and practical training lasting 8 - 10 years.



Ildiko Kozma  
Professor, Deputy Director, Peto Institute

## THE SPECIAL QUALITY, CONTENT AND STRUCTURE OF CONDUCTOR TRAINING

The basis of Conductive Education is the idea that the most detrimental consequence of motor disorders resulting from damage to the central nervous system is the disintegration of functions. This is the origin of our principle that single functions should not be treated by special remedial therapies but that coordinated functions can only be developed by a pedagogical process taking the whole personality with all its interrelated parts into consideration, simultaneously, in other words, using a planned educational process.

Historically, the demand for conductor training became evident as soon as the practice of Conductive Education began. From the earliest days Peto, working with the patients, also trained his own staff. His work with the first small group was so successful that he was able to convince the powers that be of the quality and potential of his ideas. At the beginning of the 1950s Peto was given permission to open an institute for 80 people. Meanwhile, the demand for regular training in the Peto method had already surfaced, but a number of attempts at this fell through in the early 1950s.

Initially, Peto tried to train special education students in his methods but he found that their training, although of a high standard, was concerned specifically with impairment and this proved a hindrance to understanding the complexities of Conductive Education. Professor Peto therefore continued to train his own staff outside the system. These students went for some training in infant and child care but still a basic theoretical and practical knowledge of pedagogy was lacking. On the other hand, it did enable these 'illegally' trained staff to obtain a recognized qualification, which, of course, was vital for their survival and professional reputation.

In the late 1950's, formal school education at the Institute was provided by outside teachers and the results were poor. In spite of all their good intentions and professionalism, they could not find effective teaching techniques. The unified attitude of Peto's method, its indispensable homogeneous system of requirements and the structured system of goals could not work with conventional teaching methods and in this kind of teamwork. So the problem remained, the Peto trained staff were not competent in school teaching techniques while the trained school teachers brought in from outside could not cope with the enormous problems of the disabled child.

This experience is of primary importance and reveals the limits of teamwork if the team is set up in this way. Even with the best will in the world, the limits of each separate member's professional training made it impossible to plan and implement the complex process we call Conductive Education.

Therefore, the equation cannot be like this:

physiotherapy + schooling + speech and hearing therapy =  
Conductive Education

Conductive Education is an integrated, complex education, a methodological planned and guided learning system, affecting and encompassing every single function of the child at any given age.

The child's education cannot be divided into sections. In the educational process it is impossible to dissociate, for example, intellectual education, moral education, the education of attitudes and the education of aesthetic responsiveness, as these come about as one complex process, in mutual interaction and interrelation. Therefore it would not be reasonable to expect the handicapped child, whose disability results from the lack of cerebral coordination, to be able to coordinate the various things he has been practising separately and to function in a complex and integrated manner. To

achieve complex integrated functioning we need Conductive Education, its programme and implementation, and this requires a new type of pedagogue, the conductor. With this aim in mind, conductor training began officially in 1963 and since then Hungary has remained the only country in the world where students can qualify in Peto's methods. The training is available at undergraduate and postgraduate levels.

A few facts about participation in conductor training:

Total number of persons who started in 1963: 27

	First Year	Hungarian	Foreign	Total Years I-IV
1980	37	37	0	89 (Hungarian)
1990	87	72	15	263 Hungarian + 44 foreign

Since 1985 we have been training conductor-teachers, in close cooperation with the Teacher Training College of Budapest. The primary objective of the training is to establish complex educational attitudes enabling the students to carry out integrated work with motor disordered people using Conductive Education.

The fundamental tasks of the training are as follows:

1. to prepare the students for the Conductive Education of infants, kindergarten and school-age children, and adults;
2. to provide and develop the knowledge, experience and skills that are necessary to recognize dysfunctions, to get to know and to build the personality, to cooperate with families, to plan and to carry out the most favourable Conductive Education programme;
3. to create interest which is an indispensable factor in Conductive Education, develop innovativeness and creativity and in this way enable the students to equip the children for their intellectual environment;
4. by focusing on practice, to inspire dedication, child-oriented attitudes and love for the profession.

In the system of higher education in Hungary, conductor training is a special form of teacher training. The students study for 4 years (8 semesters); in the fourth year they have to prepare and present a thesis and pass the state exam. The knowledge gained during training is not simply added up or built like bricks, one upon the other, but it brings about a specially integrated and new form of knowledge. The programmes of the single subjects are focused on the conductor's tasks and are of a functional character.

The curriculum ensures the unity and the close interaction of theory and practice in the course of the training.

Because of its emphasis on practice this training is unique in the system of higher education in Hungary. It is, above all, similar to the education of artists.

With regard to teacher training, we think it can be regarded as a model. The proportion of theoretical and practical sessions within a week is about 45 to 55% and this is standard throughout the whole training period.

Why do we consider practical training so essential? Practice is the criterion, the touchstone of the correctness of knowledge, and, in many respects - in our opinion - the most effective form of teaching. University level training should start from the students' learned experience and not from academic theory. Learning is a dynamic process that needs mutual activity and the student's role and experience are its essential components. In accord with this attitude we think the students must both give and take. In our conception the training methods first of all assist independent learning. It is not enough to transmit a certain quantity of facts. It is much more important to develop the students' own qualities in order to enable them to solve problems and acquire knowledge independently.

When our programmes of practical training were composed our aim was to draw up target categories and levels of

requirements in as precise a way as possible and thereby create the indispensable documents of the learning process which is conditioned upon the students' activity. In this way we believe we have created a situation where it is not simply the pressure of monitoring that makes active and continuous learning possible but also the allocation of tasks and the fulfilment of requirements that are set in the programmes. The form of the practical training varies in the course of the 4 years. Initially the practical work is highly structured, the students have to work under direct guidance. Later on they gradually become more independent, the proportion of the so-called "unstructured" material increases while direct guidance is proportionately reduced. Discussion becomes more important and the students' independence grows.

During the 4-year training, the system of variable forms of ongoing practical training for groups and individuals gets more and more difficult as more and more sophisticated demands are made of the would-be conductors. In the first semester the practical training includes basic health provision, care and self-help. In the second semester the students have to observe a problem and its solution. With the help of casuistic demonstrations and understanding the course of development, they are expected to set targets for individuals. Their task in the fourth and fifth semesters is to assess individual problems and locate areas to be improved, and to arrange and to perform various types of group activities. This requires the composition of task series that fit in well with the process of Conductive Education and the setting of personal ways of performing the tasks. In the sixth semester the students have to plan a complex Conductive Education programme and implement it with the group and the individual. In the seventh semester they must show their proficiency in the composition and organization of integrated group sessions. In this semester much stress is laid upon the preparation of children for leaving the Institute. In the eighth semester the practical training is related to the various organizational tasks: screening, counselling and follow-up care. Getting to know about these areas will help when sending a motor disabled child to kindergarten, school or work. The processing of statistical data also belongs in this area.

The practical training is constructed in such a way that practical knowledge becomes synthesized, that is, new elements do not simply settle one upon the other like separate geological layers, but old and new elements lead to a more and more complex practice and attitude, through a new synthesis.

In the balance of theoretical and practical training, theory in some cases precedes practice; on other occasions the practice stimulates the demand for theoretical explanation. Case demonstrations accompany the lectures.

In the course of practical training we endeavour to avoid being prescriptive as that would encourage a mechanical execution. We require that the students' practical work is based upon thinking, their ability to apply knowledge and creativity. To realize this, the group of students sitting in a lecture or a study group would be too big; the ideal is a small group consisting of only a few students. As the practical training instructors are also the lecturers on the theory, issues that arise and are cross related can be discussed. An important function of the practice is to establish and develop various types of skills. A significant part of these are of an intellectual character, e.g. observing, thinking, criticizing skills; the development of self-expression, knowledge transmitting and emphatic skills are, however, just as important.

The ordering and discipline required of the practical work contributes to a great extent to the establishment of work morale, responsibility, readiness to cooperate and work with others.

Since the practical work they do is for the most part a reflection and aspect of everyday life, there is no gap between the training within the institute and the requirements of day-to-day living. Our students acquire practical knowledge and experience, thus their knowledge is both objective and effective.

In the past few years the demand for a radical increase in the number of training places at our College has become more and more marked both in Hungary and from abroad. The demand for different kinds of training, e.g. postgraduate conductor training for teachers, different kinds of courses and conductor-teacher training has also grown.

There has also been a demand for more Hungarian training places, justified in view of the extension of the Hungarian national network and of the growth of the international Peto Institute.

The possibility of increasing the number of trainees while

maintaining the same high standard will depend on two factors:

- One, in view of the already stressed importance of practical work, the size of the Institute.
- Number two, which is at least as important as the first, the number of experienced lecturers.

The object of establishing the international Peto Foundation was to create a financial basis for the extension of the holding capacity of the building. To increase the number of lecturers is less costly but takes a very long time. This was started a few years ago and has been going on intensively ever since. A number of conductors have proved to be talented in practice, they have 5 to 10 years of experience, have the necessary qualities to be a lecturer and have taken a postgraduate degree at a university. We hope to solve the problem in the not too distant future by getting them gradually involved in training. As regards the training of foreign students, besides the number of places available, possible changes in the duration, structure and in some cases the content of the training can also be examined. Looking at these questions, above all, we must maintain the quality and standard of the training.

Taking these important criteria into consideration, the content of the training can, according to our present knowledge, be modified, in such a way that the requirements of the cultural and social environment of the country in question appear in it. That is, from the teaching techniques that are parts of teacher training in the country concerned, the range of knowledge that is peculiar to that country and the specific goals and requirements in connection with mother tongue, religion, speech and similar areas must be incorporated in conductor training. At the same time training must give direction as to how to achieve the different aims and meet the different requirements of the different cultures in compliance with the principles and the methodology of Conductive Education. There is already an example for the modification of the structure of learning and it will be necessary for us to analyse our experiences of this when the first training period is over. This example is the postgraduate training of the first entry of British trainees from the Birmingham Institute for Conductive Education. Their training has already brought a lot of good experience and also some bad. It would be, however, too early to draw conclusions before it is finished. Regarding the question of whether the structure of training can be changed we have gained the important experience that under certain circumstances this is possible, although some further modifications may be necessary. The students who are being trained in this form came as qualified teachers. Their training comprises 8 semesters, 4 in Budapest and 4 in Birmingham. While they are in Budapest, they study the theory of Conductive Education, which can only be taught here, and participate in the related practical training. Through 4 semesters they work in a group in Birmingham with Hungarian conductors, under a Hungarian instructor. Using this model, the scope of the Peto Institute's practising area is extended, as part of the Conductive Education practice, and relocated in Birmingham. Yet this form of training can only be realized with the cooperation of Hungarian conductors and lecturers working on the spot. The training period can be shortened to some extent by teaching the theoretical subjects in blocks. The extent of this shortening, however, is limited by the indispensable aspects of the practical training, but these also may be completed in blocks.

Great versatility will be required from the institute with regard to the various demands of the different countries who send their students to train with us. Some of these changes have already been implemented and some are about to be. Versatility can be expected and granted but it is essential to coordinate the demands as much as possible and, despite all the difficulties, to draw up a plan of a very high standard for the training. The preparatory work has already been going on for a couple of years and hopefully the establishment of the international Peto Association will speed it up significantly. In this way, in one or two years' time, conductor training will be accessible for professionals who wish to train with us.

No doubt there are many valuable and excellent methods in the world that are successfully used for the rehabilitation and education of the motor disabled. We have full respect for these and would never think that Conductive Education is the only way of working with the motor disabled. It is one of the possibilities. Still Conductive Education, just like any other method, requires expertise and a full course of conductor training is essential to obtain this.

We have to dispel the illusion that a visit or a study tour of a few

weeks or months can take the place of conductor training. The demands of parents for Conductive Education have grown dramatically, which is understandable, but has led to dangerous practices. Sadly, this bad practice is spreading and becoming very common. Although ridiculously naive, it often happens that someone who has spent 2-3 weeks with us at the institute goes home, buys a few plinths and ladder back chairs, starts exercising the children and calls it rhythmic intention and claims to have implemented Conductive Education. We are, of course, unable to stop this and do not think it should be necessary to do so. This is an ethical problem.

It is a truism that for the successful practice of something at a high standard it has to be learnt first. In order to achieve Conductive Education, conductor training is necessary. We want to extend the frame of the training and make it possible for anyone who wants to practice Conductive Education to learn it with the help of the Peto Institute. We will do our best to help.

We believe that the only antidote is to safeguard the high quality of Conductive Education:

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Julia Horvath  
Peto Institute

## INTERNATIONAL ASPECTS

Hungarian citizens are aware of the existence and availability of Conductive Education. It is available early: the proportion of newcomers between January 1989 and December 1990 was 313 children between 0 - 3 years.

The large number of Hungarians under the age of one coming for assessment shows that C.E. is available for the very young. The number of foreigners coming to our institute demonstrates that children or adults come to us directly or after having experienced failure with other methods.

Thus the attitude of those for whom Conductive Education is easily available and provides daily help is different from those for whom it means a basic change in the way of living worsened by language and socialisation difficulties.

Similarly the planned and managed admission opportunities as well as the long stay at the institute for Hungarian children does not correspond with that available for children coming from abroad.

Organisations for helping disabled children and adults have been established in some form everywhere.

If we wanted to analyse the way that Conductive Education has reached other countries we see that in almost all cases either a parent, a group of parents (Israel, Australia) or interested professionals started the initiative (Austria and Britain).

We could say that this is obvious since the parents whose children are motor-disabled expect help immediately. They do not have the time to wait for people to train to work with their child. This is one aspect.

The other is the system, that of established organisations, institutional networks and trained professionals. This has provided help for people with disabilities. C.E. must operate within this system. Obviously nobody will lock the doors and throw away their qualifications because somewhere in Central Europe a new and better method has been established.

We must find the way to help organisations requiring our support to have their students train at the Peto Institute while running their institutes smoothly.

I would like to analyse our relations briefly in my lecture.

### Great Britain

As early as the 1960s our method was known mainly through personal contacts via Esther Cotton and Anita Lohring.

Due to Esther Cotton's activity, lectures and studies, more and more people came to the institute. The first British child's education started in 1972, and this child still regularly comes back to the institute (once a year).

The idea of transporting C.E. to the United Kingdom was established in 1988 with the help of Birmingham University and within the Anglo-Hungarian cultural agreement. The year of 1988 produced a rapid and memorable development in Britain, which was accelerated by the enormous success of the BBC film 'Standing up for Joe'.

Since it became obvious that C.E. and conductors' training cannot be separated, the university and the Foundation for C.E. (established in 1986) decided on simultaneous C.E. for children and conductors' training. The project started with 10 children and 10 trainee conductors. Currently the first students are finishing their third year. Unfortunately their number reduced nearly by half whereas the number of children grew to 18.

The project has been a pioneering work - and, like everything new, it has taken much hard work to make it accepted.

Opponents had to be convinced and won over.

It is rather difficult to prove the applicability of a method with facts, data based on experience or economic factors. However, the pioneering work has brought results and at present many organisations want to adopt real and original C.E. in full with

conductors' training and advanced training

In 1987 the Department of Psychology of Birmingham University started independent research to 'assess C.E.' This will finish in 1992.

In Britain the media and the parents' pressure on the health and education authorities helped the few original experts to popularise the idea of C.E. Mr. Andrew Sutton played a pioneering role in this. Since then, experts, institutes and organisations, as well as those interested, showed that they are trying to achieve agreements and would like to establish the system of C.E. within the schools in their area.

The above can be illustrated by the agreement of the Soastic Society according to which 12 students started their training in September 1990. At the same time the Society requires the regular supervision, from our institute, of its schools.

### Japan

This is the first country where students qualified as conductors in the four-year training.

After Dr. Murai Masano visited the Peto Institute in 1976 and clearly saw that the method cannot be taught and that practice and theory were inseparable, 10 Japanese parents with their children and 10 students appeared in 1978.

Since then Japan sends one student a year and its network is increasing. In October this year we had the opportunity to see the work in Hokkaido Island and Osaka. Japanese conductors regularly come to our institute to brush up and develop

### Ireland

In 1988 the Northern Irish Buddy Bear organisation contacted our institute after a child came here. They discovered the contradiction between the large number of demands which could not be met. They organised the journey and provisions of motor-disabled children and their parents by raising funds.

Their organisation is set up by voluntary helpers, parents and organisations and fund-raisers, whose numbers are increasing due to the self-sacrificing and pressurizing work of four people.

They would like to have their own school, train their conductors and have strong connections with the institute. The first European camp in Dungannon for motor-disabled children and their parents was organised this summer where 23 conductors and 70 children took part. Neither political nor religious matters hindered their work.

We are looking forward to their report on their future plans.

### Scotland

A parliamentary delegation has examined the results of the work in our institute.

### Wales

Based on parental initiatives the Welsh plans (architectural and financial) with concrete requirements have reached the British and the Hungarian governments and the European Parliament. They would like to organise a summer camp in 1991.

### Israel

The organisation Tsad-Kadima (Step Forward) set up by professionals and parents supports the families with severely disabled (not only motor-disabled) children in Israel. It is trying to agree that within special schools their teachers would accept the walking and eating methods of children who attended the Peto Institute and they organise special sessions for these children.

As a result of their two-year work 16 students and 100 children have participated in and received C.E. for varying periods of time. Our conductors cater for their continuous selection following up the children through consultation and supervision. They regularly hold summer and spring camps staffed partly by their trainees and partly by our conductors

## Austria

The Austrian Spastiker Verein has had regular contacts with our institute for years.

Mrs Heiga Keil, who showed fanatical interest in the method in Professor Peto's lifetime, is fighting for conductor's training, as well as attaching C.E. to university education and practice to be accepted in her country.

In her institutions our experts regularly help with counselling

## USA

Primarily as a result of personal interest it was in 1986 that a psychologist wanted to popularize C.E. A visit, a lecture and the participation of the education authority of New York in our international courses have broadened contacts.

Presumably it is the great distance (as it is to Australia and New Zealand) that hinders co-operation of a Birmingham type, although there is a qualified conductor working there, who holds sessions similar to the Parents' school here.

## Australia

The increased demand for C.E. is indicated by the increasing number of participants on our information courses.

Smaller groups organised by parents signal that many find the method successful.

At present the method is spreading in an ad hoc way, probably due to the great distance between the two countries. (The regional health and education authorities approach the issue differently.)

As is often the case, training of the present staff causes problems, and we have heard about their future plans concerning this in the previous lecture. Distances and financial matters make the export of the method more difficult.

## New Zealand

In New Zealand different slices have been lifted from C.E., which obviously cannot provide a complete picture. In order to prevent and clear misunderstandings among parents and professionals the TV3-Network made a film in October, which we hope will contribute to gaining an overall picture about C.E. in this distant country. They have requested the organisation of a summer camp for the summer of 1991. At present there are negotiations about conductors' training.

## Germany

There is a demand for C.E. and an increasing number of families come to our institute. In the beginning the interest of professionals, articles and an attempt to develop official contacts characterised our relations. This has been hindered by several external and internal factors. It may be the reason why Siegen University has chosen a different way of development. They are trying to train students for a special and integrating operation. Besides wishing them success we must remark that it would be an illusion to think that without professional staff one can actually train conductors. Of course, the future will tell whether or not they are successful.

It still makes us wonder why it is that in the two countries (Germany and Austria) geographically and educationally so close to us, C.E. is spreading with so much difficulty.

It is probably due to the protective nature and strong influence of traditional types of therapy. However, we must admit that the experience of the first children coming to the institute shows us that they have not been neglected and have received some kind of treatment. But we have seen children who we think were put in wheelchairs too early. Nothing has inspired them to learn self-sufficiency since they are given all the advanced instruments and participate, in education, in wheelchairs.

## Cyprus - Greece

There are many applicants as a result of parents' and supporting doctors' work.

The entirely different cultural environment and the difficulty of adapting the method in the health care system of those countries present problems.

A government - level invitation for January indicates that professionals want to learn about the method and are looking for a way of caring for the motor-disabled of these countries. We must work out the possibilities of adaptation.

The tables below illustrate international interest in 1989/90

**Table 1: International interest**

September 1989 - September 1990

Great Britain	364
Australia	25
USA	32
Canada	9
Latin America	9
New Zealand	6
Africa	20
Soviet Union	439
Ireland	24
Israel	24
Arab countries	29
Asia and Oceania	29
Other European countries	235

## Europe

Greece	10
Cyprus	7
Czechoslovakia	18
Romania	10
Germany	46
Austria	5
Italy	53
Spain	21
Norway	24
Poland	9
Belgium	3
Denmark	3
Finland	4
France	4
Holland	8
Yugoslavia	15
Malta	3
Sweden	5

**Table 2: The number of first inquirers and admittances**

September 1989 - September 1990

Inquiries	Age	Admittances
18	under 1 year	13
253	between 1 - 3	143
331	between 3 - 6	140
295	between 6 - 12	91
161	over 12	45

365 were rejected

Total - 1,260

Finally, we must mention a sad phenomenon that makes our own work and our common work difficult. This is the leaving of our conductors due to temptation. Last year it amounted to catastrophic numbers.

Allow me to speak about this issue with a bit more venemence. This causes negative effects for both sides. From the tempter's side it is an anti-social gesture, since he or she ties up this person who can educate several children for the education of one or a small number. On our side in time the efficiency of the education system will decrease if this phenomenon cannot be stopped. One thing, however, must not be forgotten. The C.E. system is a complex one and a single conductor cannot and will not be able to produce a working system.

With reference to the previous lecture I hope it does not seem a repetition. C.E. is a system, whose hardware on the surface is easy to grasp and be copied - furniture, counting, task series, auxiliary aids

Its software is the educational system and it is the educational programme which is more difficult to grasp and acquire

If only certain elements are picked up and applied out of context it is similar to watered-down wine. Being a wine producing nation we feel very strongly about this.



C.E. is such a system whose *objective condition* is to provide a suitable system with an institutional background of the optimum size and organisation. Its *subjective condition* is the conductor, who manages the organisation, planning and organising it with a complex and integrating outlook. Whichever team she works in, she remains only a member of a team as opposed to a member of a group of conductors. Consequently her efficiency suffers. The crucial difference is that working without a team she cannot apply the complexity she has been trained for in her work.

Finally, let me touch upon the advantages and dangers of international interest that has recently increased rapidly.

**Table 3: The number of visitors to the Petö Institute in 1990**

Teachers	160
Doctors	23
Physiotherapists	30
Politicians	43
Educational experts	44
Students	150
Nurses	216
Others	123

I think that the advantage of increased international interest is that the range of methods of working with people with disabilities is becoming more colourful.

It presents a danger if it spreads via parents – then the demand for rapid results naturally appears. This brings in itself the need for less investment which leads to the deterioration of quality. In this phase it is especially dangerous since it influences the assessment of efficiency.

Our Institute and method was in the phase of finding its own identity in the past years – considering this it was necessary to distinguish ourselves from other methods. The process has finished – and our final identity has been established – our Institute has become much more co-operative and open. The Petö Association will provide the protection for the method and will be able to establish the basis of the international network.



## INTRODUCING THE NEW INTERNATIONAL PETŐ ASSOCIATION

I have the pleasure of being the Secretary of the International Pető Foundation for the last two years. The creation of the Foundation was decided upon by the Hungarian Government and we had a certain objective set for us. I will try to give you the list of the formulation. The aim of the Foundation is to maintain the clarity of the Pető method so that it should not remain a rigid system, but that it should be able to develop. The aim of the Foundation to us is to allow all those people who have motor disability, and through the spreading of the Pető educational method, to seek rehabilitation at home. The aim of the Foundation naturally is to create the necessary funds, also to develop the Budapest Institute and provide assistance to foreign countries by giving training of the Budapest Institute..

The Foundation is an organisation dealing with the financial matters, and is responsible for creating the financial and material conditions for the achievement of these aims. One of the means is the creation of the International Institute and also ensuring the forints necessary for the education of foreign students. This task is a very important one, but we must realise that it is only one of the means to realise the aims. It can only create a framework for achieving the professional purposes. It cannot maintain the pure forms of the applications and methods or develop them or ensure that they are available for everyone. It cannot solve all the problems of maintaining the clarity of the system either. Maintaining the clarity and purity of this method is not a profit-oriented task. Profit-oriented activities cannot be harmonised with the method of Pető, this

method should assist those who create the Pető Institute abroad and those Institutes where the Pető method is used and applied. These Institutions abroad can count on the assistance given to them by their government when they can use the Pető methods effectively and usefully in their own country

In order to achieve the aims of the Foundation we thought that it would be of primary importance to create an international and professional organisation, and I have pleasure in announcing the formation of the International Pető Association. The Association was founded by the leading workers of the Pető Institute of Budapest and some well known experts from abroad. The Association is open: we expect experts of Conductive Education from Hungary and from abroad to be members of the Association. Also the areas that are close to Conductive Education are also welcome to the Association and we hope the Institutions dealing with the Pető method will be members as well. Our aim is to provide a professional forum in order to develop the method and through the Institutions who will be our members, we hope to perfect the effectiveness, and efficiency of the method. The Association enjoys the support of the Foundation.

We are confident that the Association will continue the work and dialogue that we will hopefully enjoy during this meeting as it will contribute to cooperation internationally. We hope to create a framework for the development of the Pető methods and we also hope to lay the foundations for disseminating the method all over the world. In this way we can create a network operating on an international level.

From the international interest that is evident, we hope that the membership of the International Pető Association will grow rapidly. Let me express again my pleasure in the establishment of the Association.



Simon H Maskell

# TEACHER ATTITUDES TOWARDS INTEGRATING DISABLED CHILDREN INTO REGULAR SCHOOLS IN SWEDEN

## Historical Background

As in most western countries, if the regular school was unable to meet their special educational needs the traditional arrangements for pupils with disabilities has been special schools. Sweden, however, has been a pioneer in reforming the segregated system of education and in 1967 the Swedish Government enacted legislative changes whereby the vast majority of pupils with disabilities now receive their schooling side by side with their non-disabled peers. Only in exceptional cases are separate arrangements outside the normal class or school made. These include special schools for pupils who are profoundly deaf or severely multiply disabled. Their existence is defended on pedagogical, technological and cost-benefit grounds. In order to make such a bold departure in service delivery meaningful, the government has injected substantial resources to support pupils and teachers in regular schools. The commitment to the principle of integration in Sweden has therefore been a firm and long standing one.

Today, the crucial issue, however, is not whether disabled pupils should be integrated but which children would prosper from remaining in the regular school and what strategies are likely to enhance their educational opportunities. Another matter discussed is the effect of assigning unselected disabled students to ordinary classes without adequate resource support. Several research studies have referred to the problems that arise for both disabled and non-disabled pupils, when placement is made without regard to the characteristics of individual disabled pupils and systematic resource support for their maintenance. (Davis, 1981; Payne et al., 1974).

It is helpful to consider the organisation of special education in Sweden against the wider background of the country's education system. The general features of its provision are indicated in the table below:

Below 7 yrs	Pre-School	
7-10 yrs	1-3	Lower level
10-13 yrs	4-6	Medium level Compulsory
13-16 yrs	7-9	Higher level Comprehensive
16-19 yrs	Upper Secondary	
Above 19 yrs	Higher or Adult Education	

Pre-school education for children under the age of 7 years is not compulsory, though municipalities (local education authorities) are legally empowered to provide such education for all six year olds.

All children must attend the comprehensive school for at least 9 years. The school years are divided into three grades, corresponding to age groups.

Junior	(1-3)	lagstadium
Intermediate	(4-6)	melanastadium
Senior	(7-9)	hogstadium

Attendance at upper secondary school (gymnasieskola), is optional, but about 90% of this age group enrol. The curriculum is based on academic or practical subjects.

Higher education is offered at Universities and regional colleges. Other forms of adult education are available to individuals without University entrance qualifications, who wish to pursue vocational, industrial and job retraining courses. Sweden has made extensive provision for disabled persons to attend such adult courses, appropriately modified for their individual needs.

## Teachers and Special Needs Children

Children and teachers are assisted whenever necessary by 'pupil assistants' (teacher aides). These can be employed on the teaching side where they would assist physically-disabled or sensorily impaired pupils with practical help in the classroom. They may be required to help prepare materials or equipment for lessons. 'Pupil assistants' can also be employed for 'care', when they would help with such things as toileting, dressing, meals, and transport. The head teacher would decide in what capacity they should be used.

## Special School Organisation Hearing Impaired

A very small group of severely or profoundly deaf children attend special schools. The justification for this exception is the belief that 'substantial opportunities for genuine communication and comradeship cannot be provided in the normal school'.

These special schools, it is claimed, with their sophisticated and generous array of technical equipment and educational material can best develop the language skills of deaf pupils in such domains as language, specially designed curriculum, modified classrooms, etc. Accordingly five regional schools for profoundly deaf pupils with associated disabilities (mental retardation, emotional disturbance, severe central speech disorders, etc.) have been established in Sweden, for approximately 700 pupils.

Moderate or partially hearing pupils attend ordinary schools, whilst those with associated disabilities such as mental retardation or behaviour disorders attend remedial classes on a sessional basis.

## Mentally Retarded (MR)

The education of all mentally retarded children remains the responsibility of the County Councils. These authorities not only provide education but medical, social, family, housing, and other ancillary services. Mentally retarded children are entitled to pre-school education and almost 95% of them attend the regular pre-school. Children between the ages of 7-17 attend special elementary schools (for severely retarded). A good deal of 'location' integration occurs in which special schools or classes share the premises of ordinary schools. The educational needs of over 95% of mentally retarded children in Sweden are met by such an arrangement. A small but growing number of mentally retarded children are gradually being integrated into regular classes. Mentally retarded pupils are entitled to vocational training up to the age of 21, and this can in some instances be extended to 23 years, and as a result an increasing number of young people is entering the work force.

## Physically Disabled

Special schools for the physically disabled were abolished during the 1950s and 60s. Today physically disabled children attend ordinary schools administered by municipalities. These schools receive support and advice from a variety of educational specialists including specialist visiting teachers. Of approximately 2700 pupils 90% attend regular schools, whilst the rest are placed in remedial teaching groups. The latter are a variant of the special class with its emphasis on retaining the pupil with disabilities in the regular class and withdrawing it only for remedial instruction in particular subjects. The municipal authorities are responsible for providing schooling and ensuring pupil attendance. The county councils provide treatment, care, transport, and when necessary, boarding accommodation for some pupils. Over the years an increasing number of ordinary schools have been modified and adapted to allow physically disabled children full access to and use of buildings, classrooms, toilets, and playgrounds.

## Visually Impaired

Because of the successful drive to integrate children with visual impairments into local regular schools, supported by

appropriate technology and specialised teachers, only a small number of visually impaired children attend the two National special schools, of which one caters for children with visual impairments and associated disorders. Visually impaired pupils attending regular schools receive the full range of sophisticated technological and optical devices, for example, closed circuit television, magnifiers, facilities for enlarging, braille transcription, recording devices. They are also provided with sensory training and a modified curriculum, for example, mobility training, typing, braille writing. The help of visiting teachers for the visually impaired is also available.

### Special Education – Other Features

Other features of Special Education include instructional arrangements for separate teaching groups and hospital and home based tuition. Special teaching groups have replaced the traditional special class. The criterion for admission to this group is non-categorical, and a demonstrated weakness in particular subjects. There is flexibility in group size and retention of class membership of the pupil. Children are withdrawn for certain teaching periods for specific instruction in such things as reading and mathematics.

Hospital instruction is arranged for pupils admitted to hospital for long or short term periods. Often the program or curriculum is modified for subjects other than the basic ones. Individual teaching at home is also given to pupils who are unable to profit from ordinary instruction at school, for example, children in convalescence and school refusers.

### Teacher Training

All teachers must undertake special education units (areas of study) as part of their basic training program. As a consequence of the increased responsibility placed upon the regular teacher to instruct disabled pupils in an integrated school setting, special education is given considerable weight in the new teacher training program that is currently being launched. All teachers entering a special teacher training program must have a regular teacher certificate plus appropriate teaching experience. The present program ranges from one to four semesters, depending on the area the teacher elects for specialisation, for example, hearing impairment – four semesters; physical disability – one semester. The government proposes a longer training program for most categories of special teachers. The program comprises a compulsory core unit of foundation subjects such as psychology and child development for all teachers, followed by speciality units.

Sweden has been foremost over the last 20 years in reorganising its educational provision for children with disabilities. Teacher training is currently under careful scrutiny by all interested groups, such as government, teacher training institutions and teacher unions to provide the best educational system for children with special needs.

### Conclusion

To enable disabled pupils to profit from integrated education, the Swedish Government has provided, within the regular school system, a high level of professional support (teacher aides, special educators, etc.) as well as material and social assistance.

In Sweden, the integration experiment appears to have been a successful venture. It has also helped to create more enlightened public and professional attitudes and practices in the community. Apart from a strong commitment to a policy of integration, there is also a greater willingness to experiment with alternative forms of school placement for disabled pupils. Integrated schooling has been practised in Sweden for over two decades. However, the attitudes of practitioners, to such an arrangement, has not been ascertained in a reliable manner.

This study sought the views of a representative of administrators, class, subject, and special teachers, on such matters as school organisation and structure, professional practices, and resource maintenance services.

It was hoped that such a survey might provide answers to some questions raised in the current debate in Sweden, as to which children might benefit from remaining in the ordinary class, and what strategies were likely to enhance their educational opportunities.

### Attitude Survey

#### Aims

The main aim of the study was to ascertain the views of significant educators (school administrators [rektors], subject,

class, and special teachers), with regard to aspects of integration listed below. The characteristics of disabled pupils which best suit particular placement in ordinary classes and the level of resource support required to maintain such children were also examined.

Since rektors are the most important administrators and agents of change in the school system, it was necessary to explore their beliefs, attitudes and administrative arrangements for disabled children in regular classes. Other issues examined were the professional characteristics and skills of the practitioners, and the resource support such workers regarded as necessary for integration to be successful.

The investigation focussed on six major areas as follows:

1. The demographic characteristics of rektors, class, subject and special teachers.
2. The structure and organisation of the schools surveyed.
3. An examination of the existing qualification, experience, and practices of professionals working in the field.
4. The requisite skills for successful integration as perceived by the respective professional groups.
5. The nature and level of resource support deemed necessary for maintaining disabled pupils in regular classes or schools by respective groups.
6. Supplementary views of respondents, elicited by free comments.

Finally, the views of a selected group of 26 teachers and rektors were obtained on a standardised, structured interview schedule lasting half an hour.

### Methodology

The study used a questionnaire to collect data on a range of issues relating to integration as described earlier. This direct approach to obtaining information concerning attitudes towards integration was considered appropriate. The questionnaire was a modified version of one devised by the Macquarie University team (Center et al., 1985), and prepared by Professor Stukat and his associates at the University of Goteborg. The MacQuarie team in Australia surveyed the views of school principals, regular and special teachers employed by the New South Wales Education Department and independent schools in Sydney, Newcastle and Wollongong, relating to a range of issues on integration.

Teacher attitudes towards disabled pupils and their acceptance in the regular school is judged to be a critical factor in determining whether integration in practice might succeed in Sweden. The concern of educators appears to be the provision for three major aspects of children's development: the academic, the physical, and socio-emotional.

### Academic

Those who favour integration advances arguments in favour of academic gains. However, the evidence for such a claim is rather inconclusive, Osterling (1967) and Carlberg et al. (1980).

### Physical

It is assumed that when medical, paramedical, psychological, and physical resources are well grouped together, then children with disabilities do not feel isolated, and teachers feel more positive about accepting such children into the regular class.

### Social

The goal of living together in harmony appears to be an important function in schools. Thus, teaching children to "get along" with other children, irrespective of their social, racial, economic and medical background is a major task of schools. Schools therefore are expected to foster and develop social skills in all children, including those with disabilities by creating direct opportunities to cultivate appropriate social behaviours. Segregated settings, it is argued, cannot encourage social adjustment in disabled children, nor does it prepare them adequately to live and work with non-disabled people or function as well adjusted mature adults in society. It is also felt that sheltered, secure environments do not always offer the best settings in which disabled people discover formally or informally about "the realities of life". However, for more positive attitudes to develop towards disabled people, merely increasing exposure is not enough. Good planning and the provision of adequate resources for integration is essential for integration to be acceptable. For a fuller discussion of these issues please see (Ward et al., 1978; Carlberg et al. 1980; Jenkinson, 1983; Madden et al. 1983).

## Procedure

The first stage in the study was to establish the scope and range of the sample population to be surveyed. Professor Stukat and Mr Ulf Lekemo and their associates, contacted the relevant education authorities, school administrators, rektors, and teacher unions, with a view to seeking their approval and cooperation to participate in the survey. Next, school administrative regions were located and designated which would be representative of the entire country. Thus, the recipients of the questionnaire were selected on the basis of their representativeness of the demography, socio-economic backgrounds, and population distribution of the country. Regions with the following population characteristics selected for the study included:

- a. A large city (Goteborg).
  - b. Small to medium towns (20,000 - 50,000)
  - c. Sparsely populated regions.
- a. Goteborg (Districts: Onnered, Pavelund, Lovgardet 1 - Gardsten, Torslanda, Flatas, Hovas, Sjumila, Klareberg).
  - b. Vaxjo (Araby, Norregard, Fagraback), Kristinehamn (Centrala, Norra ro, Vastral), Ostersund (Blomanagen, Odensala, Sjoangen).
  - c. Ydre, Dals Ed, Arjang (centrala), Skinnskatteberg, Malung, Ockelbo, Nordmaling, Arjeplog.

Within each of the three major regions, a number of school districts received the questionnaires. Rektors were asked to distribute the questionnaire to class, subject and special teachers. Returns came from all districts except for Gardsten, Sjumila, and Ydre.

## Interviews

Following the questionnaire survey interviews with 26 individuals (rektor, class, subject and special teachers) were conducted in Goteborg, Vaxjo, and Arjeplog. In no sense are these interviews to be regarded as being representative of the views of the total survey sample. The main purpose of these follow-up interviews was to gain some sharper perspective and clearer insights into the attitudes and reactions of professionals working in the field. The identical protocol, sequence of questions, and time allocation was observed for each interview which lasted for approximately thirty to thirty five minutes per session. At the end of each interview, teachers and rektors were invited to address questions to the interviewer. All those interviewed took advantage of this offer by asking questions on a wide range of topics.

## Data Analysis

The data were analysed by calculating means and standard deviations for all Likert-type questions. Percentage frequencies for questions requiring ranked choices were calculated. Means and standard deviation of various subgroups were calculated.

## Results of Survey

The results of the survey are presented in six sections, and appear as below:

1. Demographic characteristics of all respondent groups
2. Organisation and structure of schools
3. Professional practices
4. Requisite skills for successful delivery of integration programs
5. Resource issues (resources and services required for successful integration)
6. Opinions of educators

## Summary

Approximately 70% of those who received the questionnaire responded. The professional experience of rektors was of an average of 32 years, almost 12 years in their senior administrative roles. Next were special teachers with 24 years of working in the field, and class and subject teachers about 18 years. Most (75%) regular class teachers had around 29 pupils, but special teachers instructed a smaller number of children. Predictably, approximately 84% of special teachers received additional specialist training and, surprisingly, almost 20% of rektors had special education qualifications, which lasted approximately two semesters. A high proportion of special teachers (32%) were employed in two or more schools. In general, special teachers declared that their expertise was confined to a particular category of disability (e.g., sensory, mental retardation, behavioural disorders, etc.). Both regular and special teachers indicated that adequate arrangements to

teach visually, hearing, and behaviourally impaired pupils were provided by their rektors. Disabled pupils in regular classes received a variety of specialist help, including assistance from aides, special teacher instruction in smaller sized classes, as well as attention from visiting teacher service from the hearing and visually impaired section.

## Requisite Skills for Successful Delivery on Integration Programs

The majority of special teachers (166 [86.5%] out of 192) reported that regular teachers felt very positively about their professional contribution to the education of disabled children. They also appreciated a high level of satisfaction for the direct support given to regular teachers by the competent special teacher.

Class, subject and special teachers were invited to rate in order of importance the appropriate skills and knowledge special teachers should possess to integrate or maintain a disabled child in a normal classroom. The ability to co-operate with a regular teacher and skill in assessing a disabled child's limitations was viewed as a major factor in providing successful integration by all three teacher groups as were curriculum and program abilities.

When class and special teachers views were canvassed on such detailed matters pertaining to curriculum, interpersonal and professional issues, the results vary. Of particular note is the higher value placed by regular teachers on a "sympathetic approach to disabled children" (93.5%) and "ability to co-operate with special teachers" (83.7%) than modifications to buildings and physical resources. All round general competence was also much valued by both class teachers and special teachers (78.5%).

Subject teachers and special teachers were requested to indicate what skills and knowledge were deemed necessary for a class teacher to successfully cope with a disabled pupil in a regular class. A similar trend emerges when 90% rated a sympathetic approach to disabled children as the most important characteristic necessary for successful integration. General competence and ability to work alongside special teachers were regarded as important attributes by 74% of the respondents.

It is of interest to note that class, subject and special teachers do not consider child directed programs as being critical for the maintenance of a disabled pupil in a regular class. All three groups of teachers when asked to list the features of school organisation that best promoted the integration of children, stated that the provision of special education for disabled pupils was the most important consideration (87.1%), followed by smaller class size (84.6%) and the positive attitudes and support of Rektors (78.6%).

## Summary

An overwhelming number of teachers in all categories, when asked to list in order of importance the bases of successful integration and desirable characteristics of practitioners which best promote integration, emphasised human interpersonal skills, sympathetic attitudes towards children and professional co-operation, as important. General competence and specific assessment skills were also highlighted. All groups placed very little importance on "child-directed" programs and "well structured teaching". This suggests that teachers are wary of vague, modish approaches to practical issues in the classroom. When asked to comment on features of school administration which best promote integration of disabled pupils into the regular school system, the majority rated special educational provision and teacher class size as the most important determinants.

I examined in greater detail resource issues and the role of support agencies which teachers consider necessary to maintain adequate integration in the regular school. These include specialist teachers and the auxiliary support services necessary to ensure good educational outcomes for children with a range of disabilities.

## Resource Issues

### Special Teachers

Special teachers declared that they received generous support and sufficient time to prepare lessons and attend case conferences during school hours. They were also highly satisfied with the level of provision of educational material and personal resources. This suggests that a large number of special teachers felt that the level of resource support they

received from school administration was highly satisfactory. When asked whether they were aware of the existence of the four national resource centres listed below, over half of the respondents knew of the existence of national agencies which offered special resource support for the four disability categories.

All groups were asked to rank in order of importance the value of support services for children with mental retardation. It should be noted that the Special Education teachers were viewed as being a very valuable asset by 90.2% of those who responded, whilst the school psychologist was rated, very important, by only 19.2%. The support offered by parents was valued by 78.1% as was smaller size classes (77.3%) and special teaching (70.5%).

When asked to rate the importance of services to support children with motor/orthopaedic disabilities, parents were regarded as the most important resource by 79.5%, and a mere 11.3% acknowledged the importance of the School Psychologist in their work. This service appears to be of dubious value by most respondents. Generally teachers rated school psychologists as a less effective service than the special educationist and teacher aide. This may be a reflection of the fact that the skills and services of the psychologist are viewed as a hypothetical service rather than one actually provided. The exception to this, is the response to the behaviour disordered category, where significantly greater satisfaction is felt for educational psychologist support. This attitudinal variation in relation to the school psychologist is consistent with the finding in the New South Wales Study (Ward, 1986).

Predictably, the Physiotherapist received a higher approval rating (77.2%) compared with 36.6% and 38.4% for Speech and Occupational Therapist respectively. There was very little support among the entire group (13.8%) for special classes for such children. This is explicable in view of the greater access teachers have to this service.

As would be expected, special equipment (hearing aids, communication devices, etc.) were rated, very important by 86.8% as was teaching material by 79.3% and parent support 78.9%. Once again the role of the School Psychologist was considered very important by only 19.7%.

When one examines the attitudes of the group towards services for behaviourally disordered pupils, a very different set of competencies and support agencies are valued by all the teachers. For example, parent support is highly regarded by 88.5% of respondents, and the School Psychologist is considered very important by 83.4% of those who replied. The Visiting Teacher is not considered as very important (11.3%) for the successful integration of such pupils. As for pupils whose learning difficulties are of unknown origin, parents (85.8%) and Special Education Teachers (88.5%) are viewed as key support agents, followed closely by school psychologists (77.3%).

The questionnaire was concerned with assessing the attitudes of practitioners towards the existing support services available for each of the disability categories (mental retardation - motor disabilities - sensory disorders, behaviour disorders and learning disabilities).

An interesting contrast emerged when the contribution of the school psychologist was examined. A very substantial number of respondents did not rate the support of psychologists as important for children with mental retardation, motor and sensory disorders. Whereas, a significant majority felt they were very necessary for pupils with behaviour and learning disorders. This attitudinal variation in relation to the school psychologist is consistent with the finding in the Australian New South Wales study (Ward, 1986; Center et al., 1974). It could be that teachers regarded the work of a psychologist either as of dubious value or a hypothetical service rather than a real one.

The special education teacher was consistently highly valued across all disability categories, as was the need for decrease in class size. All groups viewed parents as a major support and for all disability groups.

With the exception of the sensory disordered pupil, the visiting special education teacher service appears least attractive to teachers. Teaching aids and instructional technology were seen as important school-based resources for successful integration.

### Opinions

The opinions of all four groups of educators were elicited as to whether they would accept individual pupils suffering from specific disabilities, given the available support services they

were currently in receipt of. An analysis of the responses of the group, relating to Toilet/Medical, Sensory and Cognitive, Academic, Behaviour, and Mobility issues, was undertaken.

### Interview Survey

Interviews were conducted in various regions as described earlier. Twenty-six interviews were conducted at six schools in various cities and towns in Sweden. These included suburbs (kommuner) in Göteborg (Ängered, Klareberg, and Lovgardet), Bracke Östergård, Växjö, and Arjeplog.

### Discussion

Over 50% of respondents had a handicapped child in their class at some stage in their teaching careers. The largest group of disabled pupils were the hearing impaired, followed closely by children with motor disorders and cerebral palsy. A large number of teachers indicated that satisfactory modifications to their classrooms were undertaken and they were in receipt of specialised equipment and technical aids for their pupils. Half of the respondents were very satisfied with the provision for their pupils and a large number were fully or adequately consulted prior to the admission of a handicapped pupil to their class. More than half of the teachers reported were very positive about accepting disabled pupils in their class, and indicated that the placement of such children was appropriate. However, a majority of teachers did not feel that all their needs were adequately met by the school authorities. The majority of those interviewed emphasised the need for better training, information and professional support if they were to work effectively with disabled pupils in integrated settings.

### Conclusions

This study attempted to discover the attitudes and views of class, subject, special teachers and rektors towards integrating disabled students into the regular school or classroom.

It also sought to examine and assess the attitudes of educators to specific aspects of integration.

The results of this survey reveal that most educators are strongly in favour of disabled students being integrated into the regular school system. However, the appropriate level of administrative, pedagogical, technological and specialist service support is critical to successful integration.

Despite the positive attitudes to integration non-special education teachers identify critical variables such as expertise, parent support, relevant curricula, paramedical services, supportive administrators, small classes etc., as specific factors which are necessary for successful integration to occur.

The study attempted to delineate those features of disabled children which made it easier or more challenging for integration to succeed. It became clear that individual teachers, when given the opportunity to amplify their views, expressed grave misgivings about the policy of integration when the special needs of disabled pupils exceeded the resources or capacity of the regular school staff.

Several respondents were acutely aware of their lack of specialised skills, appropriate curricular and instructional technology available, especially to regular teachers.

### Comparison of the New South Wales Principals' Attitudes Towards Integration of Disabled Children into Regular Classes and the Swedish Survey

There have been a number of overseas studies which looked at practitioners' attitudes towards school integration. The New South Wales enquiry seemed highly pertinent for comparison with the present survey. In the New South Wales study answers to two questionnaires dealing with the integration of disabled children and the resources currently available were sought.

A total of 2,725 school principals from the Government, Catholic and independent school system were approached. Of these, 1,503 (55%) responded to two questionnaires. The first questionnaire was related to several "disability" issues, and the other questionnaire referred to "mild intellectual disability" concerns.

Comparisons between the first questionnaire and the present Swedish survey are more relevant. A total of 1,363 principals were sent questionnaires and 769 responded - 627 (65.4%) from the Government sector and 142 (35.1%) the non-Government schools. Thus, significantly more Government schools responded to the questionnaire than non-Government schools.

## Results

The results of the study were broadly similar to the Swedish survey. The overwhelming numbers of New South Wales Principals endorsed the concept of integration, and also emphasised the need for adequate and appropriate resources to ensure the success of the integration program. The results also indicated that principals were in favour of integration provided.

This study, though more extensive in coverage than the New South Wales survey reveals significant similarities of views in many of the areas studied. There was close agreement between the perceptions of the Swedish and New South Wales educators as to the characteristics of disabled pupils, teacher competencies, and educational strategies that were likely to lead to successful integration. Both studies underscore the point that serious problems remain for disabled and non-disabled pupils and the teachers when unselected disabled pupils are placed in regular classes without skilled teaching help and systematic resource support.

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Michel Le Metayer  
CDI, France

## THERAPEUTIC EDUCATION

Thirty years ago, Professor Petó wrote to me several times, asking questions about Professor Tardieu's work and about therapeutic education in the field of cerebral palsy. He was interested too in the new and small-scale review published by our association, CDI. I did not have the occasion to meet him but I was sure of his goodness and kindness when I received his letters written on a student's exercise book.

I must also say that Maria Hari showed us and demonstrated the great interest in Conductive Education ten years ago in Paris. This knowledge helped me in the management of an original kindergarten created in Paris in 1982 for normal and cerebral palsied children, where all the children share playing and learning in a very dynamic and positive way.

Therapeutic education for cerebral palsied children and for every patient's handicap in their motricity due to brain injuries, is conditioned by several principles. I shall only develop the following because of the time limit.

1. We must identify and assess distinctive factors in cerebral palsy and we have to understand their functional consequences, knowing that pathological factors do not exist in the same way for each patient. This approach teaches us the importance of factorial and clinical analysis for the development of educational and therapeutic activities.
2. Everyone agreed to recognize that motricity must be seen as a series of motor programmes in which the global motricity, selective motricity, gnostic appearances, praxiae and practo gnosiae have an important role to play. Emphasis must be placed today on innate motor abilities.

Innate motor abilities studied in the newborn and very young babies show us many fundamental aspects of the global motricity used in the development of functional skills such as locomotion or manual activities. Some aspects of innate motor abilities can be seen from studying babies. We can see:

- a. innate reactions, that is to say without learning, where the baby produces well regulated responses regarding physical and defined conditions created by the handling of the examiner, reactions perfectly regulated in space and in time which allow concatenations in the movements.
- b. innate functions against gravity, mechanisms for supporting weight bearing, righting and equilibrium.
- c. innate functions for locomotion - rolling, crawling and walking.
- d. functions for selective movements. We can see that subprogramme may emerge in the global motor programming when the situation demands.

The follow-up studies show us that innate motor abilities do not disappear. They are integrated in the normal motricity. Everyone can observe these facts of integration during the first year and throughout the life time.

On the one hand, assessment of this cerebromotor potentiality allows early diagnosis of cerebral palsy and functional progress.

On the other hand, innate motor abilities invite us to choose motor and functional activities in the most appropriate way for improving motricity of handicapped children, after having

corrected at the same time the regulation of movements. Education of movements, that is to say education of gnosiae, practo gnosiae and praxiae follows the same way. To develop a system of references is the "starting point". These referentials are built more quickly by using motor innate programmes at the beginning of education. This is understandable because motor innate automatisms produce synchronical sequences of contractions in space and in time, which are the source of information to the brain. This makes it possible to memorise and, very soon, anticipate actions.

3. It is the reason why we prefer to provoke automatic motricity by fundamental innate motor abilities before asking for voluntary movements and selective movements, and by using visual and auditive stimulation, in order to organize better orientation in space. Progressively we ask the child to repeat collective activities in a group of children, keeping in mind his own possibilities.

Generally we are beginning therapeutic education with the very young baby in individual sessions, in order to have more complete and well organized sequences of movements. As early as possible games are used for learning situations with and without the participation of parents.

Later the young child becomes one of a small group of three or four other children where each child is guided by his own therapist and teacher. Then the child enters a group for part of the day and twice a day he is guided again in a particular situation for education and treatment.

4. We have to pay great attention to treatment to prevent orthopaedic deformities in order to avoid problems with body axis, hips, knees, feet and so on.

Rules of the pathogeny of orthopaedic deformities are well known. That is to say:

- a. Use of mobility sectors of joints, during twenty-four hours.
- b. Lengthening of muscles (rule of 6 hours)
- c. To avoid pathological postures.

All members of the team and parents are involved to survey the postures of the children during daily life and to manage correct posture in sitting, kneeling and standing position when the children are doing activities without locomotion.

We must expect:

- a. In a sitting position, a moulded plaster cast painted by parents.
- b. In a kneeling position, use of "trotte-lapins" ("running rabbit") decorated too by parents.
- c. In a standing position, hips in good position in order to avoid or to cure dysplasiae and dislocations.

As everybody knows, this management directly involves the parents' contribution in the rehabilitation of their child.

5. One of our main aims is to share skills between members of the team.

6. Finally, the relationship between parents and the educative and therapeutic team is specially realised in the field of association where parents assume administrative and financial responsibilities, where they are taught about cerebral palsy in general and particularly for their own child. So, enthusiasm grows for all and creates better conditions for the success of therapeutic education.





Ernst Berger  
Vienna

# NEUROPHYSIOLOGICAL AND PSYCHOLOGICAL ASPECTS OF REHABILITATION

## 1. Introduction

A. Peto's 'Conductive Education' represents – virtually like no other method – a truly comprehensive concept of rehabilitation. For this reason, this historical event of the First World Congress of the International Peto Society is an appropriate occasion, to discuss some of the fundamental aspects of this subject, in particular, since we are to prepare for the future.

Rehabilitation is derived most of all from practice. I suppose, this is the reason for the substantial deficiency of theory we have to notice in this field. The constitution of a special scientific discipline 'The Science of Rehabilitation' has just recently started to emerge. This has various consequences which have to be considered if we want to deal with fundamental questions:

Starting-point of rehabilitation is abnormality or a pathological state. It is usually attributed to the medical field. Physicians generally put their emphasis on the biological level and they are used to focus on defects to determine their proceedings. If we remain in this position, and look at rehabilitation from the perspective of biological defects, it will be difficult to define the goals of rehabilitation.

Consequently, it is necessary to have more scope for this subject and to choose a broad approach for the constitution of this new 'Science of Rehabilitation'. We don't want to take the deficits of the past along into the future.

## 2. Outline of a 'Science of Rehabilitation'

If we try to sketch an outline of a 'Science of Rehabilitation', we first have to determine the goal and the object of rehabilitation. The question is: *What is it that is to be established (or re-established)?*

To further clarify the problem, I will use the example of a person suffering from spastic movement disorder. The obvious answer, 'We want to restore his functions of movement' is not enough. It is a result of the above mentioned focus on the biological defect.

The goal of rehabilitation is not the recovery of functional systems on a biological level, but the re-establishment of individual modes of life in their entire social context. This social context includes various levels: interpersonal relationships, work, leisure time and socio-political expression.

### 2.1 The Image of the Human Nature

To answer the question about the goal of rehabilitation, we have to sketch our view of the human nature first. So far my remarks suggest to use the term 'holistic'. But this term is not satisfactory.

The 'holistic view' cannot compensate for the differentiated knowledge of each separate level with its specific principles. We have to understand a human being as a bio-psycho-social entity. On each of these levels we find characteristic rules and interactions between the levels constitute the entirety.

Nothing in human life happens beyond human society. Physiotherapeutic treatment is an occurrence between two individuals within a certain social structure. Therefore the social level has to be our guiding level.

With its activity the individual acquires an image of the external world which is related to its needs. This internal representation of the external reality was called 'psychic level'.

The biotic (biological) level is the foundation of life. Only through this level, the other two levels can come into play. However, it constitutes a field of possibilities, and the capture

of this field and a crossing of borders is determined by the social level: The wheel-chair and other aids of a cross-cut-paralysed person are products of human society.

Let me repeat:

If a child reaches for something while playing with his mother, this happens in a specific social situation and it is based on an internal representation of the object through muscular activity.

## 2.2 Risks

Neglecting the dialectic interdependence of these three levels as well as the insufficient knowledge of their specific rules will obstruct the constitution of a Science of Rehabilitation. It also entails two traditional risks:

a) *The Mystification of the part of the biotic level:*

Defects of biological systems are considered as unchangeable and thus as critical limiting factors in the process of rehabilitation. Both assumptions have to be rejected vigorously. (It'll come back to this subject)

b) *The results of a rehabilitation-process are measured against the standard of average working abilities rather than against the individual progress. Thus the usability of an individual and in the end the economic benefit become the actual criterion.*

We come across these risks in our daily practice of rehabilitation just as in relevant legal regulations and theory.

To avoid these risks we first of all have to answer the following questions:

- How can biological structures be influenced aimfully?
- To which degree and at which point in time shall we employ technical and social compensatory aids to stimulate further development?
- How can we document individual progress on all three levels without referring to statistical norms of average abilities?

## 2.3 Scientific sources, Interdisciplinarity

To answer these questions we have to integrate the knowledge of various scientific sources which help us to understand the specific principles on each level and the interfaces between them. These sources are *Neuroscience* (von SEELEN, ANOCHINI), *Neuropsychology* (LURIA PRIBRAM), *Psychology* (LEONTJEW, WYGOTSKI), *developmental theory* (PRECHTL, BRUNER), *pedagogics of the handicapped* (JANTZEN, FEUSER). Hence the science of rehabilitation is based on multiple disciplines.

This interdisciplinary cooperation is an imperative necessity also for the practice of rehabilitation.

However, quite often this cooperation is misunderstood leading to a fragmentation of therapeutic proceedings.

*Cooperation really means the integration of various specialized contributions into one consistent and structured learning training-field for the client.*

The Conductive Education perfectly solved this problem by introducing the role of the 'Conductor'.

## 2.4 Definition

We can define 'Rehabilitation' as follows:

To pursue rehabilitation means to structure learning and developmental processes of people who have met with somatic or psychic lesion. So it becomes possible for them to take part in an unobstructed way in social life. Rehabilitation therefore in its essence is a pedagogic setting of a task that has to make use of different methods according to the diversity of possible defects in the biotic and psychic level. It stands in need of interdisciplinary cooperation. Rehabilitation, at all times, calls for a holistic approach comprising the biotic, psychic and social levels.

Let us return to the insights of the mentioned scientific sources and their significance for rehabilitation.

### 3. Biotic level

On the biotic level we have reached new standards in *Neuroscience*. In recent years this high state of knowledge has changed dramatically our views about brain-functions.

This new knowledge is of profound importance for the science of rehabilitation. It revealed the heavy dependence of brain-structures on external conditions.

1. Function and structure of the brain are the outcome of the process of self-organisation. They are not the result of the genetic blueprint. For quantitative reason alone the genetic information does not suffice for a detailed determination of the human brain-structure.

2. The cortical fields which represent a specific region of the body are not fixed and defined. They can be enlarged up to ten times by allocation of attention (MERZENICH et al. 1988)

This has been substantiated for different sensory systems (tactile and auditory) as well as for the motor system. There is still the question, how fast such changes occur.

3. The world outside is an integral part for a description of the system, and the functioning of neurons can only be analysed in combination with the specific environmental conditions. The reactive selectivity of cortical neurons can be influenced substantially throughout the entire life (MERZENICH et al. 1988) On the contrary, former research strategies assumed, that a neuron, and its connections form - with regard to its functional characteristics - a stable element; - so to say - a constant in a stimulus-response-equation.

4. LEONTJEW's (1973) concept of a functional brain organ has been substantiated by imaging systems depicting the functions of the central nervous system. (Goldenberg 1987). These functional systems emerge through ontogenesis. They are relatively stable and extremely plastic at the same time.

5. These new facts allow a much more optimistic view than a few years ago about possible restitutions in the central nervous system (CREICHERT 1990).

Let me now summarise my short outline of the biotic level: Step by step we had to give up the idea, that we are dealing with invariabilities on this level.

It turned out on all functional levels, that flexible and cooperative systems form the biological foundations of functions, and that the characteristics of these systems change according to the actual conditions. This is true for one single neuron as well as for the cooperation of various cortical fields.

### 4. Psychic Level

Let us talk about the psychic level. Conventional approaches often encounter substantial problems of motivation, because they consider the individual as the object of the rehabilitation process. A change of perspective can offer new points of view. We take the position of the internal observer (JANTZEN 1986) and ask: 'What are the needs of the client?'

For example: When I eat a cup of soup, my concern is not the biomechanically correct execution of movements. My motive is to quell my hunger. My goal is to move the spoon to my mouth and the realisation of this goal serves the motive. Various cognitive and sensomotoric operations are necessary in order to achieve this goal. The mentioned biomechanical aspects are part of these operations but they are of no extra value for the client. In the context of his activities which are directed toward the satisfaction of needs, they are nothing but a means to the end (LEONTJEW 1982).

The rehabilitation-process has to be organised in a way, which allows to focus on the operations every now and then without losing sight of the motive. The optimization of abilities and skills is only relevant in so far as it serves the development of the client. We now see the client as an actively proceeding individual. It is our task to create conditions which enable this active behaviour and by the same token learning-processes and processes of development.

This opens the perspective to the next level.

### 5. The social level

It would be beyond the scope of this discourse to give an extensive presentation of the social level. However, we cannot do without at least an outline of the crucial points. The job of the 'Conductor' - I'm using PETO's term - is a process of interpersonal encounters, of social interactions requiring communicative exchange. These interactions happen within the framework of given social organisations - for example a hospital or a specialised institution etc. These

conditions, and probably the entitlement to a financial support of rehabilitation as well differ from country to country. These and other details constitute the 'historic form of individuality' (SEVE 1977) of a handicapped person, or in other words, his specific learning conditions. Notwithstanding the mentioned differences, a central common problem of all handicapped people is isolation. JANTZEN (1987) has dealt with the theoretical aspects of this subject. Hence the most important task of rehabilitation is to overcome isolation and to enable a full participation in all aspects of social life.

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## THE EVALUATION OF CONDUCTIVE EDUCATION

In 1986, at the British Foundation for Conductive Education was planning the importation of conductive education from Budapest to Birmingham it seemed an ideal opportunity to evaluate conductive education and the remarkable claims made for it. Indeed several of the sponsors of the Foundation, most notably the City of Birmingham, gave support to the Foundation on the clear understanding that the experiment in conductive education would be evaluated.

An important consideration was that the evaluation should be objective and as independent of the Foundation as possible. With this in mind in October 1986 I made an application to the British Government's Department of Education and Science to finance a five year evaluation project and an award was made so that the research could start in July 1987, just a few months before the first children were admitted to the newly opened Birmingham Institute for Conductive Education.

### Objectives of the research

The objectives of our evaluation are as follows:

1. To determine the extent to which the form of conductive education developed in Birmingham is an accurate replica of that established at the Pető Institute.

According to Dr. Maria Hari, there is only one authentic system of CE: namely, that which is practiced at the Institute of Conductive Education in Budapest. The system as practiced in Birmingham is in a state of evolution: as time passes, the Birmingham system should become increasingly similar to the Budapest system. There are differences between the British and Hungarian educational systems which will necessitate differences in the detail of implementation in the two countries.

However, in order to explain and interpret the results of our evaluation, we are gathering information on whether the Birmingham Institute does have true conductive education, and whether conditions are correct for the provision of conductive education.

2. To make explicit the principles upon which conductive education operates, and to generate hypotheses as to which of those principles may be crucial to its effectiveness implementation.

The evaluation of any programme of education requires documentation of what the programme entails and what it is aiming to achieve. Such documentation did not exist in English in sufficient detail with respect to conductive education. We have begun co-operative work with the Pető Institute documenting the objectives of conductive education. We have begun co-operative work with the Pető Institute documenting the objectives of conductive education. This is the first step towards understanding the principles of conductive education.

3. To begin to define the range of applicability of conductive education in Britain.

We are in the process of describing, in a lot of detail, the type of child accepted for conductive education at the Birmingham Institute and those considered *unsuitable* for conductive education. However, it seems that we will not be in the position of being able to measure the effect of conductive education on the other types of children that would be acceptable – children with spina bifida for example – since there will be no intake of children except those with cerebral palsy during the time of the research project. There are now, of course, adults with Parkinson's Disease being taken into the Birmingham Institute, but we have been unable to secure funds for an evaluation of this part of the programme.

4. To evaluate the effectiveness of conductive education for children with cerebral palsy in the Birmingham Institute, compared to the effectiveness of some alternative British programmes.

It is on this objective that most work has been carried out and to which the rest of this paper will be devoted.

### Design of the evaluation

This fourth objective calls for a comparative evaluation of the effectiveness of different programmes of education for cerebral palsied children: one programme being conductive education, the others being more traditional British programmes. There are a number of issues and problems associated with the formation of groups of subjects which can be compared statistically in this evaluation. It was not possible to randomly allocate children with cerebral palsy to different groups for the purpose of comparing different programmes of education. Nor would it have been apt experimentally on this occasion to do so. Practitioners of conductive education do not make the claim that it is suitable for a random sample of cerebral palsied children and the children enrolled in the Birmingham Institute are certainly not a random sample drawn from the population with cerebral palsy. The parents of the children responded to an advertisement. Children brought to the Institute during the enrollment days were screened by senior Hungarian conductors for suitability for conductive education and, of those found suitable, a subset was selected by them for admission to the programme in a way that secures a "balanced" group. Although this process produced problems for the research design it was felt important that the research evaluation should not interfere with the standard procedures of conductive education in any way.

The first ten children admitted to the Birmingham Institute were aged between three and four years and all had a form of cerebral palsy. The first 10 trainee conductors and the first intake of pupils began in January 1988 at the Pető Institute in Budapest. They then returned to the newly opened Birmingham Institute in June 1988, along with senior conductors from the Pető Institute, who continue to have a vital role in establishing Conductive Education in Birmingham.

A second group of eight children with cerebral palsy was selected in September 1988 and they are also aged between three and four years. These children did not travel to Hungary, and will have all their formal conductive education at the Birmingham Institute.

As the number of children being admitted to the Birmingham Institute is less than anticipated (mainly because of trainee conductor attrition) the "group" on which conductive education is being evaluated is, in fact, a composite of the first intake, the second intake and some replacement children added subsequently. Fortunately it appears that although the first intake had nearly 1 year of conductive education when they entered the formal evaluation in September 1988 they were not detectably different, in terms of their development, from the second intake who were naive to conductive education when they entered the evaluation. Thus it makes sense to consider them as one group.

The current pattern at the Birmingham Institute is that for half of the academic year it is offered by British trainee conductors supervised by experienced Hungarian conductors. For the other half of the year the British trainees are required to be at the Pető Institute for training and the Birmingham Institute is staffed entirely by Hungarians.

It was felt that a truly matched group of children could only be assembled in a way similar to that in which children were admitted to the Birmingham Institute. With the assistance of senior Hungarian conductors and the consent of parents, samples of cerebral palsied children in the greater Manchester area were assessed for their suitability for conductive education and "accepted" or "rejected". Conductive education was not available for any of these children but those who were considered suitable formed a pool from which a comparison group was drawn which matched the Birmingham group key variables. The comparison group in Manchester is spread across three co-operating special schools.

Children in both the conductive education and the comparison group are assessed annually and the comparative progress of the two groups monitored. The design of the assessment battery has been a major task (and the major achievement) of the project to date. No battery of tests suitable for use with children with cerebral palsy aged from 3-8 existed and it was necessary to construct one which measures all the main areas of the development of young children.

The test battery is too large to be described in detail here, but a list of measures is included as Appendix 1 and further information is available. Basically the tests vary on three dimensions. *First*, there is the domain of development they are designed to tap (e.g., Cognitive, Communication, Motor, Personal). *Second*, from what source the data are gathered (by direct testing of the child, parents' reports, or teachers' reports). *Third*, the nature of the data yielded by each test (norm referenced, or criterion referenced).

#### A. Domain

Ideally we would like to have had two kinds of assessments for each child: those specific to the longer and shorter term objectives of the particular programme in which they are enrolled and measures of general progress not related specifically to their programme.

With this dual approach we would have been able to measure the effectiveness of each programme according to its objectives - that is, on its own terms - as well as, to compare the general progress of children in the different programmes.

Unfortunately, we were not able to obtain sufficient information on the short term objectives for each child in conductive education in time for us to use it in the construction of the test battery. Accordingly, we had to fall back on using tests for measuring the general development of children in as many areas as possible.

#### B. Data Source

Because any method of gathering data has its inherent problems, we thought it important to gather data on the children in a number of ways: that is, by direct testing, interviewing the parents about the child, and interviewing the teachers or conductors about the child. For direct testing, children are taken out of their class and are assessed on a one-to-one basis. Their performance, however, may not be representative of what they normally achieve at home or at school. Therefore, the parents are asked about the child's capabilities and behaviour in the home environment, and the teachers are asked similar questions relating to the school environment. There is a certain amount of overlap in the sources of information. In some cases, data are gathered by direct testing as well as interviewing a parent, and by interviewing a parent and a teacher.

#### C. Nature of the data

Ideally, in any research of this kind tests would be employed for which well documented and standardized norms were available. A child's score could then be evaluated by reference to age norms. Unfortunately in many of the domains which we wished to measure (e.g., motor functioning) such norm referenced tests do not exist.

The alternative is tests which measure the child's performance against an absolute standard (e.g., how long does it take to move two metres?) but for which age norms are not available, i.e., Criterion Referenced tests. They provide less rich data but are nevertheless useful when a comparison group methodology is employed. Only then is it possible to say whether a child's rate of development is faster or slower than that of the other children with the same handicap, but who are receiving different provision.

#### Progress to date

The main impediments to implementing the evaluation - the formation of a comparison group and the development of a comprehensive test battery - have now been cleared. However, both tasks took longer than anticipated.

The first full assessment of the children at the Birmingham Institute took place between October 1988 and March 1989 and was repeated approximately a year later and is currently being repeated for a third time. The first full assessment of the comparison group in Manchester was completed early in 1990 but as the children in Manchester are a year younger than the Birmingham children their data can be compared directly to the initial assessment of the Birmingham children.

A close match was confirmed between the children in Birmingham at the Institute for Conductive Education and the comparison group children in Manchester on all the variables on which matching was attempted - conductor ratings of severity of disability, intelligence, communication skills, physical age, self-help skills and academic age. The two groups differed on only one variable - Social Age. The Manchester group scored significantly lower on this scale which measures social competence. As is to be expected, on all measures where age norms are available the children in both groups scored behind the average for non-handicapped children. For example on the Physical Age Scale of the Developmental Profile the Birmingham children passed items at a level appropriate to non-handicapped children aged 18 months although they were actually aged 60 months on average. Thus there was a differential of 42 months, between their actual age and their Physical Developmental Age. The Manchester children had a 38 months differential, on average, on this scale.

We are able to give a preliminary indication of the progress that was made by the Birmingham children between the two rounds of annual assessments made on them - which were, in fact made approximately 14 months apart rather than exactly one year apart. The table shows that while in many domains the children had shown an absolute advance (except for fine motor skills), they had not advanced in relation to their age norms where these are available. Their advances in cognitive abilities for example was an average of only 12 months so they were actually slightly further behind their age norms at second testing (63 months compared to 74 months). Their communication skills had kept up with their increased chronological ages, but in expressive language particularly, they were still 15 months behind on average. Some improvement was evident in gross motor development - measured by the time taken to walk 2.25 meters, but virtually no improvement on this particular test of fine motor skill was shown. In terms of conductor ratings of the children's interpersonal and independence skills they had fallen a long way behind the development of their non-handicapped age peers.

Obviously, at this stage we are not able to attribute any of the changes we have recorded in the children's functioning unambiguously to conductive education. We must await longitudinal data from our comparison group in Manchester before we are able to draw any conclusions about the relative rate of development of the children exposed to Conductive Education compared to those in the other programmes.

As pointed out earlier the package of assessments employed in the present project was not designed with any particular programme of special education in mind. The assessments cover a range of domains important in the general development of children regardless of the particular programme in which they are enrolled. There are two groups of children enrolled in several different programmes of education and a full interpretation of the differences in the rate of development of the two groups on the package of assessments we employ can only be made in the knowledge of the objectives and the differential emphases of the various programmes. Hypothetically, it could be, for example, that conductive education places a special emphasis on motor development while one of the Manchester programmes places greater emphasis on social development. It would be important to know this in order to evaluate the different outcomes produced by the two programmes. To obtain this detailed knowledge of the objectives and emphases of the various programmes requires analysis of the modus operandi of each programme in relation to each child. We have begun this very time consuming but very valuable exercise.

In meeting objective 4 of our research we are basically concerned with the effects of different programmes of education on the nature and rate of development of children with cerebral palsy. It would be naive to assume that there are no factors outside the formal educational programmes experienced by the children which have a bearing on their development. For example it could happen that some parents whose children attend the Birmingham Institute supplement the education by taking their children to speech therapists, physiotherapists, etc. In addition the children receive relatively frequent medical and surgical interventions and there are also a whole host of incidental events in the child's life which may have a significant impact on his or her progress. For the interpretation of results it is very important to know whether there is any overall difference between the conductive education and comparison groups in the amount of help or support

hindrance) caused by factors outside the programme of education in which they are enrolled. Not only is this important at the group level, but is also important that this information is available for each child so that we can make sense of the differential rates of progress of children within the various programmes. To this end we have introduced a detailed interview with the parents of each child at annual intervals in order to determine what outside factors have been operating in the previous year which may have had a significant effect on the child's progress in the domains we are assessing - again we are collecting these data systematically.

If conductive education is successful one might expect that children will move away from the Birmingham Institute as the years progress. This has already begun on a small but increasing scale. While in most cases it is possible for us to continue our assessments of the children once they have left the Institute (indeed for the validity of the research it is essential that we do so), it does mean that our resources have to be spread even more thinly.

We are evaluating the efficacy of several complex and ever changing programmes which have multiple objectives. It seems unlikely that any evaluation would indicate a clear cut superiority of one programme over the others in all domains. All we can hope to achieve is an objective assessment of the relative success of each programme in each of the domains we are assessing.

### APPENDIX 1 The Assessment Battery

Domain	Test	Parent Rating (PR) Teacher Rating (TR) Direct Testing (DT)	Norm-ref. (NR) or Crit-ref. (CR)
A. Cognitive	Pictorial Test of Intelligence (PTI)	DT	NR
	Developmental Profile II (DPII) - Academic Scale	PR TR	NR
B. Academic	Reading Test	DT	CR
	Mathematics Test	DT	CR
C. Communication	DPII - Communication Scale	PR TR	NR
	Dysarthria	DT	CR
	Pre-Verbal Communication	DT	CR
	Edinburgh Articulation Test	DT	NR
D. Motor	Reynell Scale (Expressive)	DT	NR
	DPII - Physical Skills	PR TR	NR
	Vineland Adaptive Behaviour Scales (VABS) - Gross Scale	TR	NR
	Speed of Walking	DT	CR
	Pre-Walking walking *	DT	CR
	Postural reflexes *	DT	CR
	Fine Motor	DT	CR
E. Social	DPII - Social Scale	PR TR	NR
	VABS - Interpersonal Scale	TR	NR
	VABS - Play & Leisure Scale	TR	NR
	Attention Span Self-Control	TR	CR
	Problem Behaviours	PR	CR

F. Independence	DPII - Self-Help Scale	PR TR	NR
	VABS - Personal	TR	NR
G. Parents	Malaise Inventory	PR	CR
	Life in general	PR	CR
	Child's treatment	PR	CR
	Child's progress	PR	CR

\* Only assessed at beginning and end of evaluation.

**TABLE 1**  
Comparison of the children at the Birmingham Institute and at Manchester Schools at Time 1

Variable	Birmingham Time 1	Manchester Time 2	P
N =	18	20	
Chronological Age (months)	60	57	NS
Conducts/Rating			
Severe	10	8	
Moderate	4	6	NS
Mild	4	8	
Mental Age * (months)	48.6	49.0	NS
Communication Age ** (months)	50.8	43.7	NS
Physical Age ** (months)	18.1	18.1	NS
Social Age ** (months)	54.7	42.7	<0.05
Self-Help Age ** (months)	28.6	28.8	NS

\* Pictorial Test of Intelligence  
\*\* Developmental Profile

**TABLE 2**  
Comparison of scores of children at the Birmingham Institute at Time 1 and Time 2 (N = 17)

Domain	Time 1	Time 2	Change
Chronological Age (months)	60	74	14
Cognitive Abilities			
Mental age (months) (PTI)	50	63	13
Communication Skills			
Receptive language (months) (PTI)	55	71	16
Expressive language (months) (Reynell)	45	59	14
Motor Skills			
Time to move 2.25 meters (seconds)	50.7	37.4	-13.3
Average time to transfer a ball from one dish to another with preferred hand (seconds)	5.2	4.6	-0.6
Personal and Social Behaviour			
Interpersonal relations (months) (Vineland)	42	45	2
Independence (months) (Vineland)	30	34	4

# CONDUCTIVE EDUCATION IN THE KINDERGARTEN

## CONDUCTIVE EDUCATION FOR CHILDREN OF KINDERGARTEN AGE



Julia Horváth  
Pető Institute

This presentation discussed motor disability at kindergarten age – the characteristics of the age group, and special features of kindergarten age children whose disabilities are caused by damage to the central nervous system.

The special role conductive education plays at the age of 3 to 6 years, and its role in the structure of the Institute was explained.

- The structure and composition of kindergarten groups.
- The conductor's personality and role in conductive education.
- The principles of conductive education.
- The planning and organising of the daily routine.
- The formation of the programme.
- Fields of teaching.
- The general aims of kindergarten education as regards motor disabled children.

## CONDUCTIVE EDUCATION OF SPINA BIFIDA CHILDREN



Éva Beck and Györgyi Megtért  
Pető Institute

In all spinomotor and peripheromotor dysfunctions, destroyed motor units which are impossible to regenerate are involved. Conductive education builds upon the presence of anatomical and functional abilities.

Our main principle is to teach children to adapt themselves to age specific requirements and to achieve self care to the maximum of their potential. Willful, conscious activity plays an outstanding role here.

Spina bifida children, both in the outpatient group for the young (1 - 3 years) and in the residential group for kindergarten age get true multidisciplinary provision.

Regular urination, as taught in conductive education, helps to decrease both the tendency for reflux and urinary tract infections.

The goal of conductive education is to achieve independent walking instead of life in a wheelchair.

## EXPERIENCES RELATING TO THE DEVELOPMENT OF DRAWING SKILLS IN CHILDREN WITH HEMISYNDROME

Julia Horváth and Erzsébet Balogh  
Pető Institute

Since hemiplegia does not correlate to the pathological findings of ultrasound, EEG, CT, MRI and SEP could not be advanced easily; their diagnosis remains clinical. Child neurologists pay more attention to the muscle tone and reflexes and the asymmetry of these rather than to asymmetry of posture, postural reflexes or unbalanced, asymmetrical neurodevelopmental behaviour.

Conductive education is a multidisciplinary approach. Conductive education of hemiplegic children – through parents and by conductors – can start in the earliest age. The preference of motivated prone position gives freedom of action for genetically determined laterality.

Movement is regarded in this age as a contributor to learning and the conductor will stimulate active exploration of the world through movement. The body scheme requires continual maintenance by constant sampling of the environment. Development of body image was followed by drawing tests and spontaneous drawing.

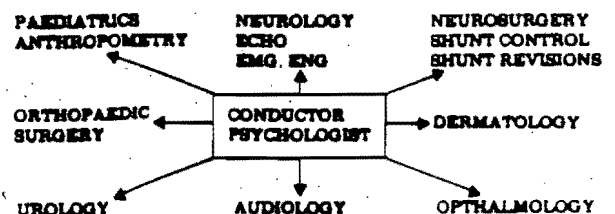
## COMPLEX MEDICAL CARE AND EXAMINATION OF SPINA BIFIDA CHILDREN



Erika Medveczky and Erzsébet Balogh  
Pető Institute

Conductive education is not as successful in the lesions of the lower motor neuron and the motor unit as in other motor dysfunctions. It is, however, more important to improve the quality of life of children born with neural tube defects. An early multidisciplinary programme as an integrated part of conductive education aims at giving the best chance for integration to spina bifida children.

The different branches of regular health care at the Pető Institute were described in this presentation.



# CONDUCTIVE EDUCATION WITH SCHOOL GROUPS

## A SPECIAL DEVELOPMENT PROGRAMME FOR CHILDREN OF PRE-SCHOOL AGE



Erzsebet Angyas  
Pető Institute

Coming to school age, children with dysfunctions show different discrepancies in the development of their personality. Our purpose with behaviour and intelligence tests is to find out what normal abilities are lacking due to damage to the central nervous system. This information is an important condition of the conductor's work: it is taken into consideration when programmes and curricula are worked out in order to compensate for falling behind and learning difficulties. With this age group the tests are also used for deciding which type of school is optimal in accordance with the requirements of the Hungarian schooling programme.

## SPEECH AND HANDWRITING IN CONDUCTIVE EDUCATION



Márta Kókuti  
Pető Institute

**Vocalisation, Speech and Conductive Education**  
Ms Kókuti discussed the problems of hearing and speech, and the reasons for them, observed in children with motor dysfunctions of cerebral origin.

Disturbances of supranuclear origin, e.g. respiration, deglutition, mastication, salivation, in tetraparetic and in athetoid children were described, as well as the characteristics of articulation and phonation, and disturbances of the rhythm of inspiration and expiration in children with dysfunctions.

Through observation, evaluation and registration of problems the appropriate development programme is planned.

Possibilities and tasks within the daily routine for correcting articulation and widening vocabulary were discussed, along with the significance of the coordination of movement and speech in the process of conductive education.

Speech improvement is an integral part of education.

### Teaching Handwriting for Athetoids in Conductive Education

The instrumental application of graphic activity is one of the key elements of integration. The topics covered were:

- The significance of fitting a special programme in the daily routine to prepare for handwriting.
- Factors that affect the learning of handwriting: grasp, aim, hold, release, coordination of movements, directions, orientation in space, vision, view, fixation.
- Establishment of the ability of abstraction to learn handwriting. Establishment of individual handwriting positions and ways of handwriting.
- In the period when elements of letters and letters are taught, we establish tracing by practising broken and continual sketching (writing over).
- Requirements regarding speed and legibility of handwriting in the last phase of learning.

## THE PETŐ SCHOOL



Maria Györgyi  
Pető Institute

The Pető conductive school is an integral part of the Hungarian educational system. We teach the motor-disabled children in a school system through 9 years. The age range is between 6 and 15. At the same time it is the area of Hungarian and foreign students' practical training. We follow the requirements of the Hungarian syllabus but with the methods of conductive education. The framework of activities is the daily routine and the content of it is given by the complex programme. The teaching process is in groups of 22 - 25 children under the guidance of the group-leader conductor. The basis of organising a class is the age and class-level of the children. We do not distinguish by IQ. We separate the children only for school lessons. Each group contains two classes and in these small classes the teaching process is much more effective. All the other activities are done together.

Our pedagogy is education-oriented, and it is the formation of children's personality by learning process, the optimal development of their abilities. It covers cognitive, affective and psychomotoric areas. The method of conductive education depends on the basic problem of these children. The set aim is to educate the motor-disabled child to become an active member of society. It is a very important principle that they should apply the learnt activities in real-life situations, which helps reinforcement and finally results in the creation of skills and abilities.

## FACTS AND FIGURES ABOUT DISCHARGED CHILDREN'S ADAPTATION AT SCHOOL



Maria Dombi and Andrea Arató  
Pető Institute

### Aftercare Activity: Methods of Follow-up

Monitoring children's and youngsters' lives following their discharge from the Pető Institute involves:

1. Regular check-ups
    - 1.1 Recording condition and any changes
    - 1.2 Discovering any problems
    - 1.3 Finding appropriate ways of giving help
  2. Organising outpatient groups in compliance with current needs
    - 2.1 Maintaining and improving condition
    - 2.2 Setting the home program and daily routine
  3. Keeping in touch with families and educational institutions
  4. Counselling in career matters
  5. Assistance with social problems
- A short video was shown.

### Characteristics of Motor Disabled Children's Integration into Primary School

Problems related to schooling have been investigated on the basis of pedagogical reports, which were analysed statistically. The data of 422 primary school children were compared.

The examined population had 3 groups:

1. Normal children
2. Residential CP children
3. Discharged CP children

We compared and interpreted data on the following: speed of handwriting, external appearance, orthography, content and technical features of speech, quality and speed of reading comprehension of text, school achievement, behaviour, diligence, and ability of forming relationships.

# CONDUCTIVE EDUCATION FOR ADULTS

## CONDUCTIVE EDUCATION OF ADULTS WITH PARKINSON'S DISEASE



Zsuzsanna Szokolysi  
*Pető Institute*

The number of people suffering from Parkinson's disease in Hungary is about 1-2:1000 of the population. In the course of the last ten years about 250 people with Parkinson's disease have been treated at our Institute. The average age is between 60 and 64 years.

Whilst traditional objective examinations concentrate on achievements in the motor system, we are mainly interested in the cognitive process preceding the output because it is this experience on which our programme is based.

Conductive Education tries to develop willpower in these people and also tries to reorganize and coordinate the everyday activities according to their changed abilities.

## CONDUCTIVE EDUCATION OF ADULTS WITH HEMIPLEGIA



Klára Tárczay  
*Pető Institute*

This presentation gave a statistical breakdown of adult patients by diagnosis, age, and activity, with special regard to hemiplegics.

The main aspects of planning conductive education for a hemiplegia patient, and working out the program and timetable were outlined. Patients' integration into society, learning or re-learning social adaptation, were discussed, along with the possibilities of re-activating the changed ability.

As illustration the stages of a hemiplegia patient's progress were shown on video.

- Anamnesis
- Treatment received previously
- Condition at admission
- Phases of the progress (also outlining the conductive education program for each phase)
- Present condition
- Chances of further rehabilitation, further aims,
- Summary and conclusion

## CONDUCTIVE EDUCATION OF ADULTS WITH MULTIPLE SCLEROSIS



Ida Paulik  
*Pető Institute*

Multiple sclerosis is a deteriorating disturbance of the nervous system which is incurable. It is, however, possible to maintain the ability to walk and to teach certain activities.

It is important to the society, the family and the individual, on what level and for how long these people maintain their capacity for work and self-care.

Conductive education is a learning process. Patients practise tasks of daily self-care, fine differentiated hand movements, basic ways of changing place and position, safe solutions.

Through learning and repetition successful solutions become automatic.

With the family's help and by applying the tasks and goals at home the working capacity and activity can be maintained for a relatively long time.



# CONDUCTIVE EDUCATION FOR MOTHER & TODDLER GROUPS

## THE PROPORTION OF MOTOR DYSFUNCTIONS OF CEREBRAL ORIGIN IN RECENT YEARS

Erzsébet Balogh  
Pető Institute

Motor dysfunctions are registered in Hungary: the incidence and the prevalence of the main types of cerebral palsy are recorded.

The proportion of total body involvement (double hemiplegia) is growing, while the prevalence of diplegia, hemiplegia and especially athetosis is decreasing, and that of ataxia remains the same.

The presence of secondary diseases (mental retardation, sensory and perceptual defect, epilepsy) connected to the main motor dysfunction interferes with the results of conductive education.

It is not the quality but the duration of conductive education that depends on the form in which the motor dysfunction appears.

## WORK AT THE MOTHER AND CHILD OUTPATIENT AND RESIDENTIAL DEPARTMENT (MOTOR DISORDER AT A VERY EARLY AGE)



Judit Kállay, Éva Szék and Erzsébet Köröspataky  
Pető Institute

Most infants with motor dysfunctions make good progress through conductive education. With a comprehensive approach an active way of life can be established even at a very young age.

We teach how to play to get experiences. With a programme of play, rhythmic intention is used even in this period of life.

Conductive education is realised by transmission through parents. In the conductive group, working with children under 3 years is effective even in a group situation, through:

- Group effect, group rhythm
- Setting an example, imparting experiences
- Interactions between mother and child and between parents and conductor
- Individual problem solving.

The preventive and preparatory role of early education was discussed, along with preparation for kindergarten, and possibilities of advancement.

## CASE DEMONSTRATION



Mária Szinder  
Pető Institute

A film showing the stages of development of a little girl with double hemiplegia at the ages of 19 months, 4 years and 5 years.

At the time of admission she had psychosomatic retardation, was unable to change place and position, responded well to playful motivation, did not speak and required full care.

Pathological symptoms have persisted since but there have been achievements.

She has learnt to get dressed and undressed, to use differentiated movements instead of grip, to button, to feed herself, to take a bath, to take some steps independently with shoes on. She is now toilet trained.

In the intellectual field she has made enormous progress.



## CONDUCTIVE EDUCATION IN JAPAN

Since I learned the Bobath Method from Mrs. Bobath at the Cerebral Palsy Centre in 1970, I have been working with cerebral palsied children at my Judo school for children in the community.

A 14-year-old spastic paraplegic boy who had been staying in bed all day learned to walk independently carrying his satchel to school. Another speech-disordered boy who wouldn't attend school gained speech ability and began to go to school again. With these experiences, I began to think that for motor-disabled children with lesion of the central nervous system, group training education might be more effective than individual medical physiotherapy such as the methods of Bobath or Voita.

In the Japanese national sport, Judo, we have "Ukemi", or preparatory exercise. This is the basic technique which makes it possible to be pushed down or thrown down in all directions without being hurt. If you master "Ukemi", you can start practising the fighting technique. We have "Throw", "Hold", "Stretch hold" and "Strangle hold". We call it "Randori", fighting exercise, in which two players grapple and practice these techniques repeatedly.

I would like to describe two cases in connection with Judo.

The first case is a 7-year-old boy with functional disturbance of speech. His schoolteacher pointed out to his mother that the boy still spoke in an infantile way and asked for a doctor's advice. According to the doctor, the boy should have his short Frenulum linguae lengthened. We succeeded in having the boy overcome his habitual way of speech by way of speech training once a week and Judo three times a week.

"Stand technique" and "Strangle hold" make breathing difficult, which makes the boy open the mouth and take a deep breath. Ticking the armpits and other acions stimulating the mouth and tongue produced the conditions which made recovery possible without operation.

Changes observed in Judo school:

1. In the individual articulatory training, only small utterance was heard.

Exercising parts were limited to those around the mouth. At the Judo school on the contrary, big utterance is heard in a natural way among the other children. Articulation happens in connection with the whole physical function.

2. The Judo school has had a good effect on his mental development, improving his positiveness and power of concentration.

3. Attending the Judo school as well as having individual training seems to have improved the articulatory functions in a relatively short time.

The second case concerns two hemiplegic adults at Judo school. By hitting the Tatami, or straw mat, with one hand after turning head over heels, the strong shock which the body (especially the trunk) has received is dissipated. If you are good enough at hitting the Tatami, you won't feel pain even if you are thrown down (Figure 1).

The upper player in Figure 2 is a tetraplegic adult with athetosis; the lower player is also an athetoid adult. The upper one is fighting hard with "Newaza", ground technique, not to let go of his opponent under him. But the more he strains himself, the more easily he becomes spastic and takes the pattern of adduction and extension of the lower limbs, which makes it easy to be repelled. With this experience, he tries to straddle by 60-90 degrees. Thus he is not repelled so easily. This means that in the "Newaza" practices, he was motivated to relax himself and put his legs aside.

Practical Judo trainings after the task series makes the whole-day learning system more effective. They are motivated to



Fig. 1



Fig. 2

stand and walk in the hope of reaching the level of "Nagewaza" practice, throwing down.

In 1976, I heard about the Peto Institute in Billingshurst near London, directed by Mrs. Esther Cotton. I visited her Institute twice, in 1976 and 1977. It was during my second visit that I received a letter from Dr. Hári at the Peto Institute in Budapest saying that I might visit her. When I felt that my studies in Budapest overlapped with my experiences at the Judo school, I decided what to do.

As soon as I came home from Hungary, I founded the Warashibe Institute for Children. It was opened in January 1978, with 5 cerebral palsied children and 8 staff members.

I was allowed by Dr. Hári to send all these children and staff to the Peto Institute in Budapest for six months, from September '78 to March '79. The Warashibe Institute for Children has thus formed an Institute of Conductive Education somehow or other.

Since April 1978, altogether 19 staff members have been given the opportunity to learn at the Peto Institute (Table 1). Two of them graduated from the Conductor's College and were awarded a Conductor's licence. I appreciate all the work and help for them from Dr. Hári and her colleagues.

Out of 19 members, only 6 are still engaged with Conductive Education, that is only 30 per cent. I hope they will come back when they have finished bringing up their children.

**Table 1:**  
Numbers of staff who learned at the Petó Institute

- 8: six months with 5 C.P. children  
(Sept. 1978 - March 1979)
- 3: International Course on Conductive Education
- 9: Six months
- 1: Seven months
- 3: one year
- 1: one and half years
- 2: more than 4 years to get Conductor's licence

Total 19

**Table 2:**

Year	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	As a whole
Handicap												
1	4	24	38	36	26	17	16	12	12	12	8	45
		(83%)	(79%)	(77%)	(70%)	(65%)	(67%)	(60%)	(57%)	(63%)	(50%)	(69%)
2	1	3	6	8	10	9	8	8	9	7	8	15
		(10%)	(13%)	(18%)	(27%)	(35%)	(33%)	(40%)	(43%)	(37%)	(50%)	(23%)
3	0	2	4	3	1	0	0	0	0	0	0	5
		(7%)	(8%)	(6%)	(3%)							(8%)
Total	5	29	48	47	37	26	24	20	21	19	16	65

1. Cerebral Palsy with or without slight Mental Retardation.
2. CP or non-CP with severe handicap both physically and mentally.
3. Not cerebral palsied handicap.

The number (and the percentage) of the children by severeness of handicap of cerebral palsied and other types of disease. (About 65 children who were residential for more than 6 months. Other types include encephalitis, spina bifida, Cornelia de Lange syndrome, Lesh-Nyhan syndrome and dystrophis.)

We had 65 residential children in 11 years between 1978 and 1988. With the year of 1981, the first International Year of the Handicapped, as a turning point, the birthrate of cerebral palsied children has decreased remarkably. It was 0.08 per cent in 1980 in Osaka. Conversely the rate of children with severe handicap with both mental and physical problems has increased with advanced age. This is why we were obliged to start Conductive Education for adults.

But I would like to show you the case of a severely handicapped girl with mental retardation. Conductive Education brought about great development in the child. The girl was born in 1980 in asphyxia caused by breech presentation. Severe jaundice was solved by exchange transfusion. We started Conductive Education with her in Mother and Child Class when she was 1 year 4 months old. The diagnosis was hypotonia. Table 3 shows her history of functional development. She was moved to the residential class when she was 3 years 11 months old. She became able to stand and walk independently when she was 5 years 5 months old. Spastic palsy of the right upper limb improved, along with which she became independent in feeding, dressing and excretion, and half-independent in bathing.

In spite of the mental retardation, verbal communication improved, too.

She left our institute at the age of 6, entered the elementary school in the community and walks to school independently. As we see in Table 4, she has remarkable mental retardation. But her ability of locomotion, hand skills, sociability with basic customs and verbal communication continued to improve even after entering the elementary school. It is admirable that she remains sociable with her classmates.

But for Conductive Education, what else could have brought her up to this level?

I hope you can see her great steps of development seeing the changes of her features in the pictures.

**Table 3:**

Name: M.K.  
Sex: Female  
Date of Birth: May, 1980  
Diagnosis: Cerebral palsy with hypotonia  
Cause of dysfunction: Asphyxia caused by breech presentation and coiling of the umbilical cord.  
Severe jaundice was solved by exchange transfusion.

**Changes observed in Mothers' & Children's Class**

(since the age of 1 year 4 months)	
Head steady	1 year 6 months
Turning over	2 years
Crawling	2 years 2 months
Crawling on all fours	3 years 6 months
Standing with holding hands	3 years 7 months

**Table 4:**

"Developmental stage" according to the new K Scale

age	developmental age
1982. 5. 24	7 8M.
1983. 8. 2	8 1Y. 2.5M.
1985. 10. 31	10 1Y. 6M.
1988. 11. 8	13 2Y. 1M.



Fig. 3



Fig. 4



Fig. 5

In 1981, we started Conductive Education for adults in the Social Welfare Juridical Person Warashibe En, Institute of Motor Disabled.

Since 1988, the second Warashibe Institute has been working at Otaki village in Hokkaido, 1100 kilometers from Osaka. This area of 330,000 square meters was presented to me free of charge by the Government. The village is located between the two beautiful lakes, Shikotsu and Toya.

Social Welfare Juridical Person Warashibe En is a half-national and half-private institute, which demonstrates that the Japanese Ministry of Welfare appreciated Conductive Education. It was more than a decade since Dr. Hári and her colleagues had first helped us. The staff of the Warashibe Institute worked with continuous effort and the Medical Society and the Pedagogic Society in Japan began to appreciate Conductive Education.

I am planning to make the Otaki village's Institute a big base for Normalization, making use of the rich natural features of the large area. I want to make a village where the handicapped people live and work in the continuity of the task series and the learning system particular to Conductive Education.

To my great fortune, Dr. Hári and her conductor colleagues, Mária Herczeg and Júlia Horvath, visited our Institutes from October 9th to 21st, and worked for us with heart and enthusiasm. We are still half way on the road to Conductive Education, but I do hope to enrich the content of our work with the ceaseless help from the Pető Institute.

I have two videotapes on the task series in our Institute: one is directed by the Japanese staff, the other by the Hungarian Conductor, Mária Herczeg. The videos show what the difference is between our way of work and the real Conductive work by the experienced Conductor with 70 years' historical background. This comparison is not a very pleasant experience to me. I should rather say it shames me. But I dare to show the video as teaching material for those who challenge Conductive Education.

## THE PETŐ SYSTEM IN AUSTRIA

1. As I was the first foreigner who got to know Prof. Peto behind the Iron Curtain in 1963, I would like to bring the Peto system close to you by describing my personal experience of Peto. When I entered the old institute in Villányi ut in Budapest I was told by the staff that I shouldn't be disappointed when Peto stops the audience immediately and throws me out after 10 minutes: sometimes he does so when he feels annoyed by somebody.

So I determined not to let him throw me out, but to leave myself after 10 minutes. You must know that Peto was a very imposing, very direct, very intelligent, very spontaneous, very humorous, and artistic but also a very authoritarian person. So after 10 minutes of my visit I looked at my watch and said: "I'd better leave now!"

Peto, totally astonished, said: "Why do you want to run away? Did I tell you?"

I answered: "No, but I don't want to be thrown out by you."

He laughed and said: "You stay!" So I stayed for a long talk of about 2 hours and I came back many, many times, and now I am here at this Congress after 27 years.

At one of my early stays at the Institute Peto presented me with an article about Conductive Education in German where he had written on top of the first page: "This is from Peto and not from Bobath!"

1.1. This he did because *Esther Cotton*, one of the early Western Peto inventors and first and great fighters for C.E. in England, had urged *B. Bobath* to come to Budapest. Peto told me about her: "She has learned from me!" And he was right, because in one of the following articles Berta B. explained why her old "RIPs", the reflex inhibiting postures, were now her new "RIPs", the reflex inhibiting pattern. I think that Berta had learned from *Andras Peto* to be more active. But I also think that *Andras* had also learned from Berta. At one of my later stays at the Institute, Peto urged me to see the *new mother-and-baby group*, which was a small external group of 3 babies and mothers working with one conductor. There I saw that the conductor, while motivating the babies and attracting them in an enormously effective way, also had to touch and to handle them. But the hand of the conductor never was the main means of interaction or facilitation. It was and still is one means amongst others that support the active child to reach his goals in his own way!

1.2. When I have to explain the difference between various methods of treatment and the Peto education system, I say: A Peto scholar always has to remember one very essential series when he wants to work with a child and really wants to get close to it: he first has to switch on his heart and find the child with this part of himself, second his brain, to inform the child about the goal and task, and only third he shall use his hand to support the child physically if necessary. This series of:

1. heart, 2. brain and 3. hand communication with the child brings about a totally different quality of action of the child, that includes the whole personality and always reaches the highest level of consciousness, self-guidance and emancipation.

1.3. There are some other sayings of Peto's which I have kept firmly in mind. Once he said: "The system is very easy to understand, there are four main parts:

- the group
- the learning method including speech
- the organized daily schedule
- the conductor

If you keep that in mind, you can't go wrong."

How easy to understand, but how difficult to realize!

Another time he was furious and shouted: "I tell you: the one

person who teaches the child mathematics also must teach him to wipe his bottom on the toilet". With "the one person" he meant the conductor and for bottom he used another word in German.

1.4. He also said: "Come whenever you like and take whatever is useful to you". So I did in the following years and took with me whatever information, knowledge and practical experience was helpful for our children in Austria. But at the same time I learned more and more that it was never enough to reach the high standard of the Budapest groups. Peto's humanity and generosity also in these aspects helped many thousand cerebral palsied children in the world. But at the same time we must not stop trying to establish authentic conductor training for all these countries in various ways. Concerning the conductors' training, Dr Maria Han says: "It needs four years and not less!" I understand this condition more and more, because it is not a question of academically studying a lot of different subjects. Rather it demands a total change of personality of the student her himself. In the work with the child it needs to invent and to develop many human qualities that have been hidden before: a loud person will also become quiet and meditative, an introverted person will become more expressive, a slow person will become quicker and so on. A conductor has to be a mother or father, a clown, a philosopher, an actor, a sports trainer, a conductor of an orchestra, an interior designer, a musician, a friend... It is the children who teach us to grow as human beings and this takes time. Once Dr. Maria Hári answered my question what the most important quality of a conductor would be: "That she is a permanent optimist" and I would like to add: "And that she is ready to change and grow in all aspects of life herself."

### 2. What is the Situation in Austria now?

In 1973 I established one small children's group which worked three times a week for two to three hours; I called it "multitherapeutic" as we had no intensive contact and supervision from Hungary at that time. Since 1983 and especially after the Peto Symposium in autumn 1984 the contact became intensive and more extended in four aspects:

2.1

- Austrian children visit the Peto Institute once or twice a year and in the meantime attend Austrian groups.
- One to two fully trained Hungarian conductors live in Vienna and work in our groups.
- Three Hungarian chief conductors visit our groups once a month and supervise them.
- The introduction course that accompanies practical work in the "multitherapeutic" conductive groups and lasts 2 years is also supported by chief conductors from Hungary.

All this is due to the human understanding and generosity of the leaders of the Peto Institute and is based on a contract that was made in 1988 between the Austrian Spastics Society plus Institute for "Multitherapeutic Paedagogics/Conductive Education" from the Austrian side and the Peto Institute from the Hungarian side. This took place before the existence of the International Peto Foundation and Association.

2.2 The present status in Vienna shows daily groups for all ages:

- 2 babies and parents groups
- 2 Kindergarten groups
- 1 severely multiple handicapped group
- 2 school groups
- 1 family integrative living training group for children and parents
- 1 self-help training group for severely handicapped youngsters and adults
- 1 living training group for youngsters and adults
- 1 vocational group.

Altogether there are:

60 children permanently attending  
40 children attending in blocks  
70 children attending only once a week or only for the summer course  
40 adults.

2.3 *What are the problems we had to fight with? Where did I fail and where succeed?* First I failed twice in trying to implement C.E. into existing schools for the physically handicapped: both times I tried it as a consultant physiotherapist for nearly ten years in two different schools – but it simply did not work.

Now I know that it costs less energy to start something new from the very beginning.

We succeeded in convincing the local governments in 8 of 9 provinces of Austria to give us enough money for the daily expenses of our groups just by the progress the children made. We have not yet enough money for adaptations, or a new building, or for our courses or hopefully for a conductor's training.

2.4 *How did we deal with the strong and constant demand for social integration?*

Let me introduce three models that we could develop:

- a) A C.P. children's group and an integrating Kindergarten group next door on one floor
- b) The family integrating living: training group for children and parents
- c) The self-help and living-training group for severely handicapped youngsters and adults which are followed by supported living possibilities in the community.

a) *The adjacent integrating Kindergarten group for the non-handicapped*

This allows the C.P. child an individually tailored form of integration: after having attended the multitherapeutic conductive group and after having achieved enough independence, i.e. personally unaided walking and self-care as well as some social routine, the C.P. child goes to the integrating Kindergarten group for one or two hours per day. In the beginning we arrange these visits during guided periods of the day: pre-school teaching, drawing, music lessons, different types of play in a sitting position at the table. There are two rules concerning these visits. They always take place:

– at the *same time* of the daily schedule and not during phases where there are relevant programmes (plinth programme, standing and walking programme, hand programme) for the child in the C.P. group.

– during the period in the non-handicapped group *no therapist must "bother" the child* to do or that, to sit like this, to stand or walk like this: the group has its own goals, its own rhythm and its own social rules and the C.P. child has to adapt him/herself. Of course there is an *"integration specialist"* in the group whose task is to look after a good social integration and to arrange special learning situations tailored to the C.P. child's capabilities of action where the whole group is involved. We avoid, for instance, playing situations on the floor where the

child would crawl and sit between the heels or where all the children run about, etc. This model has proved very good because the child experiences himself once in a situation amongst children with similar problems, where he/she might be one of the advanced ones and the other time in a situation where he/she has more difficulties than the others and needs help.

b) The second model is the so called *"family integrating living training group"*. This is a family-like small group in a big flat in Vienna which consists of two parts.

One part is the residential one: 3 schoolchildren (2 boys and one girl between 8 - 12 years) are living with 3 residential pedagogues, accompanied by one mother of the girl (who lives there 3 days/week), one helper and one consultant therapist.

The other part is the changing guest children with their parents who come 3 times a year for mostly 3 - 4 weeks. We start at 6.15 in the morning and work until 8.15. Then all children leave for the day groups. In the afternoon after coming "home" they do a walking training, a motor programme and the self-help training again with their parents.

The successes achieved by this model are based on:

– The family-like atmosphere and the work together: the parents help in the household preparing food, washing dishes, cleaning rooms, etc. They also prepare all the equipment for the programmes—plinth, rung chairs, stools, and dresses, toys, etc. in the evening they sit together and talk to each other. This has a very important *psychogenic* function.

– Other members of the family, like fathers, sisters, brothers, grandmothers, or friends or educators, for instance from the local Kindergarten, also can come.

– Parents are guided in all aspects of daily education.

– in comparison to individual teaching it is a good learning situation for the C.P. child in a suitable group (we always invite similar children who know each other already).

– A comparatively quick change of behaviour, mutual child interaction and cooperation between parents and child take place.

– and later an increasing emancipation of parents and child from each other.

c) The third model is the *"self-help and living training group"* for severely handicapped adult C.P.s. There are 21 attendees in the day and 8 attendees in the live-in group. They all came in wheelchairs and were mostly dependent on personal help in daily activities.

After 5-6 years of intensive self-help and motor training two thirds of these people have developed enough independence to move to individual specially adapted flats. Most of them at this time need very little, and a few need some personal support. About one third remain dependent on personal help. Altogether I must say that though I have been working nearly thirty years now with C.P.s. it was never boring, it was always new and interesting and I am very grateful to the people of the Pető Institute and to Prof. Andras Pető who had said to me in 1963: "You stay!"

## TRANSPLANTING CONDUCTIVE EDUCATION TO ISRAEL "STEP BY STEP"

### Beginnings

In the winter of 1987 Joey and his courageous parents opened a new door for a small group of children and their parents in Jerusalem. Joey took them, and some professionals, who confronted daily the struggles of motor-disabled children, into the sunny corridors of a place far away in Budapest. Here, in a videotape made by the BBC, the children saw other children just like themselves doing things they never imagined were possible for them to do. The adults were deeply moved by the spirit and optimism that they saw before them.

A few parents immediately tried to apply some of these ideas, others decided to explore the possibilities that they could sense awaited their children in this seemingly strange country.

I will not tire you by taking you through the complex and difficult first steps of this journey. Suffice it to say that this group of parents decided very quickly that here was gift that they hoped could be shared with other children in Israel, that here was something to be learned and brought home.

And so, "Tsad Kadima: The Association for Conductive Education in Israel" was born.

Only two "small" questions remained: Was it possible, and how?

In search for the answers, Dr. Hári's door was opened to us. From the very beginning, she and her dedicated staff showed their readiness to share their knowledge and achievements and guide us on our way. She invited us to explore and to inquire.

For me personally, my first meeting with Dr. Hári and the Institute was an absorbing experience, both as a professional and as a father.

My son Yoel, then five and a half years old, came to the institute incapable even of sitting on his own. He had relinquished responsibility for his own body, he had become entirely dependent upon external support devices. He was literally strapped tightly into a special chair.

As his father, I could follow the fascinating process of Yoel's gradual self-discovery of his ability, and the birth of his faith in himself. In Budapest he began to find his own solutions for complex tasks such as sitting on his own and even writing, despite his physical limitations.

As an educator, I experienced something that we, as professionals, hardly ever do: to see a model in which a profound educational philosophy is successfully translated into a methodical system that is meticulously put into practice down to the last detail.

Even the term "educational system" did not adequately express the uniqueness of what I observed. The way in which this philosophy shaped the small communities of children and adult staff who live and work together, the detailed norms and daily routines, and even the furniture, was, in fact, much more than a system. It was a "total life culture".

It was these basic elements of a total life culture, on the one hand, and the self-discovery learning process on the other, that later became cornerstones in our perception of the road to our ultimate goal: bringing C.E. to Israel.

### 2. The Cultural Question and Solution: The Organic Conductive Process

Here arose the question that concerns many of those sitting here today, and I suggest is perhaps the most important issue for this conference: how is it possible to "transplant" a system as complex as Conductive Education from the overall cultural

context in which it was born and developed to a completely different cultural and professional setting?

For example, as I watched the outstanding group leader and conductors who worked with my son in the international group, I observed a unique combination of a highly structured and extremely demanding approach mixed harmoniously with a great amount of warmth and personal support – elements that do not usually blend together.

Could this basic approach, which is the product of the "conductive culture" in that specific context, be copied?

As distinct from some critics who use this question as a means of avoiding the necessity of learning the system, we asked it precisely because it is this holistic approach that we want to learn. On the one hand, taking only parts of it would mean losing its totality; on the other hand, this totality is a specific cultural entity and copying it artificially would mean a loss of its vitality and authenticity.

The solution, which I will try to outline below, was worked out under the profound guidance of Dr. Hári, who as a great mentor of Conductive Education helped us find our own way by ourselves.

We first examined how Hungarian students internalize this conductive culture at the Peto Institute.

One of the fascinating aspects that we discovered was that the same principles that hold for the education of children are applied to the training of conductors. The principle of learning primarily through practice – through direct active experience [through the "gyakorlat"], is one example. Another is the way in which children learn from their peers in the heterogeneously composed group. Similarly, the student conductor learns from his peers in the diverse group who are in different stages of professional development.

In the same way, we tried to apply this educational philosophy in developing our program.

Dr. Hári helped us to perceive C.E. as an organism. Like any living organism, it needs to be nurtured, to grow, develop, and adapt. Therefore, for this young offspring called Israeli Conductive Education to grow, we would need a conductive process that could take place according to principles of Conductive Education: similar to those by which our children develop their orthofunction.

### 3. The Basic Principles

Let's look at the main principles and our application of them. Dr. Hári, in her article *The Human Principle in Conductive Education*, states that "One cannot teach new patterns directly." [Hári p. 4]. Of course, a child needs a mature and experienced teacher who will conduct him on his path, but the process itself takes place only through learning experiences that will foster his development.

This process involves basic, seemingly contradictory, but complementary conditions. On the one hand, total socialization and internalization of the conductive culture, and on the other a self-discovery learning process through gradual development.

#### A. Socialization and Internalization

The motor-disabled child's socialization comes from the "conductive" community – its support and the internalization of its norms and its "conductive culture" facilitate his learning. In the same way we decided that our path to Conductive Education would mean a long-term investment in the full and in-depth training of a group of Israeli conductors in the Peto Institute for a four-year period. As Conductive Education represents for us "new patterns", we were convinced that it cannot be taught only through direct and formal learning, but by means of complete internalization and total immersion into the "conductive" culture.

However difficult this decision is to implement in practice we

see it as vital for whoever is interested in learning Conductive Education.

In this regard we are following in the steps of our friends from the Birmingham Foundation, headed by Andrew Sutton, who were the first to show the way in full conductor training.

In some sense we were fortunate in being Number 2. Thanks to the English pioneers, beginning with Esther Cotton in the 1960s, we were able to learn from their experiences over the years, and draw our own conclusions.

This also enabled us to move more quickly. Within a year from the day of our return to Israel from our first visit to Hungary, the first student group from Israel was ready to leave for the Institute. Of 600 candidates, 10 were chosen. We didn't make any preconditions of professional background, but we mainly examined personality factors. The final selection was made by the heads of the Institute, after observing them in a practical work setting with children.

This group was received by the Institute for a full four-year training program, on the basis of an agreement with "Tsad Kadima", supported by the government of Israel and in particular the Ministry of Education, which remains involved very closely and participates in its funding.

As a result of this agreement, today sixteen pupils are studying at the Peto Institute, 9 of whom are in the middle of the third year of their studies.

In order to achieve the total immersion of these students into the conductive culture, the students were dispersed among the regular Hungarian groups.

During the first months, the students' lack of language facility was painful. They did not understand the meaning of what was going on in their groups, or the staff's instructions, and most frustrating, they did not understand the children's needs and responses.

So, we invested many teaching hours (10 a week) in the study of Hungarian, in order to open up channels of communication.

Within a few months our students began communicating with the children, who with humor and affection, became their best teachers. Before the year ended, our students were able to conduct programs in Hungarian - first by hesitantly reciting by rote, and later on gaining the assurance to speak freely. Their mastering of the language opened up the way for full integration, and today they are an organic part of their groups.

To illustrate how successfully the students became immersed into the Hungarian conductive culture, I would like to point out that if, in the beginning, they asked if it was not possible to shorten the training period in Hungary, today, more than halfway through, they feel that four years are not enough. In their own words: "now we know how much we still don't know".

Indeed, it is clear to us that our need to learn from the Institute does not end with the four-year training program. In the transition to Israel we will need guidance, in-service training and future post-studies for our advanced conductors in the Institute and in Israel.

## B. Gradual Development

Paradoxically, in contrast to the rapid pace in which the training program was put into operation, the important lesson that we learned from the English pioneers was that there should be no "short cuts", but a **realistic gradual process** that requires development over time. The development of Israeli Conductive Education must be accomplished step by step.

This is what the name of our organization, Tsad Kadima, means in Hebrew: "a step forward".

At this point we faced heavy pressure in Israel - the expectations of parents and professionals was for "Conductive Education now!" The issue was whether we would begin full operation of the Peto system immediately, or wait until the training was completed.

Our long-term goal is certainly the construction of a comprehensive system that requires the establishment of a Conductive Education center. But this goal cannot be attained all at once.

Here, too, our model was the learning principles of Conductive Education: the pupil "must find objectives which are close enough and which are accessible only by establishing a new internal organization."

This is what we believe is the main innovation in our Israeli project: the decision to begin with what Dr. Han defined as "functions containing small goals" (p. 4) before progressing to the implementation of any Conductive Education facility.

## C. Self-discovery Learning Adaptation

In order to define those intermediary "small goals" we relied upon the supplementary condition that is equally vital in our opinion for the successful transfer of the system of Conductive Education. The learning process demands that the learner be active.

"Learning does not consist of just copying, and letting oneself be carried along by the intervention of the teacher" (Hani, p.2). The most important element of orthofunction is adaptation.

Accordingly, this approach to C.E. does not lend itself to a mechanical imitation (of equipment or rhythmical chanting, for example). Though it requires a fundamental internalization of C.E. as it was developed in Hungary, its integration into the uniqueness of Israeli culture calls for a creative and dynamic adaptation.

For example, one of the most significant dimensions in Conductive Education is the comprehensive approach to the complexity of the child. Despite the fact that Israeli culture is a part of the West, which emphasizes the analytic approach, the monotheistic approach with its extra-religious implications approaches the human and world phenomena through a search for the uniting principle, the comprehensiveness that moves from the whole to its parts.

The dichotomy that separates and perhaps even clashes between body and soul never occupied a central place in our culture. The great humanists among our people dealt with philosophy on the one hand and medicine on the other - and saw completion in the mutual relationship between the two entities. This viewpoint has helped us in our internalization of Conductive Education.

But beyond the philosophical sphere there are also other dimensions which have an important operative implication.

## 4. "Small Goals" (The Family)

In choosing our "close, small goals" we tried to incorporate all the principles outlined here, and especially the need to define our own conductive culture.

Reality offered us our first goal: as a result of our preliminary decision to postpone operating a C.E. center in the short term, many Israeli children had to travel to the Institute for short periods (so far, more than 100 children have gone there).

But what would happen to these children on their return home? How could we ensure continuity for the developmental process which they began at the Institute? The need arose to develop and conduct follow-up programs throughout Israel.

Our "conductive" solution was not to implement an institutional-formal solution, but rather to look for a more organic direction, continuity involving the total life culture of the child - where the daily life of the child takes place - the family setting.

So we set for ourselves an initial goal: placing the family in the focus of our work, as the nucleus of the unique Israeli "conductive culture".

Here we combined the centrality of the family in the Jewish culture with C.E. principles.

Therefore the transfer to Israel was first begun via the family rather than through an institutional setting.

## A. Parent / Child Groups:

The beginning evolved spontaneously. In Jerusalem, a small group of parents and children who had returned from the Institute began to meet early every morning (before classes began) at the school which the children attended. Together, children and parents spent an hour of playful activity of movement and tasks they learned at the Institute with Israeli songs and games.

This activity gradually became more organized, it expanded to more schools and today we are operating such groups four times a week for several hours in the afternoon.

Our model was the mother-baby groups in the "gyermek ambulancia" at the Institute, which constitutes the first stage in the entry of the child and his family into the Conductive Education system.

Our innovation was in operating this model not only for infants but as a first stage in the conductive path of each child and his family, even if he begins at a relatively older age.

The parent in the Israeli context was given the major task of being, in fact, the child's initial "conductor". This was the purpose of our groups: to help the family shape the child's orthofunctional daily lifestyle at home. We emphasize that the



parent should not "treat" his child, but rather respond to his developmental needs in the daily functions and recreational activities.

## **B. Residential Camps**

In order to strengthen and deepen the parents' capacity and understanding of this lifestyle, we developed another innovative program - residential camps for parents and children.

Again, we learned from the model operated at the institute: the residential mother-child group.

In these camps, children and parents come together from all sectors of Israeli society: from cities and villages religiously orthodox and secular, Jews and Arabs.

For three weeks, they take part in an intense experience of the conductive way of life. From waking up in the morning, to going to bed at night, they learn to wash, dress themselves, eat, sing and play.

The very fact of the intensive time parents spent together, the heart-to-heart conversations into the night, between them and with the staff, give support and help them to cope with the difficulties of being a parent of a disabled child.

Up to now, we have run four such camps, which have involved scores of children. The largest of them all, which in the second year of its operation included 60 parents and their children, takes place in an environment unique to Israeli society - a kibbutz. Kibbutz Yavne combines agriculture, modern industry, with an egalitarian communal lifestyle. Not only does the kibbutz donate us the site, living quarters, food and logistical assistance, but also and, above all, its most important resource: the kibbutz community. Kibbutz children go with our children on walks to see the farm animals, go swimming with them at the pool and at the beach, play and put on joint performances and parties. In this way we try to fulfill the great ideal of Conductive Education, integration into regular society.

These camps serve not only the immediate children and families but also our "step by step" learning process. The Israeli student-conductors who study all year long with the Hungarian groups at the Institute, have here a first chance to begin to gain experience in a limited framework in operating Conductive Education in their own language, and in a milieu in which they will be working in the future. This is done in so-called "laboratory conditions" with the guidance of Hungarian senior conductors.

## **C. Impact on the Educational Frameworks**

Israeli professional staff from the schools and kindergartens attended by the children all year long also come to participate in the residential camps.

This was an additional "step forward" that we carefully took upon ourselves in the second stage. After we began from the immediate surroundings of the child - the family - we felt it important to turn to the next close circle: his educational setting.

Since we are certain that there is no possible way to make short cuts to an "instant C.E." and it is impossible to train the children's professional staff in their schools as conductors, we chose to introduce them to the conductive way of life by means of direct experience. We try to influence their general orientation without trying to change their well-founded professional treatment and techniques.

We are pleased that the professionals who collaborate with us do not claim to practice Conductive Education, but rather try to create a more active and integrated environment for the child, fuelled by ideas that are inspired by C.E. but not the comprehensive system itself.

In this way we are working today in various follow-up programs in the three main cities in Israel. These programs reach scores of our children through the parents and children afternoon groups, periodic residential camps and through the changes in attitudes and atmosphere in the schools attended by the children.

## **5. Our Ongoing Contact with the Institute**

All of these efforts could not even be started alone. In all our work we were closely guided by a senior team from the Peto Institute, headed by Mrs. Varjasi Gyongyi, who supervised professionally and were full partners in the planning and implementation. The mutual interaction and the profound partnership between us and the Institute team go above and beyond the customary ties between organizations, and we feel that they constitute a shared mission toward a common goal - full lives for our children.

## **6. The Future**

And what about the future? The Israeli government has decided to operate a pilot project upon the return of the first group of graduate-conductors in less than two years from now. Again, we are going to take it one step at a time. This will begin with a limited and initial pilot project.

The attempt to learn, and fully internalize a system as complex as Conductive Education is an extremely difficult challenge.

First, we want to make it clear that there is still controversy in Israel in accepting C.E. by professionals and organizations who have been until now the main providers for motor-disabled children. There is, of course, also a natural hesitance to accept such major changes by the establishment. Many questions remain creative and original. In the words of Dr. Harit, "mere copying would be a too trivial and sad business". But we shall not allow this creativity to lead us to a loss of the holistic nature of conductive education, down to its smallest details.

What gives us the strength, the ability and the faith to continue on this path in which we have only just begun, is the knowledge that we are partners in opening up a new way of life for children, and there is nothing more fulfilling or exciting, than that.

## CONDUCTIVE EDUCATION IN THE UNITED KINGDOM

The Spastics Society of England and Wales is delighted to have the opportunity to be at the Congress and to share its existing work.

It is my intent to share a few brief insights with you in regard to:

History

Policy

Current Developments in England and Wales

Our current trainees here in Hungary

Views on future developments

The hope is that these insights will help some people here with their developments around the world. We do not presume that these insights are unique; we do, however, presume that they are current and likely to occur to many of you who move forwards.

I feel that it is important just to say a few words by way of introduction to the Spastics Society. We are one of the major charities in England and Wales. We support children and adults with cerebral palsy. Most importantly we are a major provider of services across England and Wales and have over 3,000 full-time staff. We run over 100 institutions which include schools and colleges, residential homes, houses in the community and our own training college. We also run a national assessment service for those with cerebral palsy, a microtechnology support service and provide a considerable amount of family support. We have a local group system with over 200 local groups across England and Wales.

In addition we run a Quality Assurance Service, and undertake very major national research and development work in the field of cerebral palsy.

There are also two other major roles for any national charity. One is to be a pressure group, to assist in effecting change across the country, especially by working with the Government. The other major role is to be a pioneer, to support and establish different developments at all stages and ages.

I hope these few words of introduction to the Society will put the comments that I make within context.

A few brief words now on the History of TSS in regard to Conductive Education. TSS has had both personal and professional links with Dr Hári and the Institute for the past 25 years.

We are glad to publicly thank Esther Cotton for her contribution to Conductive Education development in Britain since her first visit in 1965. It was Esther who was given a scholarship by the Spastics Society for a 6-week visit to Budapest in 1966. It was following her visits and those of other staff that work was undertaken in a range of centres which took account of the work of the Peto Institute during the following 20 years.

It was also, I am pleased to say, Esther and other staff and colleagues such as Anita Loring who hosted Dr Hári and some of her staff for some of her earliest visits to Britain.

It is, of course, in part because of this history that we are so delighted to be here working with the Institute now.

We should now look at the issues of TSS policy in regard to Conductive Education. Many of you in your own organisations, areas and countries will struggle to establish a clear overall policy for Conductive Education. This is especially so where there are different demands upon you from different groups, ages, people with different perceptions and different needs.

Our policy is in two parts.

Firstly, a commitment to help to bring the proper Conductive Education system to Britain. This is what I have heard called true Conductive Education during the past couple of days. In our discussions with Dr Hári and her staff we are quite clear that the key word is 'system'. We also agree with Ildyko Kozma's

observations that for such a system there can be no short cuts. Of course, recently, we are now able to be far more direct in our support of this policy as we have our 12 conductor trainees now working in their first year here in Budapest. More of this aspect later. The long-term goal is therefore clear from this first policy.

The second part of our policy recognises that we have to make services available now to children and adults. It therefore states that two of our schools offer programmes of work which are inspired and led by the work going on here in the Peto Institute. It is also our policy to ensure that these developments are established with the closest help, guidance and advice from Dr Hári and her staff here at the Institute.

Like Udi Lion we are quite clear and pleased to say that what we do at these two centres is not Conductive Education. But we are clear that we can offer a system which learns enormously from the work going on at the Institute.

We are quite strongly of the view that you don't get Conductive Education just by:

- buying a set of plinths and ladder-back chairs
- copying a task series
- employing a conductor.

Dr Hári's list of misconceptions reinforced these points in her presentation.

We do, however, believe that if you establish the right environment in such centres and recognise that which is at the core of Conductive Education, as well as the framework of organisation which helps it to work, you can build together a team which is more able to learn about Conductive Education and which is willing to improve its practice. These developments should not be in isolation from the Institute or outside the influence of Dr Hári.

I want just to spend a couple of minutes on the issue of policy formulation and argument and debate about Conductive Education.

During the past 5 years in Britain there has been very much high-profile public debate and argument in regard to what is Conductive Education, who can call it Conductive Education, and the issue of when do you go far enough to call what you are doing Conductive Education.

This debate has often involved television and radio, with many people, individuals and groups, searching for clarity and unity. I am quite sure that as your own countries and groups move forward this debate is likely to be replicated.

We must remember that such debate is right and proper as a part of the development of any system, especially when it is across international boundaries. I believe that TSS has learnt much from the debate, as will others. What we must ensure is that the clarity which has come from the debate is shared with all those involved, that people do not have to reinvent the wheel and start from the same starting point. It could well be that the new International Peto Association can play a major role in such information sharing.

The Spastics Society welcomes the new International Peto Association and wishes it every success.

Just a few words now on two of our schools which base their work upon the principles of Conductive Education and whose programmes are inspired by the work done at the Peto Institute. One is Ingfield Manor School in the South of England. The other is Rutland House School in the Midlands.

We are delighted with the work that we have done with the Peto Institute, especially in recent years. Dr Hári has kindly agreed this year to recognise Ingfield Manor formally as a school which is "advised" by the Peto Institute. In the generous manner in which they try to help us all Dr Hári has also agreed to visit our schools every year to guide and advise us upon our developments. When you link this to an annual visit to Budapest by a group of our children with their staff, you can clearly understand how closely we are working together and how much we are trying to learn and develop together.

For us Ingfield Manor is our national centre for work inspired by the Peto Institute. It is our information centre for Conductive Education, and we are now just building a new purpose-built School for Parents. This School for Parents is modelled on the vital work done in the Institute with mothers and their children. Whilst we have no intention of calling the work done there Conductive Education, we have made some considerable advances not only in our learning but also in the development of structure to aid such learning.

We have, for instance, negotiated with our unions - teachers and therapists - to establish, and appoint to, a totally new staffing structure. This staffing structure incorporates senior team leaders, team leaders, team members, and trainees and is complete with job descriptions and job specifications.

In this structure the boundaries and barriers between the traditional staff groups have been broken down. This has enabled a totally different training experience to take place.

We have also established a single salary structure for the staff group which recognises expertise and leadership within the team group rather than the traditional salary ranges.

The staffing model also generously recognises the continuous training needs of all staff. If we are to learn about conductive education there must be the time to learn, time to practice.

A few words also about Rutland House, which is our second national centre for work which is inspired by work done here at the Institute.

I mention Rutland House separately as it specialises in this approach whilst working with children with cerebral palsy who also have severe learning difficulties or profound and multiple learning difficulties. You will be well aware that many parents for this group of children do have a belief in conductive education as a method of educating their children, and we believe it is right and proper to develop such a centre of expertise.

I want to move on to the School for Parents.

The Spastics Society has a belief that one of the key national developments required in Britain is in the 0-5 years area.

We do believe, on a national basis, that we still let down families.

There are 2 main elements in our own developments.

1. Early Years Compacts.
2. Schools for Parents.

An Early Years Compact is a contract signed between ourselves and local services, local authority services including health, education and social services, to enable us to jointly make a cohesive, more appropriate provision for families and their young children with special educational needs from birth.

Our School for Parents are again based on work here, and are developed alongside Dr Hári. The closest link here is between Margaret Barker, our Head of Pre-School Services and School for Parents at Ingfield Manor, and Ildikó Kozma.

The School for Parents provides the earliest support for families within the community. Dr Hári and her staff are trying desperately to share their work in the hope that it will prevent families having to travel to Hungary. Within our own countries we also need to get help, support and guidance close to the families' own homes.

Importantly ~~these centres will also receive early accurate and up-to-date information about conductive education.~~ Such a system should help in the dissemination of conductive education.

We are looking to establish a network of Schools for Parents. Some will be run by TSS. In some others we shall train and enable, and offer help and advice.

We anticipate 7 such School for Parents centres being established in the next 12 months.

Our own centres will be at:

Plymouth  
Cardiff  
West Sussex  
Nottingham  
Bradford

One will be established with one of our own local groups within the community in Kent.

We are also delighted to have an approach from Sheffield RACE Group - the Rapid Action for Conductive Education, and hope that we will be able to establish a School for Parents in Sheffield in association with both the local education authority and the Sheffield RACE group. We hope that this particular initiative

will show how we have moved on in our history and can now help each other and work together.

Now let's move on to training.

If we are to use what we learn properly, if we are to make proper use of the advice and guidance we are given from the Institute, it must be put into a proper training scheme.

It is vital for our work based on the initiatives in the Peto Institute to be put into a formal training programme which can be shared, checked, developed.

We have developed 2 major training aspects.

1. We have established a 2-year training programme for team members. This is essentially a 3-level course based on the integration of theory and practice with assessments for "on the job" practical assignments.

Levels 1 - 3 move from an essential knowledge base about cerebral palsy and conductive education information, through good practice and advice gained from links with the Institute, up to management training for our team leaders.

We have just established Ingfield Manor as a pilot assessment centre so that on completion of training, members can gain a nationally recognised certificate with NCVQ.

2. It is important to share accurate information with local authorities and we are offering Conductive Education Awareness Courses to health, education and social services teams. We are offering a 38-day, 2-term training model.

I cannot stress too much that within Britain it is vital to ensure that local authorities understand Conductive Education and feel involved in its development. This should enable them to help in the funding for children who need places and support in the Conductive Education area. Fee payment by local authorities is a key issue in Britain. We have to support this interaction, and try to prevent the battles between families, assessment services, and local authorities.

I wish to go on to share some observations in regard to our agreement with Hungary.

We are delighted to have 12 trainee conductor places for the 4-year-training here in Budapest with Dr Hári. I am certain that these additional places will help to bring conductive education to Britain more quickly.

Our agreement, as mentioned, not only involves our trainees here but includes regular links with Dr Hári and her staff working with us in England and with our children and staff working here. Our contract is an integral part of the inter-government agreement between our countries, which we do hope will see £5 million being paid to support the establishment of the new International Training Institute.

I would stress that TSS developments have been undertaken with the support and knowledge of our Government, and we are committed to supporting the Government in its developments in Britain.

I must share some initial observations of our 12 trainees and the recruitment process.

There were two key aspects on which to reflect:

1. We had a very short time span for recruitment (10 weeks).
2. We had undertaken, warmly, to match the selection criteria that was used here in Hungary.

We were also delighted to have the support of Ildikó, the Deputy Director, in the final selection process.

I am just going to provide some essential data for you to consider if you are lucky enough to go forwards - I am sure our friends from Birmingham and Israel will also be able to share their information with you.

- We ran a National Advertising campaign for the trainee posts which we also hoped would raise the profile of Conductive Education.
- We had nearly 800 responses to the campaign.
- We ran a series of 'roadshows' across England to tell people what Conductive Education and the training programme really was, to stress the commitment and hard work required.
- We ended up with 160 serious applications which met the essential selection criteria.
- We called 40 applicants for a 4-day intensive interview process. The selection criteria met the Hungarian criteria, and full assessments were made in areas of music, speech, personality, physical education, and working with children. Clearly stress was also placed on work within the classroom settings with children and on interviews with the candidates.

At the end of the process we had a group that we were confident we could put forward for Ildikó to make her final

selection. Upon completion of selection by Ildiko we moved jointly with the Institute and Foundation to a press and television launch of our trainees.

Six working days later our trainees were here in Hungary undertaking their induction.

Clearly we learnt an enormous amount about the selection procedure and for those about to go through it we will be glad to share our experience and provide support.

There are a few other points worth mentioning. We ended up with 12 young women aged 18 - 23 years. We have been very open to applications from men and indeed we received approximately 100 in the first round of information searches, and called several forward to our final interview process.

A key aspect integral to our development is the issue of academic qualifications, both to ensure we recruit a high quality of trainee and to ensure that Conductive Education gains appropriate recognition in academic quarters. We are delighted to be working with Keele University to ensure that our students can gain both a B.A. and M.A. qualification during a combination of their 4-year training and their first year back working in Britain.

We are also working very closely with our Government to ensure that Conductive Education training can become recognised in association with work done in Britain and within our University for Qualified Teacher Status (QTS).

#### **What of the future?**

I am quite clear about certain things that we all need to do.

1. We need to support Dr Hári at a very difficult period of change. There is massive international pressure on Dr Hári for Conductive Education developments. This pressure is being put on her at a time of major social change in her own country.

2. We must keep in mind Dr Hári's generosity. For example, Britain has been offered training places for both ourselves and Birmingham in advance of Government funding. We must therefore ourselves accept that we are adding to the pressure on the Institute.

3. I believe there is much we can and should do to support the training programme for international students here in Budapest.

4. I believe we can all do much to help by supporting Conductive Education and its development in our countries. We should be able to ensure that demands are not always coming directly and personally through to Dr Hári.

I have a few very strong personal views in regard to the future.

a. We need to ensure clarity in regard to our definition of Conductive Education, and an understanding in regard to the sharing of information. We need to reduce confusion for parents, sponsors and Local Authorities.

b. A specific issue is that of working together in our own countries to establish Conductive Education as a system. I have learnt at this Congress that we need, crucially, to consider getting the act together in each of our countries.

c. We need to help in any way possible to prevent the departure of conductors from Hungary unless it should occur with Dr Hári's approval. The Institute is a precious resource. It is under threat, and we all have a joint responsibility for ensuring that it remains so.

d. We should all be working to ensure that we are strongly in favour of the Institute's efforts to address the key problem of funding.

In summarising, The Special Society of England and Wales looks forward to:

- The growth and development of its trainees.
- Continued links and friendship with Dr Hári and her staff.
- Helping to establish a Conductive Education system in Britain.
- Ensuring that it becomes one of the realistic options in education which is made available to children and adults who wish to take advantage of it.



Andrew Sutton  
Director, The Foundation for Conductive Education  
University of Birmingham

## CONDUCTIVE EDUCATION IN THE UNITED KINGDOM: CHAOS AND SOCIAL POLICY

The United Kingdom has advanced furthest amongst those countries that have as yet taken the Conductive road and currently remains in front by a short head. We have progressed far enough to being able to address the issues raised by Conductive Education at a social policy level, and to experience contradictory forces that make this difficult.

### Geography and Demography

The United Kingdom comprises the Kingdoms of England (including the Principality of Wales) and of Scotland, and the Province of Northern Ireland. The majority of its 57 million inhabitants live in towns and cities, the large part of them in England. The economy is advanced but not overly successful, with the greatest prosperity concentrated in the southeast of the country.

The bulk of provision for motor-disordered children and adults is made through the public sector, through health, educational and social welfare services, supplemented by voluntary and charitable bodies. Services are highly decentralised, with considerable discretion over their scope and nature in the hands of local bodies, and an old national tradition of pluralism has in recent years been compounded by the new factors of choice and competition.

Services are generally underfunded, understaffed and ill-coordinated. The professionals who work in them are often less well qualified than their equivalents in other advanced countries and in the one-time Socialist countries.

There are, therefore, quantitative and qualitative inadequacies. Consumers are often grossly dissatisfied. These include parents of children with motor disorders, disappointed in their search for optimistic, coordinated and effective services to enhance their children's development; adults disabled since early life with little or no security of services once they have passed school-leaving age, and people with late-onset conditions with no rehabilitative services at all.

### Conductive History

Conductive history began in the United Kingdom in 1947, when the first child from our country went to work under Peto. From 1977 another child attended the State Institute that he had founded. Both these experiences have been subsequently described in print. I have heard that there was a third child, in the late fifties or early sixties, but have not been able to trace this person. At least two people who knew or worked with Peto have subsequently moved to the United Kingdom. One is now dead, the other married. We also have a young woman who attended the State Institute as a child, then emigrated to the United Kingdom where she now attends university. These latter personal contacts remain as yet undocumented and had created no public or professional awareness of Conductive Education.

Professional interest began in the mid-sixties with the work of Esther Cotton and her colleagues. Much of this work was done within the Spastics Society, though the most extensive, whole-school attempt to create work modelled on Conductive Education took place within the state sector, in Bristol. Man Hari twice visited the United Kingdom to explain the approach. This early contact attracted no widespread institutional or professional support, and perhaps even outright opposition. The events of this time remain still largely undocumented but their outcome was that awareness of Conductive Education remained marginal to the care and education of children with motor disorders and virtually unheard of with respect to adults. If Conductive Education was known of at all it was as a therapy and, by the beginning of the eighties, following a number of unsupportive evaluations and despite the continuing enthusiasm of a tiny band, it was little more than a footnote in the textbooks, something that had been developed in Hungary, tried out in the United Kingdom, and found to offer no advantage over other approaches.

In the early eighties a small group of associates re-perceived Conductive Education as an educational system, one moreover that sets out to transform personality, and decided that its particular

conductive nature would be best sought by reference back to source, to Hungary. They also soon recognised that attempts to implement this system solely through professional channels, or through existing state or voluntary institutions, would lead to opposition, and adopted the strategy to place the issue in the public domain for a political resolution. During the mid-eighties, therefore, there began unprecedented media coverage through press, radio and television, there were public meetings up and down the country, a single-issue pressure group was created (RACE), there were two mass lobbies of Parliament and picketing of other bodies, all backed up by 'shotgun' publication in the professional press and presentations to professional conferences.

It has to be remembered that motor-disordered children and adults in the United Kingdom, and their families, comprise a large and very needy population, one that before Conductive Education had perceived no concrete common cause. This large population included people at least as articulate, professionally expert and well-connected as many of the professionals who stood forth to oppose Conductive Education, it was, moreover, a blameless cause and advocates, their relatives, neighbours and colleagues comprised a sizeable constituency. Small wonder, therefore, that politicians, local and national, soon hurried to stand by them.

A cycle began. Publicity led to people's going to Budapest to see for themselves. This led to further publicity – and controversy – more publicity, and then more off to Budapest, and so on.

Initial professional responses included:

- it doesn't work;
- it's highly selective;
- it can't transfer for cultural reasons;
- and, of course, we've been doing it already so there's no reason to bring it over.

As public and political interest began to create the possibility of a financial input then it has been the latter formulation that has gained most ground, that Conductive Education is already understood and implementable in our country.

The present situation is that there may now be a couple of hundred schemes in the United Kingdom, perhaps more, in which schools and other centres provide programmes "based on the principles of Conductive Education". A definitive analysis of how these principles may be regarded as "Conductive", or even necessarily educational, has yet to appear in the public domain and is pressingly required, especially with respect to profoundly mentally handicapped motor-disordered children with whom this approach is often implemented in the United Kingdom.

Meanwhile, Her Majesty's Government has taken substantial action in favour of Conductive Education:

- a. it has funded independent evaluation of the introduction of Conductive Education to the United Kingdom through the work of the Birmingham Institute;
- b. it has changed the law so that local education authorities now have the discretion to fund children and accompanying parents receiving special education outside the United Kingdom;
- c. it founded a support service for families temporarily in Budapest;
- d. it has funded the preparation of a resources pack for families considering the journey to Budapest;<sup>(2)</sup>
- e. through the statements of Government ministers it has reiterated the intention that Conductive Education should be available as a choice for motor-disordered children in the United Kingdom;
- f. it has supported the work of the Foundation for Conductive Education to establish Conductive Education in the United Kingdom.

In a few years enormous developments have taken place. It might look at a cursory glance that the United Kingdom is well along the road to establishing a social policy for the introduction of Conductive Education.

Would that things were so simple!

## Social Policy

What most would-be consumers want is similar to what is stated by Government ministers. Conductive Education as a choice within the overall system of provision for the motor-disordered in our country, though they would probably differ in stressing that it should be available for *all* who might benefit.

The policy makers and decision-makers have to confront the strong possibility that Conductive Education might be the preferred choice of very many, perhaps most of those eligible, not just for children but for the enormous population of adults without proper rehabilitative services.

It is important in this respect to remember the numbers that are involved. If one simply prorates up from the numbers of trained conductors available to the Peto Institute for a Hungarian population of ten million, bearing in mind that this provides less than a complete service for Hungarian children and only the sketchiest rehabilitative service for adults, then the United Kingdom would require upwards of two thousand conductors to provide a similar basic service for its population.

But it is also important to remember that it is not necessarily Conductive Education *per se* that people want, but the benefits that it has indicated can be gained from a structured, consistent and optimistic educational approach to motor disorder.

Any system that could provide similar outcomes would be equally welcome.

For the policy-makers the simple answer "train more conductors" is in itself no adequate answer to the emerging demand, since in no foreseeable future can it satisfy the requirements of would-be consumers. It must be coupled to explicit and responsible attempts to derive other means towards the desired ends.

Events over the last year or so, driven by *ad hoc* individual and institutional attempts to short-cut what has to be a more than short-term problem, have illustrated the growing tensions of present unmet needs, rather than contributed to a solution at the level of social policy.

## Chaos

The present chaos in the development of Conductive Education in the United Kingdom may be arbitrarily viewed in terms of the conceptual grasp of the system and the politics of its implementation. In dealing with these separately it is, of course, suggested that the two categories are not closely interrelated, nor is it suggested that in listing several factors under each category, in no particular order of importance, either has been covered exhaustively.

### 1. Conceptual Chaos

a. Empirically, the British public can be forgiven for believing that Conductive Education, its principles and methods, are already widely understood and implemented in the United Kingdom. There is no way in which the term Conductive Education can be registered, copyrighted or trademarked and in a democracy such as ours self-definition is often definition enough. A recent text book noted that "there is still controversy over the efficacy of Conductive Education, certainly in the form practised in the Peto Institute"<sup>2</sup>.

The outcomes of forms practised outside Hungary, presumably, are less casually controversial. Increasingly Conductive Education runs the risk of being defined by the large number of schemes set up in its name, asserting the use of its principles, methods or furniture, or claiming its inspiration.

b. It is therefore disappointing that, despite the large numbers of professionals from the United Kingdom who have visited the Peto Institute over the last four years and the prints of controversial ink that have flowed, the understandings of the system available in the public domain have shown little developments, the level of 'debate' has been generally mediocre and as a nation we are little further forward, if at all, in coming to a common, recognisable view of Conductive Education than we were a year ago. Whatever the political pressure, the mechanisms of professional and academic sifting and analysis of knowledge have not worked as they are supposed to do to advance the cause of knowledge.

c. This is no academic quibble. Hundreds of professionals and thousands of would-be consumers are determined to act now to upgrade services on the basis of what can be learned from Conductive Education. Easy nostrums, in the absence of a fuller understanding, may certainly provide for quick action but will not necessarily provide the hoped-for outcomes. As a result ...

i) there is much repetitive mass chanting of spells over children on wooden furniture according to supposed "principles of Conductive Education";

ii) this often involves profoundly mentally handicapped children who cannot respond;

iii) adaptations to the local culture are more likely in fact to involve the attempt to unite the transformative philosophy of Conductive Education with what Feuerstein calls the passive-accepting approach of our existing system.

The latter point is fundamental. Lose the transformative essence of Conductive Education and its whole purpose, to create an ortho-functioning personality, disappears with it. Eclecticism is one thing but one cannot mix paradigms, in education as anywhere else.

d. Alongside the failure to tackle basic issues in Conductive Education there has been a corresponding failure to confront the reality of special educational provision in our own society. Conductive Education schemes have been proposed or implemented with little regard to how they relate to the working of wider organisations, even at the school level. If Conductive Education programmes were to be successfully implemented at the pedagogic level, then close attention would have to be given to ensuring that this happens on a suitable institutional base, with an understanding of the implications for children's medical supervision and in appropriate geographical and demographic locations (almost certainly, in the early stages, in major centres of population).

e. There has been a disappointing failure to respond to Conductive Education heuristically, i.e. to look to the general theoretical and philosophical principles that may be drawn from it as a source of inspiration for developing innovative approaches in motor education. Instead of principled evaluation there is a tendency to incorporate superficialities of observed or reported practice. The Peto Institute should be proud that so many in our country and elsewhere say that they have been inspired by Peto and by Conductive Education – instead it is ashamed and angry that its work, purpose and nature have been misrepresented by those who, they say, simply ape its superficialities.

Such conceptual chaos, one might have thought, would be largely resolved after a period of intense national 'debate'. In the United Kingdom, at least it appears that this supposed debate has some way to go before political forces operate within an informed consensus – if that is what political forces will permit.

## Political Chaos

It should be appreciated here that 'political' does not mean party-political, since Conductive Education has so far remained almost wholly a non-party issue in the United Kingdom. Rather it refers to resolution of the conflicts of interests that inevitably occur at every level.

a. Some would-be consumers of Conductive Education, whether resignedly or altruistically, realise that news of Conductive Education may have come too late for them – or at the very least it is not possible to provide it for them in the immediate future. Others, however, are unwilling to wait. Their obvious short-term answer is to employ conductors on the free labour market. Hungary is now an open society and it is a goal of the new Europe that there should be mobility of labour. Conductors are very poorly paid indeed by Western European standards, they possess a highly valued skill ... the outcome is inevitable. Over the last couple of years a flow of conductors to positions outside Hungary has grown rapidly from a trickle to a torrent. In the United Kingdom, largely in the prosperous South of England, there are conductors working singly with families or local parents' groups. Some work in twos, there is one group of four, one group is said to be growing to seven. It is widely stated (though not yet corroborated) that there are already around thirty conductors working in the United Kingdom. Almost inevitably training schemes will follow simple provision. How far does one have to project this trend before (whatever the substance of the matter) it is murmured that Conductive Education is *already* available as a choice in the United Kingdom. At local level, in some places, this is already happening.

b. Unfortunately, this process – however extended – cannot bring Conductive Education to the United Kingdom for the overwhelming majority of those who might benefit, even in the short term and certainly not for future generations. It may solve some of the immediate needs of a favoured few but will soon prove inequitable and devious.

c. In the meantime it serves to detract from the longer-term strategy of bringing the benefits of Conductive Education equitably to all, offering a quick, glamorous alternative to a process which in comparison is slow, fiendishly expensive and extremely costly in human commitment.

d. In the meantime, too, immediate schemes for motor-disordered children using simple programmes according to simple "principles" attract parental and political approval and extra funds from the voluntary and even the state sectors. It may be that this flurry of activity in an area that has, frankly, not been generally at the forefront of special education in our country will inject liveliness and expectation that will provide long-term benefit to the children being taught. On the aeroplane coming out to Budapest, however, I heard two teachers on the way to this Congress introducing themselves to each other. "Yes, we do it too", said one, "of course, it's the flavour of the month". When this flavour goes out of favour, then there is real danger that it will drag down the reputation of Conductive Education along with it.

e. It seems unlikely that at the present stage of events it will not prove possible to focus this enormous national activity into a national effort. We shall have to wait till the effectiveness of present schemes and plans is demonstrated through their outcome, which will take a few years yet. For the moment Conductive Education, or what is done in its name, provides a fascinating case study in the sociology and politics of professional knowledge and practice – and especially perhaps in that all too familiar phenomenon, innovation without change.

### The Foundation

The Foundation for Conductive Education is a national charity created at the end of 1986 "to establish the science and skill of Conductive Education in the United Kingdom". It is an educational charity (not a disability organisation) concerned with a particular educational method (more properly an educational system). It exists, therefore, to create and disseminate knowledge to all who might require and benefit from this, children and adults, through whatever means should prove the most effective. It does not exist to deliver Conductive services directly to all who might benefit from them – nor should its existence as a voluntary body for innovative purposes suggest that actual provision for all in need ought to be other than the responsibility of the state, which alone has the resources to create an equitable system.

Our Foundation can do no more therefore than make Conductive Education implementable as social policy – no small task in itself.

The basic programme for transferring Conductive Education out of Hungary was established back in 1985:

1. Conductive Education can successfully be transferred out of Hungary only with the Institute's active collaboration in passing on its knowledge and experience;
2. The system must be established, initially at least, in an institution set up specially to receive it;
3. The work must be carried out at first in as Hungarian a way as possible;
4. The outcome of the work must be evaluated;
5. Then, and only then, should Conductive Education be adapted to our indigenous ways, with the effects of any modifications very carefully monitored; and finally ...
6. An account of the essence of Conductive Education, the active factors in its success, may be offered tentatively for generalisation to new contexts.<sup>14</sup>

We are now at points (3) and (4) of the programme and it is possible to see the process falling into three stages.

The first stage has involved establishing basic training, creating a first practice base of child and adult groups and enabling the first comparative evaluation of part of the Conductive system. This is a substantial start but does not lead directly to the final goal, the implementation of a social policy of an equitable

national provision. Such a provision must be considered as the third stage in the process of establishing Conductive Education in the United Kingdom, and the process of reaching this cannot be a simple linear progression from the present position.

There are two problems in adopting a simple linear model for introducing Conductive Education. The first is quantitative: however much one extends existing activities there will never, within any acceptable timescale, be enough to satisfy demand. Remember, it would take more than two thousand conductors to provide us with the same basic conductor cover as enjoyed by Hungary. Meeting national need by simply training more conductors on the present model is simply not on. The second problem is qualitative: Training conductors may indeed prove a necessary first step in establishing Conductive Education in a given country, though this will be only ultimately answerable in the hindsight of alternative approaches. It is already clear, however, that it is not sufficient in itself to achieve this end. Newly trained staff, however keen, hardworking and talented, cannot transfer, establish or satisfactorily develop an educational system.

Therefore we have to interpose a second stage, which we look forward to introducing during 1991, a research and development stage in which we evaluate, explicate, communicate and disseminate our understandings of Conductive Education. We intend to develop the Conductive system in microcosm, with different conditions, age groups and service deliveries (from assessment through to follow-up), to identify its essences, its active agents, in terms readily comprehensible in our society. True, Conductive Education is a highly complex system. What educational system is not? There seems no reason, however, why the complexity of Conductive Education should not be subject to serious, concrete systems analysis, to include at the very least consideration of its pedagogical, psychological, theoretical, organisational and infrastructural levels, and the ways in which these interact. Further, there is the need to define its applicability, what outcomes are achieved from what input and for whom, to evaluate not just its effectiveness but its cost-effectiveness too and, alternately, to determine the best means of disseminating its potential benefits to individuals and to families, either directly or through existing or specially created services.

To implement this second stage of our work, incorporating points (5) and (6) of the programme of 1985, the Foundation is to create a National Institute of Conductive Education.

We very much hope that we can continue our close collaboration with the Peto Institute through the second stage of our work and beyond. We do not know how long such a second stage might take to achieve a communicable, applicable and disseminable knowledge base but, until this is achieved, there can be no possibility of considering Conductive Education and its benefits as a matter of social policy, and chaos will continue to reign.

### Footnotes

1. J. Savage, *Memories of Budapest*, *Special Children*, 1, (1), 12, 1986; E. McDowell, *Standing up for George*, *The Conductor*, 7, (1), 14-15 and 7, (2), 30-32, 1986.
2. J. Read, *Going to Budapest*, Birmingham, Foundation for Conductive Education, 1990.
3. B. Riddick, The education of children with physical impairments: curriculum development, integration and prospects, in P. Evans and V. Varma (eds), *Special Education: Past, Present and Future*, London, Faber, 140-155, 1990.
4. P. Cottam and A. Sutton (eds), *Conductive Education*, London, Croom Helm, p.212, 1986.

unpredictable oscillations, so-called "yo-yoing", the administrations of various adjunctive agents can no longer modify the state of the patients. These observations also confirm the therapeutical strategy that the dose of levodopa should be as low as possible and the methods of Conductive Education must be introduced right at the incipient stage of the disease.

It is a well-known fact that one of the sources of Conductive Education is the work and experiences of Lurija.

Lurija demonstrated that in the lesions of the premotor area of the frontal lobe the "kinetic melody" was disturbed.

To quote *Veronica Wanton*: "Lurija had started his early experiments as a result of observing that certain patients who had difficulty in walking across a floor were easily able to climb stairs. He hypothesized that, when climbing stairs, each step follows a signal to which patients' motor impulses respond: the successive, automatic flow of movements that occurs when walking along; a level of surface is thus replaced by a 'Chain of separate motor reactions'."

In the everyday clinical practice we often have P.D. patients with start hesitation, apraxic character of gait and of manual activities.

In these patients the failure of "kinetic melody", the functional impairments of the premotor area can be suspected.

So we involved 30 non-demented P.D. patients and their healthy relatives in a clinical trial. We used some of Lurija's original methods: alternating drawing of rectangles and triangles. At the end of the trial one of our patients was repeating the triangles.

Using Lurija's original tapping test one of our patients had to knock twice with his left index and once with the right one. His

response indicated very clearly the failure of "kinetic melody", the disturbance to the organization of successive movements. The same tendency can be revealed using the reciprocal tapping test showing the defective functioning of "kinetic melody".

It was very interesting for us that practically all patients defective in Lurija's tests had start hesitation, festination, axial apraxia, micrographia, usually without marked rigidity or tremor at rest.

Our clinical experiences unequivocally demonstrated that even start hesitation could not be influenced by increasing the dose of levodopa.

So I try to sum up the possible indications of conductive pedagogy from the point of view of a clinical neurologist.

### **What Symptoms of P.D. Can Be Improved Using Methods of C.E.?**

- start hesitation
- axial apraxia (defect of turning)
- festination, "freezing episodes"
- standing up; sitting down
- postural instability
- speech problems
- micrographia

Daily Living Activity!

Depressive Mood and Isolation!

Patients with P.D. need complex treatment with the participation of neurologists and experts of Conductive Education. Our duty is to look for rational collaboration not only in Hungary but all over the world.



## THE CONDUCTIVE EDUCATIONAL SYSTEM IN THE REHABILITATION OF ADULT HEAD-INJURED PATIENTS

The multidisciplinary rehabilitation team exists for the rehabilitation of multiple disabled patients such as those who have suffered head injuries. Indeed this team consists of highly qualified specialists who are able to deal with all kinds of damaged functions caused by a major head injury.

But beside its advantages, we have also learned some disadvantages of the traditional rehabilitation team. Those are:

- the discontinuity. The individual therapeutic sessions are not continuous either in time or in place. Thus the patients have relatively too much free time spent without guidance.
- the patient's daily therapeutic programme is adapted to the working hours and the working load of the staff. In consequence of this the various sessions follow one another by chance. It often happens often that the patient exercises his bathing activities with the occupational therapist before noon, though it has been done somehow alone or with the help of a nurse at the proper time, in the morning.
- it is very hard or quite impossible to replace those team members who are unique or few in number. This results from their individual training.
- between team members of different education backgrounds there may develop a kind of struggle for prestige.

The weakest points of this system are the nurses. In many countries – as in Hungary – they acquire very little knowledge on rehabilitation during their course, though they should play a very important role in the rehabilitation process. Most of the real daily living activities go on with the help of nurses or under their supervision. Their work might often be characterized by two extremes, either helping too much, or too little. Having the lowest prestige among the team members they feel they are always losers in the struggle for prestige if it occurs. This may influence deeply their mood and behaviour towards the patients.

The functioning of the traditional rehabilitation team can be represented graphically. In the centre of the diagram is the patient with multiple disability. Round him are the nurses, who have the most immediate contact with him. The next circle belongs to the therapists. The connection between the therapists is not continuous mostly and takes place at team meetings. Lastly is the physician who tries to integrate the whole process and take care of the patient's medical condition.

Looking for an alternative to the multidisciplinary team we found the conductive education system. This is not the place where I should talk about the principles of the conductive educational system. But I'd like to tell you which are the main elements of the system in my point of view, and why they are useful in head injury rehabilitation.

Those main elements are:

- conductive observation
- the tasks series
- the rhythmic intention
- the daily schedule

During continuous observation the conductor observes the patient as a whole, while solving the tasks or having free time, and so she could get much more complex information about the patient than a therapist could working for a limited period of time with the patient and exercising a particular function only. The rhythmic intention is very useful for those head injured patients who have attention problems, ataxia, apraxia or any other motor-coordination problem and, of course, who have speech disorders. And last but not least, the daily schedule which gives a framework to the patient's daily life, assuring a functionally built program and a whole day's cover for the patients.

We introduced the conductive educational system into head injury rehabilitation four years ago, with one alteration only. Besides the conductors we have still employed some of the former team members, like nurses, physiotherapists, psychologists, speech therapists but less in number. The patients belonged to the conductors, who organized their whole daily programme under the supervision of the physician and the head conductor. The former team members served as special consultants to the conductors.

The functional diagram of the so-called enlarged conductive educational system shows in the centre the conductors and the patients; round them are the nurses dealing with the medical problems of the patients. The whole activity is co-ordinated and supervised by the physician.

We have felt this mixture of the conductive education system and the multidisciplinary team very successful. The patients seemed to recover faster, to be more satisfied with the whole day's program, and the conductors could also manage those patients who seemed unmanageable for the other personnel.

In order to prove what we felt to be the case we made a retrospective comparative study. We compared the results of our in-patient rehabilitation programme in 1986 working with the traditional team and in 1988 when we worked with conductive education system. The two groups were comparable; in 1986 there were more new head-injured patients admitted, but the average age and the length of coma was nearly the same. In 1986 the patients needed more time for in-patient rehabilitation. Two parameters were used for the evaluation: the Glasgow Outcome scale, and the Barthel index. As far as the GOS is concerned, it was higher at the discharge in 1988 than in 1986 but the difference is not significant.

Concerning the Barthel index, the average improvement in the total patient material was higher in 1988, but if we look at only those patients who were incapable of self-care at admission (that means their Barthel score were under 35), the improvement was higher in 1988 with conductive education; the difference was not significant, but very near to it.

Summarizing the advantages the enlarged conductive education system in head injury rehabilitation we may say that it is successful for the most severely injured patients, it covers all the patients' daily activities, it makes the recovery faster, and replaces some of the specially trained rehabilitation personnel.



Tibor Vizkelety  
Semmelweis University, Budapest, Hungary

## CONDUCTIVE EDUCATION (PETÖ METHOD) AND ORTHOPAEDIC TREATMENT

Even nowadays cerebral palsy cannot be defined better than it was in the title of Little's paper. We even have historical illustrations of cerebral palsy. The painting of Ribera entitled "Le pied bot" from the sixteenth century represents a child with hemiplegia, and the text legible on the slip in his hand shows the level of the invalid care in that age very well. In Shakespeare's Richard III the Duke of Gloucester described his illness very concisely.

Deformed, unfinish'd, sent before my time  
Into this breathing world, scarce half made up  
And that so lamely and unfashionable  
That dogs bark at me as I halt by them.

The frequency of cerebral palsy is about 1-2% in developed countries depending on neonatological care.

We can differentiate spastic, ataxic and hyperkinetic forms; however, frequently mixed forms are also found. The treatment of the spastic patient is the most promising field for the orthopaedic surgeon.

Among the different methods used in the treatment of spastics, we have to mention first of all Petö's conductive pedagogics, recognized even abroad and used in the Institute for Educator Instruction and Education of the Handicapped.

Important features of conductive pedagogics are:

- The motion lesson
- Exercise of the reflexory connected motions
- Learning of the motions (cortical function)
- Continuous rhythmical innervation
- The conductress lives with the children from getting up until going to bed
- The child has to eat, dress and undress independently.

The joints of the lower extremity form a closed kinetic chain and so the faulty position of one joint leads inevitably to the faulty position of the other. Generally an increased lumbar lordosis is observed in the sagittal plane together with flexion contracture of the hip and knee and equinus contracture. Rarely lumbar kyphosis and tension of the hamstring muscles can be seen. In the frontal plane adduction will develop in the horizontal plane internal rotation contracture of the hip.

Independently from the method of treatment, in a significant number of cases, we have to perform operations. As a result of the operations performed in due time, the development of motion may suddenly improve, the contractures, the dislocations, the deformities may be prevented, or if they have already appeared they may be corrected.

Concerning the orthopaedic operations, two general questions may arise:

1. At what age should the operation be performed?
2. Considering the somatic and mental retardation of the patient, in what state is it useful to perform an operation?

Orthopaedic operations are justified after 2-3 years of age if the function of a group of muscles or the function of an extremity cannot be improved with various physiotherapeutic methods and if the danger of secondary deformities or dislocation arises. The operative treatment of the adduction-flexion contracture of the hip and of the equinus contracture will be the earliest necessary interventions.

It is more difficult to answer the second question. The result of the orthopaedic operation is better if performed on a mentally well developed child, who can already walk and who has an adequate ability of motion. We have to be aware that single operations do not enable the patient to walk, they produce only more favourable conditions to the upright position and gait. These operations have to be considered also in patients treated

with Petö's method as they are selected patients with relatively favourable prognosis of mental and motion development. As the orthopaedic consultant of this Institute I examine monthly the patients for whom the conductors think that the possibilities given by their own methods are exhausted and further improvement could be reached with operation, or they see the danger of the development of some deformity. After the operation I regularly monitor the children.

As the figures show, there were many operations performed on the Children's Department of our Clinic on spastic children in the period 1951-1983.

### Cerebral Palsy Operations 1951 - 1983

Open reduction of the hip (+femoral osteotomy)	97
Varus derotation osteotomy	74
Chien pelvic osteotomy and shelf operation	20
Anterior obturator neurectomy	25
Open adductor tenotomy	511
Posterior adductor tenotomy	155
Iliopsoas tenotomy (recession)	30
Release of the "spina" muscles	114
Knee flexor tenotomy (Eggers)	642
Achilles tenotomy	1708
Grice operation	49
Subtalar arthrodesis	81
Other operations on the feet	55
Operations on the upper extremity	1107
<b>Total</b>	<b>3693</b>

The number of operations in the time between 1951-1983, divided into 3 periods, has increased gradually both on the upper and lower extremities. In the 3rd period approximately half of the patients operated on were treated in Petö's Institute. Previously this ratio was lower.

The most frequent soft tissue operation in the hip region was the open adductor tenotomy. If it is performed in time dislocation of the hip may be prevented.

We have good experiences with the posterior transfer of the adductor muscles.

The open reduction operation can be performed even in older children with good results. If the acetabulum is shallow the femoral head can be supported by Chien's osteotomy.

It may be that adductor tenotomy, open reduction and possibly correction osteotomy of the femur are performed only to ease the care of the patient.

Formerly Eggers' operation, the transposition of the knee flexors to the femoral condyles, was made to correct flexion contracture or spasm of the knee. Gradually we have gone over to the tenotomy of the knee flexors that could be dosed better.

Most frequently Achillotomy was performed on the foot, however the resection of the talocalcaneal and Chopart joints and Grice's operation have favourable effect too.

If the indication of the operations on different joints could be exactly stated we have performed the operations on more joints frequently simultaneously, e.g. in both hips, adductor tenotomies, release of the spina muscles, Achillotomy, possibly tenotomies of the knee flexors. This way the development of the child's motion is less disturbed.

The end result depends naturally on the initial state. The post-operative treatment influences the result, also significantly independently whether it was carried out in an institute or at home. We could observe a favourable effect of the post-operative treatment if it was at the Petö Institute.

Instead of detailed statistical assessment we used the following qualifications only:

The result was good if the operation led to a rapid improvement in the development of motion, the patient become able to walk after the operation, his gait become stable and he could walk with or without a stick. The majority of such children become self-supporting and they go to school.

There was an improvement if the partial function of the operated extremity was normalised or improved as a result of the operation.

The operation was unsuccessful, "unchanged" if it did not solve the local problem.

There was a deterioration if the gait and standing ability showed a postoperative worsening.

Summarizing, we can state that in a considerable number of C.P. children too, treated with Petó's method, orthopaedic operation will be necessary. I think a significant development of Petó's method is that the present leaders have acknowledged the importance of cooperation with orthopaedic surgery.

The operative indication is demonstrated if the children reached in Petó's Institute the level of standing and walking.

The result of the orthopaedic operation was better and more lasting if the post-operative treatment was continued at the Petó Institute.



## CONDUCTIVE EDUCATION AND UROLOGICAL ASPECTS

By way of introduction I'd like to outline the development and innervation of the bladder in order to look at the complicated and combined problem of emptying the bladder for those children who suffer from spina bifida. The bladder itself is derived from two parts: the detrusor develops from the cloaca, the posterior urethra, the trigone and the pelvis from the ureteral bud. The parenchyma of the kidney is derived from the metanephros. This complex development explains the larger occurrence of congenital anomalies in the urinary tract. From the spina bifida patients examined, congenital anomalies occur in about 20%. (Wilcock and Ewery).

The sympathetic nerve supply of the bladder arises in the superior lumbar segments of the cord, the parasympathetic nerves being derived from the sacral segments of the cord. The external sphincter consists of striated muscle fibres innervated by the internal pudendal nerve.

Voluntary controlled micturition stands under higher central nervous control. We can see how a combined reflex mechanism must be realized for normal micturition, even in patients with healthy nervous systems.

How sensible is this system, which shows that some people can't urinate in a public lavatory, or on request at examination, in consequence of cortical inhibition? Before formation of cortical inhibition, for example in infants, micturition takes place in an uncontrolled fashion, furthermore in the elderly, incontinence may develop because of cerebro sclerosis. Due to some injury of the central or peripheral nervous system, the neurogenic bladder may occur. Depending on the etiology, the bladder may become uninhibited, reflex neurogenic, autonomous (non-reflex), or sensory paralytic.

This can be represented in two forms:

	irritable bladder
small bladder	autonomous bladder
	reflex bladder
large bladder	autonomous bladder
	deafferentated bladder

In our institute the children with spina bifida struggle against trouble with movement of neuromuscular origin, trouble with micturition, incontinence. The correction of movement and micturition trouble must be treated simultaneously. The method - as worked up in our institute - is a complex, educational conductive method.

There is no special urological treatment; however, after using the conductive method for some years, we try to empty the deafferentated bladder as well as possible, while the child remains in a continent status.

The goal is that micturition takes place without any help - catheter, etc. - and the muscles remain unhurt.

We perform urinalysis, ultrasonography, urography and start the conductive education only where the results are appropriate. In this way we can discover and recover the congenital anomalies, the hydronephrosis or calculous disease. The control continues. We make fortnightly urinalysis, control of retention with ultrasonography, bacterium breeding and if necessary urography.

It is possible to make urodynamic examinations, but this gives no valuable result that we can use. We start the practices separately and more frequently, later, in groups. One training session lasts for ten minutes. Years later the children can empty their bladders themselves without any residuum. There need be no fear of developing reflux or the damage it may cause, and the small reflux with functional bladder may stop.

The regular control of the retention and of the upper urinary tract by ultrasonography, frequent urinalysis and the proper treatment of any infection which may appear are the guarantee against the formation of any damage of the urinary tract in children.

## PLANNED FUTURE DEVELOPMENTS: GERMANY

"Preparing for the future" applies also to the Federal Republic of Germany as far as the reunification is concerned, and especially concerning Conductive Education.

When this congress was being planned, we were negotiating with the Government of the Federal Republic of Germany on the starting of Conductive Education in our country. In the meantime our project has been running since March 1990. Based on the long-standing connections with the Petó Institute, particularly between Professor Weber and Professor Hári, we could have been reporting under the heading of 'Existing International Connections'.

Since March this year we have been working on a German project for Conductive Education at the University of Siegen and Taunusklinik near Frankfurt/M. The government of the Federal Republic of Germany conferred on us the research and development contract through the Federal Minister of Labour and Social Affairs.

Priorities of this pilot project designed for the period from the present until February 1992 are:

- Elaboration of the theoretical foundations of Conductive Education, based on the fundamental PETO philosophy;
- Elaboration and testing of Conductive Education in a group of 12 children (3 - 6 years old) with cerebral palsy, following a self-developed German "Konduktive Förderung" and evaluation;
- Conception of continuing education at university level for the profession of a "certified conductor" according to the West German guidelines and conditions determined by the German Conference of the Ministers of Education.

Since a mature medical support system exists in the Federal Republic of Germany, a new branch can only be added if in addition to a scientifically convincing theory it is also based on profound medical knowledge and capabilities, and the education is certified by a German university examination. Only via medical rehabilitation can approval by the health insurances be expected in the Federal Republic of Germany.

The training of the Hungarian conductors will therefore never be accepted by the health insurances in our country.

The location of our pilot project has carried out intensive work with the handicapped since 1962. In 1984 I assumed the management of the neuropaediatric department and redesigned it completely. Our hospital has 145 beds. Among others, we treat patients with cerebral palsy, spina bifida, multiple sclerosis, apoplexy and Parkinson's disease.

For years we have maintained international contacts to support the handicapped patients optimally, utilizing the latest scientific results. Here we should like to point out that next year we will invite colleagues for an international workshop to report on long-term experience with Conductive Education in their country.

Our special attention is directed to the cooperation with the PETO Centre and projects in other places of the world.

## CONDUCTIVE EDUCATION IN THE UNITED STATES

### History of Conductive Education in the United States

In May of 1985 Dr. Hua Chin Chen and Prof. Frieda Spivack were invited to the International College of Pediatrics Conference held in Budapest. They heard Dr. Maria Hari's paper and visited the Peto Institute. They both decided to invite Dr. Hari and three conductors to the United States the following Spring. In the winter of 1986 Prof. Spivack was informed that a Hungarian trained conductor, Marianna Vig was available in the United States. Ms. Vig became the first conductor at Hospital Clinic, Home/Center Instructional Program which is directed by Prof. Spivack and is associated with Kingsbrook Jewish Medical Center. Dr. Chen is the pediatric director at Kingsbrook Jewish Medical Center.

### First Conductive Education Conference in the United States

On May 22, 1986 the first Conductive Education conference was held at the Kingsbrook Jewish Medical Center, New York City. This conference was an introduction to Conductive Education as it is practiced at the Peto Institute. Approximately 200 professionals and parents came and were impressed with Dr. Hari, her conductors and the videos they presented. The four videos were: "Kindergarten for Spastics," "Learning Through Music," "Manipulative Activities with Athetoid Children," and "Different Activities in the Kindergarten." A case study of "Laszlo L.A." was also presented.

Participants were members of two different hospital programs, one executive of United Cerebral Palsy and a Professor of Psychology and Special Education trainer. The talk was directed to how can we bring Conductive Education to the United States. Can Conductive Education exist outside of the context of the Peto Institute? Then and now the answer is that we have no choice since Conductive Education is a major improvement over what exists. The realization that Conductive Education can improve the lives of so many handicapped children and adults was acknowledged by all.

### Recognition of Conductive Education in the United States

In the Spring of 1988 a video, "Standing up for Joe," made a strong impact in Great Britain. In the Spring of 1988 both "Standing Up for Joe" and "To Hungary with Love," was broadcast by Channel 13 (Public Television) station at midnight to 1.30 am. Not as many inquiries as hoped for were received by Professor Spivack but one response was most important. This was from City Councilwoman Julia Harrison who is an elected official and represents a Queens district in New York City. She organized a Conductive Education Day to be held at the New York City Council meeting. At the same time a fledgling organization called American Conductive Education was born. Meetings were held three times yearly at Kingsbrook Jewish Medical Center. Before these meetings members and would-be members of American Conductive Education Organization visited Marianna Vig's Conductive Education class. In this way New York Cerebral Palsy Foundation (UCP) (an organization similar to the British Spastics Society) decided to try Conductive Education. Another interested participant at our meetings was Terry Marchant, a Special Education teacher trainer at the New York City Board of Education. Thus at the New York City Council meeting, three programs were represented. Judy Fearon and Marian Marks spoke for UCP. Terry Marchant spoke for the New York City Board of Education and Prof. Spivack and Dr. Chen spoke for the Kingsbrook Jewish Medical Center. During this time Lehman College received two small grants to create Conductive Education

classes for graduate Special Education students. However, grant proposals sent to the Department of Special Education and Rehabilitation in Washington, CD, were not funded.

### Issues and Antagonists to Conductive Education in the United States

When the Rowley Case was heard in the Supreme Court of the United States in 1982 an essential change took place in the direction of Special Education, i.e., Special Education need only be adequately effective. The concept of habilitation was to be left to therapists. Therapists were thought to have the essential knowledge, techniques and "know how" to habilitate the child and/or adult with neuromotor and other disorders. This point of view has become embedded within federal requirements and legislation so that it would be illegal for a child with a neuromotor disorder to be habilitated by only a Conductor Educator. A therapist alone is able to assess and develop a therapeutic plan for a child. Therefore Conductive Education in the United States "flies in the face" of American understanding and established practices. Programs working with children with neuromotor disorders would need to duplicate funding for the therapists and conductor educators. All handicapped children's planned programs need to be evaluated and implemented by multidisciplinary teams. Each team member competes in trying to convince the parents that his/her role in the habilitation of their child is the quintessential one. The team approach is paramount in importance in this instance. The child's treatment is fragmented. Goals for the child are divided into separate functions according to specialists, i.e., movement with the physiotherapist, hand function with the occupational therapist and language function with the speech therapist. Often these therapists do not observe the children receiving various therapies. These therapists' assessments will overlap each others' fields and may stress what *not* to do. Thus parents become overly concerned about their participation in their child's habilitation. These therapists' services provided on a hourly basis twice per week have little impact on the child's daily functioning.

### The Need for Change in the United States

Presently therapists and special teachers working with children with neuromotor disabilities, may be knowledgeable of Bobath or Neuro-Developmental Techniques (NDT). However, again, only a therapist is thought to be knowledgeable enough to implement an NDT program. Therapists have begun to work on an hourly basis and programs cannot afford them on a full-time basis. Therefore, the therapist has become more tangential to the child's program. Although the special educator has the responsibility of the child in the classroom and spends more time with the child than therapists do, he or she is not specifically trained to handle the motor problems of the child. Another serious problem confronting special educators in the United States, is that close to 50% of mothers of young children are working mothers. Mothers who are not working are often welfare mothers who must go to school and receive training quickly for their benefits will be terminated when the child reaches age 3. Poor families with large numbers of children are too overwhelmed and middle-class mothers work very hard to be "super moms", i.e., to be able to be all things to all family members and hold down an important and well-paying job at the same time. These mothers have no time to meet with therapists who come to programs infrequently. Therapy reinforcement at home is poor, special educators also find it difficult to involve parents.

### Promise of Conductive Education in the United States

Given the above issues it is instructive to follow how a program can utilize the Conductive Education model. At New York's UCP program in the Bronx, there is no conductor but the special educator has the responsibility to develop each child's

individualized educational program, while the therapist sets goals in fine and gross motor areas, in language and self-care skills. The content of the task series and the daily schedules are developed by the entire team. The teaching of the various group lessons that take place during the day are done partly by the teacher and partly by the various therapists.

All staff interact with the child while learning the roles and programs of other disciplines. UCP sees the above development as a source of transdisciplinary training for educational and therapeutic staff. Unlike the Peto Institute, UCP uses computers and augmentative communication. In fact, computers adapted to a high-powered wheel chair for young children is viewed by many American professionals as progress in the field of rehabilitation.

### **The Conductive Education Program at Hospital/Clinic/Home Center (HCHC) Instructional Program**

The focus of treatment for neuromotor disorders in the United States, has been largely medical and therapeutic. But children who overcome medical problems and are given limited therapeutic care do not develop normally without special consideration of their social, motor, educational developmental needs and their ability to be as self-sufficient as possible. The overall goal of Conductive Education at HCHC therefore meets this set of needs, to have each child enter the mainstream of life, with increased competency in motor and developmental skills and self-sufficiency. To meet this goal the program has three components which augment, integrate and capitalize on existing resources and services. They are:

1. The comprehensive program for children to become orthofunctional utilizing Conductive Education;
2. The education of the parent and
3. Community outreach including inservice Conductive Education training of special educators through hands-on practices and conferences, as part of the American Conductive Education Organization.

#### **Child Education**

To increase the child's orthofunctional ability through:

1. daily conductive education with conductors; (trained in Hungary)
2. evaluation of the child's program by conductors
3. providing a mainstream nursery for children who have begun to achieve orthofunction.

#### **Parent Education**

To increase parent coping with the child by:

1. increase understanding of the child's daily needs
2. increase parents' ability to cope with their own and family needs as a result of the impact of having a child with a disability
3. acquiring and utilizing skills to help increase the child's motivation, confidence and level of functioning.

#### **Community Outreach**

To publicize conductive education:

1. provide workshops in conductive education
2. make members of the community and its agencies aware of conductive education
3. integrate conductive education with existing services for young handicapped children and their families
4. create a model for other programs interested in conductive education
5. expand American Conductive Education Organization.

Initially this program servicing Kingsbrook Jewish Medical Center has worked with children who have primarily come into the hospital for treatment. Not all of these children are appropriate for conductive education in the usual sense.

### **How Does the Conductive-Therapeutic Classroom Work for "ADD" Children?**

At HCHC we also work with severe behaviorally disordered children with ADD\* and have been able to infuse conductive education ideas to the other classes of young differently handicapped children. The HCHC therapeutic classroom is a nurturing environment where children on different levels have specific individual goals to meet; they have unique strengths and weaknesses but together they can blend into a functional classroom unit. This normalization, as expressed by Wolfensperger (1972), means that individuals are to lead age-

appropriate lives, and have a rhythm of the day, week and year close to the norms and patterns of the mainstream of society. Normalization is both a process and an outcome. The normalization process takes place for HCHC children through habilitation, education and treatment, through support services, and, when needed in the community based services of Kingsbrook Jewish Medical Center. As an outcome, the child learns to have normal expectations, to be in charge of himself, his body and actions. He is taught to be responsible for his own functioning. This is true for all children, neurologically and other impaired children who cannot "sit still," focus or pay attention. In this way we have integrated conductive educational ideas with therapeutic concerns. Peto understood that cerebral palsy had a devastating effect on an individual's motor, perceptual, sensory, social and intellectual functioning. He saw that individuals needed to learn to function independently and concluded that they had complex learning problems. We believe that children with attention deficit disorders\* can benefit from conductive education just as cerebral palsied children do.

Basically Peto understood that learning can take place through an "intention" being delivered to the brain and this message leads to an attempt to carry out the intention. Conductive education implies that you intend an action and experience the feeling of attempting to carry it out. The message goes from the brain to the body. If I am going to do a difficult task I rehearse it in my mind or even talk myself through the action. How does the message get to the brain? - Peto and Hari would say through rhythmic intention, motivation and the group process.

To understand rhythmic intention, one must first understand intention. Intention means a verbalized intention to act. It should be noted that the efforts of language upon development are seen to be extensive if taken from a Vygotskian theoretical position. "Language may be used in the regulation of attention, perception and even the development of language itself" (Vygotsky 1962). The model is that the adult gives a verbal intention, the child repeats it and then attempts to carry it out. Over time the adult can leave it to the child to say it and carry it out, leading to thinking it till finally the thinking becomes automatic and then the behaviour becomes automatic. Verbal intention operates at different levels according to the child's developmental level, and ability both to learn to internalize the words and to act upon his intentions. Sometimes it's a sound stimulus; at other times it's at the semantic level. For ADD children the above helps them become more focused in their attention and in their actions.

"Rhythmic" refers to the fact that the intention is delivered in a musical sequence because it increases the possibility of smoother and more deliberate action. As well, children are motivated by music and have a repertoire of rhymes and songs they love to hear and imitate. The class sings together "clean-up time, clean-up time, everybody knows it's clean-up time," and other songs and rhymes are used. If the intention to the action is delivered with music it's more fun. Rhythmic intention extends the stimulus time and gives the child a better chance of responding appropriately to the stimulus and thus of experiencing success.

The visual channel is used for reinforcing the intended action as the adult performs and the child attempts to imitate. In addition the child has a number of peer models to imitate. Thus the child remembers for himself the performance of the intended action and also that given by peer and adult examples. Therefore the message of the intention is conveyed to the brain by a powerful visual experience and at the same time it is conveyed verbally.

The role of motivation in learning is fundamental. Peto saw this in the cerebral palsied child. Such a child would give up when he sees that it is difficult for him to perform a task that is so easy for others. It is also easy to understand that a condition such as CP and/or ADD which demand a lot of adult help, lead to learned dependency and helplessness. The power of the group in conductive education can overcome learned helplessness in children.

The group aspect of conductive education is used as a powerful force and positive motivation. At the youngest level just being with other children and being taught in a group is motivating. Some children enjoy competing within the group. As it develops, the conductor teaches the group to help the individual by patiently waiting, encouraging him and congratulating him on his achievement. The force for good which a group can be and the superb efforts that children make within the group are well known. Each child then becomes concerned for the group's performance as a whole as well as his/her own.

## Milieu Therapy At HC/HC

HC/HC special teachers know how to teach to children's different levels and to meet their individual needs. The curriculum is varied and interesting; the classroom is an open learning early education center. It contains different centers of learning and the classroom arrangement allows for an easy flow from one activity to another with verbal or singing prompts. The physical space is changed periodically for different kinds of activity; other learning centers are installed; new outdoor games, special quiet corners and new spaces for classroom learning with individual tables, desks or carrels are reorganized every few months.

There is another concern at HC/HC, i.e., the adult responsibility for the "milieu". The caring feeling is not enough; the consistency in management of children that pervades is part of the program. Every professional and child care member understands the individual child and the rationale for the child's treatment. Peto insisted that the learning environment must be right and educators set the right goals in order that the children are properly motivated. Staff other than the professionals can be helpful. The cook, maintenance staff and secretarial staff need to be understanding and sensitive to the psychological needs and space of the child without catering or molly-coddling, or doing for the children what they can do for themselves.

Positive interactive relationships characterize therapeutic child care, i.e., relationships with children are exemplified by consistency, continuity, and contingency. (Contingency means response follows stimulus immediately and stimulus follows response immediately; in this way the young child learns to be cued for positive relationships and positive reinforcement.) Firstly this approach means that staff are consistent with the child and each other in translating the teaching and learning goals for children. Secondly, staff continue those goals until there is a consensus when the goals need to be changed. Thirdly, staff (especially special educators) who have a close bond with the child will sustain their relationship which then becomes constant and therapeutic. This is important when the child is moved from toddler to preschool to kindergarten classes. The constancy in the relationship promotes children's confidence, motivation and helps socialization through the child's secure feeling of positive regard and a sense of well being at HC/HC.

Many of our children come from homes with multiple problems. In fact, these are the 675 families, the 6% of the population who use 75% of community based services and resources. These are families who are in and out of homeless situations, whose children are in and out of foster care, whose parents are on drugs and cannot therefore function as parents. These are children of extreme poverty who, according to French and Brumen, DeSilvia, Greenspan, et. al, will still be needing services at more intensive levels as the children become older and the family further disintegrates. This is the family we try to work with at the beginning of the child's life so that a change can be made avoiding dire consequences.

The basic principle is family involvement. Parents must be involved in order to understand the learning needs of their child as well as how to manage their child successfully. Counseling and teacher meetings with parents deal with developing

purposeful family goals to help the child and family. If parents are too passive and cannot cope, their child's progress at school suffers. If the parent is accepting of the child's needs and follows through with the teacher he/she is more likely to succeed.

## Therapeutic Conductive Environment and Program

This therapeutic conductive educational environment is for all handicapped children, not only for cerebral palsied or emotionally disturbed or neurologically impaired, or hyperactive children, or children who have motor as well as developmental delays. Most children with learning problems will benefit greatly from a therapeutic-conductive educational environment. Conductive educational concepts are used. This is specifically orchestrated teaching to meet needs of handicapped children. A therapeutic conductive educational environment needs to be particularly interesting and motivating and specific to the child's needs. For very impaired hospitalized children we use conductive education with physical motivation and multi-sensory stimulation. These children, when able, will also be placed in a functional group outside the hospital in a setting adjacent to our motor conductive educational program. This is particularly helpful with severely retarded children. Children need to understand consequences and reality constraints. This is important especially for disturbed children. Important for all children is teaching them socialization skills which will help them become more appropriate and cooperative. Our therapeutic classrooms have functional groupings, i.e., children, regardless of their handicapping condition, have been chosen because they are good learners and teachers for one another in the group. Children learn to adjust to children who have different learning problems. In this way each child can have positive models.

\* ADD is the acronym for Attentional Deficit Disorder

† Many of our preschoolers at HC/HC have attentional deficit disorders

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Claire Cotter  
National Association  
for Conductive Education (Australia)



## THE PLANNED FUTURE DEVELOPMENTS: AUSTRALIA

### Background

The term, "Conductive Education" has been known about in Australia by individual people over the past 20 years - primarily through literature from Britain. There has been very little published information from Hungary except more recently. Individual therapists and teachers have interpreted what they thought Conductive Education was, on the basis of limited reading without more generalised development of the philosophy and concepts into practical application. Apart from therapists using random tasks from task series on an individual basis, very few group programs were set up. Those that were, were based on the limited knowledge of one person and subsequently finished because they could not be sustained without the input and knowledge of trained Conductors.

However there has been an accelerated, widespread and significant enquiry by a large number of professionals, parents, and service organisations in most States of Australia over the past 5 years. It has also been a time of relatively rapid growth of programs based on or inspired by Conductive Education. There is however, no national approach - each group is going in its own direction. Services range from a total holistic approach in a combined special school and residential service in Brisbane, to holistic Mothers and Young Childrens intensive training programs in Melbourne and country Victoria servicing 40 - 50 children, to smaller privately organised and sponsored programs utilising Hungarian trained Conductors for small groups of kindergarten and school-aged children. There are 5 conductors in Australia - two are married to Australians. The Conductors are located at distances of 500 - 2000 kilometres apart. Two are employed by established service provision agencies. As has been occurring in other parts of the world, Conductors are being encouraged or induced to work in Australia. So, there is overall ad hoc development despite strong attempts by the National Association for Conductive Education (N.A.C.E.) urging people to think and act on a more national basis, particularly in regard to Conductors. N.A.C.E. was established five years ago - it is a national group of interested professionals and parents and has been primarily an information disseminating body attempting to develop a national perspective. N.A.C.E. is not, at this point in time, a service and/or training body.

The most important development over the last five years then, has been the seeking of information and the changing of attitudes towards Conductive Education by professionals and service organisations - there have been introductory seminars and workshops in every State of Australia in the past two years.

### Some Considerations

Australia is now well ready to look at a future involving Conductive Education. However it is necessary to look briefly at some facts and figures about Australia which have relevance to future developments.

Australia is a country some 20,000 kilometres from Hungary. It is 40 times bigger than Hungary with a population of 17 million, compared to Hungary's 11 million. 75% of the Australian population live along the eastern coastal areas. Services for people with disabilities are provided in the major cities. Towns and country areas are poorly serviced, with an extremely mixed and scattered population of people with primarily motor disabilities. When considering the proposed International Institute, Australia faces many difficulties.

Here are just a few obvious ones:

- Conductive Education has, despite the last five years, a relatively insignificant profile. The Government is unlikely to produce the financial amounts being asked by the Institute.
- The distance between Australia and Hungary poses substantial financial difficulties for trainees and families to access the proposed Institute.
- Our populations of children with disabilities are relatively small and very mixed in any one location and may not match the selection criteria of Hungarian children.
- There is no national approach to education or disability services. It is the responsibility of each of the six State Governments.
- Legislation for normalisation and integration of people with disabilities into their local communities has been put into place. Funding for the outcomes of this legislation has drawn millions of dollars away from segregated and specialist services into the generic and integrated services.
- The demand for intensive, holistic programs appears greatest from families with children with very severe disabilities at the present time especially in Melbourne, Victoria.

### The Future

The goal is to set up a national Centre to provide age-specific services to a range of people with motor disabilities and to train Australian personnel. We have the hope that it would be staffed by both Hungarian and Australian professionals who share the vision and commitment towards Conductive Education as a broad and evolving system. We believe it is possible to develop a training curriculum co-operatively based on Conductive Education as the structure and philosophy, and incorporating successful methods and intervention strategies which are appropriate for children with severe and multiple disabilities. The Conductors would retain professional autonomy in this approach. In this way, the Centre, which hopefully will provide services for a very broad selection of clients with motor disabilities, will be needs based, i.e. attempting to meet the needs of Australian families and training will be developed to meet those needs. The Centre, its goals and programs, must be compatible with the Australian culture.

We are hoping that our future discussions with the Institute in Budapest will assist us to develop this approach which we believe is appropriate for Australia.

### What will this Centre look like?

At this stage we are making preliminary investigations and discussions about a number of alternative models:

- Should we establish a new Centre, totally and independent of current service providers and training institutions?
- Would it be more effective to utilise existing service providers? The primary task would then be to establish links with a training institution?

Australia will be looking at the advantages and disadvantages of these models and also looking closely at the overseas experiences to establish the most appropriate approach for Australia.

In Australia, the future developments will need to provide appropriate high quality training and services to the broadest range of people with motor disorders so that every person, no matter how severe the disability, has the opportunity, as early as possible in life, to learn to develop their own individual orthonormal personality and approach to life. This can only be achieved through the Conductive Education approach. In 1986, Dr. Maria Hari said that "Conductive Education is a system that is open to many methods". It is with this non-perspective, open and evolving philosophy and approach that we view Conductive Education for Australia. We believe it is the key and the basis for developing future services for people with motor disabilities in Australia.



## SYSTEM OF EDUCATION OF CEREBRAL PALSIED CHILDREN IN THE USSR

In the Soviet Union special institutions for cerebral palsied children of pre-school and school age are established. Between pre-school and school special institutions exist for interaction, close contacts and interaction. Special boarding schools cater for cerebral palsied children, children with inborn underdeveloped upper and lower extremities, children suffering the after effects of poliomyelitis and with myopathy. The integral unity of medical correctional rehabilitation work with educational activities is characteristic of the special boarding schools.

The correction of damaged functions is the most important part of the whole system of medical rehabilitation work. In the system of correctional rehabilitation work the leading part is taken by the correction of motor disorders. Correction of motor disorders promotes the complex system of effect including medication, physiotherapy, orthopaedic treatment, therapeutic physical training closely connected with usual lessons of physical training and lessons of vocational training. Medical (therapeutic) rehabilitation work is individual for each child and takes into account the form of cerebral palsy, the structure of the motor deficiency, peculiarities of psychic activity of a child and his somatic state. Remedial work is aimed at the normalization of the muscular tone, the reduction of forced movements, the intensification of compensatory processes in the nervous system. The orthopaedic treatment includes the maintenance of the orthopaedic regime at all school lessons and in free time, the use of various orthopaedic facilities for the correction of the hand, fingers and the stable head position and also special orthopaedic boots for walking.

Therapeutic physical training is very important for the correction of motor disorders. It is aimed at the development of motor skills, promoting the school and social vocational adaptation of pupils.

Therapeutic physical training classes are closely connected with ordinary lessons of physical training. The programme of physical training includes exercises of general development, exercises aimed at adjustment, applied exercises, indoor and outdoor games.

Exercises aimed at the normalization of the muscular tone, the motor co-ordination, the maintenance of the balance function and the ability to hold themselves upright, the development of local motor functions, spatial orientation and the exactness of movements.

Practical exercises are aimed at the development of age-appropriate motor static functions and the motor skills necessary for everyday life, education and work activity. Special training classes in the swimming pool are very important in the system of correctional-educational work. Motor skills and abilities being trained and developed at special lessons are fixed and automatic during all routine activities of the school hours.

Special attention in the system of the complex correctional work is paid to the development of speech in cerebral palsied children. The specific features of speech disorders in the child with cerebral palsy are their pathogenetic connection with motor disorders.

We can identify in 70-80% of children in special schools speech disorders such as dysarthria, which is characterized by difficulties in the pronunciation of speech sounds. Difficulties of articulation, voice production and regular breathing are the

main features of these pronunciation disorders. Articulation disorders are caused by the lack of voluntary articulatory movements, the presence of hypergenesis, oral synkinesis, the damage of proprioceptive efferentive immovability, the impaired muscular tone of speech organs, in the majority of pupils, dysarthria is combined with general underdevelopment of speech.

Correctional work of speech disorders includes a complex of remedial measures, i.e. speech therapy classes, special lessons for the development of speech habits. The system of speech therapy classes consists of the development of the articulatory skills and the correct pronunciation of speech sounds, providing children with vocabulary and grammar rules and also creating necessary pre-requisites for children to master written speech abilities. Started at a proper time the systematic correctional work with speech disorders in cerebral palsied children promotes the development of communicative skills in them, which, in turn, provides pupils with school and social adaptation.

The peculiar feature of the educational process is its correctional direction. In the boarding school for cerebral palsied children there are two departments: the first one is for children with normal mental abilities and the second one is for children with mild and moderate mental retardation. These children are taught with the original programmes that have been worked out by the Research Institute of Defectology. Preparatory work with children precedes the basic course of the school programme. This preparatory work provides children with more knowledge about the surrounding world, the development of practical activity, motor skills and speech habits.

In the teaching process of these children we use an individual and differential approach to every child, taking into account the structure of damaged functions, motor and speech abilities, age and the peculiarities of a child's personality.

In the organization of the teaching process special training classes on the rehabilitation of damaged functions are extremely important. These classes are aimed at the development of spatial and time concepts, the higher cortex functions, the development of speech habits and calculation operations.

Lessons of vocational training also occupy a very important place in the teaching process. The vocational training combines some elements of work therapy (i.e. maintaining everyday life skills, the development of motor skills while working with different natural substances and various instruments; and mastering by the children the initial skills of their future professions. At the lessons of vocational training special attention is paid to the development in children of the ability to plan, to control and to estimate their activity. Mastering the initial skills of the future professions is carried out individually for every child with due regard to his motor skills, age abilities and inclinations.

Educational work includes a complex of activities aimed at the development of children's active life position (active personality), their interests and inclinations and training of social and community life skills. This complex of activities presupposes the organization of various extramural classes according to the students' interests, sport and social events.

An important place in this work is occupied by activities promoting children's adaptation to a normal environment and life in the community.

The combination of medical-correctional and educational work to a great extent ensures the students' adaptation to their milieu. Sociological investigations determined that 37% of special-school leavers received further specialized secondary education in professional and polytechnic schools, 27% of special-school leavers receive higher education and about 30% of school leavers continued working in the profession taught at

school. These data witness that the organization of special institutions for cerebral palsied children is a necessary means for the provision of correctional-rehabilitation work and social adaptation. But our own experience testifies to the necessity of introducing the method of Conductive Education that will improve the effectiveness of the present system of rehabilitation, remedial and educational work. For spreading this method it is necessary to train specialists for the Soviet Union on the basis of Peto Institute.

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ИЗДАНИЕ  
1954



Marion Fang, MBE, JP  
Chairperson, Working Group on Conductive Education

## THE PETÖ SYSTEM (CONDUCTIVE EDUCATION) AND HONG KONG

### Preamble

Hong Kong is a small, densely populated, mainly Chinese community of nearly six million people and a highly sophisticated international business and financial centre. Services for motor disordered children began in the early sixties and by 1977 a Government "White Paper" on Rehabilitation Services gave renewed impetus to these services. Building on the already well-established professions in therapy and education, a multi-disciplinary approach was adopted.

### Early Application of Conductive Education

Therapists and nurses discovered Conductive Education through their international connections about 1980. Faced with the immediate needs of large groups of motor disordered children and disillusioned with the results of the multi-disciplinary approach, they began to apply some principles of Conductive Education in pre-school, school and hospital settings in the early and middle 1980s. Esther Cotton was therefore invited to give a course in Hong Kong in 1984. As a consequence of the sustained interest Esther Cotton was invited to return to Hong Kong in 1986 for a series of five courses. A wide cross-section of the rehabilitation establishment thus became aware of an alternative approach in rehabilitation of motor disordered people. Athetoid children - of whom there were an exceptionally large number in Hong Kong then - responded well to the Conductive Education approach, and so did motor disordered pre-school children. At present the disability pattern is changing again, with more multiply handicapped children requiring Conductive Education.

### Present Services

The Conductive Education approach is mostly used in rehabilitation facilities situated in some of the most densely populated areas of Hong Kong, indeed in the world. The limited space made available, as compared to the more spacious rehabilitation facilities in other countries, has unexpectedly proved to be a benefit in that the motor disordered children can walk everywhere in the centres and schools, without using wheelchairs. The staff's group-orientated attitude, their disposition towards detailed organisation and the outstanding work ethos provides the framework for the day-long timetables.

Conductive Education is now used for children at the Spastics Association of Hong Kong's five pre-school centres and at schools; at the Hong Kong Red Cross John F. Kennedy special school and at the Caritas Medical Centre's Mental Handicap Unit. Groups for adults have been established in a hospital for hemiplegic patients and in sheltered workshops of the Spastics Association.

### Conductive Education:

#### Unity of Education and Treatment Education

Education stands for the transmission of culture. Chinese culture, so vastly different from any Western culture, calls for careful consideration of how to re-create the educational element in Conductive Education.

Group cohesion and loyalty are valued and group recitation is an old Chinese teaching method, at times still used in Hong Kong. Due to the great emphasis on academic achievement in Hong Kong, children at an early age are required to practise writing both Chinese characters and English words. Many

parents do not understand the value of play for their children. Obedience to superiors, either parents or teachers, is expected. Memorizing skills and frequent practice are the methods of learning. Mastering orthography, i.e. the writing of Chinese characters, is a complex skill. Characters can consist of anywhere from one to twenty or thirty 'strokes', and two or three characters make up a 'word'. Oblique lines are part of the characters and may present special difficulties for young motor disordered children.

While the principles of Conductive Education are universal, there are thus considerable differences between Chinese and non-Chinese educational practices, some of them supporting others, hindering the application of Conductive Education. Much thought is going into how to make Conductive Education as relevant and effective as possible within a Chinese society.

### Therapy

However, as Peto taught us, education and therapy go together for motor disordered children. There is a need for detailed knowledge about motor disorders, knowledge of how to deal with them and how, with patience and imagination, to look constantly for new ways of guiding the children. Observing each motor disordered child closely (as Peto did) and following up each clue in an educational manner is a prerequisite for helping the child to achieve orthofunction. Ignoring the therapeutic element within this system of education means poor progress for the children.

### Staffing

In Hong Kong, the professions of occupational therapists, childcare workers (i.e. early childhood educators), physiotherapists, nurses, special school teachers etc. use Conductive Education. They contribute their expertise towards creating trans-disciplinary, integrative programmes which enhance the motor disordered children's life skills. When working together, all these professionals now share the same attitude, use the same method and aim at the same goal.

### Staff Education

Staff education raises fundamental issues. There is a strong sense of the "here and now" in Hong Kong, as its political future may bring significant changes. As we consider that Conductive Education is universal and a philosophy of life in regard to motor disordered people, we see it as our ethical responsibility to learn about Conductive Education in as many ways as possible, so as to develop the quality of work:

1. Participation in the "International Observation Courses" at the Peto Institute in Budapest since 1987 has added greatly to the interest and knowledge of the staff. Not only have the staff who went to Budapest benefitted, so have their colleagues in Hong Kong, through extensive and generous knowledge sharing on their return. Full attention has been given to evaluating the study visits, as can be seen from the 192 pages long "1987 Budapest Report, by the Hong Kong Delegates"
2. "On the spot" and formal in-service training is conducted in the various Conductive Education Units.
3. Regular lectures, workshops and seminars have been organised for rehabilitation workers since 1986.
4. Since 1989 a course on Conductive Education has been organised. Starting in October 1990, a course at the Extra-Mural Studies Department, University of Hong Kong, has been organised, which allows us to deepen the course content. Participants are mainly those who have acquired the practical skills of using Conductive Education through the apprenticeship method in their units. They now have the opportunity of learning more about the underlying theory, so as to interlink theory and practice.
5. Publishing has been another important learning experience. Regular publications, describing the work both in Budapest and in Hong Kong, innovative books, like our illustrated Chinese song book and translations into Chinese, have already proved of value.

## **Organisation of Conductive Education in Hong Kong**

Characteristic of Conductive Education in Hong Kong is the close network of organisation at every level, the practical, professional, and administrative.

First, the group orientation makes staff cooperation enjoyable, natural and effective. Using a group situation for guiding the motor disordered children is meaningful to parents as well.

Second, the Spastics Association of Hong Kong created a post of "Conductive Education Coordinator" for its many units throughout Hong Kong. This was a decisive move. Sister Joan O'Connor was the first Coordinator. Together with the staff in various units the Coordinator interlinks all relevant activities, the knowledge of each unit reinforcing the others.

Third, all Hong Kong Conductive Education activities of a general nature are coordinated under the "Working Group on Conductive Education", formed in 1986. This unassumingly named Working Group is in fact the equivalent of a National Association. The many members, representing numerous professions and organisations, meet regularly to coordinate pertinent matters.

Fourth, it was found to be necessary to set up a "Conductive Education Project" for the whole of Hong Kong. This 3-year Project, set up in November 1989, consists of a Coordinator, Anita Tatlow, an Assistant to the Coordinator, a Clerk and an Office. The Project Team is responsible for coordination, publication, education, local and international liaison.

Based on this intricate network of coordination, intensive information and knowledge sharing is possible within all Conductive Education units in Hong Kong.

### **Future Development Plans**

Conductive Education has already helped several hundred motor disordered children in Hong Kong. A number of experienced visitors from many countries have commented favourably on the work being done. We are convinced that the International Peto Association will enhance and strengthen our work in Hong Kong. Seeing how our children progress we have learnt to trust our experiences. We feel new knowledge is being created in Hong Kong and we wish to make it grow here. Our rehabilitation work could thus also be of value to other countries in the Asian and Pacific Region.

## WELSH INITIATIVE FOR THE MOTOR DISORDERED

I am the founder of the Welsh Initiative, which is a national charity and, as the name suggests, is based in the principality of Wales. Wales has a population of about three million people, and like all countries has children who suffer with motor disorder. The objective of the Welsh Initiative is to transfer the system of Conductive Education home to Wales. But as this is a new science and skill to us in the West, we have always believed that to succeed in this transfer one would require a new organisation, with a fresh approach, and its own haven in which to cultivate the seeds of that new-found skill. These seeds will, I know, take time to grow (as my friend from Israel commented, one step at a time) but of course this transfer would not be possible without first the trust, then the help and guidance of the International Peto Institute.

Those of us here, in this congress, who are interested in conductive education as a system and acknowledge its achievements, owe it to our future children to establish this method in our own countries as an alternative choice and by forging close links with Hungary, which after all is the birthplace of Conductive Education, we will be assured of a high standard of teaching and development.

1991 is deemed the Year of the Disabled in Wales, and our Initiative think it fit that this is the year we begin to take the first positive steps towards establishing a national centre of excellence for Conductive Education in Wales. I am sure that over the past years the Peto Institute has had many battles to ensure the safe keeping and development of Conductive Education.

The Welsh Initiative now faces a similar task and looks forward to the support of its own Secretary of State, and the well-established national charities who claim to support pure Conductive Education.

Then in July will be the first Welsh summer camp for Conductive Education. This will be a partnership of international cooperation between Wales and Hungary, staffed by the Peto Institute. The summer school will offer four weeks of full time conductive teaching, and will benefit some fifty children. But just as important, it paves the way for more understanding and closer links with the Peto Institute, which will be necessary to successfully transfer the system.

In September 1991 it is intended that Welsh Initiative trainees will start their four-year course in conductive teaching. Therefore, 1991 will be a special year for the motor-disordered children of Wales, as it will see the conception of a Welsh National Centre of Excellence for Conductive Education.

I am aware of the enormous task, to complete the successful transfer of this system of teaching, but there is a saying "If you have the will you will find the way". And my willpower receives its energy from watching my son, now aged eight, and my daughter, now aged four, slowly becoming independent under the teaching of the Peto Institute. Then my thoughts turn to all the other children in Wales who deserve by right that same opportunity my children had the good fortune to enjoy. Just let me inform you that the Initiative already has over 10,000 supporters in the principality and this figure grows daily.

To end my speech, I would like to say a little about Conductive Education generally. The Peto Institute has generously opened its doors to the world, and this has caused problems of expansion, which is not a Hungarian problem but one of our making. I believe we should respond positively with support, but most of all try to discourage the enticement of conductors away from the Institute, which in the long term cannot serve any useful purpose except to slow down the transfer of Conductive Education, which surely is the reason we are gathered here today. The support we give now will show our appreciation of the generosity shown by the Peto Institute in our hour of need. Please be patient - Rome was not built in a day.



Brendan McConville  
Buddy Bear Trust

## THE SEED OF HOPE – DESTINED TO BEAR FRUIT OR TO WITHER AND DIE?

### Introduction

Ireland was once known as the land of saints and scholars. Today it is seen by many as a divided country at war where neighbours kill and maim each other over their differing religious or political beliefs. It is generally portrayed by the media as a land of division, sorrow and shame. Such a portrayal is a grave injustice to the Irish nation who are in reality kind, warm and generous people who give more per head of population to charity than any other Western country.

The hope of disabled children that has been radiating from Peto has provided a focal point for the generosity of the Irish people and, by giving them a common purpose, is helping to unite them in a way that no other issue has. We cannot and would not claim that the efforts of the Buddy Bear Trust in building up support for the campaign to open a Conductive Education Centre in Dungannon in County Tyrone will lead to a resolution of all of the problems associated with 20 years of conflict. We do know that over the last two years the people of Ireland have shown that they really do care by sharing their time, their talents and their energy in order to help special children in need, and this must be an indication of real hope for the future in Ireland. The hard evidence of the benefits of Conductive Education as applied at the Peto Institute for children with motor disorders has acted as a stimulus in the reconciliation process. It has motivated people to examine more closely the real issues in life and has helped to put everything into perspective. It has also helped some to peel away their political, social and religious prejudices and has centred attention on the child who has to be helped within a meaningful time frame if he is to be helped at all. The urgency of the need to help our special children seems to have done more to bring our people together than many other schemes specially designed to achieve that result.

For that, Dr. Mária Hari, the conductors from the Peto Institute and the early pioneers of Conductive Education who brought out of Hungary a glimmer of hope for children deserve thanks and appreciation from all of the people of Ireland.

### Philosophy of Conductive Education

At this conference we have had an overview of the philosophy of Conductive Education. We have seen how the conductor uses the expertise acquired through years of training and experience to motivate the child to want to learn and how she instils confidence, which is the cornerstone of success. Success in small things lays the foundation for success in greater tasks and functions. This is the cycle of events in all learning situations. The skill of the conductor lies in identifying the personal goals for each child and in creating the learning opportunities, the tasks and the learning environment to enable the goals to be achieved. As the child progresses and becomes more independent and, in the case of the disabled child more functional, the role of the conductor becomes less significant. Conductive Education, like any other system of education, is a process not a product. The product of the Conductive Educational process is a child who has learnt to overcome his disability and has become or is becoming functional.

### The Goal

Throughout the last two years the members of the Buddy Bear Trust have witnessed improvement in the quality of life for some children with motor disorder as a result of Conductive Education. During the same period we have come into contact with nearly 200 children with motor disorders from all over Ireland and quite frankly we have been alarmed at the lack of

provision for the children in some areas. For these two reasons, namely the positive benefits of Conductive Education and the shortfalls in the existing provision, the members and supporters of the Buddy Bear Trust have been campaigning forcefully for the establishment of a Conductive Education Centre in Dungannon in County Tyrone for those disabled children from all over Ireland who can benefit, regardless of the political or religious beliefs of their parents.

### The Tasks

In order to achieve this goal, just like the children attending the Peto Institute, the members of the Trust have had to work hard to attain success in small tasks before gaining the confidence to move on to more difficult tasks. The first task was to define the aims of the Trust, which are:

1. to establish a Conductive Education Centre in Dungannon;
2. until then to help children who are suitable attend the Peto Institute in Budapest;
3. to raise public awareness to the needs of special children.

The next stage was to organise fund raising to enable children to go to Budapest. While fund raising was important in itself it also gave us the opportunity of speaking to large audiences about the hopes of parents for a Conductive Education Centre in Dungannon and thus publicising our campaign.

Publicity was an important element in the accomplishment of all three aims of the campaign. One of the most difficult tasks was dealing effectively with the media so that information would be presented to the public concisely and accurately but in a way that would arouse and hold their interest. This task was made all the more onerous by the lack of knowledge within the media about Conductive Education, which was sometimes described as a new breakthrough totally ignoring the fact that the method has been developed over the last 45 years. Dealing with the media and informing the public through the media, was just another skill that had to be mastered in order to achieve the goal.

### The Key of Hope

There are many milestones on the journey of hope for the child. His first tentative step or a formerly unwilling hand stretching out to firmly grasp are just such milestones. The first milestone for the Buddy Bear Trust was the Family Photograph for which more than 2,500 supporters stood in the form of a triangle, at the pinnacle of which was a white 4-foot cuddly bear. The photograph was taken in 1988 in the centre of the town of Dungannon, which during the preceding decade had become infamous as the centre of "the Murder Triangle" because of the number of sectarian killings in the area. The triangle of hope was made up of men, women and children from all political and religious backgrounds who were publicly prepared to place the interests of the child in need above all else. The photograph became our "Key of Hope", the symbol of "people power" which it is hoped will be the wedge that will eventually open the door to a special centre for our special children. In Ireland the family and especially the extended family, including uncles, aunts, cousins, grandparents and others, is still of fundamental importance. The concept of the extended family unit, within which close contact is maintained and support is both given and relied on, has almost disappeared elsewhere. Any member of such an extended family who is in need of help, whether financial or otherwise, is sure of a ready-made support group. Our hope is that every child in our organisation will have such an extended family of supporters, a group of caring people working for the child and sharing the burden with his family by raising money, by ensuring that the child receives all the benefits to which he is entitled, and just simply giving support, whether it is needed.

### Buddy Bear

The making of the Family Photograph was also the debut of

Buddy Bear. The white Buddy Bear with its short arms and legs is modelled on some of our children who are unable to sit up unaided or unable to give their parents a hug. The Buddy Bear is the mascot of the campaign and is a constant reminder, in case we should ever forget, that the campaign is all about helping children.

### The Members

Confidence grew with each success and like Peto's children more challenging tasks were undertaken in order to achieve the ultimate goal, a regional Conductive Education Centre. The Buddy Bear Trust sought and gained the active support of Dr. Ian Paisley, John Hume, John Taylor and Jim Nicholson. These men represent Northern Ireland in the European Parliament as well as in the Westminster Parliament. They also reflect the whole spectrum of political opinion in Northern Ireland. The Buddy Bear Trust then expanded its power base of support, reinforcing the wedge, by inviting the Church leaders, i.e. the late Cardinal T O'Fiaich, Archbishop R Eames, Reverend G Brown, Reverend C Newell and Monsignor F McLarnon, to become members of the Trust with other influential people, including Sir Harry Secombe and former world snooker champion Dennis Taylor. All of these people were invited to become members of the Trust and to influence the decision-makers in Government.

### Assessments in Dungannon

The next big step towards the ultimate goal was achieved when Dr. Hari, Mrs Ildiko Kozma and Mrs Julia Horvath came to Dungannon to assess children and to meet some of the many thousands of supporters of Conductive Education. The visit was an outstanding success. Dr. Hari was an excellent ambassador for the Peto Institute and for her country. She personally enlisted the support of the District Councils who are now some of our most enthusiastic supporters. For parents there were the obvious benefits of having their children assessed at home in the security of their own environment without the trouble and expense of the harrowing journey to Budapest.

Just as importantly the visit demonstrated the will on the part of the Peto Institute to cooperate with the Buddy Bear Trust to help children in Ireland and brought the dream of a Conductive Education Centre in Dungannon a little closer to realisation.

### New Incentive

It was during Dr. Hari's visit that the international dimension to the campaign arose. Children from the South of Ireland as well as the North came to Dungannon for assessment. This development added another incentive for the authorities in Northern Ireland to take an active role in providing a Conductive Education Centre as it would provide for children from all over Ireland. It offered a rare opportunity for the United Kingdom Government to cooperate with the Government of Southern Ireland in a project which would help promote mutual understanding while at the same time remedying inadequacies in the existing provision in both countries for children with motor disorders. The Buddy Bear Trust had already shown that the goodwill and generosity of the community could be successfully harnessed in a practical and uncontroverted manner for the good of the child.

### Good Times

Throughout the campaign there were times of elation and times of despair, but fortunately so far the good times have outweighed the not so good. One of the high points of the campaign came in February 1989 when representatives of the Buddy Bear Trust were presented to the Holy Father Pope John Paul II to explain the aims of the campaign and the benefits for the children and for the country as a whole. Then one year later on 1st February 1990, at the request of the Buddy Bear Trust, the first all-party delegation of members of Parliament from Northern Ireland went to 10 Downing Street where the Prime Minister, Mrs Margaret Thatcher, received a Buddy Bear and a letter signed by all the Members of Parliament pressing for the establishment of a Conductive Education Centre in Dungannon.

### Disappointment

Having mentioned the good times it would be wrong to disregard the disappointments. After all it is through the disappointments that we gain some insight into the suffering of the parents of a disabled child. One of our greatest disappointments has been our failure to gain the wholehearted support of the medical profession and the therapists for our

campaign. One of our next tasks must be to investigate the reason for this and take whatever action may be necessary to remedy the situation.

### Summer School 1990

A major goal was achieved during the summer of 1990 when the Buddy Bear Trust, in conjunction with the Directors of the Peto Institute, organised and ran the first ever Conductive Education Summer School held in Ireland. Twenty-four conductors directed by Mrs Eva Beck worked with 50 children from all over Ireland. For three weeks the Peto Institute and its furniture and equipment were reproduced in a secondary school in Dungannon and the ethos of Peto permeated the School. The Summer School was an outstanding success, both for the children and for all concerned with the Buddy Bear campaign, to transport pure Conductive Education from Peto to Ireland. So successful was it that plans are well advanced for an even bigger summer school in July 1991.

### Proposal for Conductive Education Centre

In July 1990 the political pressure created by the campaign began to have an effect and the Buddy Bear Trust was invited by the Minister for Education in Northern Ireland, Dr. Brian Mawhinney, to submit initial proposals for the Conductive Education Centre in Dungannon for consideration. With the assistance of experts from the Peto Institute, Coopers Lybrand & Deloitte Accountants, and a Belfast Architect, Mr Martin Campbell, the Buddy Bear Trust have submitted a document to the Minister for his consideration. The document will be formally presented to the Minister by a number of children, Roman Catholic and Protestant, from both North and South of Ireland, all of whom have achieved mobility in less than two years through Conductive Education.

### Conclusion

From the beginning of the campaign, the members of the Buddy Bear Trust have had a clear vision of the School. We know where it will be, how it will be set up and how it will be managed. This picture is so clear that we cannot conceive of it not materialising. Without this vision we doubt whether we could have maintained our steadfastness. All that we have learnt and seen over the last two years has simply reinforced the original vision and strengthened our resolve.

One thing really came home to us in August when our Summer School ended and the conductors had gone home, and that was that even though we still had the School, the furniture and the equipment, without the Conductors we had nothing. There is a great danger that with so many countries throughout the world seeking the benefits of Conductive Education the major resource of the Peto Institute, i.e. the Conductors, might simply be creamed off. That would destroy the Institute and would be disaster for Conductive Education.

There is a saying in Ireland that a mother can have more than one child and the more children she has, the stronger her family will be. We firmly believe that the promotion of Conductive Education throughout the world must be through the Peto Institute in Budapest. We would like to see similar institutes established in every country in the world, staffed by conductors trained in Budapest and affiliated directly to the Peto Institute. Direct supervision by Budapest is essential, we believe, in order to preserve the purity of Conductive Education and to prevent standards from declining. A world-wide network of Conductive Education Centres all born out of Peto will grow into a source of strength for Peto. The network needs to be like the extended family in Ireland maintaining close links both with each other and with the parent, regularly exchanging knowledge and information and learning from each other's experiences.

We would submit that we should all resolve that when we go home from the Conference we will persuade our respective Governments to invest in the International Peto Institute. When you walk around the Institute here in Budapest it is impossible to ignore the evidence of the dividends which can be reaped. In this way the seed of hope, which was first sown by Peto and which has been carefully nurtured for many years by Dr. Hari and her conductors, can flourish and branch out into many countries round the world, so that children who might otherwise be trapped in wheelchairs can be helped now and not in 5 years time or 10 years time when for some, it will be too late. How do you say to a child in a wheelchair "Sorry, too late"?



Paul Kelly  
RACE, United Kingdom



## RACE (RAPID ACTION FOR CONDUCTIVE EDUCATION)

RACE was formed in 1986. I have personally been part of that organisation since 1986 and now hold the office of Vice Chairman. Can I first of all give you the objective of RACE. It is very important and we spoke about this many times at national RACE meetings.

"The purpose of RACE is to campaign and press for the establishment of Conductive Education (as practised at the Peto Institute in Hungary) in the UK, on a wide scale so that every adult and every child who needs Conductive Education has access to it as a right. RACE is committed to striving to achieving this objective in the shortest possible time." (No... compromise.)

RACE was formed as a pressure group mainly by parents and for all intents and purposes it was a very successful pressure group. We lobbied Parliament. In our country, if you want to speak to your Member of Parliament (MP) you either visit him in his constituency or you go to Parliament. We lobbied Parliament and told them exactly what we wanted in the United Kingdom as far as Conductive Education was concerned, and for some reason they did not listen to us. We then returned again with the same questions. So we then had lobbied twice, lobbied our MPs on both a local and national level. Quite soon they heard about Conductive Education from RACE and other people and started to understand. We picketed the Spastics Society in London, mainly because at that particular time they were claiming that they were doing "Conductive Education". We led a very successful media and press campaign. We were on prime-time television in the United Kingdom, we were on very many news reports, and I can remember at least four members of RACE were on TV-AM, the early morning television programme. The four RACE members, if I remember rightly, came from Birmingham, Southampton, Wales and Essex. Those people on TV-AM represented a large proportion of the country.

The highest point of the RACE campaign was the national meeting in Coventry in April 1987. Dr Hári very kindly spoke at that meeting and I will have to guess at these figures but I believe that over 1000 people attended, both professional people and parents. It was a very impressive day.

Can I now say to you that there was a grandfather who said something at that meeting which has always stuck in my mind. It was, "Conductive Education has given in one hand, hope that we did not have before, and in the other hand it has taken it away". That phrase seemed to sum up the situation in our country at that particular time, regarding the lack of provision. Obviously his grandchild was not able to participate in Conductive Education at that time.

What has RACE achieved? Well, first of all, legislation for local authorities to fund a child's trip to Hungary. I think that any parent who has brought a child to this city understands that it costs a great deal of money to go to the Peto Institute and live in the city. Secondly, Government support of the Foundation for Conductive Education, our first national project. Thirdly, possible Government support for the Peto Foundation - I am not saying that RACE was totally responsible for this, but we are there on most occasions pushing for that. Fourthly, widespread public and professional interest. There was a time when people would say to me "What are you going to Hungary for?" I would then have to explain everything about Hungary and the Peto Institute. If you now mention that situation to the man in the street, he would say "Ah yes, the Hungarian thing". One of the major things that we have achieved is a revolution in special school education. We have made professionals examine their own provisions. Even the non-believers have now sneaked the Peto furniture in through the back door. This has made RACE very vulnerable. I may raise a few eyebrows because of the success of the organisation, but we were never a large organisation. We called upon a great deal of people at certain times, but we were a group of people, a very small group of people that worked very hard, fooling a lot of people into thinking that we were a large group.

Where are we now? Julia Horvath spoke earlier about the importance of training 4 years in the Peto method. People are wanted here and now, we are in situations where we are having private conductors. That is a drain on the Peto Institute, it is also a drain on our national project in Britain. We are seeing watered-down practices. People are attending the 6-week Peto courses and going back to their various outlets and saying, "We are doing Conductive Education". I even know of a situation where Conductive Education is being done after school because the various establishments can't get school status. These watered-down practices are raising very large sums of money for their "Peto" centres. This is, of course, again a very big drain on the money resources of the Foundation of Conductive Education.

Local links are being sought with the Peto Foundation, again diverting this very important cash from the Foundation of Conductive Education. This Foundation needs money very badly. In Southampton, I heard of a situation where a family wanted to take a child to the Peto Institute and they were told, when they asked for help with funding this, that they would not raise the money for the child to go to Hungary as there was an Institute in Southampton. This is a terrible situation for a parent to put up with.

RACE as an organisation is now in hibernation, waiting for parents to recognise the long-term limitations of these approaches. We hope that you, in other countries, will learn from our experiences.



Joseph Lebeer M.D.

## BIOGRAPHICAL RESEARCH OF CHILDREN WITH A GOOD DEVELOPMENT IN SPITE OF A SEVERE BRAIN OR SPINE DAMAGE

### Introduction

This study has a long history. It started with our own struggle with the handicap of our daughter, who was born with brain damage as a result of prematurity and twin-birth. Discovered at six months to be a spastic, tetraparetic, visually impaired girl, having diffuse brain-damage on the CT-scan, she has nevertheless now, at the age of 10, learned to walk independently, to read and write and she attends a normal school. She has no deformations and did not have any operations. As parents we are convinced that this development has not just been a natural maturing, nor a result of a particular physiotherapy or treatment method. It has been continual hard work. In fact, almost nothing of the motor development came spontaneously, but it had to be taught; the child would not learn to sit, crawl, grasp, stand or walk without being taught patiently, sometimes against all odds. Neither was the intellectual development self-evident, but probably helped by a carefully directed, enriched input and experience. We have found inspiration in Bobaththerapy and other conventional physiotherapies, and we have worked for a short while with ideas of Doman-DeLacato, managing as well as we could, to 'do it our own way'. But after six years, and still not walking a step, we discovered that the principles we were already following, were applied on an institutional scale by the approach of conductive education. So we came to the Petó Institute for the last (at least that's what we thought at the time), but decisive step: the step towards walking. Hence, I am not an unbiased observer, as we owe much of our survival to the energy we have found in Budapest.

### Methodological Problems

I wanted to design a study starting from the following questions: 1. in what clinical conditions does brain (or central nervous system) plasticity occur? And what kind of plasticity can be found in *homo sapiens*? And 2. is there any meaningful relationship between the functional recovery of neurological damage and the early educational environment of the child, particularly the adult attitudes of education, and the psychological processes?

The use of quantitative methods in evaluating the effectiveness of methods in rehabilitation has not been particularly fruitful. Several quantitative attempts have been made, but it hardly ever has led to more knowledge: most methods remain without proven effectiveness. Scientific evaluation by neutral people who did not have to defend a particular method, have not shown significant differences in the ultimate outcome of different rehabilitation methods, as has been shown in extensive reviews and controlled studies (Hourcade & Parette, 1984; Nakken, 1983; Ottenbacher, 1986; Palmer *et al.*, 1988).

Yet when a child with a serious developmental disorder improves, everybody wonders: how come? Of course, one is tempted to believe that this is the result of the treatment given to the child, but critics keep saying 'he would have done it anyway'. Therefore, we wanted to study exceptional cases, where the development had been successful in one or another dimension. At first we had been puzzled by the implicit, almost obligatory requirement that good science involves counting and measurement; yet we were convinced that what we were looking for was not going to come out with methods applicable in physiology and pharmacology. However, the idea of

studying the individual may not be very common nowadays, but it finds support in the scientific thinking of people like professor Prigogine (Nobel Prize 1977), who advocates the reintroduction of the study of the exceptional and unique (Prigogine & Stengers, 1984). We also found encouragement from the late ethologist and Nobel prize winner Niko Tinbergen, who spent the last ten years of his life researching autism. Tinbergen remarked that "it further strikes the ethologist, whose science owes so much to a return, however belated, to non-interfering observation, how the trend in modern psychiatry is to repeat the mistake that has held back the development of psychology so much in the past: the trend to pass over or run hastily through the observational-interpretative, the qualitative, exploratory or reconnaissance phase that every natural science has to go through (and to return to from time to time), and to resort prematurely to measurement and experiment." (Tinbergen, 1983:305).

Hence we have followed Tinbergen's advice not to go too soon to quantitative analysis, and we have returned to the old 'watching and wondering' (in Tinbergen's words). We have chosen the study of biographies, i.e. individual life histories. This kind of individualized research is not able to prove anything, it only wants to show what the potential can be, and what relationships are involved in the process of recovery; and it generates more context data.

We probed parents' organizations, child guidance clinics, consultant neuropediatricians and institutes working with handicapped children to see if they knew any children who had developed more successfully than had been expected (based on the medical diagnosis or the prognosis). When we had collected about 50 examples (most of these were referred to us by a network of parents), the next step was to find out in which cases the initial status had really indicated such a negative outlook, and whether the reported exceptional development was really that positive. We verified as many data as we could find: from the medical files, rehabilitation files, I.Q. and developmental status tests, family photographic albums, or amateur cinematographic recordings and diaries. Initially we were almost following the extremely severe procedure of the Medical Committee at Lourdes. However, when we applied the criteria of 'miracle', as officially required by the Catholic Church for recognition of a miracle, only 1 out of 50 was left: the case of a spina bifida and meningomyelocele child, who, though initially paralysed, does not yet show any sign at all of gait dysfunction. On the other hand, all the children whose reports we had received, were interesting enough to learn a lot about mental attitude. Thus we decided to study those histories which we could verify ourselves, leaving 27 cases for study, of whom 23 life history interviews have been recorded on tape so far. In addition the life histories of 3 children with cerebral palsy and a negative outcome served as controls (the study has not been finished yet, and we intend to verify in more controls in what way they differ from the study group).

The most revealing part of our research was the visit to the child and its family, where we interviewed the parents about the child's life history. Particular interest was paid to exploring the belief systems of the parents educating the child, their way of dealing with the child's helplessness, and their teaching attitude. The method resembled very much the way anthropologists proceed when doing fieldwork: they call it *participating observation*, indicating their wish to mix with ordinary life of the people they want to explore. Another technique known in *biographic research* is the selection of individuals who are in a way representative of a whole group. We took care to select children representative of the most important categories of handicap.

### Results

We will briefly describe the kind of children whose biographies we analyzed.

- there was 1 spastic tetraplegic, born prematurely at 37 weeks

because of bicornuate uterus, apnoea after operation because of necrotising enterocolitis, completely autistic at one year, with no looking, no smiling, no balance reactions (hence no sitting or mobility); who quickly developed in his second year with massage, physiotherapy (various methods), intense home-based stimulation programme. Now, at the age of 9 he is completely orthofunctional and has normal intelligence.

- there are 5 hemiplegics, all with porencephaly. One child had a complete atrophy of the left hemisphere, because of hemophilia type VIII. All have learned to walk, some without visible gait dysfunction. One of them is taking ballet lessons together with normal peers. All are orthofunctional, though with learning problems. One child with right-hemispheric porencephaly is seriously aphasic and still has severe pronunciation problems: she learned to walk at age 8; she had been in special education class for 6 years, at the end of which she still was not able to read, make a proper sentence, or make calculations; then the parents started a home-based education programme: three years after, the girl had learned to write well, construct sentences, make herself understandable to others, so as to be able to mix with non-handicapped peers in a mainstream school.
- there were 5 diplegics, all born prematurely, with more or less comparable developmental retardation and spastic symptoms at age one, but with different subsequent developments. One, now an adult woman, is completely orthofunctional, though she walks with crutches; but she has a university degree in physics, and she managed to take part in a desert rally. She walked independently from about age 8, but she had tendon operations 3 times afterwards, with little or adverse results. One child has had intense physiotherapy right from the beginning up to now, 2 hours a day, with a method which seems to me very close to conductive education. Now he is absolutely normal, so there is a tendency to think he was a light case. One child who was operated on for a craniostenosis at age one, and who was not able to crawl or sit at age four, did follow a St. Bravels' parent-guided stimulation programme, with relative success: she attends a mainstream school, she can walk, but in equinus. Another one, a boy, was considered a severely spastic diplegic at age 2, but now he walks well, showing only minor dysfunction: this without operation or any special programme outside his Volta-oriented daily physiotherapy. What happened? His parents are deeply spiritual people, and they have practised daily sessions of a kind of 'energy healing' with him; he has had a tremendous social supportive environment. The last one is a twin girl with an awful neonatal history of apnoeic spells, intubation, ventilation, prolonged acidosis and hypoxia. She attended the Peto Institute for 6 months with very good results, but it has to be said that she has a very determinate and hard-working mother, who has been teaching her continually.
- 5 multiple handicapped (motor mental/sensory). One child had intractable fits, almost a status epilepticus, up to a year and a half. Every medication and combination had been tried without any result; then her mother took her out of the hospital, and practised a Japanese spiritual massage technique; after one year she was free of fits; she is now developing, she has learned to eat independently and she is now learning to stand and walk. Another girl, with post-vaccination encephalitis, completely autistic, epileptic and immobile up to age 4.5, learned to walk in a swimming pool. A brother and sister, both deeply mentally and motor retarded with a still obscure diagnosis, are now developing well. I have known them when the younger sister was one year, when she was just sitting in a baby relax, not reacting to anything. Another boy, deaf and floppy, no mobility up to age four, attended the Peto Institute: he has learned to walk independently and he is attending a school for the deaf, now learning to sing.
- 2 Down's children have entered mainstream education.
- 1 child with spina bifida, operated on the fourth postnatal day from a meningomyelocele, paraplegic, is now walking without visible dysfunction. Her father, a traditional Indian musician, practised Shantala massage (Leboyer, 1976) during a year and a half, after which she developed quite normally on the motor level, except from a spinal bladder. Cum hoc, propter hoc? We don't know, but it is at least remarkable. Another boy, paraplegic after a medullary infarction during a coarctation operation, recovered partially within a year, also with Shantala practise.
- 1 boy with congenital cerebellar atrophy, completely floppy

at two years without any mobility, is now walking well: his parents first did a home-based Delacato programme (after which he learned to crawl), then came to the Peto Institute where he learned to walk.

- 1 girl with Rett syndrome, who, quite unexpectedly, learned to walk and to speak.
- a boy with Rubinstein-Taybi syndrome, microcephalic, with a severe mental and motor retardation, now able to talk, read and write, to cycle and to play the cello, and who is working on a farm.
- a girl with von Recklinghausens' disease, with autism and mental retardation, is now attending mainstream education.

We have tried to represent all the children's initial developmental status and present functional levels in a number, according to the Denver Developmental Screening test (DDST) and the Eau Claire Functional Ability Test (Heal, 1972). Because this juggling with numbers was rather disappointing, as it did not pay tribute to the real progress made in the children's developments, we decided to describe the children's conditions in a qualitative way. E.g. it was of enormous significance for S.'s parents, a multiply handicapped child, that the intractable grand mal epilepsy had vanished in one year without the use of medication, that she managed to learn to eat independently, and that she is now learning to walk, although the girl still gets a low score on the ECFA. A full picture, subjective as well as objective, of the development and the attitude by the environment is better reflected in the complete story of the child. We cannot do this here for the whole series of children.

Not all children became orthofunctional in all respects. There can be discussion about the term remarkable or 'exceptional'. We agree it is a subjective definition, and leave it to the reader to judge.

### Conclusions

Of course we have to interpret these results cautiously, because it is retrospective research, and it is difficult to exactly retrace what really happened and what people have really done. Also we had to rely upon written reports which do not always reflect the truth, or which often contain the evaluation by one person. So there is a difficulty in verifying which children did really have a bad start. Sometimes the doctors' or therapists' oral reports sounded more serious than the parents' perception of the situation; mostly it was the reverse. Nevertheless we can draw already a few conclusions:

1. Although in many instances the recovery was not complete and the children retained substantial handicaps, all children showed that a considerable degree of plasticity in development is possible, even with the worst known brain damage. By plasticity we mean here in the first place functional. We cannot make any statements as to what degree this plasticity is also due to neural reorganization. But there are remarkable examples of orthofunctional development in spite of large brain lesions.
2. No parameter has yet been found, usually considered to be devastating for the functioning of the brain, which allowed making a reliable negative prognosis: neither the length of birth anoxia, type of chromosome damage, extent of brain tissue loss, degree of spasticity (several severe spastics at age one developed better than the controls), justified a prediction of future non-functioning.
3. Recovery, however partial, does not seem to be linked with any particular type of rehabilitation method, indicating that there are many roads to Rome. In addition, many parents have adopted unusual treatment procedures outside the mainstream medical establishment. The choice for an alternative approach seems to us to be linked with the condition of the handicap itself: because often a negative prognosis had been pronounced or the future had often been described as uncertain or negative, parents tend to turn to whatever approach that offers hope.
4. Even the profoundly mentally handicapped who had been classified as 'uneducable mentally retarded', can make significant progress. We therefore suggest dropping this too pessimistic term.
5. All parents, how individual certain solutions may be, show a common pattern in their attitude, which can best be described as a *development encouraging attitude*, which will be explained below.

These findings confirm the model of Prigogine of indeterminacy of living systems: living systems like a person are essentially indeterminate, unlike mechanical systems

Hence one cannot predict, between certain limits, what the ultimate outcome will be (Prigogine & Stengers, 1984).

## Development-encouraging attitude

### 1. A field effect of a mental attitude

A way of describing what happens on a level of mental attitude, which acts beneath the surface of a therapeutic method, is the concept of 'healing field', introduced by the Dutch professor in general pathology Marco De Vries (De Vries, 1983: 58-73).

The concept of a field of forces is accepted in physics to designate e.g. a gravitational, magnetic and electromagnetic field. The peculiarity of a field is that you cannot see the forces in action; they are everywhere, and they exert an influence on any object present in the field, even on the structure of the atoms. Recently, biologist Rupert Sheldrake has hypothesized the existence of a morphogenetic field, responsible for the information of form and appearance, and of the preservation of form in case of damage. They argue that the information for the wound to heal cannot be explained solely on the basis of the information contained in the genes, but must be carried in some sort of field (Sheldrake, 1981).

In analogy with this, De Vries hypothesized a field at work in all healing processes of the body, mediating the psychosomatic influence originating from the mental attitude of all who deal with the patient. This means that, if the whole environment of a child has a positive belief that the child can make progress, and does invest all its energy in it, this has some influence.

The concept of 'healing field' could explain why some institutions have a lot of results and success, while others who try to adopt the same methods and techniques achieve less: maybe this is because the latter are not able to install a good field. It could also explain why in some families children with a handicap are well integrated, while in others with a comparable handicap, the child stays dependent or does not make progress.

The field-effect of attitude includes also aspects of the process of will. Will is a psychological force, which is still scarcely investigated, but it was extensively studied by the Italian psychoanalyst Roberto Assagioli (Assagioli, 1973). We have observed the following elements in the biographies of our study group:

- **motivation:** parents have a strong motivation to devote the necessary time and interactions to their child, in order to increase its development. Often parents belong to a certain type of character, which they also show in other matters in life: they are non-resigners. Parents elicit their child's motivation by searching tasks which the child can accomplish. The initial experience of success after a period of despair and standstill motivates the child as well as the parents to carry on. Success breeds hope, and this in turn generates new energy and motivation to start a new task. Probably this mechanism is involved as a strong influential force in certain unorthodox or new approaches.
- **positive reinforcement:** by considering every slightest progress important, contrary to what the parents often hear from professionals, a positive feed-forward circle is created. Often a major progress is celebrated with a pleasant ritual. Incorporating rituals to celebrate little progresses is another important aspect of keeping up motivation. Many institutes appear to ignore this. Positive reinforcement is not identical to always being nice to the child: many parents appear to demand a lot, to be not nice when they do not agree with a certain behaviour, to ask that movements are carried out properly: they are not tolerant. This can be called discipline, control, mastery: all are qualities of will.
- **financial commitment:** All but one of the mothers have stopped their professional activities to devote themselves to their child's education. They come from all social classes, wealthy and poor, so it cannot be said that wealth is a precondition for success. Instead of saying to themselves: "I cannot do this, because I cannot afford it", these parents turn financial problems upside down. They say: "I want to do this, so from where am I getting the money?"
- **the pilgrimage effect:** the investment of hope is larger when the source of hope is far away.
- **a systematic moving ahead of apparent developmental limits:** This is a very important point. These parents, when they are confronted with a problem do not believe that the child cannot solve it. This is a very specific aspect of will, in which many phases can be distinguished: the experience of a need, or problem, which is felt as unbearable (a 'we cannot go on like this' feeling), a strong positive belief system that

the child is potentially able to solve the need in due course, and a refusal to accept that the present situation will be the limit of his capacities. Together, they are three preliminary conditions to set the will process in motion. It seems to be a quality of will, which is not a personality trait, but can be elicited under extreme circumstances, analogous to the survival instinct under extreme pressure as was seen in concentration camps. This is in contrast with the life histories of the 'control' children, as well as with the often heard (but never written) professionals' expressions, who often appeared to have said that 'it was useless to hope for more'. However, this sort of an intense 'non-resignation instinct' is not enough; in order to let the will continue its course, other criteria have to be met:

- **goal-orientation:** setting oneself a short-term goal helps in focussing all the energy onto that goal. For example, when A.'s mother was fed up with A.'s not being able to move when he was 22 months, she wanted him to crawl, and put all her effort into the attainment of that goal for days. When he did not understand one word or concept when he was 4, she invested all her energy into making him understand 'mummy' and 'daddy', and did not stop till he understood it. Another example: the child M., was severely mentally handicapped, nearly blind, mute and autistic, immobile after an encephalitis at 9 months, remaining so at age 5. At this stage, the parents did not want to continue with this unsuccessful outlook, and they started swimming with her in a hot water pool; in this way they discovered their girl's motivation to move, and she gradually learned to walk, first by walking in the swimming pool, where the fear of falling down was minimal. In order to keep her upright in the water, they glued a leaden sole to plastic sandals. *Little self-help tricks* like these have yielded a treasure in our stories. Often professional helpers try to help parents with accepting the present truth, and to forget about too unrealistic long-term goals, but it seems that the parents in all cases did tap an important source of energy by also holding on to a long-term goal: e.g. the avoidance of institutionalization, striving for integration in the normal world, independent walking, writing and reading, reducing fits, independent eating.
- **determination:** in order to attain the goal, it is not enough just to desire it; this would be wishful thinking; determination is another quality of will.
- **patience:** it is a cliché to state that patience is important when educating a child with a handicap. But the consequences of patience are often largely underestimated: in most cases it has taken years to get to a major breakthrough. Five children of the group learned to walk after age 7.
- **inverthiveness:** is another aspect of will, necessary to move ahead of barriers. When one way does not lead to results, these parents try another way.
- **self-help and taking responsibility:** a home-based programme, combined with a thorough self-instruction of the parents, seeking regular supervision and demanding information, going for second, third and more opinions, the mothers ceasing professional work, are all signs of the parents' autonomy and taking up responsibility, so that they do not feel helpless. Indeed, the feeling of helplessness, which they all did encounter if one time or another, was depressing, and it blocked the child's development. Most parents showed a marked autonomous relationship with professionals (doctors and therapists). But most essential seems to us that these parents, at a certain moment, decided to take up responsibility for their child themselves, wanting to strive for a certain goal, instead of merely letting others do the job.
- **coaching:** parents look for a good coach, who is skilful, and has an attitude of positive reinforcement, encouragement and confrontation.
- **the experience of meaningfulness:** the experience that educating a child with a handicap can be meaningful and rewarding is a source of energy, making the process of coping easier to bear. When meaningfulness is the background experience, conflicts, disappointments, difficulties and sacrifices become easier to cope with. To give meaning is also a part of the will process, because it needs a personal choice. All but one of the parents had acquired this experience. All but two stated that having a child like their's, though it had been extremely difficult and stressing for the family life, at the same time had given depth to their life. Some parents said that they really discovered the meaning of love, commitment, patience, self-sacrifice, which thus

made the process rewarding. Some parents had found an explicit spiritual source.

One has to be careful in evaluating qualities of will, however. They are easily confused with the common image of the 'will-type personality', i.e. the always strong, always brave, cheerful person who does not know any doubts or fears. The reality of the parents we have seen is very different. Will in our view (and in Assagioli's) is something else: it is the underlying energy. It can be observed in actions and expressions. Someone who is rather shy can have a lot of will for instance, when he (she) goes for a certain goal and does not rest before it is achieved.

## 2. The concept of modifiability and mediated learning experience

During the course of our investigations, which brought me also to Israel and Prof. Feuerstein, it was a happy surprise to discover that the histories of the exceptional children we had seen, showed a striking correspondence with Feuerstein's criteria of mediated learning experience (Feuerstein et al., 1988): parents who achieve results, mediate more, in all the different aspects of development, than parents whose child stays helpless. In addition, parents of exceptional children have created a modifying environment: all efforts are directed to modifying the child toward more independence.

These findings can add evidence to the theory of the brain-mind interface (Eccles, 1987) that 'mind' as a non-material field has an action on matter, i.e. the brain cells and organization. In addition, they describe in more detail what is meant by 'enriched environmental experience', i.e. the beneficial effect that was found in animal experiments of ecological influences of the environment (including the enriched input and experience as well as even the attitude of the experimenter) on the recovery after brain damage, called the ecological model of brain plasticity (Walsh, 1981; Rozenzweig, 1980).

## Biological effects of hope

Although our observations cannot prove anything and cannot be considered as hard science, they form an interesting working hypothesis. Will processes, the experience of hope, positive belief systems in combination with constant mediation and a modifying environment can have dramatic influence on development. However, will and hope are not to be seen as mere gifts. They require choice: it is hope together with hard work which give the child (as well as the people working with the child and the family) a boost of energy.

One mother said 'it is a constant battle between hope and despair', and thus she summarized what all the others felt as well. Hope has to be renewed constantly, because precisely in a difficult rehabilitation hope is easily lost when results are not seen immediately. Hope is not easy, because the distinction with false hope is difficult. But it can be a strong force. It seems to us that many workers in the field of retarded children have lost contact with their own source of hope, that they loose their energy somehow, that they get easily burn-out. Then the will process stops. It is not knowledge and techniques which are often lacking, but the necessary energy. In an institutional setting, the climate of hope and energy is often created by a leader who has all the above mentioned qualities. On our trip to various institutions, we noticed that this was often the biggest problem: Institutions don't have an inspired leader, it is difficult to create a commitment-encouraging field. This threatens every institute. Another threat is that after a number of years, many institutes and many parents loose their vital energy.

Looking at the future, we think it is necessary to pay much less attention to discussions about rehabilitation methods, but to be very careful about creating and maintaining healing fields, both in institutions and at home. It can be trained.

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## THE SIMPLICITY OF CONDUCTIVE EDUCATION

Since I first visited the Institute, I have always felt at home here. I remember meeting Mária Hári with my late husband. We held hands and walked down a great big wide corridor, and there in the corridor were a group of children with their conductor doing their walking programme. The conductor had a sense of humour and had put the shortest child at the front of the line. He had curls and dark eyes and big spectacles and a grin, and they all walked in the way they chose and they talked and shouted as they went, encouraged by their conductor. They made very good progress until the child at the front fell over. The whole line then fell, like a line of dominoes, until they were all lying on the floor. Nobody could stop laughing at this, all the children laughed, the conductor laughed, Dr Hári laughed and we laughed. It was then I realised that the Institute was a giant party and this is what we were attending. I have always thought, ever since that day in 1968, I wanted to be a conductor.

What is a conductor? I have come to the conclusion that I have been a conductor for many years, not necessarily a successful one, but a conductor. So what is a conductor? A conductor is a leader, somebody who brings order from chaos. I conduct my house, I clean it, I do the washing and the ironing, I do the shopping. If you want to see chaos in my house, where there has been no conductor, then go into my son's bedroom because the conductor has not dared enter. I conduct my office and there is some semblance of order. There are files and so on, and so I conduct - I have order in my office.

Pető, apart from being a neurologist, was also a gymnast and was a Hungarian strongly influenced by Slav concepts of athletics and gymnastics. I was, once upon a time, a tennis player, but I do not have much time since I became involved in the world of disability. In order to play tennis, I had to organise myself. So, what am I? I am a conductor. I order my house, I order my office and I physically order myself if I need to play tennis. Perhaps the most important role I have had as a conductor and perhaps the most difficult, was as a mother.

I was presented with a baby. I had responsibility for him, for his care, his development and his learning. What did I teach him? When he came into this world, apart from smiling, gurgling and waving his arms and legs around in the air, he could do nothing. I taught him to feed, to sit, to look, to dress himself, to walk and to pay attention. In other words, I helped him to organise himself to create order out of chaos, to facilitate his development. This is not magic. I did not wake up one morning and my son could do all of these things. He had learned them with my help and it was no accident.

I now have a problem, with which I need your help. Everybody says "what is conductive education?" Well, I am now going to tell you. Conductive Education is quite simply nursery education. It is encouraging, teaching where necessary, the child to bring order from chaos. If I am right and Conductive Education is nursery education, can somebody please explain to me why has it become so complicated? I think it has become complicated because if it was simple, it could not possibly be any good. We have come to believe that the best things must, by definition, be complicated. If it is simple, like I believe Conductive Education is, then there are those who seek to make it complicated just to prove to the world how wonderful it is. You may say that if I am right, and as Helga Keil said, the definition is simple but putting it into practice and reality is extremely difficult. It is, I believe, not helped by those of us who have a professional training. Could somebody please explain to me why it is that when people are faced with a child with special needs, a child with disability, they immediately acquire tunnel vision? They immediately appear like horses with blinkers on. They forget all the things I listed to you that I taught my son to do. For some curious reason, they imagine that a

child with a disability does not have to learn these things so they look at the child through their professional training. If they do that then they lose - they do not see - the whole picture. What we have to do is to forget our professional training, leave our hats and coats at the door and come to look at the child as if he were any child with its own particular needs.

Let us return to my thesis, if it still holds, that Conductive Education is simple and that it is nursery education. Then what on earth are some of us doing by trying to set up complicated procedures to see if it works?

Have you ever heard of Edward de Bono? (He wrote a book called *Lateral Thinking*.) I think we need to apply it here. Occasionally I cook and I also make clothes. Within the last few weeks I made a Christmas pudding and I made myself a ball dress. If, in order to measure the flour to put into my Christmas pudding, I had taken the tape measure with which I measured my dress, I would not have made my Christmas pudding. I suggest to you that we need to look very carefully at the way in which we measure Conductive Education. If I were going to do it, I would take a child on Day 1, I would see what the child could not do, I would plan goals and I would look towards them. My criterion for success would simply be, "Can the child do, let us say on Day 365, what he could not do on Day 1?" If the answer is yes, to me that is a sufficient criterion for success. If you want to know if it works, go and ask the children. If you have problems in believing what children say or with talking to them, go and ask their parents. If you don't believe the parents, go and ask Dr Hári, because Dr Hári has got shelves and shelves of the files of all the children who have been through her Institute and she can tell you scientifically if you like, graphically if you like, exactly what progress was made and what success she has had in the field of Conductive Education.

### The Future of Training

In 1984, we held a meeting in the Institute at the end of which we said that we had to do something about future training. We wrote a training programme which I took back to England and I won't bore you with what happened to it, but in fact nothing happened to it! What followed has to some extent been talked about here. I do not think that we have solved the training programme at all. This is not Mecca, although many of you seem to think that it is. It is not fair to expect this country - this Institute - to put this burden on Dr Hári; it does not make sense. Pető said that we had to find a way. We have to find a way to do this training, to take forward if you like the gospel of Conductive Education. There are people with Parkinson's Disease, Multiple Sclerosis, Spina Bifida and Cerebral Palsy. What about all the people who are blind and deaf who also need resources? It does not make sense just to pour everything into this Mecca of Conductive Education. We have to think seriously and realistically. There are people who are starting services in countries like Jordan and Brazil: they do not have money to come here, but we have to help them. We have to sit down and devise a method whereby we can help each other to help ourselves in spreading this training of Conductive Education, and I am sure that Dr Hári and her conductors will help us.

Finally, I am convinced after 22 years that it is the simplicity of Conductive Education which is its main enemy. I have heard people here asking impossible, irrelevant and ridiculous questions. I am afraid that I am convinced that you either understand Conductive Education or you don't. That you either look at it and see and understand what you are looking at, and with a little explanation it helps you understand, or you never will. I actually wonder if one does not despair.

Those of you who know London will know that there is a very large shop called Harrods. It has been in the Brompton Road, Knightsbridge, since it began 150 years ago. I once met a very rich American lady at a party in London who told me that Harrods was not in the Brompton Road, Knightsbridge. You cannot argue with somebody who says that. It is not possible. I would make a plea to you: would you please stop arguing. You

cannot argue – there is no time. The children of the future are in our hands. They don't want us to argue, they want our help. We do not have the luxury of being philosophers and sitting on a rock in Greece, we do not have the luxury to argue. We must call our knowledge our expertise, our hearts. We must remember for the sake of our children that the children are our most important friends.

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*T · h · e*  
**CONDUCTOR**

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*Royal Issue*

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ONTARIO  
MARCH  
OF DIMES

presents

**DISCOVER  
CONDUCTIVE EDUCATION**

An exploration of the Hungarian system for teaching children and adults with physical disabilities such as Cerebral Palsy, Spina Bifida, Multiple Sclerosis, Parkinson's Disease, Stroke and Head Injuries.

**Friday, May 28th &  
Saturday, May 29th 1993**

at

**The Ontario Institute for Studies in Education  
252 Bloor Street West, Toronto, Ontario CANADA**

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## Special Guest Speakers:

Gary Malkowski, MPP York East;  
Parliamentary Assistant to the Minister of  
Education and Training.

The Honourable Elaine Ziemba, Minister  
of Citizenship with Responsibility for  
Disability Issues.

## Guest Speakers:

**Andrew Sutton, B.A. Birmingham, England '62; Diploma Education '66; M.Sc. Aston '76; Director, Foundation for Conductive Education**

Director of the Conductive Education Foundation in Birmingham since its inception in the mid eighties, Dr. Sutton has a strong background in education and psychology. He is an activist in child/family rights and has a key interest in special educational journalism.

**Marion Marx, B.S., UCLA '51; Certificate Physical Therapy LA Children's Hosp. '51; M.A., NYU '56; NDT, Stamford '67; Senior Physiotherapist, United Cerebral Palsy, New York City Bronx Pre-School Program**

In 1989 Ms. Marx helped develop a pilot project using principles of Conductive Education in preschool classes at UCP. She lectures on Conductive Education, and has studied Conductive Education programs in Australia, Hong Kong and Budapest as part of a fellowship grant.

**Agnes Borbely, Conductor Diploma, Hungary '76; Primary Education, Hungary '80; Director, MOIRA Conductive Education Centre, Hungary**

As a Conductor at the Peto Institute for 15 years, Mrs. Borbely had special responsibility for establishing research, extending provincial networks, and assessment. She has since established MOIRA to serve persons from all over the world.

**Udi Lion, B.A. Special Ed & Jewish Philosophy, Hebrew Univ., Jerusalem; M.A. Special Ed. & Admin, Jerusalem; Educational Director, Tsad Kadima**

As a parent of a child with motor disorders, Mr. Lion discovered Conductive Education at the Peto Institute in Budapest. He then co-founded Tsad Kadima to bring Conductive Education to Israel.

**Anita Tatlow, Physiotherapist, Germany & Sweden; Neuro-Developmental Certificate H.K. '84; Editor, Hong Kong Conductive Education Source Book; Consultant, Conductive Education.**

Ms. Tatlow has worked in paediatrics as a physiotherapist and then as a Conductor for 26 years, in Germany and Hong Kong. She was Hong Kong's Conductive Education Project Coordinator from 1989 to 1992, and has written a number of articles on Conductive Education.

**Cheryl Cott, BPT, Manitoba '77; Diploma Gerontology, Toronto '89; M.Sc., Toronto '91; Lecturer, Div. Physical Therapy, U of T.; PhD. in progress.**

After studying with Rowena Kinsman in England, Ms. Cott was involved in an evaluation project on Conductive Education with Stroke patients at the Queen Elizabeth Hospital. She has used Conductive Education for Parkinson's groups at Sunnybrook Hospital in Toronto.

## Guest Speakers: (continued)

Lyndel Hill, M.A.O.T. Oxford, England; B.Sc. O.T. U of T, Toronto; M.A. Special Ed. OISE; Consultant/OT, New Visions Homes for Children, Adolescents/Adults. Resource Consultant/OT, Toronto School Board.

Ms. Hill worked as an Occupational Therapist at Hugh MacMillan Rehabilitation Centre in Toronto when Conductive Education was introduced to a group of kindergarten and grade one children with cerebral palsy, in a school setting.

Frieda Spivak, B.A. City College, N. Y.; PhD New York University; Professor, Queens College WNY; Director HCHC.

Dr. Spivak developed a Conductive Education program in the United States in '85, and has been active in the field ever since. She is President of the American Conductive Education Association for the Motor Disabled.

Betty Yan, President Beth Tikvah Friendship Group.

The mother of five and grandmother of eight children, one of whom has Spina Bifida. Mrs. Yan has been an advocate for Conductive Education for three years. While in Budapest in 1990 she heard of the Peto Institute and subsequently took her grandchild there for treatment. Since returning, she has worked to establish a program in Canada.

Gerald Rosenberg, B.A. Political Science & Philosophy, Pittsburgh, USA '73; M. Public Policy, Michigan '77; Vice President, Glassman Oliver Economic Assoc., Washington D.C.

Mr. Rosenberg, the parent of a four year old child with cerebral palsy, has been to the Peto Institute, and worked with a Conductor in his home. His goal now is to establish a pilot program in the United States.

Bharati Banerjee, MBBS, India, '75; Pediatrics/Neonatology, USA, '82; Attending Neonatologist, Stamford & Greenwich Hospitals, Connecticut

Dr. Banerjee is the parent of a child with Cerebral Palsy. She spent two years at the Peto Institute in Budapest, Hungary working closely with Conductors.

Rowena Kinsman, Chartered Society of Physiotherapists, '60; American Association of Physiotherapists '74; B.Sc. (CNA) for the Remedial Profession '85.

Since 1982, Ms. Kinsman has been actively involved in Conductive Education and has written numerous articles on her extensive work with adults. She is a tutor in Conductive Education locally, nationally and internationally.

## Moderators:

**Sandi Bell**, Member, Appeal Division, Immigration and Refugee Board. Mrs. Bell is a member of OMOD and Chairperson of the Attendant Services, Toronto Regional Advisory, and Stephanie McCaul Support Services Living Unit Committees.

**Steve Paikin**, Host of TVO's "Between the Lines" and "Fourth Reading". Weekly discussions on 'Between the Lines' look at national and international events.

**Ed Wadley**, Literacy Coordinator, currently on leave from Frontier College, Toronto. Always an advocate and activist for innovative opportunities for all, Mr. Wadley is pursuing his own "freelance hobby" on CBC's Street Legal.

**David Onley**, News Anchor, Citytv's Breakfast Television - Toronto's #1 Morning Television Program. Mr. Onley is a Board Member of OMOD and Chair of the Public Relations Committee.

**David Logan**, Professor of Biology, York University. Dr. Logan, an active volunteer for more than ten years, Board Member and Past President, currently Chairs the Fundraising Committee.

**Joe Coughlin**, Author, Broadcast Journalist and seminar leader. Host of "Challenge Journal" for CTV and "Disability Network" for CBC, Mr. Coughlin's book entitled The Disabled and The Media in the Information Age will be published this fall.

## Workshop Facilitators:

**Joan Ferguson**, Director of Rehabilitation Services, Hospital for Sick Children, Toronto. Formerly with the Hugh MacMillan Rehabilitation Centre, Mrs. Ferguson has worked with children with Cerebral Palsy for more than 20 years.

**Andria Spindel**, Executive Director of Ontario March of Dimes. Ms. Spindel joined OMOD in 1984. During this time the organization has grown six fold and many new programs and services have been initiated.

**James Bell**, Chairperson, OMOD Information Services Committee, Chair Conductive Education Conference Committee. Mr. Bell, a biochemist, has spent the last 20 years producing and managing creative science communication projects.

**Jerry Lucas**, Director of Program Development, Ontario March of Dimes. Mr. Lucas is responsible for corporate planning and evaluation, and directs provincial programs. He has investigated Conductive Education for two years, and visited the Peto Institute in 1991, when he attended congress.

**Mary McKnight-Taylor**, Associate Professor/Coord. Special Education, Dept. Counselling Resources, Special Education and Rehabilitation, Hofstra University. Dr. McKnight-Taylor is a consultant to a Conductive Education program at the Kingsbrook Jewish Medical Centre, and VP of the American Conductive Education Assoc.

# FRIDAY, MAY 28, 1993

- 7:30am REGISTRATION
- 8:30 WELCOME (Auditorium) Andria Spindel - Executive Director, Ontario March of Dimes.
- 8:40 PROVINCIAL GOVERNMENT WELCOME Gary Malkowski, MPP York East and Parliamentary Assistant to the Minister of Education and Training.
- 9:00 KEYNOTE ADDRESS Dr. Andrew Sutton, Birmingham Institute for Conductive Education, England.
- 10:00 REFRESHMENT BREAK
- 10:15 PANEL DISCUSSION **Conductive Education Around the World**  
Moderator - Sandi Bell  
  
Marion Marx, USA  
Udi Lion, Israel  
Anita Tatlow, Hong Kong
- 12:30 GUEST SPEAKER Agnes Borbely, MOIRA, Hungary.
- 1:00 LUNCH
- 2:00 PANEL DISCUSSION (Auditorium) **Barriers to Conductive Education in North America**  
Moderator - David Onley  
  
Lyndel Hill, Canada  
Dr. Frieda Spivak, USA.
- 3:00 PANEL DISCUSSION **Adult Applications of Conductive Education**  
Moderator - Steve Paikin  
  
Rowena Kinsman, England  
Cheryl Cott, Canada
- 5:00 ADJOURN
- 6:00 DINNER Sign up at the Registration Desk to join Special Guests for a dinner in Chinatown. \$20.00 per person.

# SATURDAY, MAY 29, 1993

- 9:00 am PANEL DISCUSSION  
(Auditorium) The Role of Parents in Conductive Education  
Moderator - Joe Coughlin
- Dr. Andrew Sutton, England  
Dr. Bharti Banerjee, USA  
Agnes Borbely, Hungary
- 10:30 REFRESHMENT BREAK
- 10:45 PANEL PRESENTATION Advocacy in Practice  
Moderator - Ed Wadley
- Gerry Rosenberg, USA  
Betty Yan, Canada  
Udi Lion, Israel
- 12:30 GUEST SPEAKER The Honourable Elaine Ziemba, Minister of  
Citizenship, with Responsibility for Disability  
Issues.
- 1:00 LUNCH
- 2:00 WORKSHOPS What Do We Need to Do to Build Awareness  
and Opportunity for Conductive Education in  
Canada?
- (Workshop Rooms  
to be announced)
1. Applications of Conductive Education  
Facilitator - Joan Ferguson  
Marion Marx, USA; Anita Tatlow, Hong Kong.
2. How to Mobilize Parents and Consumers in  
North America  
Facilitator - Jerry Lucas  
Gerry Rosenberg, USA; Betty Yan, Canada;  
Dr. Bharti Banerjee, USA.
3. Applications for Adult Disabled Persons  
Facilitator - James Bell  
Rowena Kinsman, England; Cheryl Cott,  
Canada
4. The Role of Agencies and Professionals  
Facilitator - Mary McKnight-Taylor  
Dr. Andrew Sutton, England
- 4:15 WRAP UP Moderator - Dr. David Logan, York University/  
Ontario March of Dimes.
- 5:30 ADJOURN



# Canada

## Israel adapts treatment to fight cerebral palsy

By RON CSILLAG

TORONTO — Udi Lion recalls that when his son Yoel was diagnosed with cerebral palsy as an infant, experts in Israel recommended what he calls the Western approach: treating the disorder as medical and having several experts work with the child, each on a different skill, while the child is strapped into a special chair to hold him upright.

He didn't know it at the time but Yoel Lion became a pioneer, for he was the first Israeli child to undergo the so-called Peto method, a psycho-educational approach to treating children with motor control disorders that has become known around the world as conductive education.

Considered quite radical when it was developed after World War II by Andreas Peto, a Hungarian Jewish doctor, the method was literally kept behind an iron curtain until around 1987, when Udi Lion first travelled to Budapest with Yoel.

When he arrived at the Peto Institute, Yoel could not keep his balance while seated; standing up was impossible. What's more, he was deaf. His hand movements were jerky and everyday tasks, like eating and getting dressed, were tortuous.

After one month at the institute, Yoel was able to sit still by himself and showed dramatic improvement in self-confidence and morale.

And he wasn't alone. Hungarian officials estimated that fully 70 percent of children who receive conductive education at the Peto Institute improve to the extent they are able to function independently.

Conductive education intrigued Udi so much that he negotiated with the institute to reserve space there for Jewish and Diaspora children. At the same time, he gained the institute's agreement to train professionals in the method for export and bring the Peto approach to Israel.

Thus was born Tsad Kadima (A Step Forward), the Association for the Advancement of Conductive Education in Jerusalem, with Udi Lion as its current director.

The method is attracting more and more converts around the world, says Lion, who was in Toronto last week for a two-day conference on conductive education presented by Ontario March of Dimes and to feel out the feasibility of setting up a Canadian Friends of Tsad Kadima.

There are roughly 3,000 children in Israel who suffer from cerebral palsy and associated motor dysfunctions like spina



Udi Lion

bifida, Lion points out, as well as thousands of adults with Parkinson's disease, multiple sclerosis and head injuries.

Today, there is hope for them because of conductive education. The method differs from conventional treatment of motor disorders in that the child spends the entire day with a single professional, known as a conductor, instead of with several different experts. The conductor seeks to stimulate the child to rely on his own resources. Emphasis is on socialization skills and since the child is with his peers, support from them is encouraged.

The method is by no means a cure or treatment, Lion stresses, but it does go a long way toward improving motor skills.

"The disabled child gets frustrated early," Lion explains. "He cannot grab a toy or sit up. So he cries. The parents respond to the crying so the child learns to be dependent. He stops trying and becomes passive."

Conductive education is designed to check and rectify that personality impairment. Self-image and motivation are restored with a view to integrate the child into mainstream education.

Today, there's a long waiting list at Tsad Kadima, which has 200 students. Half of all applicants must be turned away. Fees, about 400 sheckels a month, are subsidized, but only up to 10 percent of the total, by Israel's health ministry.

The bright side is that Israel is now turning out its own conductors, who undergo five years of training.

However, spiralling costs and more applicants mean Tsad Kadima will be squeezed. That's a shame, Lion notes, especially when one can see the faces of its "graduates."

For more information, call Albert Gellman at (416) 485-4448.

## Variants

By MA

VANCOUVER has the highest percentage of the largest Canadian Jewish community in the Jewish community of Vancouver.

In a bulletin based on the survey, the federal government shows that 15.7 percent of Vancouver's homes have Jewish residents, both Jewish and non-Jewish. In Montreal, the percentage is 15.7 percent.

Gerber's questionnaire defines them

## Israel

By M

OTTAWA - around the world, Dr. Shmuel Penchas, a general of Jerusalem, says the system was a model for other countries.

Dr. Shmuel Penchas, a general of Jerusalem, says the system was a model for other countries.

"We view Canada as undergoing the other countries through," he says.

Penchas was named by the arm of Hadassah, the Canadian representative of Jerusalem's Hadassah.

Penchas is a health care manager.

IN

Name of The New Jewish Front

# Conductive Education: The Continuing Challenge

## Observations drawn from a recent period of study at the Pető Institute, Budapest

JACQUELYNE E TODD MCSP.

Senior Physiotherapist, Bradford Area Health Authority

**Key words:** Conductive education, orthofunction, group work, conductors, task series.

**Summary:** The author recently spent six weeks studying at the Pető Institute in Budapest. The article is specifically directed to the institute's work for children with cerebral palsy. The key aspects of conductive education are discussed. Personal observations and data acquired during the visit are provided. The apparent value of conductive education is considered, together with its relevance for future service provision.

**Biography:** Jacquelyne Todd (*née* Sandylford) qualified at the Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry, in 1976. She has always been specifically interested in paediatrics, and has held a number of posts within the NHS as well as working for the Spastics Society. She completed a Bobath course in 1977. At present she works part-time for Bradford AHA and part-time in the nursery unit at Hawksworth Hall Spastics Society School, Guiseley, Leeds. Her interest in conductive education culminated in two visits to the Pető Institute, the latter being at the end of 1988. She is shortly moving with her family to Victoria, Australia.

THE discussion on conductive education causes continual controversy. In November and December 1988 I went on a six-week course at the Pető Institute; and like other parents and professionals am very impressed with what I saw. The dedicated work done by the conductors is indeed inspiring. There is little wonder that professionals who have some experience of methods of conductive education return fired with enthusiasm to adapt what they have seen and learnt into their own working environment. There can be no doubt that the present facilities on offer to cerebral palsied children in the UK fall far short of what is offered by the institute in Budapest.

The major stumbling block is the use of the term 'conductive education' which generates much of the controversy. Can we — as professionals — justifiably say that we offer 'conductive education'? This is the question demanded of us by parents and media alike. It has forced many professionals and institutions into rash or defensive statements. The time is long overdue for all involved to sit down and take a long hard look at what we want to achieve and what is the best way to do it. There are many philosophies and methods used in conductive education which are indeed pertinent.

### Orthofunction

Conductive education measures its success by the term 'orthofunction'. This is a concept sadly misinterpreted by many. Orthofunction is not just learning to walk, it is a more subtle but significant personal quality. It combines physical, psychological and social aspects.

As normal children develop they spontaneously acquire the confidence and social abilities to become active and contributing members of their families and the wider environment.

In children with cerebral palsy the spontaneous process

of development and adaptation never takes place. The children's physical disabilities inevitably lead to frustration. These children learn from their failures both in terms of operant conditioning and cognitive learning. They become passive and dependent or learn to cope in an inefficient fashion with their stereotyped movements. They become dysfunctional.

'Dysfunctionals are not characterised by certain symptoms, but by the general serious disorder of the personality extended to their activities, willpower, learning, problem-solving ability and every form of accommodation' (Hári, 1975, p65). Orthofunction is the determination to succeed; which equips the person with the physical and mental capacity to live and blend into the home, school or working environment. It is 'the general capacity for adaptation or learning' (Hári and Ákos, 1971, p141).

The distinguishing factor between dysfunctional and orthofunctional people is not what they learn, but how they learn it. The key to success is the learning process. '[Orthofunctional] demands differ greatly, first with age and second according to tradition' (Hári and Ákos, 1971, p141).

Hungarian lifestyles and educational demands play a significant part in what is meant by orthofunction in the Pető Institute. Hungarian schools will accept only children who can fit into the broad general standards of the relevant classroom environment.

'Underlying everything is the demand that no child shall attend school — even a special school for motor disabled children — unless able to walk and get about independently, at least within the confines of the school' (Cottam and Sutton, 1986, p42). A child who does not achieve these standards will be offered six hours a week home tuition. Those requiring total care are offered placement in institutional care. There is thus a special incentive for both parents and children to work hard and to achieve as much independence as possible. In my observations, it is apparent that orthofunction is inseparable from the high expectations of both the conductors and children alike. They all know the aim and strive to achieve it with great enthusiasm.



The Pető Institute with its formidable steps

### Results of Conductive Education

The Peto Institute assesses its success by the number of clients who leave it ready to participate fully in their family, school or working environment. The number of children leaving the institute to return to a local school or nursery demonstrates the level of success of conductive education with children at the Peto Institute. Unfortunately, we found it difficult to acquire a regular supply of figures and statistics during our stay in Hungary. The figures given below indicate how many people have left the institute — and are orthofunctional — after a period of training at the institute.

● In 1968, the institute discharged 364 in-patients, of whom 176 (48.35%) were orthofunctional (Hári and Ákos, 1971, p1).

● In 1971 out of 866 adults and children passing through the institute, on admission 55 (6.3%) were self-supporting and able to cope with a school or work environment; 522 (60.3%) were orthofunctional on discharge (Hári, 1975, pp 66–67).

● In 1987, a total of 88 children left the institute after residential placement; of these 58 (65.9%) were orthofunctional (notes from lectures, 1988).

● A significant proportion of young children (under four years) are under the care of the mother and child out-patient department. Up to 1988, a total of 1,140 children under five years had passed through the department (notes from lecture). An average of 25% will subsequently become resident in the institute; the remainder are discharged — mostly into their local nursery schools.

In 1987, a total of 1,400 people were offered a place at the institute in Budapest. The numbers in each section were as follows:

373 adult out-patients.

585 children's out-patients/pre-school groups.

366 school residential placements.

76 school day placements.

496 (11.1%) were seen by conductors working elsewhere in Hungary.

(Notes from lecture, 1988)

( In 1988, a total of 4,513 children and adults were counselled and assessed by the institute. The numbers were as follows:

606 (13.4%) were new patients from Hungary.

393 (8.7%) were new patients from abroad.

1,860 (41.2%) were discharged people returning for their first check-up.

1,654 (36.7%) were discharged people attending follow-up visits.

In 1988, 81 children left the Peto Institute, of whom:

48 (59.3%) were orthofunctional, ie they became fully integrated into their local nursery or school.

26 (32.1%) were integrated into school but required additional help.

7 (8.6%) required placement providing more intensive care (Moore, 1989).

The next figures are related specifically to cerebral palsied children, as this is where the largest demand and interest lies. The distribution of diagnosis among children accepted

gives some idea of the relative severity of motor disorder.

Out of 291 children accepted into the mother and child out-patient department, the diagnosis was as follows:

Diagnosis	Number (percentage) of children
Ataxia	18 (6.2)
Athetosis	24 (8.2)
Quadriplegia (total body involvement)	126 (43.3)
Diplegia	59 (20.3)
Hemiplegia	64 (22.0)

(Notes from lecture 1988)

Of 8,165 children accepted by the Peto Institute between 1952 and 1987, the relative figures are as follows:

Diagnosis	Number (percentage) of children
Ataxia	728 (9)
Athetosis	958 (12)
Quadriplegia	2,105 (26)
Diplegia	2,455 (30)
Hemiplegia	1,919 (23)

(Notes from lecture 1988)

Conductive education is not a therapy. It is a teaching method available to all motor disabilities due to damage of the central nervous system. Children with profound mental handicap, recurring and uncontrolled fits, or children with a progressive neurological condition are not accepted. Conductors do not select children according to the relative severity of their motor disorders, but by their ability to learn. There are pertinent qualities required by the children in order to be able to integrate into a conductive group. They need the ability to establish contact, ie to participate actively in a situation and to relate to a parent or other person by verbal or non-verbal means. This pre-supposes some minimal ability to communicate. Second, the children must be able to perform some intentional function.

### Methods used in Conductive Education

In contrast to the individual therapy used predominantly when working with motor disorder in the west, conductive education uses a group setting as its means of teaching. In each case, the team of conductors working with the groups would consist of one or two trained conductors, the rest being students in various stages of training. In the younger age groups, I saw an average of eight children with their parents, working with two or three conductors. In the residential groups, there is an average of 25 children working with five to eight conductors. The adult groups varied from six to 11 people working with one to three conductors. In the adult section specific groups catered for a variety of separate conditions, with appropriate sessions available according to level of disability.

The composition of the group is vital to the success of conductive education. The children's groups are not homogeneous as to type of cerebral palsy — although there may be a predominance of athetosis or of spasticity within the group. Children with spina bifida are grouped separately. The essential feature is the ability of the group members to develop effective inter-personal relationships. Groups mobilise great forces and these exert an extraordinarily

significant influence on the individual' (Kelber, 1966, as cited by Hári and Ákos).

The essence of conductive education is the team of conductors working with a group of children or adults. It is through the guidance of the conductors that the motor disordered learn the mental drive and skills they will need to be orthofunctional. The group setting provides both consistency and intensity. To illustrate my point I shall refer to a typical residential class group. This consists of 23 children and a team of 16 conductors working in four-hour shifts throughout the week (four conductors are trained staff and the remainder students). The group leader is responsible for producing and implementing the complex programme which runs from 7 am to 8 pm and covers all aspects of that which the children have to learn. All the members of the group share the same educational aims; they work towards common goals. The dysfunctional children have to learn to do what is spontaneous in normal children — from how to get out of bed, to how to sit on a chair to write in class.

The teaching methods used in conductive education are very effective and deceptively simple. A common goal is reached through a build-up of small steps within a task series. The task series provides the situation for problem-solving learning. By this means, each child's activity is promoted. It is essential that the children initiate the activity on their own, ie they develop the intention, or aim to reach the goal. The verbal guidance of speech or inner speech is used to direct conscious action (rhythmical intention). A specific goal is always reached through the same task series and verbal intentions, as repetition reinforces the learning process. The task series starts at a baseline where each group member can achieve noticeable success.

'In constructing a task-series it is essential to go down the hierarchy of goals until we reach an activity consisting of goals achieved already and so then the task series will build up from actions which each dysfunctional can carry out successfully. These actions form the individual tasks and it is by achieving their stated or "verbally (rhythmically) intended" aim that a dysfunctional person is able to learn the control leading to that action' (Hári and Ákos, 1971, p161). It is very important that the task series is a vehicle to an immediate result, that it leads to the fulfilment of the intended goal.

'Each day task series facilitate the satisfaction of all the social and biological requirements comprised in the daily schedule. Day by day the level of achievement required by the schedule rises' (Hári and Ákos, 1971, p165).

— Each part of the day is used as a learning situation and included in the complex programme which shapes the groups' daily routine. Common goals are shared, although individual methods of solving, or working towards the goal, will vary. The complex programme provides direction for both the group goals and any individual means of solution. It directs all conductors within the group on methods of facilitation required by specific children and specific situations. In this way, consistency and continuity of teaching are assured.

#### Personal Viewpoint

The immediate and striking feature of conductive education is the sense of enthusiasm and activity seen in its participants. There are no wheelchairs or special aids to rely upon — the aim is that the motor disordered will walk and work on their own. Most frequently, this is indeed what happens. Parents welcome and admire this concept and persevere with the same approach at home. The structure



The school choir

of the day is directed towards the achievement of practical goals. The dysfunctional's performance is observed and monitored by conductors working alongside the group, so any modification or facilitation which is necessary can be put into practice straight away. Success — no matter how small — is often immediate and exciting. 'Good results are a spur to further achievement' (Hári and Ákos, 1971, p144).

A goal-oriented approach is valuable. There is an aim and incentive to each session and the motor disordered person has the incentive to work towards a high, but realistic, expectation of success. Methods of recording performance can also be related to the acquirement of tangible skills and abilities. It is unfortunate that our present ideologies and methods of working have been compromised by the accessibility of specialised equipment and relative unavailability of staff.

In my own experience, and from what I saw in Hungary, working with children and adults in groups provides the most powerful tool for progress and inspiration. Furthermore, this method enables more people to receive a more intensive input than it would be possible to achieve with individual visits and therapy sessions. For example, in Hungary children with hemiplegia and diplegia are given intensive help by the institute. In the UK they often receive relatively little therapy or specialist help, because their physical problems are small compared to many other children in our care. Consequently, these children are in ordinary schools with little preparation or support and are left to face physical, psychological and social problems which can seriously impede their progress. The timely help of therapists and specialists in a regular group programme would enable these children to develop the self-confidence and physical abilities that they will need in the future.

Some of the most impressive and effective work that I observed at the institute was in the mother and child outpatient department. Parents and children from Budapest and the nearby countryside attend these sessions daily. The children start as young as six months of age and will progress through a series of groups at a rate depending on their speed of improvement. In the initial groups, parents worked with their children under the guidance of a small team of conductors, each of whom takes turns in leading part of the programme. The programmes are fast-moving and inspiring, based on the use of play and song. The parents become skilled at working with their children and teaching them new skills. Most important of all, the parents learn how to promote their children's personal activity.

In my view, the greatest advantages which this method provides were as follows:

1. It provides an excellent opportunity to see young children frequently — thus at a time of high potential, the children can be offered concentrated and intensive help. Physical aspects, basic functional movements and social skills can be introduced within the context of the group programme.

2. Parents work with their children at the earliest stages — they develop confidence and expertise with their own children under the guidance of professional help.

3. Parents can make contact with other families facing similar problems.

4. The group situation prepares the older children for the social aspects of school or nursery.

I feel that there is a significant degree of selectivity in the use of conductive education. 'It is the child's mental potential that is regarded as the most important pointer to the long-term outcome of conductive education, not the degree of motor difficulty, this is consistent with the approach's educational nature' (Cottam and Sutton, 1986, p44).

In the early stages of development some conductive education methods are relevant to all children with cerebral palsy. Conversely, it is the children with the capacity to learn who progress more quickly and achieve orthofunction.

There are a number of children who will benefit from an intensive structured day, as pioneered by the Peto Institute. They should be offered this facility in our own country. The present situation of parents in this country, raising large sums of money in order to pay frequent but short visits to the

institute in Budapest is unsatisfactory on all counts.

As physiotherapists, I feel it is up to us to recognise the need for trained and experienced conductors within our own facilities for children with cerebral palsy since we cannot offer conductive education as it is practised in Hungary. We, as professionals, work within the whole spectrum of disability — both physical and mental, sensory and motor. We have many methods and resources at hand to deal with what we see. To offer conductive education as the only answer would do both it and ourselves a grave injustice. What is important is that we see conductive education as a positive addition to what is already on offer and that we are prepared to acknowledge and learn from its methods.

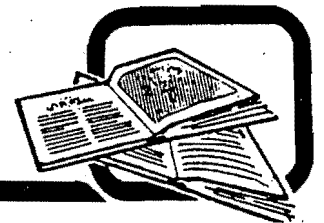
#### ACKNOWLEDGMENTS

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## journals



**AIDS Care: Psychological and socio-medical aspects of AIDS/HIV** Quarterly. £74 (individuals £37) from Carfax Publishing Company, PO Box 25, Abingdon, Oxon OX14 3UE. ISSN 0954 0121.

Started in March 1989, this international journal is a source for research and reports from the many disciplines involved in the AIDS/HIV field.

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Multidisciplinary forum for all concerned with rehabilitation. Includes scientific papers, review articles, reports on equipment, and case studies.

**Care of the Elderly: The journal for the age care team**. Monthly. £36 in UK from the Newbourne Group, Greater London House, Hampstead Road, London NW1 7QQ.

Multidisciplinary journal with a physiotherapist on the editorial board, started in May 1989. It contains news and professional

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**Crosslink**. Up to three times a year. Free on request from Marketing Services and Publicity Division, Bayer UK Ltd, Newbury, Berks RG13 1JA.

General interest magazine launched in August 1989, with articles on the space race, perfumes, photography, the environment and health matters. Its underlying purpose is to show the benefit of the chemical industry in everyday life.

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# Conductive education at the Petö Institute, Budapest

R O Robinson, G T McCarthy, T M Little

## Abstract

Conductive education, which was developed at the Petö Institute in Budapest, has been publicised incorrectly as a method of treatment for children with cerebral palsy. From the results of information given and our own observations during a week's visit to the institute we conclude that a minority of carefully selected children with cerebral palsy and spina bifida, who have a relatively good prognosis, are educated at the institute; the education is carried out with appropriate medical, surgical, and orthotic intervention; and the children probably function better as a result of the intensive programme than do similar children in Britain in areas where therapy is scarce. They seem to achieve, however, what we would expect similar children in Britain to do when facilities are adequate. Though our findings do not therefore justify using public funds to refer children to the institute, some (self selected) families benefit from a visit, particularly from the positive attitudes of the staff. The role of the conductor and the integration of programmes into a classroom setting have much to recommend them, and conductive education, if successfully transferred to Britain, might be beneficial to a wider range of children than in Hungary.

## Introduction

In the past two years the system of conductive education in Hungary has been rediscovered as a method of helping children with motor disability. The television programme *Standing Up For Joe* generated enormous interest, resulting in the formation of a parent pressure group, Rapid Action for Conductive Education (RACE). The Department of Education and Science has donated £300 000 to a research project at Birmingham University to evaluate the method. The project aims at training British "conductors" alongside a group of British children who will spend time in Budapest and Birmingham. It is hoped thereby to bring conductive education with fully trained conductors to Britain. Against this background we were invited to attend an international meeting on conductive education at the Petö András State Institute for Conductive Education of the Motor Disabled and Conductors College in Budapest for five days in June 1988. We describe our observations of the institute and the children we saw there, our interpretation of the information we were given, the results achieved, and our opinions about the availability of conductive education to children in Britain.

The essence of conductive education is that it is education; its most striking feature is that all the child's needs are met at any one time by one person—the conductor. Conductors are specially trained to educate children with motor disorder in all aspects of their needs. The children are given the opportunity to learn for themselves, through activity, how to overcome

their disability. It is assumed that they will not overcome their disorder. The specific solutions to overcoming difficulties are not given, as they might be if this were a method of treatment; the children are encouraged to discover the solutions for themselves.

The method was developed by Professor Petö, who lived and worked with a group of children with cerebral palsy. His aim was to develop "orthofunction"—that is, functioning adequately in society without aids. András Petö was a physician with training in rehabilitation and psychiatry; perhaps an indication of his insight is that he developed a method of education. He laid emphasis on training conductors by having them work alongside fully trained conductors in the classroom. As this training abolishes at a stroke discussion about multidisciplinary teams, their coordination, leadership, interprofessional relationships and responsibilities it is worth considering the conductor's role, not least because the success of the method depends crucially on them. Conductors (about 40-50 a year) are trained only at the institute. Applications are purposely invited mainly from school leavers rather than from people who have already received training in any form of therapy. Apart from intelligence and character the main requirement is to like and be liked by children. Most are women. Training takes place over four years, two of which are spent in teacher training in conjunction with a teacher training college. A third of the remainder is spent in theoretical work on basic medical sciences, principles of physiotherapy and speech therapy, and some foreign languages, and the remaining two thirds are spent working with the children in class groups with a trained conductor.

The relationship between the child and his or her conductor must be mutually enjoyable. The content of the programme is designed to maintain the interest of the child. Throughout the groups we watched enjoyment and motivation seemed to be high in nearly all the children and conductors. Programmes are worked out individually as a series of tasks in defined areas such as manipulation, drawing, writing, coordination of fine movements, etc. Sometimes the task is a means; sometimes an end. Achievement of tasks, in itself rewarding, is reinforced by the positive interaction within the child's peer group. The success achieved by the child and seen to be achieved by the group matures the social awareness of the child as well as his or her ability to contribute to the success of others.

It is potentially misleading to attempt an account of the service out of context of the community it serves. Some seven million of the 10.5 million people in Hungary live in the countryside, villages, and towns with populations of fewer than 200 000; some centralisation of services is therefore inevitable. Elementary schooling in Hungary is from 6 to 14 years. Most children naturally go to normal schools; 8% do not, entering schools for the blind, deaf, and mentally or physically handicapped. To go to a normal elementary

Chailey Heritage Hospital,  
Nr Lewes, East Sussex  
BN8 4EF

R O Robinson, FRCP,

consultant paediatric  
neurologist

G T McCarthy, FRCP,

consultant neuropaediatrician

T M Little, FRCP, consultant  
paediatrician

Correspondence to:  
Dr Robinson.

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school a child must be able to walk. There is no provision for wheelchairs in normal schools; integration of the physically handicapped is not attempted. There is no secondary education at the institute.

The institute caters mainly for two types of physical handicap: cerebral palsy—which has received most media attention—and spina bifida. Hungary has a prematurity rate (proportion of all births of below 37 weeks gestational age) of 10%. Ultrasonography for use in pregnancy or in the neonatal period is rarely, if ever, available. Screening for maternal serum  $\alpha$  fetoprotein concentration is available in Hungary, although without ultrasonography to localise the placenta we were not clear how this information was used in practice. Treatment is offered on a selective basis for children born with open spina bifida. Each child in Hungary is examined six times in the first year of life. By decree all children with suspected cerebral palsy are to be referred to the institute for further assessment. Ascertainment is unlikely to be complete; of the 496 children aged under 5 years seen in 1982-7 at the institute, 159 were self referred, not being previously among those notified. These figures and others we were given were not broken down by country of origin; most, probably over 95%, were Hungarian drawn as implied from all over the country.

### Cerebral palsy

#### ASSESSMENT AND SELECTION

Assessment is carried out by an experienced conductor, who has medical and other reports available. The time this takes varies, although some children from abroad are offered a half hour's assessment without further commitment. Although the conductors use what seems like a checklist, the essence of the process is one of conductive observation—that is, working with the child not only to assess the level of development but also the extent and quality of responsiveness. Although essentially subjective, we judge from the obvious high quality and experience of the conductors we saw working with the children that the assessment is accurate in terms of assessing the suitability of the child for treatment by the institute—in other words whether the child does or does not have a fairly good prognosis (see below).

Children are not accepted at the institute if they have one of the following problems: mental handicap sufficient to impair responsiveness to conductors' requests; impairment of vision or hearing; poorly controlled fits; progressive disorders; biochemical disorders; and major orthopaedic problems, including limb reduction. Undoubtedly, some parents choose not to take up the option. We have no data on how large this group is nor on subsequent achievement.

The effect of the selection process may be judged as follows. About 1000 children were assessed in 1982-7, including children of all age groups from Hungary and abroad. Of these, 496 children aged below 5 years we have already referred to. Table I shows the disposition of method of working with these children. The children who were not treated were excluded because of orthopaedic and other problems. Table II shows the percentages of children with types of cerebral palsy treated in the institute as a proportion of those registered nationally. From our own observations of the children our practice would be to label most of those with ataxia as having moderate choreoathetosis, and we would call a proportion of the double hemiplegia group spastic diplegia.

In 1987, 201 children were accepted for inpatient treatment at the institute; table III shows their distribution by diagnostic categories of cerebral palsy. Fifteen eight entered the kindergarten groups (for



FOUNDATION FOR CONDUCTIVE EDUCATION

TABLE I—Method of working with 496 children aged below 5 years with cerebral palsy 1982-7

	No of children
Outpatient	160
"Country-side network"	116
Parent group	157
Admitted	13
Not treated	50

TABLE II—Types of cerebral palsy among children educated at institute

	Proportion of cases registered nationally
Diplegia	8.7
Double hemiplegia	11.3
Hemiplegia	1.5
Athetosis	10.3
Ataxia	3.7

TABLE III—Number of children educated by type of cerebral palsy, 1987

	No
Diplegia	50
Double hemiplegia	95
Hemiplegia	16
Athetosis	32
Ataxia	8
Total	201

TABLE IV—Intelligence quotients in 237 children\* educated at institute

Intelligence quotient	No of children
<50	20
50-70	68
>70	149

spasticity were either born early (at 6-8 months' gestation) or had low birth weight (<2500 g), but we were unable to determine the proportion with evidence of intrauterine growth retardation. Neither of these variables applied to any of the children with athetosis or "ataxia."

Whether the same selection criteria are applied to children from abroad is doubtful. We briefly saw a group of non-Hungarian children, some of whom were older than the other children in that part of the institute, and many of whom seemed to be more severely handicapped. Of 27 children admitted from the pressure group in Birmingham, however, 19 had been worked with in Birmingham and 10 had just completed a six month course at the institute.

Further indirect evidence of the effect of the selection procedure may be obtained from the results of psychometric testing, which children at the institute now undergo. The Stanford Binet test is used, modified for and standardised on children from Budapest. In 1987, 237 children being treated at the institute were assessed; 155 had spastic forms of cerebral palsy, 42 had athetosis, and 40 had spina bifida. Table IV shows their distribution by intelligence quotient.

#### TREATMENT GROUPS

We were able to see the school for parents as well as the kindergarten and elementary school groups. In general, the children were alert and eager, their conductors lively and enthusiastic. Work flowed naturally from one activity to another. The children's attention was held—they seemed to be unaffected by our presence. The children live and work in the same room. There is little evidence of personal space. The children go home on alternate weekends and during the holidays. Their day starts at 6.30 am, the younger children having an afternoon rest.

#### School for parents

Work with the youngest children (aged below 3

connect it with intellectual development. The parents, usually the mother, who live(s) near or in the institute with the child for two to six week periods, return(s) home with a programme for a similar period, and then reattend(s) the institute for further courses of similar time intervals. The home programme, presented as a daily routine with tasks set for the family, is understood as an operational plan with aims and a prognosis. It is built round the structure of mealtimes; little time is unused, and rumination is replaced by activity, which is thought to improve the relationship between dysfunctional children and their families.

#### Kindergarten

In the kindergarten section there were three groups of children (aged 3-6 years) with eight conductors and one leader for each group: two conductors were trained, the rest were students. This means that each child had several adults to relate to. We were told that the children usually settle down quickly in their groups, any behavioural problems being rare. Problems are more likely to occur after the children have left the institute and have lost the security of their "group family." Much of the group activity we saw with the children with cerebral palsy was carried out with bare feet and legs. Some of the children wore crude splints made by the handyman, which were gutter backed and some of which had wooden soles with padding.

#### Spina bifida

Although some children with spina bifida have been admitted to the institute since the 1950s, it seems that only recently has a programme incorporating their particular medical requirements been designed specifically for them. There is now a school for parents specifically for children with spina bifida, one aim of which is to prevent the development of contractures and decubitus ulcers. Like the children with cerebral palsy, those with spina bifida move into the residential unit at the age of 3.

The incidence of spina bifida is still high relative to other developed countries. About a third of all physically handicapped children in Hungary have spina bifida (and these are only the survivors of the neonatal period). Some idea of the degree of selection may be obtained from the numbers of children with spina bifida currently being treated at the institute compared with the numbers born each year in Hungary (table V). The effect of selection may be

TABLE V—Numbers of children with spina bifida in Hungary and currently educated at institute, 1979-84\*

	1979	1980	1981	1982	1983	1984
Total	128	110	152	107	112	91
Treated at institute	1	4	7	4	5	1

\*Excluding children not surviving or children discharged from institute

gained from the numbers of children with different levels of the lesion: thoraco-lumbar (two), lumbar (one), lumbosacral (19), as well as by the mean intelligence quotient (105.7), with only two having a quotient <70 (table IV).

#### BLADDER CONTROL

We observed a group of children with spina bifida carrying out their bladder conditioning programme. We were told that this takes place for 20 minutes in every hour initially, becoming less frequent as the

The aim is to establish a conditioned reflex, and it seems that this programme is used indiscriminately, without knowing what the urodynamic profile is for the individual child. Sessions are carried out every hour, also at 11 pm and 3 am. The children were sitting in a row on their potties wearing nothing below the waist. They carried out a vigorous programme of swinging backwards and forwards in a sitting position, deep breathing, tapping their abdominal wall, pushing their abdomens in and out actively, and had some help from the conductor with sacral tapping if the bladder did not empty. The programme was carried out to an active chanting and clapping regimen, the conductor urging the children on. The children stood up to look into their potties using the "saucepan" handle to give them support and balance. Urine volume, if any, is measured at each session and totalled for the 24 hours. The aim is to increase the dry periods so that by the time the children leave they can sit on a toilet, emptying their bladder without difficulty. No mention was made of bowel training, but we assume that this degree of concentration on the bladder must also cause emptying of the bowel fairly regularly.

#### OLDER CHILDREN

We also observed a group of children aged 5-9 years with spina bifida, who were carrying out a movement programme together. They walked through a complex of rooms over various obstacles to collect a number of shapes to make a complete picture. Various methods of walking were used; some children were wearing calipers, including long calipers. Many of the children had pronounced lordosis as well as inadequate support from their orthoses, with consequent hyperextension of their knees. We thought that some of the unusual postures may have developed from the overenthusiastic use of what are called "fixation exercises," in which children fix their paralysed legs in extension and develop active muscle strength in those muscles that worked by taking their weight on the hands forwards on to the floor and climbing up the ladderback chairs using their arms. This clearly strengthens the child's arms and back but tends to accentuate the effect of weak hip extensors. As with the cerebral palsy groups movement was used as part of the learning process.

#### Countryside network

We were given few details of how the countryside network operates. It is probably run by trained conductors based outside the institute, sometimes supplemented by conductors visiting from the institute, who work in kindergartens, special schools, or in adult institutes.

#### Participation of other disciplines

We met several conductors who had gone on to take further specialised training—for example, in speech therapy or psychology—who seemed to act as advisors to groups of conductors. We understood that each child in the institute saw an orthopaedic surgeon once a year. Vision and hearing were checked regularly. Referral to specialists was initiated by the conductors. We were not given details about their training for indications for referral.

#### Adult groups

The institute also treats adults with acquired neuro-motor disorders. We saw a group of people with Parkinson's disease and a group with a mixture of other





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disorders, chiefly multiple sclerosis, who seemed to be enthusiastic and enjoying the work.

#### Overall results

Some 9000 children have been or are currently being worked with by the institute as either inpatients or outpatients. Some 3000 have been discharged from follow up; 5000 have been discharged from the programme but are still being reviewed, leaving 430 currently receiving active treatment at the institute—that is, an average of about 33 in each year cohort.

The overall figure for discharged children is that 73% have become integrated—that is, they have attended and coped with normal schools (possibly being excused physical education and some craftwork) without walking aids or other aids. This figure varies by age at discharge; 80-85% of the 3-5 year age group have become integrated and 50-65% of the 14 and over age group. Children naturally leave as soon as they are judged to be ready for normal school; thus 30-50 leave each year from the 6 months-2 year age group to go to normal nursery schools. Table VI shows the numbers of children in the 3-14 year age group discharged each year to normal schools from 1985 to 1988.

TABLE VI—Number of children aged 3-14 years at institute and number discharged to normal schools, 1985-8

Year	Children at institute	Children discharged to normal schools
1985-6	167	22
1986-7	210	17
1987-8	237	32*

\*Includes 15 finishing at primary schools and going on to normal secondary schools.

To prepare a child for leaving the conductor arranges visits to the new school and accompanies the child on several occasions. The conductor is also responsible for following up the child's physical progress after leaving the institute.

We have few data on results in the children with spina bifida. Five of the 22 children with spina bifida currently residing at the institute are about to be discharged to normal schools. We were given several figures on the acquisition of urinary continence but not at what time interval this was achieved.

taken to mean that considerable and worthwhile improvement has not occurred.

#### Discussion

We found it most helpful to have been given a clear picture of the selective policy at the institute for it is against this that results must be judged. It seems likely that the policy is operating against a background of an incompletely developed obstetric and neonatal service, in which survive fairly large numbers of preterm, otherwise non-handicapped, children with spastic types of cerebral palsy.

In addition, our own observations at the institute strongly suggest that most children had fairly modest spasticity or, in the case of children with what we would term dystonic choreo-athetosis, minor degrees of dystonia and fairly modest degrees of unwanted movements. Each group, however, had one or two more severely affected athetoid children who had constant one to one assistance. No children with fixed or rigid types of dystonia were seen, nor as far as we could tell were there any children with mixed types of cerebral palsy (neither did they emerge from the statistics we were given). The effects of the selection procedure are expected to result in the modest degrees of disorder we observed. Our overall impression is of children mainly of good cognitive potential with fairly modest motor disorder, who achieve near normal functioning.

It would be presumptuous to attempt more than a superficial assessment of the effect of therapy at the institute compared with our own practice and that elsewhere in the United Kingdom. In general, most children achieve what we would expect from the better provisioned facilities in this country, and they may do better than such children from areas where such provision is scarce. The more severely athetoid children acquire impressive motor organisation with continuous attention, perhaps achieving more than we have seen elsewhere.

From this, two questions arise; firstly, Should we send children to Budapest for treatment? We think not. Children whom we would like to see do better in England would not be selected for treatment at the institute. The question should not be taken to subsume the question, "Should children go to Budapest for treatment?" We do not feel justified in recommending expenditure of health, social services, or educational funds for this purpose. We do not, however, wish to minimise what might be called the "pilgrimage effect"; this has several components. It should be borne in mind that parents who go to Budapest have in common high motivation, a feeling of dissatisfaction with the services received in the United Kingdom, and a very strong desire to see good results from their considerable efforts and sacrifices. They also undoubtedly gain strength from sharing with others in this self selected group the experience of going to the source of their inspiration. In addition, of course, this is reinforced in some cases by real improvement as the result of an intense therapy programme. Finally, and perhaps most importantly, they gain additional inner resources to care for and be involved in the continuing management of their children from the cheerful, encouraging, and positive attitudes of the doctors and, particularly, the conductors at the institute. This is sometimes at variance with the messages they perceive they have received, particularly from the medical profession, and should cause us to examine closely our own methods of counselling and management.

We have some reservations about the management of spina bifida, if not about the method applied then

potty. Even given that they can learn things other than urinary continence during this time, this does seem an inappropriate investment (a) without knowledge of the bladder pressure or volume characteristics, and (b) when intermittent catheterisation for many will achieve the same end in a much shorter period. We predict that the exaggerated lumbar lordoses observed will cause secondary problems in future.

The second question is, Should conductive education be available in Britain? Part of the pilgrimage effect may derive from the distance concerned as well as the effort in getting there. A more practical question, however, concerns two aspects which we believe are applicable across cultures and with differing methods of providing health and education—that is, the method as a model for offering integrated care and the emphasis on improving function through the activity of the child.

#### INTEGRATED CARE

To one person, the conductor, devolves the responsibility for education, physiotherapy, and speech and occupational therapy for the children and much, we suspect, in the way of social work and counselling for the parents. In Hungary conductors also attempt to act as substitute parents, about which we have reservations. But there can never be any doubt in the minds of the parents as to who is responsible for their child. This may be contrasted with the situation often found in Britain. Although the Court report has done much to integrate child care services, medical care is still delivered via a tripartite (and in the case of tertiary care quadripartite) structures. The therapy services are similarly fragmented, different forms of therapy being delivered at separate times, often in separate places, and with or without parental involvement, to preschool children. Some degree of integration may or may not be achieved at professional level, possibly at meetings of the district handicapped team, again with or without (usually without) the parents present. Other methods of multidisciplinary management exist. We do not think that adequate integration (which really means reinforcement of a range of functions to meet agreed goals by a wide variety of means) can be met unless the teacher and therapists concerned with the child are, at a minimum, all working together at the same time and in the same place. In practice, as children spend most of the working day in school this means the classroom.

It has been argued that the four year training of conductors cannot hope to provide them with the combined theoretical background and skills of qualified physiotherapists and speech and occupational

therapists. This is perhaps less relevant because children at the institute represent a very narrow diagnostic group. Therapists in our services will always be asked to help a far greater variety of types and grades of severity of physical handicap. Though these points are undoubtedly true, they may be offset by (a) supervision from specialised professionals and (b) the advantages of integration of disciplines in one programme carried out by one person.

#### FUNCTIONAL IMPROVEMENT

For many years many forms of physiotherapy, most notably perhaps in Britain the Bobath method, have entailed active participation of the child. The idea that physiotherapy simply entails passive stretching should be long gone. We wish to emphasise, however, that by including so many different forms of activity to reinforce the aims of the physiotherapists, the Pető method has much to offer. Indeed, the actual content of the programme may have little new to offer to the experienced therapist; what is particular to the method, however, is the imaginative and varied way the activities are offered to the children. We are very conscious that this is difficult to describe and that we are bound to have fallen short in some respects. There is, unfortunately, no substitute for seeing the programme in action.

We are perhaps fortunate in Britain in not necessarily having to be so constrained by the concept of "orthofunction"—adequate functioning in normal school without aids. There is no intrinsic reason why, with our more integrated school system, this criterion for selection should not be considerably relaxed in due course. Indeed, with our present system of education it would surely be advantageous to give teachers of physically handicapped children some training in basic physiotherapy and speech therapy so that they may supplement the work of the therapists. We also have a higher quality of orthoses as well as of communication and other aids.

The Pető Institute runs six week courses for interested teachers and therapists, and we recommend these to staff who work in special education. It is possible that eventually conductive education might find greater application outside its native Hungary.

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## ANY QUESTIONS

*Clinodactyly is a deformity associated with Down's and Larsen's syndromes. What is the mechanism of the deformity?*

Clinodactyly is congenital curvature or deviation of a digit beyond 8°. In the hands it most commonly affects the fifth finger, which shows incurvature (radial deviation). In the feet the affected toe varies; incurvature of the fourth and fifth toes being common, as also is clinodactyly of the second toe with overlapping of the third. Clinodactyly is caused by hypoplasia of the middle phalanx, which may be short, wedge shaped, or even absent. It should not be confused with camptodactyly, which is flexion deformity of a digit caused by soft tissue abnormalities.

Fifth finger clinodactyly is certainly common in people with Down's syndrome and is also seen in Klinefelter's syndrome and in several other

multiple X syndrome disorders as well as in trisomies 4p, 9p, and 20p and several partial chromosome deletion syndromes. In addition, it occurs in several non-chromosomal syndromes such as Seckel's syndrome, de Lange's syndrome, and occasionally Prader-Willi and Williams syndromes. It is also a fairly common isolated defect when it can be inherited in an autosomal dominant manner. It is not, however, a common feature of Larsen's syndrome, in which hypoplasia of metacarpal bones rather than phalanges occurs.—M d'A CRAWFURD, consultant clinical geneticist, Harrow, Middlesex.

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# A Conductive Education Approach to Stroke Patients At Barnet General Hospital

ROWENA KINSMAN BSc MCSP

District Physiotherapist, Barnet Health Authority

**Key words:** Conductive education, task analysis, group, language, learning, practice.

**Summary:** This article attempts to explain how and why a conductive education approach has been introduced into a small District general hospital. There is no stroke unit in the hospital. The patients are normally seen once a day for five days a week. Although the hospital life is structured, it is around professionals and their working hours rather than stroke patients' needs. Initially these patients need care and are handled to provide better posture. They then need to learn how to function, each to their maximum potential. A conductive education approach seemed one way of providing stroke patients with more opportunities in which to learn how to function.

**Biography:** Rowena Kinsman, although a District physiotherapist, is involved in the active treatment of patients with neurological dysfunction. She has always been interested in providing patients with opportunities to learn and believes that conductive education has a lot to offer in the management of patients with neurological dysfunction. She first came across conductive education some ten years ago when secretary to the Hemiplegia Interest Group, now the Association of Chartered Physiotherapists Interested in Neurology. Since then she has become more involved. She has visited Hungary and is currently chairperson of the Conductive Education Association. She teaches the conductive education approach both in this country and abroad and was involved in designing the course for adults, a validated course for both occupational therapists and physiotherapists.

BARNET General Hospital is a small District general hospital in north London. Patients who have had a stroke are scattered about in medical beds or beds for the elderly that are far from the physiotherapy department. Patients are normally seen once a day, five days a week, by the physiotherapist and two or three times a week by an occupational therapist. Physiotherapists meet with other staff involved to discuss the rehabilitation of the patients.

Nevertheless, despite this input, patients appear to do movements that they were not taught. For example, stroke patients in Barnet are always taught to stand up taking weight through the affected leg, yet when observed out of treatment are to be found standing up taking maximum weight through the unaffected leg. It seems this is the learned response when standing up. Such a response poses many questions about the efficacy of physiotherapy, the workings of the multidisciplinary team, and whether patients are in the right environment to learn how to function.

Patients who come into hospital as a result of a stroke are initially confused, disorientated and may have lost the ability to move easily. In hospital once their condition has stabilised they need to learn to function to their maximal potential. A functioning person can be described as someone who can perform activities throughout the day and in any environment as a whole person. Staff at Barnet felt that given the current resources in physiotherapy and the lack of consistency in staff of other professions owing to staff shortages and the necessity to employ agency staff, it was difficult to provide patients with sufficient opportunities in which to learn how to function. A conductive education approach seemed one way of providing our stroke patients with more opportunities in which to learn how to function.

## The Daily Schedule

Initially it was decided to look at the patients' day and see whether it was possible to structure it so that the patients' needs were met, rather than ours as physiotherapists which follow a professional model working from nine to five o'clock with time out for meetings and personal development. In other words the professional model does not provide a consistent service, nor does it provide the environment for patients' learning. To learn it is necessary to have opportunity in which to learn, to practise, and to generalise skills learnt. In fact, there needs to be a very structured day that is geared towards the patients' learning needs, ensuring that every patient is given the opportunity to learn and practise how to function throughout the day. Conductive education as devised by the late Professor Peto provides a system of consistent management that is concerned with learning and combines education and therapy theories. In Hungary conductive education is practised by conductors who have been trained for four years. Others, who have not trained for four years, have adopted some of the principles of conductive education. Their work is based on what they have seen and/or read about and goes together with their own professional training, be it physiotherapy, occupational therapy, and so on.

At Barnet, we looked to conductive education to meet the management and educational needs of our stroke patients. Stroke patients in Budapest are seen on a long-term out-patient basis. However, in Barnet we see in-patients who have had a recent cerebrovascular accident. Not surprisingly our stroke patients have a range of disabilities, are often depressed, and lack motivation. Physiotherapists are also only part of the overall team managing the patients through this period of rehabilitation. A conductive education approach, besides providing our patients with more opportunities in which to learn, also helped members of the multidisciplinary team learn how to structure the patients' day.

Stroke patients in Budapest attend the institute as out-patients on average two or three times a week; during these sessions they work for two to three hours. Although ours are in-patients, they needed an opportunity to work for a long period of time so that they could practise and consolidate what they had learnt. By restructuring the physiotherapists' working day it was possible to allow stroke patients to attend the department twice a day, for a group session and an individual session, thereby increasing the learning opportunities for the patients.

These group and individual sessions are a forum in which to teach the patients and form part of their day known as the daily schedule. This should encompass all activities from waking up to going to bed. Activities such as eating are often taken for granted by the multidisciplinary team and left to the patients to do somehow or other. Budapest caters primarily for children and these activities are important, being taken into account when determining each child's daily schedule so as to give a smooth flowing rhythm of the day. No attention to detail is spared.

another. From the literature and word of mouth, it is not clear how continuity is achieved by adults attending as out-patients in Budapest, obviously long sessions at the institute help as do the personality of the conductors and the whole motivating atmosphere of the institute.

At Barnet it is difficult to have a smooth flowing rhythm of the day. However, there are regular group and individual sessions run by physiotherapists and occupational therapists, who meet weekly to discuss patients' goals for the week, and after every group the therapists discuss whether a patient has achieved the expected goal for the session and if not how the programme for the group or the individual session can be developed to help the patient achieve this aim.

### Multidisciplinary Co-operation

It is accepted that in Barnet it is the responsibility of the therapists to teach the stroke patients how to learn to function to their maximum potential and it is acknowledged that this is not achieved by group and individual sessions alone. Without support and help from nurses it is not possible to provide a meaningful day for the patients or ensure that they are given the right opportunities. This support is not easy to organise because although the rehabilitation of the stroke patients is all-important to us, it is just part of the nurses' responsibilities on a general medical ward; and most therapists work a nine-to-five day. Nurses have a routine of drugs, doctors' rounds and so on, as well as a counselling role to patients and relatives, to name but a few. If therapists are to tackle the daily schedule of stroke patients and acknowledge the importance of this, it is essential to spend a lot of time communicating with nurses on how individual patients move and how they can help. This may involve teaching nursing staff normal movement therapy, as well as spending time talking about skill acquisition and the importance of functional goals. It is then the nurses who will ensure a smooth flowing day for the patients, providing opportunities for them to practise skills learnt in therapy sessions.

At the Institute in Budapest there is no multidisciplinary team; the conductors have been trained for four years to meet the needs of motor disabled people needing to learn to function. Although this system has obvious advantages in that there are no professional demarcations between staff, it is very dependent on leadership and does not encourage the use of other modalities that may be helpful to a person with motor disability. For instance, some patients may benefit from a speech therapist's knowledge, of communication aids and through using such an aid be better motivated to work at the motor loss incurred because of the stroke.

At Barnet we rely on the nurses to carry out the daily schedule. Wherever possible the patients are involved in planning this schedule by meeting with the nurses and ward therapists to decide what activities need to be practised.

### Goal Setting and Task Analysis

Function goals are established — sessional, intermediate and long-term. For example a sessional goal might be drinking from a cup, the intermediate goal would be independent eating, and the long-term goal independence in activities of daily living. All goals are functional. A function such as drinking from a cup is analysed, and broken into smaller parts known as tasks which are further broken down into task parts — the movements that need to be practised

function. There may be several tasks in any one function. For instance in taking a cup to the mouth, the tasks would be sitting, holding the cup and then taking the cup to the mouth. Each of these tasks can be broken down into task parts. The process is known as task analysis.

### Task analysis of taking a cup to the mouth

Tasks	Good sitting	Holding the cup	Cup to mouth
Task parts	1. Feet flat 2. Bottom back	1. Make a fist 2. Bring out the thumb 3. Bring out the fingers 4. Make a tripod grasp 5. Hold the cup	1. Fix elbows 2. Keep flat hand still 3. Take cup to mouth 4. Lift up cup 5. Drink
	2. Head in the middle 4. Head straight 5. Hands flat on the table	6. Pick up the cup	

Patients initially learn the movements they need in group and individual sessions. They then have opportunity to use these movements in the ward and then later on at home. Because for many patients there is only one way to do the movements, this practice time is very important, for it consolidates what patients have learnt throughout the day in a different environment and with different people. It is essential that nursing staff know how each patient moves to achieve particular functions, and that the patients are expected to do things correctly. This will help them to build up a repertoire of movements based on functional activities.

Because of staff turnover and nursing schedules it is often difficult to ensure that the patients' day includes opportunities to practise, and often the therapists will have to spend a lot of their time with nursing staff or even forfeit the individual sessions.

The individual treatment sessions are generally used to find ways for the patients to perform better within the group session. They can be viewed as coaching sessions in which patients are guided to find their own solutions which they will use in the group.

### Group Conducting

The group sessions are led by one therapist acting as first conductor and others as second conductors. The first conductor runs the session and knows each member of the group and how each is feeling that day. Patients should be treated with respect and consideration and introduced to the other members of the group. The first conductor states the goal for the session. Because Barnet is a small hospital there are never very many stroke patients at once, and as these have mixed disabilities, it is difficult to have a homogeneous group. In view of this there often has to be more than one goal for a session.

Once the goal is stated, the movements needed to achieve the goal are described, demonstrated or illustrated. The language known as rhythmical intention used in the session is explained, and each of the participants is asked to join in with the intention and rhythmical counting. Initially the conductor will state the intention, and then the group will say it together; during this phase the conductor's voice should be raised. Only when the rhythmical counting is taking place do the patients move. The movement must

match the intention, which never varies, although the way in which it is achieved may. The conductor should know the response and what level of response is acceptable. If the response is not acceptable then the intention needs to be changed, or the patient facilitated by a second conductor, using an individual session later to resolve the problem.

The programme for the session should not be static and should develop as the patients progress. The therapist acting as a conductor is in effect conducting the group, using task analysis, rhythmical intention and her/his own personality to get the most out of each patient within the group and the whole group. It is a dynamic process in which patients are learning. This is of course facilitated by being in a group where patients have opportunities to work together for long periods, to learn vicariously and to experience the feeling of movement. All this is motivating and encourages the patients to be committed to the task of learning how to become functional again. Patients observe their progress and that of others and are able to share this progress before or after the group session starts, thereby developing their social skills. This helps them accept the disability and concentrate their energies on learning how to become a whole functioning person.

In using this approach at Barnet we always have to be aware of our own limitations, especially with staff, who are ever-changing and always in short supply. We therefore have to be especially careful when planning the group sessions, making sure that the task analysis is accurate and that we know which patients need particular help (facilitations). We have to pay attention to all factors that might motivate the patient and help him/her learn. We expect our patients to come to the session motivated to learn, therefore it is essential that we do not let them down, for example by not having the room ready.

If patients are in a learning environment geared for their own needs as well as that of a group it will help them learn. That is why the whole system of conductive education is described in the literature as a facilitation. Obviously, if the day is broken up because of staff meetings, ward rounds, visitors and so on (to name but a few) it has to be recognised that patients are not in a total learning environment and may not learn as much or perhaps their rehabilitation will be longer or be less complete.

#### Individual Facilitations

Within the whole system there are individual facilitations, the most important of which is rhythmical intention already mentioned. This is the term used by Peto to describe how language can be used to plan, intend and carry out a movement. The theoretical background is not well known, for Peto wrote little about conductive education, and there have been few publications from the institute and these mention little about the underlying theories. It is known that Peto was influenced by the works of Pavlov, Luria, Vygotskii and Bernstein; nevertheless it must be remembered that conductive education was being practised while some of these neuropsychologists were writing their theories.

Peto is quoted as saying that children should 'speak at all times' and patients with motor disability should use speech to intend an action, thereby learning to use speech to plan a movement. Among psychologists there is general agreement that speech can have a regulative function but it is not clear how it works with the normal, let alone the brain injured person. Speech regulation usually refers to

components of speech that are used to aid, regulate or control a movement. For instance when teaching how to drive a car, the instructor describes the process, instructs the learner, anticipates problems, and provides a constant feedback. As the learner becomes skilled, so the prompts or regulation are withdrawn and driving becomes an automatic process, only changing in an emergency when the driver may use language as a prompt.

In conductive education, language is used to help stroke patients. Functions are described and then stated as movements in the intention. The room becomes filled with noise, eliminating any distractions and thereby facilitating the patients' concentration. The patients learn to intend every movement until this becomes automatic. Initially there is an intention for every movement, but as the patients begin to control their bodies it is possible to leave out the intentions and do the movement as a whole. For instance when patients learn to put their hands on the table they initially need to go through many stages, but after a while the intention 'I put clasped hands on the table' is sufficient.

At Barnet rhythmical intention is used in all the group sessions, but not in the individual sessions. The latter are viewed as coaching sessions and allow us to adapt to the mixed abilities within the group. Those who have difficulty in the groups are further prepared and those who find the group work easy are given more challenging tasks in the individual sessions.

It is rare that patients complain about the group sessions, in fact they welcome the opportunity to have so much time in which to learn how to move and achieve functions. When working with adults the functional goal is always done at the end of the session and is not controlled. For example if the goal for the session is buttering bread, the patients practise the movements they need to achieve this and then at the end of the session they butter the bread in their own time, being helped as and when necessary by the therapist/conductor. We try at all times to remember that our patients have known normal movement, unlike children for whom conductive education has received so much acclaim. To this end we help the patients learn to control their movements so that they can participate as a whole person in society.

Dr Hari, the director of the institute, states: 'The primary aim of conductive education is to stimulate a developmental process which would not come about spontaneously, and which will continue subsequently even when the child has been discharged from our institute and has been integrated in a regular kindergarten or school.'

#### Conclusion

Our aim in using conductive education is to provide our stroke patients with a consistent approach and as many opportunities as possible in which they can learn to function. Patients learn to work with different staff for ever-increasing periods of time and in different environments, for example the ward and the department. Also, conductive education helps staff learn to work together sharing in patients' goals and their successes.

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# The Petö principles: one patient's experiences

Much debate surrounds Conductive Education and the Petö Institute in Budapest from which it originates; not least whether its principles and their application are significantly different from those practised in the UK. Now at least some of those doubts can be laid to rest by this first-hand account, by a patient who is also medically qualified, of how Conductive Education is practised at the institute

By John Williams PhD MB ChB, Department of Biochemistry, University of Bristol Medical School

The potential value of rehabilitation in the management of Parkinson's disease has been the subject of much debate. Most notable is the work of the Petö Institute in Hungary—with conflicting positions being taken on its significance and even on what the Conductive Education method entails. In September, 1987, I spent three weeks as a patient at the Petö Institute to gain experience of this method in the management of Parkinson's disease. During my stay in Hungary I kept a detailed diary of events, impressions and conjectures. This report is based on the diary.

By way of preparation for my visit I took lessons in Hungarian, which proved to be very valuable. I also read as much of the literature on Conductive Education as I could find, but on the whole it was mystifying rather than enlightening. Thus, I had acquired a number of preconceptions about the system. It will be useful to describe them at the outset.

### Controversy

I knew that some aspects of the work of the Petö Institute were controversial, and that intensive programmes of re-education can considerably improve function in children handicapped by cerebral palsy<sup>1</sup>. However, the results currently being obtained in

this country generally fell far short of those reported in Hungary, and disagreement and hostility had arisen between the parents of afflicted children and the doctors and physiotherapists caring for them. An urgent question was: what precisely is Conductive Education and how does it differ from other rehabilitation methods?

It appeared that workers at the Petö Institute had also been successful in rehabilitating adults with defective motor control following strokes, multiple sclerosis and Parkinson's disease. It was, therefore, hard to understand why the majority of neurologists and geriatricians, both in the UK and in Hungary, appeared not to have heard about Conductive Education. Were different definitions of success being used? Were the

"The group joined in, endeavouring to reproduce the conductor's actions, and chanting the count 1, 2, 3, 4, 5"



## How the Parkinson's Disease Clinic brought a troubled patient new hope

The weekly PD clinic is held in the city's largest health centre, with easy access. It opens at 9.00 am and by 9.15 is pulsating with activity. At the group physiotherapy session, which is being led by two young women, the noise level is remarkable; the 20 to 25 patients taking part declaim numbers with much emphasis as they perform long sequences of exercises. The two leaders (or conductors) are using a Hungarian system of conductive education which they learned at the Foundation for Conductive Education, Birmingham University. Being among the first graduates, they are very enthusiastic and great sticklers for accuracy. Clearly, the patients are having an enjoyable time. There is almost a party spirit as a speech therapist takes over and the exercise is to inflate and burst paper bags. But we are here to listen to the account of just one patient.

Alan, a 46-year-old schoolteacher

and good amateur violinist, has been troubled with tremor of his right hand for about six months. Even earlier he had felt depressed and vaguely aware of something amiss.

Lately, his work has begun to slip badly and his inability to hold his pupils' attention has brought questions of retirement, even redundancy, into his mind.

Dr Lyle (general practitioner) suspects that Alan has PD from the resting tremor and absence of arm-swing when he walks. He refers Alan to the PD clinic to be held in one week's time. In the meantime, Dr Lyle checks the patient's general health and has some chest x-rays taken.

Dr Baker (consultant neurologist), confirms Dr Lyle's diagnosis and briefly reassures Alan: "This thing won't kill you, if you decide not to let it."

One week later, our Alan meets Dr Baker again. This time a

psychotherapist is also present, Dr Daniels. After some discussion of the notes, Dr Daniels asks the patient what he regards as the most important goal in his life now; Alan replies that it is to stay at work for as long as possible. All three agree to his starting antiparkinsonian therapy at once with selegiline (Eldepryl) 5mg x 1 daily and levodopa and benserazide (Madopar) 62.5mg, starting at one capsule daily and building up slowly to a limit of five daily. Alan is taught to recognise the symptoms of dopa toxicity. Dr Daniels tells Alan that he can call at the clinic for advice on any social, emotional or other psychological problems.

Five uneventful years pass. Alan has allowed himself slightly more Madopar than the agreed limit of five capsules per day, but from time to time has kept in touch with Dr Lyle. He has joined the Parkinson's Disease Society in order to

patients not comparable in some unsuspected way? Was it possible that cultural/philosophical/political differences between the two countries were responsible for the superior results obtained at the Petö Institute?

Assuming for the moment that Conductive Education is effective in restoring function to the parkinsonian patient, how does it work?

The idea of retraining the damaged brain did not seem to be ruled out by current neurological theories, which recognise plasticity of brain structure and function; such retraining would involve re-routing instructions through remaining intact brain structures and also the conscious provision of extra sensory inputs at certain points, as in the practical "tricks" already used by parkinsonian patients. Whether the re-learned movements would ever become independent of conscious control seemed less likely. But to some extent Parkinson's disease could be said to pose pro-

blems in learning and, therefore, to be amenable to educational methods.

I was keen to investigate interactions between Conductive Education and medication. My plan was to begin the course on my normal drug regime, and then gradually phase out the drugs, leaving the problem of motor control to be borne more and more by Conductive Education.

It will be seen that my preconceptions about Conductive Education have not survived my visit unmodified. I am not disappointed by this, since at the same time it has underlined what I now see as one of the most important factors in the successful management of Parkinson's disease, a factor which I had previously underestimated.

### Preliminaries

At our first meeting Dr Hári, director of the Petö Institute, said: "You must take from the course whatever is useful to you, it does not help

contribute to funds supporting research into PD, but has not joined his local branch. An unfortunate casualty of his PD has been his violin playing. In fact Alan has not yet faced up to the reality of his situation; for this reason he has still not taken up Dr Daniel's offer.

Alan has ruefully to admit that he has run into serious trouble. Madopar is not working properly, often taking hours to produce an effect, if it does so at all. Raising the dose causes his limbs to writhe, which normal people find hard to tolerate. Dr Lyle refers Alan to the PD clinic again. Dr Baker tells him that the progress of his illness has caused the reaction of his brain to Madopar to change. Dr Lyle also attends the clinic, partly to discuss some difficult cases with Dr Baker and partly to talk about a research project, entitled 'The stress factor in Parkinson's disease', which he hopes to submit for an MD.

Together, they work out a new policy for Alan. In order to reduce his dopa intake, they decide gradually to reduce Madopar to a limit of four capsules daily and to introduce amantadine (Symmetrel) 100mg x 2 daily and benzhexol (Artane) 2mg x 5 daily. Alan rapidly begins to feel much better and is able to lower the Madopar limit to three capsules per day himself.

A minor problem is that for a short period he is liable to suffer strange perceptions, of which the oddest is the discovery that the surface of his dining room table is covered with a seething mass of ants. He calls his wife to see it and, fortunately, she remembers that anticholinergic drugs can cause hallucinations. They are able to reduce Alan's Artane to 4mg daily, without sacrificing its antiparkinsonian effect entirely, and the ants go away. Alan has a number of conversations with Dr Daniels, which helps him to

recognise some feelings of aggression which have been holding up his rehabilitation.

About this time Alan decides to join the weekly physiotherapy sessions at the clinic and a great change in his mental attitude is noted, especially by his wife. He starts to practise his violin again and to attend the meetings of his local Parkinson's Disease Society, making a number of new friends. Alan now takes occasional short intensive courses of therapy at the clinic and is currently participating in group speech therapy. Recently, he took part in a crash course to improve his handwriting.

Looking back, Alan agrees that the clinic has supported him well, responding quickly and flexibly to his problems as they surfaced. Now, 10 years into PD, he feels he can face the next decade with equanimity. The question of retirement has been shelved for the time being.

everybody." There was no more introduction to Conductive Education than this, but I understood that it was up to me how I would apply what I learned.

After a general medical examination I was declared fit to take a three-week course of Conductive Education for five hours each day, from 9am to 2pm. The following day I met the other members of my group: as the course continued I came to regard the group with its range of interpersonal relationships as being a very important component of Conductive Education. There were about 20 of us, with equal numbers of men and women, aged up to 75.

The most common overt signs of Parkinson's disease among us were flexed posture, shuffling gait and speech difficulties. In a few of us the speech difficulties were extremely severe, rendering even quiet conversation impossible. Only three of us, including me, showed obvious

tremor. Problems with postural balance occasionally appeared. Of course, nobody was in a wheelchair; indeed the wheelchair is anathema at the Petö Institute. From time to time one or two people suffered from adverse drug reactions, but on the whole the general level of disability seemed less than I would expect. I shall offer no explanation for this difference.

### The daily round

Each day's programme of exercises was divided into sessions, each of which would involve up to four conductors. A senior conductor would begin by announcing the first exercise in a voice unmistakably musical in its phrasing and variations of tempo. He or she would then perform the exercise to an accompanying count of 1, 2, 3, 4, 5. The group joined in, endeavouring to reproduce the conductor's actions and chanting the count. Meanwhile

...  
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... that that usually ...



the other conductors moved about the group, helping and correcting those having difficulty. They were punctilious and very observant in their supervision.

It was stressed that all movements should start from a fixed, stable posture which should also be adopted as a resting position between movements. When sitting in a chair the soles of the feet must be flat on the floor, the spine upright, the elbows fully extended, the palms pressed firmly on the knees or the surface of a table; even the two thumbs had their correct positions, fully extended and with their tips touching one another. For the standing position an "arms akimbo" posture was insisted on. For the lying position the toes must point vertically upward and the palms be pressed downward.

In themselves the exercises appeared to be standard ones (see p44).

In addition to these standard sessions, my left wrist received some extra attention. Dorsiflexion was limited by the excess tone in the flexor muscles and possibly by contracture. Each day warm packs were applied to the joint for 15 minutes, followed by vigorous attempts to increase the range of movement.

#### Observations on the exercises

Since the conductors did not attempt to explain the exercises I felt free to form my own consumer-oriented views on the appropriateness of the course to the problems of Parkinson's disease patients.

The emphasis on starting movements from stable postures is particularly useful and, I would add, some mental rehearsal of the movement should also take place (this technique is commonly used by musicians)<sup>2</sup>. Failure to prepare oneself often leads to loss of balance and falling. The stable positions oppose the body's inherent tendency to curl up to relieve the over-tense flexor muscles. A measure of discipline is therefore necessary and members of

the group soon began to check each other's posture. Adoption of these positions can also be helpful in controlling tremor, and they should be taught to all parkinsonians along with other practical tricks.

Second, the use of rhythmical counting to prevent a movement's fading away is already known by many patients, although one often forgets to do it. Related to this is the way in which the exercises are carried out with impetus and flow. The whole organisation of the course encouraged this and interruptions, such as coffee-breaks, were generally avoided. Thus at different levels the course aids the attainment of "kinetic melody", to borrow Luria's memorable phrase.

On certain other aspects of the course I had some reservations. The unvarying nature of the programme eventually became a little tedious and, with the exception of my left wrist, no modifications to focus on particular difficulties were made. Thus, some of us had no speech problems while others were virtually voiceless, yet all performed the same speech exercises. Then, some common problems were not specifically recognised: thus, problems of balance were not directly tackled, although they are common and put the patient at risk of serious injury. Another area which I was surprised to find neglected in the course was medication. Finally, I felt that intra-group relationships are of particular value in Parkinson's disease and that greater emphasis on this would have been useful. For much of the time the patient works hard but as an individual; only occasionally did the group come to life. One exercise in which this happened has one patient pointing at another with a strong arm-extension and saying loudly, "speak loudly". That patient then points to a third and commands "louder still", and so on. Another occasion was when we threw beach balls for each other to catch. Therapeutically effec-

tive relationships can exist between patients as well as between patient and conductor.

**The Petö spirit**

Patients with Parkinson's disease are liable to feel depressed and to become isolated from society. They may become unwilling to leave the house and tend to undertake fewer and fewer activities within it. Added to all this, they are often plagued by extreme fatigue. This state of affairs threatens not only the patient's life but those of his or her family too. At the Petö Institute the atmosphere, created by the conductors, is warm, optimistic and encouraging. The word "can't" is simply regarded as a challenge: all that counts is a willingness to tackle one's problems.

In this environment laughter became possible again and with it a significant improvement in our condition. At an oro-facial session the sight of a roomful of people grimacing and puffing out their cheeks proved too much for the young conductor; she collapsed with uncontrollable giggling and had to be rescued by her colleague. On another occasion a woman in our group launched into a dazzling performance of an episode from *My Fair Lady*, taking the parts of both Eliza and Prof. Higgins. She received prolonged applause from the astonished audience: it was difficult to believe that she suffers from Parkinson's disease.

**Does Conductive Education help?**

On the last day there was an interview with senior conductors:

Q: Has the course helped you?

A: Yes, it has.

Q: In what ways has it helped?

A: Mm, that's not so easy to answer. (Pause.) Well, I feel better. I'm more relaxed, more confident that I shall be able to cope with whatever Parkinson's disease has in store for me.

Q: Do you intend to return next year?

A: I don't know yet. I want to see how I get on when I return to my normal

**Types of exercise in the six sessions**

**Session 1 Exercises on piloth beds**

Rising from lying to sitting position. Raising arms and legs in the air. Turning on to right and left sides from lying position. Crouching in squatting position and standing up again.

**Session 2 Exercises while sitting on chair**

Arm raising and arm swinging movements, incorporating finger movements, such as opposing thumb and individual fingers. Leg raising and foot stamping, moving the position of the foot stamp to the side or in front. Face, neck and tongue exercises. Vigorous arm swinging to accompany enunciation of a string of syllables. Leg-swinging exercises, forwards and backwards and from side to side, while standing up supported by one hand.

**Session 3 Chair and table exercises**

Arm extension and rotation movements. Writing in exercise books and on blackboard, using left hand, right hand and both together. Pencil manipulation exercises.

**Session 4 Speech exercises**

Blowing out candle flame. Inflating and bursting paper bag. Blowing through a plastic straw. Prosody exercises. Singing. Breathing exercises. Practice in production of explosive consonants. Tongue twisters, in English (How much wood etc?) and Hungarian (the number 33,333).

**Session 5 Walking exercises**

Slow march while swinging arms and clapping hands in front of and behind one's body (this also tests balance). Stepping between rungs of a ladder placed on the floor. Walking up a ramp. Ball games; dribbling the ball, throwing it to one another. Deep breathing, stretching and bending.

**Session 6 A short session**

Picking up small fiddly plastic pegs and placing them in holes in a board.

life. But, as well as the improvement in my feelings about the disease, I've learned some valuable practical things, such as the use of the fixed stable postures.

My answers reflected the very real positive aspects of my course, but I knew that there were also some negative aspects. Moreover, I wanted to see if the gains would be maintained. On the negative side, difficult

### The Petö programme: my pros and cons

#### Pro

- Practical details (starting from stable postures: rhythmical, counting, impetus and flow)
- Atmosphere (warm, optimistic, encouraging)
- Improvement in mental attitudes, maintained afterwards
- "In this environment, laughter became possible again"

#### Con

- Unvarying programme became tedious
- Few modifications for particular difficulties
- Some common problems not recognised
- Medication neglected
- Intra-group relationships neglected

movements were still difficult and automatic control did not seem to be returning. My body would still prefer to relieve the tension in my flexor muscles by curling up; extension required a sustained conscious effort. The exercise of putting small pegs into a board did not get any easier with practise, until I adopted a new strategy (to pick up only those pegs which happened to be in the correct orientation in the box).

As for my plan to study the interactions between medication and Conductive Education, it was not even attempted because, having first joined the group showing little or nothing in the way of parkinsonian symptoms, I found myself unwilling to apparently deteriorate, for fear of causing adverse reactions in other members of the group. On a return visit I would hope to overcome this resistance. Thus, the major question as to whether the parkinsonian brain can be retrained by Conductive Education remains, for me, an open one. Perhaps the period of retraining needs to be much longer than three weeks; possibly the exercises themselves could be improved. But my inclination now is to concentrate on the positive aspects.

The improvement in my mental attitude has been maintained during the past three months and friends tell me that I look in better health now that I did a year ago, which is

unexpected in an illness which is normally regarded as relentlessly progressive. I think that my experience of Conductive Education is similar to those described by other patients, all of whom stress the changed mental attitude brought about by the course. It is much less clear whether they experienced any significant improvement in the control of motor functions.

It seems to me likely that at some stage in their illness many sufferers from Parkinson's disease would benefit from Conductive Education. Obviously, not all will be able to visit the Petö Institute, so it is important to ask whether Conductive Education is unique in its ability to induce beneficial changes in the mental attitudes of patients. Two elements seem to me to be largely responsible for the effectiveness of Conductive Education:

- first is the ability of the conductors to *motivate* the patient;
- second is the group, which can overcome a patient's growing sense of isolation and provide access to a much larger store of experience than is available to any individual. Some patients state that they have no need for communication with other patients, but I think that often they deceive themselves.

1 Ellis R W B. *Disease in infancy and childhood*. 1953. Livingstone Ltd, London  
 2 Merrick F. *Practising the piano*. 1958. Barrie & Rockliff London.

February 243

*Management  
of the  
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DAVID SCRUTTON

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**MANAGEMENT OF THE MOTOR DISORDERS OF  
CHILDREN WITH CEREBRAL PALSY**

Edited by

David Scrutton

*F. 1838*

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# CONTRIBUTORS

BERTA BOBATH

Director of Studies, The Bobath Centre,  
5 Netherhall Gardens, London NW3 5RN.

KAREL BOBATH

Honorary Consultant Physician, The Bobath Centre,  
5 Netherhall Gardens, London NW3 5RN.

BRUCE GANS

Chairman, Department of Rehabilitation Medicine,  
New England Medical Center, Boston.

X MARIA HARI

Director of the State Institute of Conductive  
Education of the Motor Disabled, Conductor's  
College, Budapest.

GEORGE JESIEN

Outreach Director, The Portage Project, Portage,  
Wisconsin.

LINDSAY McLELLAN

Europe Professor of Rehabilitation, Southampton  
University; Honorary Consultant Neurologist,  
Portsmouth and Southampton Health Districts.

DAVID SCRUTTON

Superintendent Physiotherapist, Newcomen  
Centre, Guy's Hospital, London SE1 9RT.

ANITA H. SLOMINSKI

Co-ordinator, Cerebral Palsy Treatment Center,  
Department of Orthopedics, Indiana University  
School of Medicine, Indianapolis.

THOMAS TILLEMANS

Professor, School of Education, Acadia University,  
Wolfville, Nova Scotia, Canada.

VACLAV VOJTA

Neurologist and Child Neurologist, Vice Director  
and Chairman of the Department of Physiotherapy  
of Kinderzentrum München, West Germany.

ROSEMARY WHITE

Registered Occupational Therapist, Specialist in  
Developmental Disabilities, Seattle, Washington.



## 2

# CONDUCTIVE EDUCATION

*Maria Hari and Thomas Tillemans*

### **Introduction**

For a proper understanding of Conductive Education (CE) the following may prove useful:

(1) The term CE is difficult to understand. It means education as organised by 'conductors'. The conductor is a generalist, licensed after four years of professional college-level training, who combines in her function what medicine, education, physio- and logotherapy and psychology have to offer to the education of physically handicapped children. CE is also 'conductive' to a desired goal. The conductor, like the person in front of the orchestra, is responsible for the total effect obtained through careful orchestration of the contributions made by the individual musicians, each one of whom remains responsible for his own playing. CE is a systematic approach, a practice supported by theories, now used in the education of the physically handicapped, but potentially also applicable to other chronic conditions. The child is actively engaged in his own learning. CE uses materials, few in number, but numerous in their applications. It aims at the maximum integration of the physically handicapped. During his waking hours the child will be surrounded by persons who have received or are receiving the same training at the Conductor's College, situated in the Institute for the Motor Disabled, Budapest.

(2) The Institute has as its motto: 'Not because, but in order to'. It is future- or goal-oriented, not focusing on the past or on the aetiology of the problem.

(3) Positive expectations on the part of the parents and conductors are important, but so also are the child's body image, his self-concept and perception of his environment.

(4) Motivation, when it is a general alertness, has an organic or neuropsychological basis, being related to the function of the reticular formation. The child's motivation is also influenced by the presence in his group of healthy examples with whom to identify. There is also specific motivation which is related to one subject area or narrow field of talented performance.

(5) A dysfunction is not a property of the child, but the product of the interaction between himself, or the way he is, and his environment, or the way he is perceived.

(6) Positive comments will reward the child when he demonstrates behaviour directed towards the relevant goal. Unwanted or inappropriate behaviour is not extinguished through negative comments, but by the suggestion of a different activity.

(7) Neither the College nor the Institute supports a 'cookbook' approach, in which conductors are expected to look up standard recipes for rapidly categorised problems.

(8) In 'rhythmic intention', the conductor employs the child's inner language to voice directions to himself, which is considered more effective than when the conductor continuously verbalises the directions. It also serves to involve the child in his own education.

(9) Children with cerebral palsy have a learning disorder, which affects not only their motor skills, but also the intake and elaboration of information, their expressive functions, and the feedback system, separately or together.

(10) Fragmentation of the child, as a result of each member of the multidisciplinary team concentrating on only one aspect of the child, is avoided by making the conductor the contact person for the supportive specialised services.

(11) The Institute stresses learning rather than treatment.

(12) It combines the concepts of task-analysis and that of the underlying abilities.

(13) Conductors aim at maximum independence: they seek to avoid holding the child or supporting him. They *will* assist when failure would otherwise be inevitable. Credit for accomplishment, however, should go to the child, not the conductor.

(14) The conductor has a great deal of autonomy. She can select the methods she considers to be most suitable for the child in her charge. Outsiders cannot prescribe to her, but she is prepared to discuss her approach with them.

### **Aims**

The primary aim of Conductive Education is to stimulate a developmental process which would not come about spontaneously, and which will continue subsequently, even when the child has been discharged from our Institute and has been integrated in a regular kindergarten or school. At its best, this process will result in a level of adjustment permitting him to function as a useful and contributing member of society, and this requires the development of language, attention, and diverse cognitive functions. However, society too must make an honest effort to accept the child who tries so hard to be admitted.

At least 60 per cent of the children at our Institute manage to attain the behavioural and academic standards set by the State system of education for average or below-average children. They are able to attend State schools and do not require specialised education for the severely handicapped. They avoid being institutionalised and do not require special equipment, even for writing or as a substitute for defective speech.

The Institute functions within the general education network of the country. It provides a formal education for school-age and preschool children, meeting the requirements set for all children in Hungary. Therefore a child can be transferred from the Institute to kindergarten or school only when the receiving school is convinced that he has attained these nationwide standards. When the Institute fails to provide convincing evidence, the school has the right to deny admission. Therefore we strive to maintain close contacts with governmental health, education and welfare services so as to make physicians, teachers, psychologists, social workers and physiotherapists aware of our ideas about the education of physically handicapped children.

### **The nature of Conductive Education**

Our Institute is much closer to institutions offering education than to those providing therapy. CE is a system organised to maintain the continuity and coherence required by the educator. Within the system, it is the conductor who designs, organises and carries into effect the educational programme. She also serves as the contact-person for the supporting specialised services that will make their contributions *via* the conductor. By acting as an intermediary, the conductor prevents the fragmentation of the child and tends to lower the rigid boundaries among the professions.

The system fosters the conductor's autonomy. For any one child she can schedule the various sessions of the daily programme in such a way that the components each make significant contributions, while the unity of the whole is maintained. She can establish skills and plan for their application. She will ensure that a unity is formed between academic subjects and developing physical competencies.

Key elements in the organisation of the system of CE are: (i) the careful grouping, for the purposes of instruction, of the pupils on the basis of several criteria; (ii) the highly perfected team-work of the conductors and the conductors-in-training; and (iii) the nature of the interpersonal relations among the conductors themselves and the pupils in their care. Basic to these key elements is the fact that the Institute that delivers services also functions as the Conductor's College, the institution responsible for the professional training of all personnel ever to be employed in CE. This ensures a uniformity of outlook, philosophy and practical applications, which unfortunately too often is lacking in schools, clinics or hospitals elsewhere.

CE is an all-embracing system with its own register of those who one day may require care; its own diagnostic services, counselling services for parents, and client-centred services on the premises of the Institute; follow-up services for those transferred to kindergarten, school or a place of work; together with consultative services to the institutions that have received graduates from the Institute. This organisational network spans the whole of Hungary.

Conductors use teaching methods to reach the goals they set, and consequently the Institute comes under the Ministry of Education. The curriculum, timetable and methods of teaching are all shaped by the conductor to ensure that the child achieves, through learning activities, the intended eventual outcome. In essence, CE is no different in this respect from general education. Underlying this approach is the notion that for compensation or rehabilitation to take place, a creative process is needed in which the central nervous system will be permitted to restructure itself. Every person enrolled in CE, whether infant or adult, must develop his own method linking his executive and cognitive functions, *i.e.* linking what he does to what he wants to do. In order to reach this objective the programme cannot and does not depend primarily on practice and repetition.

### **Treatment**

The word 'treatment' is actually a misnomer, since the Institute hopes to facilitate

learning rather than to offer treatment. It is when a person learns to learn—and this applies to motor skills, balance, sensory and perceptual functions, emotional development, language and various cognitive functions—that we are reminded of the Oriental saying that if one gives a fish to a hungry man he will be saved from starvation today, but if one teaches him to fish, he and his family will prosper and be happy for life.

The programme must foster in the child a sense of personal responsibility and commitment. We do not deny the need to teach the elementary skills and competencies that normal children acquire without a great deal of instruction by trained personnel, but we feel that we should also reach for something much higher: learning to live through learning to learn. As a first step, we seek to establish contact and to stimulate the child to become an active participant in his process of education.

It is the conductor's responsibility to draw up the pupil's programme, carefully apportioning the various activities and their integration into the daily timetable, in line with the needs of the child and his future educational or vocational goals. All aspects of everyday living are included. There are opportunities for learning sensorimotor skills, self-care skills and general intellectual competencies, as well as those pre-academic skills required for success in state schools. In every teaching/learning session, however, there are opportunities for the child to develop his own lifestyle, his own approach.

Special goals frequently serve as ends and at the same time as means to a more general goal. Locomotion, self-care and communication skills may be goals desirable in themselves, but once attained become means to a more comprehensive goal. Similarly, the possibility of leading an active life, having a healthy personal development, mutually beneficial family relationships and social esteem earned through achievement are goals of CE, but at the same time are important as positive reinforcers.

In CE the road towards the acquisition of an isolated skill runs *via* a training aimed at a more comprehensive goal, which then will include the targeted skill. For example, if the conductor tells a child to straighten out a bent arm or wrist, he cannot do it. If she tells him to hit a nail with a hammer, he will rapidly learn the movement the conductor wished to see established. It is also important that the conductor employs many tasks similar to the one of hammering the nail, for instance holding a stick and pretending it is a hammer, which is used to hit an imaginary nail, or other functionally related tasks.

The brain will institute and organise those activities that are relevant to the particular person. Feedback on the quality of performance is important, since it will enable the brain to restructure itself on the basis of this information, which means that the person is learning. Involving the child in learning activities that are relevant to his way of life will encourage the brain to restructure itself. At the same time, however, overt behaviour may be modified as well. It has frequently been noticed that when a tense person plans a relevant activity the process enables him to relax generally, whereas simple locomotion exercises, when they are felt to be irrelevant, may well produce increased tension.

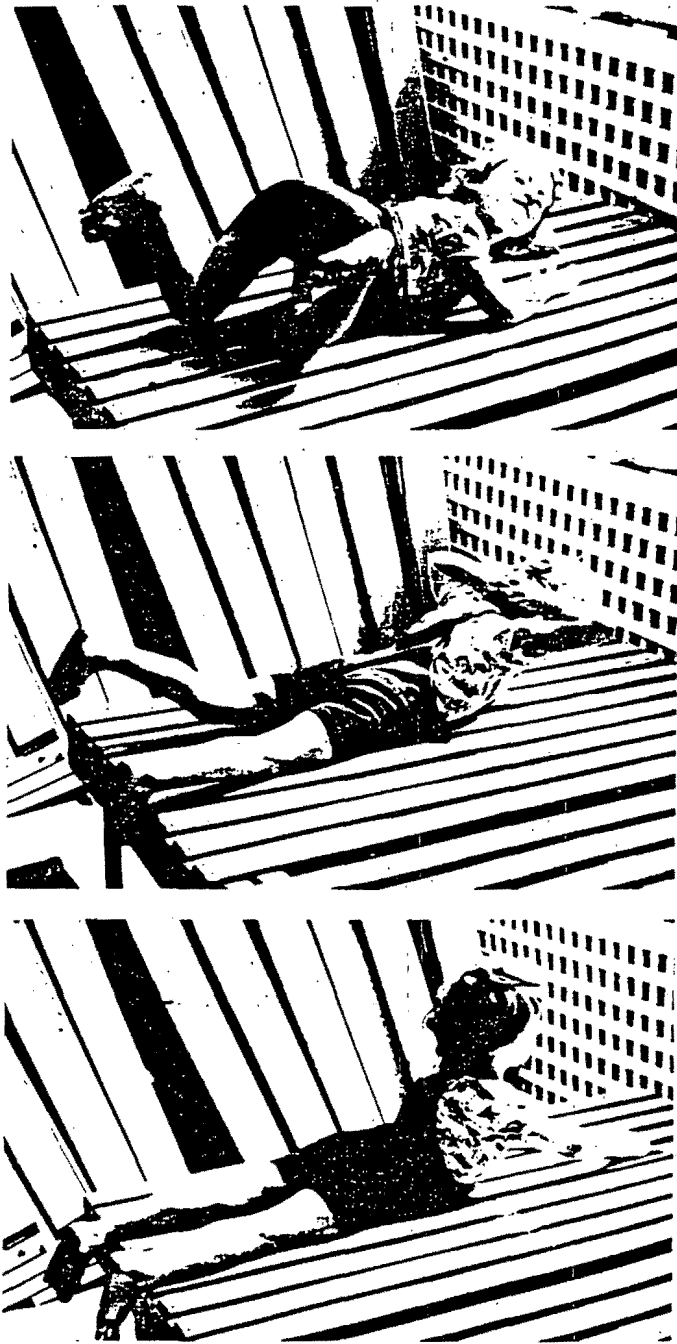


Fig. 1. A child on a plinth working in a lying task series.  
*Top:* beginning of task series, showing typical pathological posture.  
*Middle and bottom:* 30 minutes later, on completion of the task series. Child has been able to re-organise her posture on her own.

The conductor is expected to ensure that the several skills and competencies, while taught in a variety of ways, are properly integrated in the programme. Various teaching methods do not preclude each other and may be used simultaneously, as long as the idea of the whole is maintained. This is discussed under the next three sub-headings.

*Movement for learning.* Movement is regarded as one contributor to learning. The conductor at all times will stimulate active exploration of the world through movement. It is important that this active exploration should be rewarding to the child, because the child who has learned to explore successfully through purposeful activity will also develop a healthy and positive self-concept.

*Underlying abilities.* According to many authors (as reviewed by Ysseldyke and Salvia 1974) there are basic or underlying abilities which are prerequisites to success in academic subjects or their formal instruction. We would include attention, and the ability to translate intentions into intended overt behaviour. In this behaviour tensing and relaxing are subsumed, just as the pitch in music is governed by the tensing or relaxing of the strings. In a musical performance, however, the musician does not require conscious cortical control of the motor skills needed for each separate note. Some other underlying abilities are co-ordination and integration of functions, and sequential movement.

The concept of underlying abilities, as used here, means more than is commonly understood in Western countries. The abilities are not prerequisites in a temporal sense, but in a functional sense. They are subsumed under or embedded in the targeted skill. Conversely, whenever the whole or targeted skill is employed, the underlying abilities necessarily will be involved and therefore the use of the whole will contribute to the improvement and maintenance of the parts.

The approach followed is supported by views of human development which regard the whole as the framework within which the process of differentiation is constantly taking place. This is quite different from the block-building model, common in education, which sees the whole emerge from blocks being put one on top of the other.

To develop underlying abilities the training should make use of activities in which the underlying abilities are embedded, rather than attempt to develop these abilities separately. In our Institute it is felt that the cortex can deal with the underlying ability only when it is subsumed under the total skill, which will make it meaningful and relevant. Specific training, as advocated by Frostig or Kephart, for example, is not used in the Institute, since it is felt that perceptual and motor skills are already embedded in more complex or more complete skills which, because they are meaningful, offer much better opportunities for learning since a greater part of the cortex will be involved.

*Task analysis.* The training of underlying abilities does not preclude the task-analysis approach. This approach, commonly found in programmed learning, divides the tasks to be learned into a series of small steps which, taken in sequence,

lead to the mastery of a complex routine. Developmental scales may be used to determine the order of the individual steps to be taken. Frequently the task-analysis model is considered to be the opposite of the underlying abilities model, but in our view they are not mutually exclusive because the underlying abilities, which are part of a whole function, interact with the whole to their mutual benefit. Within the framework of the whole, when the parts are permitted to vary, the common elements in the parts stress what is the same.

In task-analysis, the teaching sessions take the child from where he is to the aimed result *directly*, not by means of sub-skills deemed essential—whether the skill to be mastered is lying down, sitting, or standing. The skill is reviewed and further developed every day in an ascending spiral, which constantly brings the child's performance closer to the desired level. The practice of the whole skill then will also contribute to the acquisition of the parts, because the underlying skills are always involved in one form or another. Similarly, the tasks that make up the curriculum of the school form a longitudinal series, the sequence of which is given, but not the amount of time to be allotted to any one step. Steps are always linked, and the conductor will avoid any that are unrelated or meaningless. When the conductor, in order to ensure successful performance at the lowest level of the task-series, concludes that preliminary links are needed to prepare the child for the first step in the series, she may choose learning experiences which at first do not appear to be relevant. They may be similar to, analogous with, or even contrasting with the experiences of the first level. The clarifications or illustrations used to link steps will become less numerous as the series proceeds, and actual mastery of what must be learned will predominate more and more. Even if the form appears to be different, the function is essentially preserved.

#### *Selection of groups*

This is done by observing certain salient characteristics in the children and determining their relationship to the programme. A group comes into being through a consideration of several characteristics of the children. Selection for group-membership is a process of examining and re-examining children on diverse measures. The group must be large enough to permit individual differences and the formation of sub-groups around similarities. It must create a favourable climate for teacher-student and student-student interaction. It must ensure success. Working in a group is more than merely training group spirit and a sense of responsibility for others: it sets the stage for activities in which the members of the group learn to find ways to solve their problems. Each member of the group will go through the same series, but there will be variation in the time needed, the method employed and the level of performance attained; however, each will attain his maximum and his own way of solving problems the sub-tasks present.

To prevent one child from being singled out for unfavourable comment, the prevention or correction of incorrect behaviour is always directed towards the whole group, not to one child by name. But the child must be made to realise that the statement relates to him, if necessary with the help of a second conductor. However, children *are* singled out for praise. The conductor emphasizes what has



Fig. 2. Above and right: a child shows how he can move his fingers. Below: one year later, he has learned to use his hands.





been accomplished so far, not where the child has failed. This positive approach enables the child to attempt to solve what is ahead of him confidently and independently.

The situation is different when a child has begun a movement but cannot go beyond the half-way point and is in danger of falling back to where he started. If failure is imminent, the conductor must help the child to succeed by offering a minimum of appropriate help, thus preventing a sense of failure and allowing him to give himself credit for the completion of the learning task.

The conductor does not present the pupils with the tasks to be learned, but accompanies the children in their progression through these steps which, as much as possible, are taken by the child independently. CE has nothing in common with, for example, practising musical scales or any other automatic motor skill: the conductor is able to monitor the unfolding of the programme and to combine, change or modify parts of it as she sees fit. She will also see to it that a proper balance is maintained between the introduction of new skills and the application of ones already established, and that they reinforce each other.

The integrative, spiralling effect is very important, and all previously acquired skills are included in each day's learning sessions. When a child has mastered a certain task, the skill needed for solving this problem will return as part of a more complex task, incorporated in a much wider context. This applies, for example, to the basic patterns of lying down, sitting, standing, prehension and speech, which will be used repeatedly, even during recess-periods between teaching sessions. Tasks are set by the conductor in such a way that the children use their skills at first consciously, then without being aware of doing so.

Through observation of the children in a large variety of settings, many of them practical life-situations, the conductor gathers information about the children's deficiencies or dysfunctions. This enables her to revise the programme of prerequisite skills and competencies by analysing the tasks and the ways of dissolving them into their component steps, which then are carefully graduated according to level of difficulty. Any situation in which the child happens to be can be used for observation and can serve as a point of departure for fruitful teaching.

### *Orthofunction*

While it is important that the pupil works all through the day on the competencies that he will need, it is even more important that he finds the approach that is the most advantageous to him, *i.e.* his orthofunction. While engaged in solving the many tasks in the series, he discovers the methods most appropriate to him. The conductor will assist him in the discovery, but will not provide him with a solution. However, the conductor will try to prevent the establishment of inappropriate, self-defeating or improper approaches.

In order to be able to overcome the many barriers that our pupils no doubt will have to face in life, we must foster in the children a self-directed, spontaneous integration of correct approaches. To be challenging to the child and thus involve an important part of the cortex, the tasks should be quite difficult.

Orthofunction is quite difficult to define, but it includes: (i) the integration of

what has been learned so far, as separate items: (ii) a person's best performance to date achieved without the use of a by-pass (an aid which replaces, rather than assists, the original function); and (iii) the avoidance of stereotyped, pathological behaviour and the adoption of healthy behaviour.

Pető regarded orthofunction as the opposite of dysfunction. While dysfunction is characterised by substandard or improper co-ordination or socially unacceptable behaviour, orthofunction is what is good and acceptable for a particular person. It is the function that his brain has constructed under the guidance of the conductor in order to cope with his situation. It should be judged on its qualities as a coping mechanism, not in terms of preconceived, socially determined criteria applicable to or derived from the performance of others.

### **The programme**

In drawing up the programme, all dysfunctioning areas should be included and one should specify how much attention should be given to each. The timetable should state the time needed for everyday life skills and for teaching academic subjects—these two being parts of one whole. The programme indicates how and where differing goals may be pursued simultaneously. It is multidisciplinary, dealing simultaneously with different aspects of development. Thus language and movement might be combined to their mutual benefit, when movement supports the learning of language and the child's speech is used to control movement. For this to be possible, motor and speech development have to be planned as a unit. It is important to keep in mind the many-faceted nature of the learning, and the interrelatedness of the various tasks to be mastered. Even in planning one single lesson, we must ensure that opportunity is given to use the basic skills which have been learned, so that now they can be used automatically. Whatever is to be learned can be incorporated in different series of tasks and included in varying programmes.

### *Learning activities*

The timetable should include not only what the curriculum requires to be taught, but particularly what contributes to maintaining a good mood and attitude and persistent attention. Therefore the daily programme includes short, alternating periods of different activities, which gradually can become longer. Such detailed planning does not preclude improvisation. The conductors can change the sequence, or prolong or shorten sessions, as the situation requires. For each specific subject, whether it be language, reading or writing, the series of tasks to be mastered is laid out in the spiral organisational pattern. The interaction among the learning processes directed to separate subject areas has a multiplying and integrating effect upon the child's total learning. The comprehensive nature of the programme fosters academic, social, aesthetic, ethical and emotional development. This highly organised curriculum, which draws from such a variety of disciplines, is perhaps an even greater contributor to the success of the Institute than its techniques or methodologies, however outstanding those may be.

### *The importance of flexibility*

A flexible timetable is needed to extend the programme to include much more than the designated sessions. Time is a very important ingredient in the process of learning: it is needed for locomotion, communication and motor activities, to be practised throughout the day. Time must be made available for the acquisition of such self-care functions as locomotion and toilet-training in an unhurried fashion. In primary and secondary school, handicapped children frequently are not encouraged to go to the blackboard, but are kept in their wheelchairs, since it is thought that their slow movement takes too much time away from scheduled instruction. In such schools, academic subjects dominate the curriculum and little time is allowed for non-academic education, however vital it may be for some of the children. If a conductor decides there is not enough room in the therapeutic programme, she may incorporate these non-academic elements in the recreational programme, which is entirely controlled by the Institute. Visitors sometimes wonder whether our children have any leisure time at all, but the balanced development and high activity levels these children demonstrate shows that such an integrated programme does lead to a full life.

The conductor's autonomy and flexibility are much greater than those generally granted to teachers in ordinary schools. The conductor can incorporate any type of learning, academic or non-academic, recreational or emotional, and it is not necessary to assign special slots for them in the timetable. She is free to use any opportunity for contributing to the child's whole development.

### *Strategies and techniques*

CE will help a child to find his own level of functioning, in line with his orthofunction. This means that he will establish a new pattern of skills and competencies which is best for him, although the pattern may be quite different from those of other or normal children.

In order to learn appropriate motor, sensorimotor and autonomic organisations, or to unlearn previously acquired inappropriate ones, the children in our Institute must go through a series of 'tasks' which will enable them to acquire substitute organisation. One strategy is for the conductor to help the child in areas that are not central to the learning task. For example, if the child has to reach for a chair with his right hand, the conductor may stabilise his legs, if necessary. The conductor may also help by constructing an alternative route which the child learns to follow. The child who cannot move his hand to his head can be shown an in-between position, in which his bent arm rests on his knee: he will stabilize his arm on his knee, move his head onto his hand, then bring head and arm, which remain connected, to an erect position. This type of help is allowed, because subsequently the child can incorporate it into his own repertoire.

Any support used in carrying out a movement should just be an aid. For instance when a child uses a chair for support, he should feel that his own legs carry more of his weight than the chair does, to ensure sufficient kinesthetic and visual feedback and so that he can experience the results of his own effort. In our pedagogy we include anything that will facilitate learning, as long as it is directed to



Fig. 3. Playing, learning grasp and release with manual assistance. *Left*: helping the child himself. *Right*: one year later, fixing the object only.

the formulated goals, is related to the child's previous learning, and fits the characteristics of the individual child. The conductor has at her disposal a wide variety of approaches, which at first sight appear to be 'techniques', but in CE are better described as 'experiences':

- (1) to establish proper balance in a sitting or standing position;
- (2) to control raising of arms or legs by using a base or 'anchor' to prevent unwanted movement;
- (3) to stretch the arms in the desired direction and extend the range of movements;
- (4) to enable the eyes to check or monitor movement;
- (5) to make goals concrete instead of abstract;
- (6) to improve or maintain posture;
- (7) to allow the elbow or the back to be straightened.

The 'learning experiences' or approaches the conductor chooses to use serve also to stretch joints, to stabilise body-parts not essential to the process of learning, and to free or control movement in body-parts which are central to learning. Not only special equipment, but also certain parts of the body, can serve as props or pivots, provided the child learns to use them as such. Props or supports are considered as teaching-learning aids. Special equipment is a last resort and is allowable only if used temporarily, if it helps to teach skills not readily learned otherwise, and if used to prevent the formation of an incorrect body-image.

Gravity is one useful substitute for mechanical aids. In the standing position, gravity helps to maintain a limb in a stretched position. This process is called active fixation. Gravity also is used to maintain a limb in the extended position, or when a limb is allowed to swing freely without any active muscle involvement. The application of heat, or heat-producing ointments, may also be useful.

A dynamic aid is the resistance experienced when movement is directed against something. A synthetic aid is produced when several movements are combined, for instance as in lifting an arm, when the trunk can be rotated to facilitate abduction of the lower limb. A synthetic approach can also be used to teach posture, combining information obtained through all the senses with that received from the neck and labyrinth, to establish or maintain balance.

Effective learning is promoted by daily continuity of the programme, the specific sequence of tasks chosen from one or more of the task series, and by association of functions to be acquired: associating toilet-training, for instance, with certain colours, sounds or situations. It is worth repeating that when the child himself discovers the solution to his problem, the success of his endeavours will greatly assist his learning.

### *Rhythmic intention*

What has been described so far as contributing to learning, forms a functional series linked with the intention of the person. When these contributors to learning are arranged in a series, subordinated to a formulated goal, 'rhythmic intention' comes about. Rhythmic intention is the person's mental preparation, *via* a symbolic representation, for overt behaviour. It professes that while initially the conductor states what is going to be the child's guiding principle, the latter will gradually take over the rôle of announcing what he will do and of carrying it out. When the conductor starts by saying, 'One, two, I hold it', she uses the word 'I', not 'you'. This helps to underline the fact that the child (repeating the 'I') is the principal actor in the scene.

The task, though chosen by the conductor, immediately becomes a shared commitment of both child and conductor, and in the course of time becomes the child's personal responsibility. In the learning-teaching session the conductor has to fade more and more into the background, the child increasingly occupying the centre of the stage. For this transfer to take place, the dysfunctional person must have such confidence in the conductor as to accept the goal-directed activity she has selected, and be willing to commit himself increasingly to the realisation of this goal. This requires that strong interest and lasting motivation are aroused in the child. It is part of the conductor's job to formulate the goal, to select the proper roads leading to its realisation, and to state these intended activities in words. The words must express what the child is to think, and therefore must represent or complement the child's thinking.

It has been found helpful to teach sequence and rhythm while the child says the directions. The intention, which is built on the words, is then harnessed to control the child's overt behaviour. In the case of aphasic patients, when speaking is difficult or impossible, control of overt behaviour is established by enlisting the help of another part of the body—arms or legs for example—which in turn will have a beneficial effect upon the person's ability to speak.

Every skill, including those involved in speaking, requires a well-developed sequencing of rhythmic actions. The ability to analyse and to carry out this sequence is gradually controlled by the person himself. This is because intention,

initially conscious, will eventually lead to an unconscious control of the sequencing process. In turn the spoken word may itself encourage other sequencing processes.

### **Integration into society**

Integrating the physically handicapped with the rest of society is one of the main aims of CE. At the Institute we do not consider our task finished when the child has acquired certain motor patterns and learned to use them. We also deem it necessary to make careful preparations for the child's transition from the Institute to a kindergarten or state school. These preparations include modifying the child's daily routine to fit in with the school; and we gradually increase the hourly load so that the child will be able to meet the demands of the school's timetable.

An elaborate system of follow-up services ensures that once the child has left the Institute he is not allowed to stagnate or slide back. When a child has been admitted to a school or kindergarten, a conductor will visit the school to observe him in the new environment, at first once every three months but gradually less frequently if all goes well. She will spend time in the child's classroom, check up on his adjustment, watch out for any regression, and consult with the principal and the teachers. If necessary, the itinerant conductor can arrange for the child to return to the Institute at the end of the school year for a short refresher course.

Apart from this follow-up service, which reaches deep into the school system, the Institute also maintains liaisons with the consultative and supportive services of the school system, with the medical services attached to the schools, and with the network of social workers.

### **Summary**

The Institute should be regarded primarily as an educational agency which uses a multitude of approaches and techniques to realise educational goals. It seeks to integrate the physically handicapped as active participators in our society. It uses a programme that is undoubtedly multidisciplinary in character, but which manages to avoid the damaging fragmentation of the child, because it integrates all contributions through the conductor, who serves as the mediator between the supportive services and the child.

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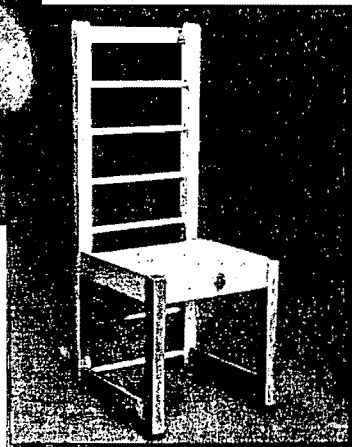
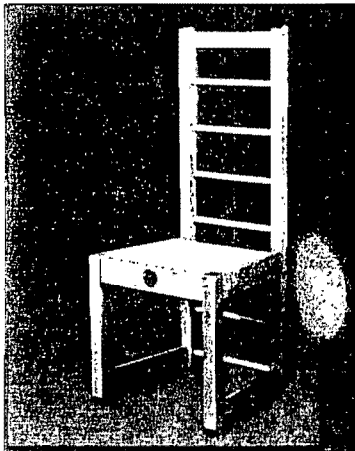
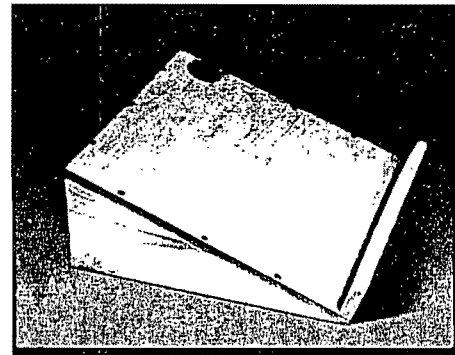
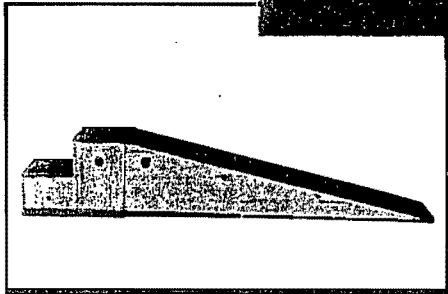
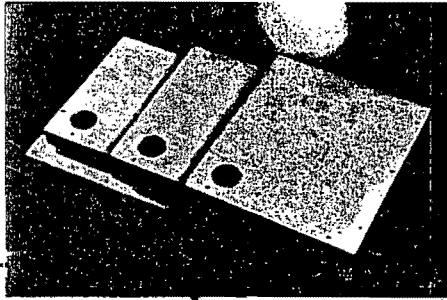
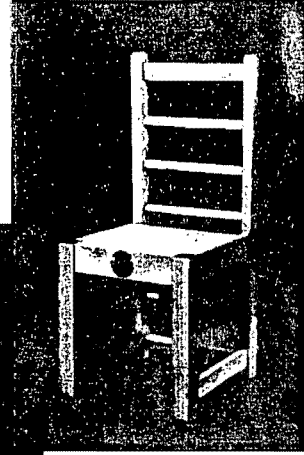
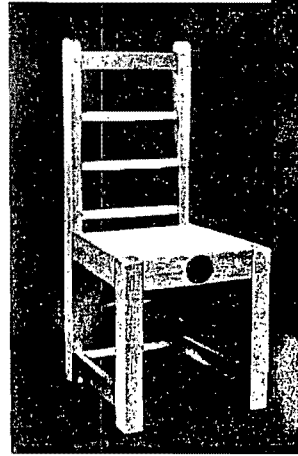
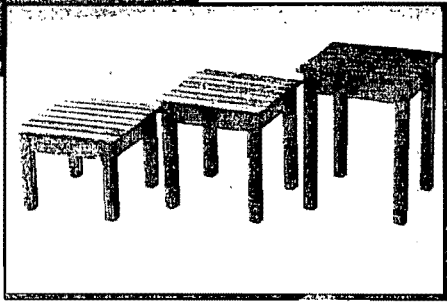
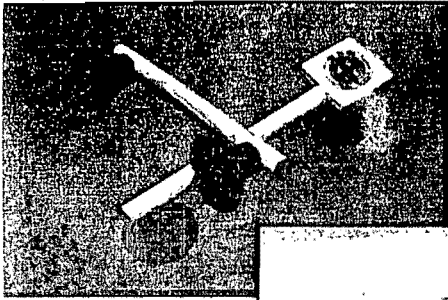
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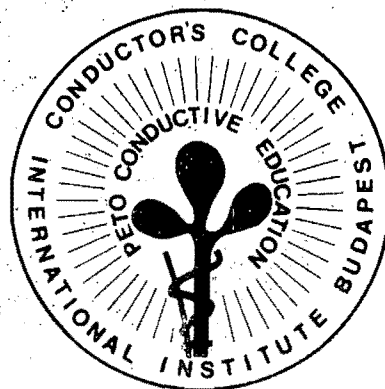
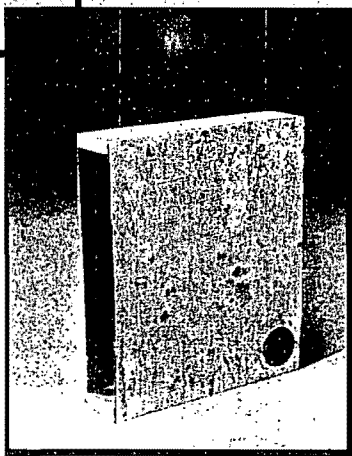
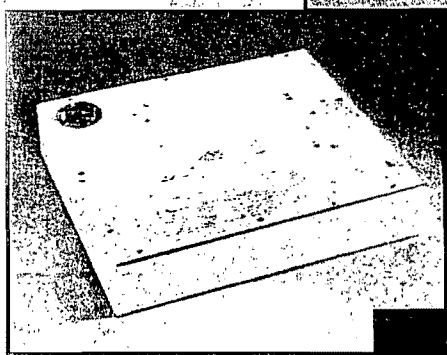
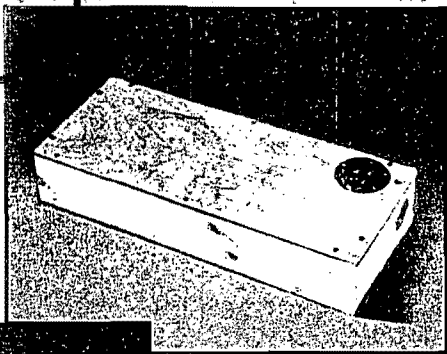
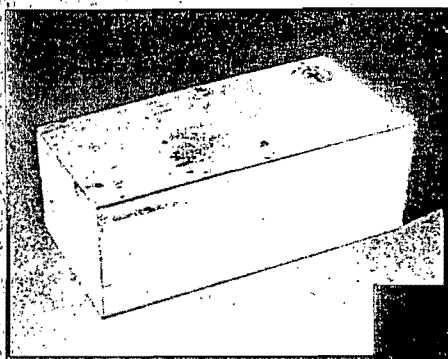


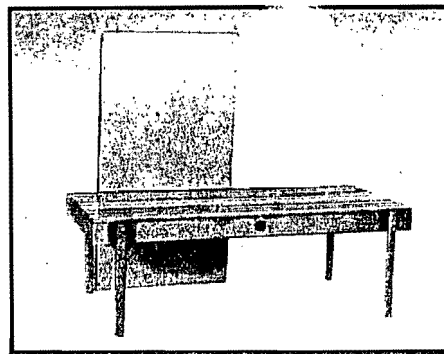
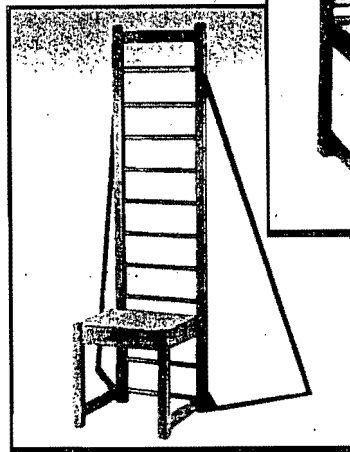
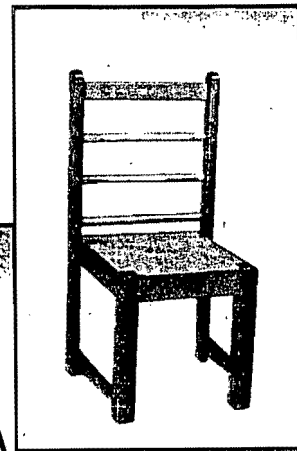
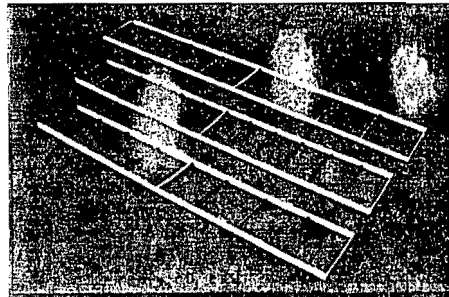
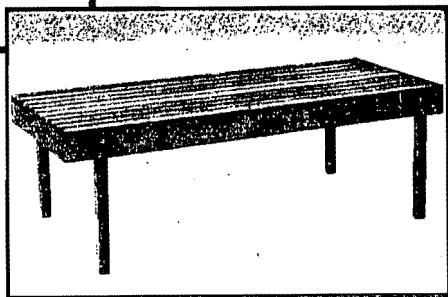
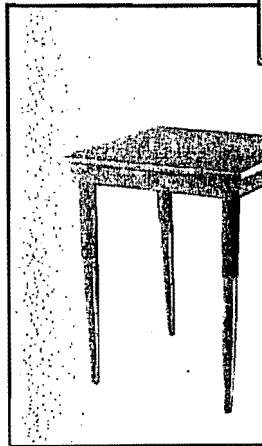
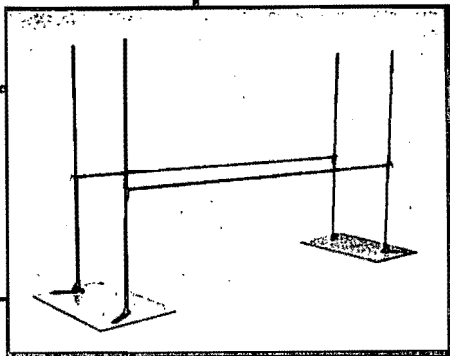
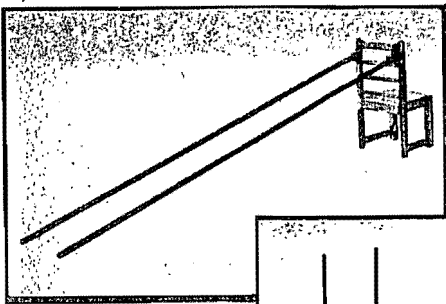
**PETŐ INTÉZET** • A konduktív nevelés és konduktorképzés alapítása dr. Pető András magyar orvospedagógus nevéhez fűződik. Kitűnő komplex alapképzettségét és szakmai gyakorlatát Bécsben szerezte, majd kiváló képességei alapján számos neves osztrák klinika, gyógyintézet munkatársa és vezetője lett. Magyarországra 1938-ban tért haza, és tanulmányai, gyakorlata, valamint gyermekközpontú szemlélete alapján 1945-ben kezdte el Budapesten a mozgássérült gyermekeknek egy új, egységes rendszerben történő nevelését. Az új egységes nevelési rendszer, vagyis a

konduktív nevelés programjának megszervezése és megvalósítása új képzési formát igényelt. Ezért dolgozta ki és szervezte meg dr. Pető András a világon egyedülálló módon a konduktorok főiskolai képzését. Első 80 férőhelyes intézetét 1950-ben alapította, ennek utóda a mai Pető Intézet. A konduktív nevelés nagy jelentőséget tulajdonít a humán dimenzióknak – a gyermekcsoport interperszonális kapcsolatrendszerének és a konduktor-gyermek, illetve a gyermek és szülő közötti kapcsolatnak. Nem alkalmaz speciális eszközöket, gépeket, csak a prospektusban látható egyszerű bútorokat. A konduktív nevelés nem egy rehabilitációs technika vagy terápia, sőt nem is csak egy módszer, hanem egy rendszer, amelynek eredményességét számos feltétel befolyásolja.

*Az intézet címe:*

**Mozgássérültek Pető András Nevelőképző és Nevelőintézete**  
1125 Budapest XII., Kútvolgyi út 6.





**THE PETÓ INSTITUTE** • The launch of conductive education and conductive training are immediately identified with the name of dr. András Petó, a Hungarian pedagogue. He received his complex basic education and initial professional experience in Vienna and later he became consultant or head of several famous Austrian clinics and health institutes. He returned to Hungary in 1938 and on the basis of his studies, experience and child oriented interest started in 1945 the education of motor-disabled children in a carefully integrated system. This new system, i.e. the organisation and implementation of the conductive education program demanded a new form of training. This is why dr. András Petó has in an unprecedented way developed and organised the training of conductor-to degree level. He founded his first institute with 80 places in 1953 and the present Petó Institute is a testament of its development. Conductive education attaches great significance to the human dimension, i.e. to the interpersonal relationship within the children group and to the relation between the conductor and the child as well as to the relation between the child and parents. It does not use special instruments or machines only simple furnitures, that can be seen in our prospectus. Conductive education is not a rehabilitation-technique or a therapy, not even a mere method but it is a system, the success of wich is influenced by several factors.

*The address of the institute:*  
**Mozgássérültek Petó András Nevelőképző és Nevelőintézete**  
 1125 Budapest XII., Kútvolgyi út 6.

**DIE INSTITUT PETÓ** •

Die Begründung der Konduktiv-Erziehung und die Bildung deren Fachleute ist mit der Namen von dr. András Petó, der ungarische Arzt-Pedagoger verbundet. Er hatte seine ausgezeichneten komplex Grundbildung und fachpraktikum in Wien beschafft und aufgrund seine ausgezeichnete Fähigkeiten wurde er der Mitarbeiter und Leiter der zahlreichen österreichischen Kliniken und Heilanstalten. Er kehrte nach Ungarn im Jahre 1938 zurück und aufgrund seine Studien, Praktikum und Ansicht, die die Kinder im Zentrum stellte, begann die Erziehung der Bewegungsbehinderte Kinder in einem neuem, einheitlichen System in Budapest im Jahre 1945. Die Organisation und die verwirklichung dieser neuen einheitlichen Erziehungssystem, das Programm der Konduktiv-Erziehung, verlangte neue Bildungsform. Deshalb arbeitete und organisierte dr. András Petó die Hochschulbildung der Fachleute, die einzige im seinem Art in der Welt. Die Konduktiv-Erziehung wurde im Jahre 1950 begründet, deren Nachfolger ist die heutige Institut Petó. Die Konduktiv-Erziehung misst grosse Bedeutung der human Dimensionen dem interpersonalen Beziehungssystem der Kindergruppe und der Beziehung zwischen dem Konduktor und Kind, bzw. zwischen den Eltern und Kind bei. Das Method benutzt keine speziellen Zeugen und Mitteln, Maschinen, nur die im Prospekt sehbare einfache Möbeln. Die Konduktiv-Erziehung ist nicht ein Rehabilitationstechnik oder Therapie, sogar nicht ein Method, sondern ein System, dessen Erfolg sind durch mehrere Bedingungen beeinflusst.

*Die Adresse der Institut Petó:*  
**Mozgássérültek Petó András Nevelőképző és Nevelőintézete**  
 1125 Budapest XII., Kútvolgyi út 6.

A Csongrád Megyei Gabonaforgalmi és Malomipari Vállalat a megye egyik legnagyobb élelmiszer-ipari vállalata. Ez a szép alföldi vidék az ország legnagyobb gabonatermelő területei közé tartozik. A mezőgazdasági termelés szép sikereket ért el. Ebben a körzetben a feldolgozóipar is erőteljesen fejlődött. Ezen körülmények és lehetőségek is adják, befolyásolják a vállalat tevékenységét.

A feldolgozótevékenységünk kétirányú:

- A termelés volumenét tekintve a keveréktakarmány-gyártás a legnagyobb. Az állattartó nagyüzemek és a kistermelők részére széles skálában, állatfajonként és korcsoportonként típusokat, előkeverékeket és koncentrátumokat állítunk elő, az igény szerinti receptúra alapján.

- A másik feldolgozási irány élelmiszercélelt. Ma mindkét bűtát és rozsoz őrlünk. A malomipari tevékenységgel különböző tulajdonságú, speciális liszteteket gyártunk, tészta-, süti-, édesipari, valamint lakossági felhasználásra.

Lisztfeldolgozással a lakosság új fogyasztói igényeit, valamint a lisztkeverékeket felhasználó üzemek folyamatos ellátását kívánjuk kielégíteni.

Vállalatunk tevékenységéhez szükséges berendezések felújításán, karbantartásán és gyártásán kívül Pető-bűtor gyártásával is foglalkozik.

**TERMÉKEINKET** a közvetlen felhasználókön és a nagykereskedelmi hálózaton kívül saját bolti hálózatunkban is értékesítjük, melynek egy részét nemcsak megyénk ellátására, hanem az országos igények kielégítésére és export céljára termeljük és gyártjuk.

Köszönjük, hogy érdeklődésével megtisztelti termékünket. Csongrád Megyei Gabonaforgalmi és Malomipari Vállalat

Az általunk gyártott Pető-bűtorokról magyar, angol, német nyelvű fényképes tájékoztatót a következő címről kérhet:

**Forgalmazó: Csongrád Megyei Gabonaforgalmi és Malomipari Vállalat Szeged, 6701 - Pf. 137.**

**Telex: 82-709 - Telefax: 36-62-26-303**

**Gyártja: Karbantartó Üzem**

**Szeged, Szabadsajtó u. 54. sz. 6725**

The Csongrád Megyei Gabonaforgalmi és Malomipari Vállalat (Company for Corn Trade and Milling Industry in Csongrád County) is one of the largest food producing enterprises of the county. This attractive lowland landscape belongs to the largest cereal growing areas of Hungary. Agricultural production had significant success in increasing the average yields and producing high quality crop. Animal husbandry is also very important in this area as the processing industry is well-developed, too. Our company's activity is influenced by the above circumstances and possibilities. The purchased products are sold with or without processing after storing.

The processing activity has two directions:

— With a view to the extent of the production, the mixed fodder production is the most significant. On the basis of the requested receipt, fodders, premises and concentrates are produced for species of animals and age groups for the animal keeping large and small farms.

— The other direction of processing is food production. Wheat and rye are milled in our mills. Our milling industrial activity includes production of special flours used by farinaceous, baking and sweet industry and also by individuals.

Flour processing satisfies the latest demands of the consumers on the one part, and a continuous supply is assured for the plants using flour mixtures on the other.

Our company deals not only with the reconstruction and maintenance of the equipments necessary for its own activities, but produces Pető furniture, electric pneumatic rotary locks, quick mixers of type Bombix 500 and 3000, gránit fodder press and fittings. Machines and fittings suitable for producing mixed fodders and vegetable flours in different granulates are made to order.

OUR PRODUCTS are sold not only to direct producers or through wholesalers but also in our own shops. A part of our products are sold in the county and in the whole country, while another part is exported.

FLOURS are milled from good quality wheat, durum wheat and rye in the demanded granulate size, gluten content and bran content. The by-products of wheat milling, the wheat germ and bran have nutrition quality. Wheat germ is rich in vitamins and minerals, therefore it is an element of the particular nutrition culture and is an excellent basic material of sweet industry.

FLOUR MIXTURES. Half-manufactured products are made in the flour processing plant in order to make the work in the kitchen and the baking process easier. These products are sold with the trade mark UNIKORN in small (200-400 g), medium (5 kg) and large packages (20 kg). Flours are mixed with additives, flavouring substances and substance improvers in order to make them suitable for leavened pies, cakes, warm pies in restaurants, garniture, vermicelli and desserts, as well as for coating vegetables and meats. At present we have two products for diabetics.

BAKING INDUSTRIAL ADDITIVES. They contributed to the introduction of the up-to-date baking industrial techniques. They make possible shaping by machines, they improve the volume, crumb structure and crust development of baked goods and increase shelf-life.

We co-operate with numerous research institutes, universities and organizations in order to preserve the profile of our company and to develop new processes, techniques and products.

We hope that we succeeded in arousing your interest regarding our activity. We will be glad if you show interest enabling us to widen our business connections.

We thank you for the interest shown in our products. Company for Corn Trade and Milling Industry in Csongrád County Hungary

You can obtain a prospectus — showing our Pető furniture — in Hungarian, English and German language from the following address:

**Distributor: Csongrád Megyei Gabonaforgalmi és Malomipari Vállalat Szeged, 6701 - Pf. 137.**

**Telex: 82-709 - Telefax: 36-62-26-303**

**Manufacturer: Karbantartó Üzem Szeged, Szabadsajtó u. 54. sz. 6725**

Csongrád Megyei Gabonaforgalmi és Malomipari Vállalat (Unternehmen für Getreidevertrieb und Mühlenindustrie des Komitats Csongrád) ist eines der größten Lebensmittelunternehmen des Komitats. Diese schöne tiefländische Landschaft gehört zu den größten Getreideproduktionsgebieten Ungarns. Die landwirtschaftliche Produktion hat entscheidende Erfolge in der Erhöhung des Ertragsdurchschnitts und Herstellung der Produkten von guter Qualität erzielt. Dieser Kreis verfügt auch über eine intensive Tierzucht, weil sich auch die Verarbeitungsindustrie sehr kraftvoll entwickelte.

Auch diese Bedingungen und Möglichkeiten können die Grundtätigkeit des Unternehmens beeinflussen. Die gekauften Produkte sind nach Lagerung mit oder ohne Verarbeitung verwertet.

Unsere Verarbeitungstätigkeit hat zwei Richtungen:

— Was die Grösse der Produktion betrifft, ist die Mischfutterproduktion die grösste.

Futter, Vormischungen, Konzentrate werden pro Tierarten und Altersgruppen für die Tierzuchtgrossbetriebe und Kleinbauern in breiter Wahl und aufgrund des beanspruchten Rezepts hergestellt.

— Die andere Verarbeitungsrichtung ist Lebensmittelherstellung. In unseren Mühlen werden Weizen und Roggen gemahlt. Innerhalb unserer Mühlenindustrietätigkeit werden verschiedene spezielle Mehlsorten für die Verwendung der Teig-, Back- und Süßwarenindustrie und Bewohner hergestellt.

Durch die Mehlerarbeitung werden die neuen Ansprüche der Bewohner befriedigt und die Mehlmischung verwendenden Betriebe ununterbrochen versorgt.

Unser Unternehmen beschäftigt sich ausser der Erneuerung und Erhaltung der zu seiner Tätigkeit nötigen Einrichtungen mit Pető-Möbelherstellung. Produktion der elektrispneumatischen Drehverschlüsse, Schnellmischmaschinen Bombix 500 und 3000, gránit Futterpresse und Bestandteile. Maschinen und Bestandteile werden zur Granulierung der Mischfutter und Pflanzenmehle in verschiedener Granulgrösse auf Bestellung hergestellt.

— UNSERE PRODUKTE werden nicht nur an die direkten Verwender und das Grosshandelsnetz verkauft, sondern auch durchs Netz der eigenen Geschäfte. Ein Teil der Produkte befriedigt nicht nur die Ansprüche unseres Komitats, sondern auch die des ganzen Landes, und ein Teil wird exportiert. d. h., für die Zwecke des internationalen Warenaustauschvertriebs hergestellt.

— DIE MEHLE werden aus Weizen, Durumweizen und Roggen mit erforderter Granulgrösse, Glutengehalt und Kleiegehalt hergestellt. Die Nebenprodukte der Weizenmahlung, der Weizenkeim und die Weizenkleie verfügen über Nahrungsqualität. Der Weizenkeim ist reich an Vitaminen und Mineralien und er ist deshalb das Element der anspruchsvollen Nahrungskultur und ein ausgezeichneter Grundstoff der Süßwarenindustrie.

— MEHLMISCHUNGEN. Küchenhalffprodukte sind in unserem Mehlerarbeitungsbetrieb hergestellt, um die verschiedenen Küchenarbeiten und Backprozesse zu erleichtern. Diese Produkte sind unter der Marke UNIKORN in kleiner (200-400 g), mittelgrosser (5 kg) und grosser Verpackung (20 kg) vertrieben. Die Mehle werden mit Additiven, Würzen und Substanzverbessern vermischt und dadurch werden sie zur Bereitung der Hefeteige, Backwerke, warmen Teige im Restaurant, Garnierungen, Einlagen und Desserten und zur Panierung der Gemüse und Fleische anwendbar gemacht. Zwei von unseren Produkte sind zur Zeit zur Bereitung Diätspeisen brauchbar.

— BACKINDUSTRIELLE ADDITIVE. Dadurch wurde die Einführung der modernen Backindustrietechnologien geholfen. Sie ermöglichen die mechanische Verformung und verbessern das Volumen, die Krumestruktur und die Rindeentwicklung der Backwaren und längern die Erhaltung.

— Wir haben enge Verbindung mit zahlreichen Forschungsinstituten, Universitäten und Organisationen, um die Tätigkeit des Unternehmens aufzubewahren und neue Prozesse, Technologien und Produkte zu entwickeln.

— Wir hoffen, dass es uns gelungen ist, Ihr Interesse für die Tätigkeit unseres Unternehmens wach zu rufen. Es macht uns grosse Freude, wenn Sie uns ersuchen, um die Partnerverbindungen zu erweitern.

Wir bedanken uns für Ihr Interesse.

Unternehmen für Getreidevertrieb und Mühlenindustrie des Komitats Csongrád Ungarn

Der Prospekt über die von uns hergestellte Pető Möbeln ist bestellbar auf ungarische, englische und deutsche Sprache unter der folgender Adresse:

**Vertreiber: Csongrád Megyei Gabonaforgalmi és Malomipari Vállalat Szeged, 6701 - Pf. 137.**

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# CONDUCTIVE EDUCATION

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*The conductive education approach is a highly effective method of teaching and learning for students with physical disabilities. This book provides a comprehensive overview of the approach, including its history, theory, and practice. It is an essential resource for educators, therapists, and parents.*

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