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Contents

WELCOME LETTER OF THE PRIME MINISTER OF HUNGARY

Dear Congress, Ladies and Gentlemen,

Let me greet with particular respect all the participants of the 5th World Congress on Conductive Education.

Let me greet our hosts, who enhance the reputation of the Republic of Hungary all over the world and whose knowledge has become a real Hungarian speciality by now. A value for which Europe, and the entire world, can be proud of us. The same way as Albert Szent-Györgyi, an outstanding representative of science in Hungary gave vitamin C to the world, you give the Pető method and the conductors trained for its implementation to humanity.

Let me greet experts and conductors from various parts of the world. Let me express my sincere appreciation for honorary conductors awarded earlier and to be awarded at this occasion, both as benefactors and selfless people.

I think it is impossible that a more humane society, a juster world come about without you. You are the ones who elicit people's hidden strengths, who are capable to induce ill people to win over themselves and overcome their physical and psychic problems. You are the ones to make your patients recognise: "man was not born to be defeated".

Dear Congress,

The achievements of the Pető method are not less that the victory of will over limitations. The victory of the soul over the body. The victory of man over illness. I think that you, who have become capable to explore the secrets of the human body and to create independent people, are "masters" in the noblest sense of the word: we should bow to you. It is impossible to thank for or recognise at real value what you do for your fellow-men.

Now I still intend to express our gratitude on behalf of the Government and recognise how you complete your duties. Benevolence, understanding and assistance, however, constitute duties of us all, a measure and quality of our

humaneness. This is the reason why, for the first time in the history of democracy in Hungary, my Government raised the cause of equal opportunities to the rank of a ministry as a special governmental factor. I know that we are on the right track. This is also a step forward to a world where assistance to and medical treatment of ill and prostrate people is not a private family affair but also a duty of a communal society.

In the spirit of all this, I would like to wish you successful therapeutic work, good health, lots of happiness and all that is fine and fair.

20 June 2004

Yours,

Dr. Péter Medgyessy
Prime Minister

WELCOME LETTER OF MINISTER OF CHILDREN, YOUTH AND SPORTS

„You seek to educate? Awaken curiosity; show the destination, an illuminate the road leading to the solution."

Ladies and Gentlemen

It is a great pleasure for me to welcome all participants and organisers of the 5th World Congress on Conducive Education. Unfortunately, official duties prevent me from joining your personally today. Therefore I would like to use this letter to share some of my thoughts with you.

First of all I would like to emphasise that the opportunity to be an advocate of such an outstanding event is of great importance to me. I am pleased that I can lend my moral support to this Congress and that I can be of assistance to the organisers in their efforts to reach out to the wider public, beyond the professional experts working in this area.

Conductive pedagogy

The term probably sounds a little odd, rather scientific to most of us. But it is when we meet a child with a disability or an adult who, after a long, arduous struggle, is attempting to speak, walk, or make full use of his body, that the notion of conductive pedagogy takes on its full meaning.

András Pető. He is a well-known, often heard name. Still, many people do not quite know what to associate with this name.

András Pető's conductive pedagogy. For adult and child alike it provides the key to lead a quality life. And it was András Pető himself, the innovator who gave us this key. He created the opportunity to improve patients' conditions with a shorter therapy aimed at developing the individual's personality as a whole. A therapy whose goal is not to change the disability but to endow the human being with the ability to change its method, and therein also lies its ingeniousness, is to teach, to provide pointers.

To develop the goals, which also guide us towards the solution. It is also thanks to you that this method is giving thousands of people worldwide back their joy of life. I sincerely believe that the constructive discussions, useful dialogues, and new information emanating from this Congress will enable an ever increasing number of people to lead fuller lives. On this optimistic note I would like to wish you a pleasant stay and more and more people cured as a result of your efforts.

20 June 2004

Ferenc Gyurcsány
Minister
Ministry of Children, Youth and Sports

OPENING SPEECH OF THE 5TH WORLD CONGRESS

June 2004, Budapest

Esteemed Chair, Distinguished Guests, Dear Friends and Colleagues

On behalf of the Organizing Committee, it is my great pleasure to cordially great all of you at the 5th World Congress on Conductive Education, Science and Quality, at the Sofitel Atrium Hotel, here in Budapest.

The Congress is designed to provide an innovative and comprehensive overview of the latest methodological, theoretical and research developments in Conductive Education and in some other, related scientific, theoretical and practical areas too. This Congress gives the possibility for the introduction and discussion of the national, international and organisational achievements also.

Our First World Congress, organised by the Pető Institute, was held in Budapest, in 1990. In our life this date symbolises not just the start of a new, democratic development of our country but at the same time it means for us the start of a new, unlimited, worldwide dissemination of information on Conductive Education also. Not long before this very special time, Conductive Education was a Hungarian issue, something, that was translated and explained by a few enthusiastic, highly valued, non-Hungarian professionals for the others. It was something very extraordinary in this very ordinary world.

Through media coverage, many valuable results and world of mouth Conductive Education work suddenly has became known internationally and very strongly supported by thousands of parents. Conductive Education emerged as a new, potent, integrated approach, a dynamic force for the benefit of children and adults, cutting across the dualism of mind and body, the border between teacher and learner, health and education.

In these past 14-15 years Conductive Education spread out very rapidly from our country, from our Institute, and is present already in every part of the world. The key to that fresh movement became the persons, who have always been, the - conductor-teachers and lecturers. The Pető Institute has trained 1244 Hungarian and non-Hungarian- professionals. I am very proud of the knowledge base and skill, that brought this determining, centre of excellence role of the Pető Institutes College and Practice Institution disseminating the Hungarian know how worldwide on a high standard.

In this development I must sadly mention the great names of Conductive Education, unforgettable personalities, passed away from the previous Congress, held in London, where we last met. They had very specific role, heavy impact on this phase of Conductive Education, and had a profound effect on the past.

The first name to mention with very high appreciation is Dr. Mária Hári, who was the reference point, the knowledge base and determined Conductive Education's development after Pető, served, represented and developed Pető's intellectual heritage in its purest form. She led not just the Hungarian but the worldwide realisation of Conductive Education practice, developed its scientific, theoretical aspects, gave it to us, by her publications and lectures, and influenced its organisation and growth.

Later in last year the English-speaking world of Conductive Education lost Esther, the very valued and influential professional not just in Britain. Esther Cotton fulfilled a mission, her name is strongly connected to transferring the belief, basic knowledge and a form of practice to realise the principles of Conductive Education as fast and wide as possible, make the strength of it known by professionals keen to provide more help for children and adults with brain damages.

In February this year the Far Eastern community, Hong Kong and the Colleagues throughout the world were shocked by the sad message that Dr. Marion Fang passed away. Marions' energy, knowledge and determination in the realisation of the principles of Conductive Education brought a success story to follow. With Marions' leadership colleagues in Hong Kong built up a strong, comprehensive, systematised and official option, from the early

intervention, to school education and vocational training in Hong Kong. Marion had many more plans, and was very keen to further disseminate the knowledge in the Far East.

Ladies and Gentlemen

Please, remember about Dr Mária Hári, Esther Cotton and Marion Fang. May I ask you please, to express the highest regard and esteem of the whole international community of Conductive Education and stand up for one minute to the memory of these great personalities.

Esteemed Congress

Our fifth event will have again a symbolic role, firstly this year is entitled as the re-union of our country to the European Community and the re-union at the Alma Mater of all our former students, working all over the world. Many distinguished invited speakers and scientists have agreed to join us, participating in this Fifth World Congress. Papers will be presented in the form of plenary and parallel sessions, videos and posters, which will include scientific materials, assuring a major scientific step forward in the progress of Conductive Education. The number of abstracts sent in was unexpectedly high, close to 150, the largest ever to date.

Programme areas will range from neurobiology, neuroanatomy, pedagogy, psychology, Conductive Education methodology, and history, including valuable memories, philosophical, theoretical areas, to evaluation and school techniques, and integration studies. We will discuss new and innovative initiatives and the forms of practical Conductive Education. A full discussion on learning in Conductive Education, school and specific facilitations and the parents' role will be integrated into the programme. Special emphasis will be given to rehabilitation related topics including the current status of new procedures and regulations.

Your interaction and free communication with your colleagues from many different countries will stimulate a creative exchange of ideas and will be personally rewarding.

We hope that you will enjoy this Congress and learn the most recent scientific and practical work in the rapidly evolving field of Conductive Education. I'd like to warmly welcome you in Budapest and look forward to your active participation.

Ladies and Gentlemen

I declare the 5th, World Congress on Conductive Education open.

President of the International Pető Association
General Director of the International
Pető Institute

Novelties(?) in Conductive Pedagogy

(Old fundamentals enlightened by new findings)

by Ildikó Kozma

The originator of conductive pedagogy (CE) Dr. András Pető (in Hári, Székely 1962, 1998)[1] and his follower Dr. Mária Hári (2001)[2] stated in their time many revolutionary new theories about learning and rehabilitation possibilities of children with dysfunctions. Senior CE lecturers (Hári-Horváth-Kozma-Kőkúti, 1992)[3] and other members of the Pető Institute College according to their broad experiences further developed these basic thoughts of Conductive Education (CE). These fundamentals were very widely questioned at their appearance, but many of these ideas have got scientific justification by modern studies in very recent years.

"Learning to learn"

The spectrum from very old to brand new learning theories consists of many approaches or ways of explaining how humans learn. Learning is the process by which we receive and process sensory data, encode such data as memories within the neural structures of our brain, and retrieve those memories for subsequent use. All learning takes place within the brain, and as the understanding of the underlying structures and processes of the brain increases, we should apply that knowledge to further improve conductive education, teaching-learning and our conducting-facilitating environment. Learning is a personal act. It is very individual on how we learn, what we learn and when we learn. We all have our own learning style.

Learning is a holistic experience. The act of learning is paradoxical in nature. It can at times appear to be a very simple act. Yet, when we encounter difficulties in learning something, we no longer take the learning process for granted. The existence of numerous definitions and theories of learning express the complexity of this process. “Learning implies a change in the individual as a result of some intervention. It may be viewed as an outcome or as a process." (Belkin and Gray, 1977)[4]. This definition reflects a behaviourist view of learning, for it equates learning as an outcome, but it is important to recognize that "intervention" in the learning process can imply many different things. The degree of intervention (whom, what, how) are the defining factors of a learning theory. These factors help distinguish the many different theories. These theories are not stagnant. They are evolving and changing as scientists discover new ways of viewing humans.

The extremes of this learning theory spectrum are represented by respectively, the Behaviourist and Constructivist theories of learning. As theories trying to explain the same thing, they are bipolar based on their respective views of how knowledge is acquired and the intervention of tools of learning (teachers or instructors).

There are authors who in fact simplified voluntary or automatic behaviour as being either strengthened or weakened by the immediate presence of a reward or a punishment (Skinner, 1968)[5]. The use of exams to measure learning, the many explanations and methods of rewards and punishments in the school, and the so called “conditions of learning" by Robert Gagne, are all examples of the Behaviourist influence. Behavioural learning theory created a systematic approach to teaching. Others combined behaviourist principles of learning with cognitive theory of learning, named Information-Processing. The focus in this combination was of the internal information processing that occurred during a learning moment. The design of teaching must be undertaken with suitable attention to the conditions under which learning occurs. From the learners point of view learning conditions are both external and internal. These conditions are dependent upon what is being learned (Gagne, Briggs, 1974)[6]. It is in effect, this type of systematic approach to teaching that acted as the catalyst for the creation of another view of the way humans learn. Behaviourist learning theory had served its purpose and its approach and goals were becoming outdated according to Constructivists.

Constructivism is recognized as a unique learning theory in itself. Constructivist learning theory sought to improve on what behaviourist learning theory had already established by focussing on the motivation and ability for humans to construct learning for themselves. It viewed behaviourism as being too teacher centred and directed. It was void of meaningful learning. They also saw the teaching process focus too much on individual work rather than on group work. Theorists like Dewey, Vigotsky, Piaget, Bruner and others associated with Constructivism believe that all humans have the ability to construct knowledge in their own minds through a process of discovery and problem-solving. Learning according to constructivists is a question of motivating an individual to attach new meaning to past experiences. In the theories of Pető and Hári we meet these thoughts. The goal is to teach in such a way as to produce the most learning for the least teaching. In this aspect teaching is minimalist. Those educators who share this view of learning want children to be motivated learners, critical thinkers, and problem solvers. It is to be achieved through an active, motivating education environment that equips the learner with the necessary tools to participate and to take ownership of the learning process.

We can see some of the fundamental teaching statements of CE in the work of Tapscott. Tapscott cites eight shifts in learning, happening today, (from these at least seven are practiced in CE already more than fifty years):

* (From linear to hypermedia.)
* From instruction to construction and discovery.
* From teacher-centred to learner-centred education.
* From absorbing material to learning how to navigate and how to learn.
* From school to lifelong learning.
* From one-size-fits-all to customized learning.
* From learning as torture as learning as fun.
* From the teacher as transmitter to the teacher as facilitator.

A transformation in learning is taking place today from what Tapscott labels "broadcast" learning to "interactive" learning. No longer are today's generation of learners satisfied in being the passive recipients of the traditional teaching process, rather, they want to discover it for themselves by becoming

interactive with the learning. New tools offer great promise for a new model of learning - one based on discovery and participation (Tapscott, 1998)[7]. Is this statement really new for CE professionals?

Freud focussed on our sub-conscious, Skinner on our observable behaviour, cognitive psychologists on our mental processes, humanistic psychology on our social and interpersonal development. The Scaffolding Theory (Vigotsky, 1971)[8], the so called "Brain-based Learning" theory (On Purpose Associates 1998a)[9] and others show the complexity of understanding how humans learn. The new flowering of learning theories expresses our biological, social and cognitive complexity. Many theories exist, all focussing on different aspects of our make-up as humans. Each theory is an attempt to explain how we learn, act and behave.

Howard Gardner (Harvard professor) took a more holistic approach in describing our cognitive profiles. His classification of human intellectual ability into seven intelligences incorporates many aspects of psychology to define the cognitive behaviour of humans. In his "Theory of Multiple Intelligences" he states that human intelligence should not be equated solely with linguistic or logical-mathematical intelligence alone. Gardner identified many type of different intelligences, (Gardner, 1993)[10] that humans may possess. His list includes:

* Linguistic intelligence
* Logical-mathematical intelligence
* Spatial intelligence
* Musical intelligence
* Bodily-kinaesthetic
* Interpersonal intelligence
* Intrapersonal intelligence

"Multiple intelligences theory pluralizes the traditional concept" (e.g. the traditional concept of information-processing regards human learning as being analogous to a computer and its ability to store memory.) The theory of multiple intelligences provides a more holistic view of the intelligence of humans. Gardner states that we may all attempt to develop each of these

intelligences to our optimum level. However, we may be more adept in only certain of these intelligences.

Gardner's fascination with human intelligence and how the brain works was started with his own investigation of people, who had shown brain damage. He recognized that not all abilities, whether cognitive or motor-sensory, were eliminated from the individual's repertoire despite having undergone some brain damage. Gardner understood that we possess more than one form of intelligence and may aspire through practice and development to improve in the remaining intelligences. Gardner's theory links new thoughts to the already justified theory of neuroplasticity (Hámori, 1997)[11], which serves as ground to Conductive Education.

Learning, Action, Interaction in CE

Learning is the process by which we receive and process sensory data, encode such data as memories within the neural structures of our brain, and retrieve those memories for subsequent use. The variety of information stored within such memories is enormous, including such items as: how to identify relatives in a crowd, how to ride a bicycle, what is the shortest path to grandma's house, what is the rhythm or melody for a certain poem or song or what kind of taste has the chocolate. All learning takes place within the brain, and as our understanding of the underlying structures and processes of the brain increases we can begin to apply that knowledge to improve our understanding and construction of learning itself and learning environments.

Our ability to describe and understand the basic processes by which our brain learns has been enhanced by recent technological developments and by the accumulation of long-term studies in human populations. Of particular benefit has been the development of brain-imaging techniques like CT scan, MRI, PET, fMRI, MEG (Greenfield, 2000)[12] that allow us to observe the operation of normal human brains during the performance of a variety of tasks.

These technologies have allowed for example researchers to map neural activity during sensory data processing and monitor the transfer of information into long-term memory, to determine the basic mechanisms that underlie the transmission of information within the brain. Such research on brain struc-

ture, neural transmitters, and the process by which memories are stored and retrieved have allowed the development of neuro-physiological models of learning. Although neuroscience has provided us with an increasingly rich and accurate descriptive theory of learning within the brain, we still need prescriptive theories of how to maximize the efficiency and capacity of human learning. Learning theories are prescriptive and seek to minimize the time required to transfer information into memory and maximize the efficiency of retrieving that information. Our current knowledge of the brain, and our speculations regarding the function of learning, should assist such prescriptive theories in designing learning environments that provide for maximum learning efficiency.

The idea that there is an essential relationship between bodily movement, consciousness, and cognition is not a new one, but recent advances in the technologies of brain imaging have provided new and detailed support for understanding this relationship. Experimental studies conducted have explored the details

* of brain activity,
* not only as we are actively moving, but as we plan to move,
* as we imagine moving, and
* as we observe others move.

Works also capture important distinctions between pathological and non-pathological experience. Researchers are working on such questions, like:

* What happens in the brain and what do we experience when we are trying to grasp an object?
* How do we plan these types of actions?
* To what extent does explicit motor imagery contribute to such action?
* What role does a motor representation or motor schema play in the accomplishment of action?
* How is it possible to understand the intentions of others?
* What mechanisms allow us to imitate other people's actions?

Although in contemporary philosophical debates on consciousness one can still find arguments that simply ignore bodily movement as an important factor in cognition, several recent works have returned to serious consideration of movement and action.

Fundamentally important terms of CE

Consciousness

Consciousness is the operation of the plan-executing mechanism, enabling behaviour to be driven by plans rather than immediate environmental contingencies. The mechanism unpacks a single internally held idea into a series of actions. The act of doing something is motivated by a plan, an internally held image of an intended achievement (Miller, Galanter & Pribram, 1960)[13].

According to these thoughts the image is an internal representation, not necessarily a graphic visualizable entity. The plan is defined more broadly here than in its everyday sense, to mean a scheme that can control a sequence of actions to achieve a goal.

Planning

It is plans that motivate behaviour. The plans become the prime movers, the keys to understanding how behaviour is controlled. If the centrality of plans is so essential and is a reality, then it is important to understand more about planning:

* How and why plans are established and executed and
* Why the control of behaviour by plans rather than direct control by the environment should have evolved.

Almost everything about plans came from Miller, Galanter and Pribram. The general concept had precursors in the German psychology of the previous generation.

Humans typically have hundreds of plans, from small, immediate ones such as eating the next bite of dinner to large ones such as earning a college

degree. Our large-scale plans in turn contain a hierarchy of smaller-scale plans. As a plan is executed, a single goal state or idea is unpacked into a series of actions. The plan must be held in an active, working memory while this occurs.

Motivation, Action

The terms motivation, attitude, needs, intention and other similar ones are very difficult to define, they are very often used in a mixture, or as synonyms but most professionals who are concerned with education use the word to describe those processes that have major influence on learning and efficiency of it. Plans can also be discussed in terms of the psychology of motivation; modern conceptions of motivation include the pathway from motivating influences such as instinctive needs or selective attention, through plans, to action. The plan becomes the path from motivation to action.

Researchers have taken many experimental approaches to this question. They found that freely voluntary acts are preceded by a specific electrical change in the brain (the 'readiness potential', RP) that begins 550 ms before the act. Human subjects became aware of intention to act 350-400 ms after RP starts, but 200 ms. before the motor act. The volitional process is therefore initiated unconsciously. But the conscious function could still control the outcome; it can veto the act. Free will is therefore not excluded, it would not initiate a voluntary act but it could control the performance of the act (Libet B.)[14]. “Consciousness is the name we give to the process of executing plans” (Bridgeman 1992)[15]. There are other scientists suggest that monitoring plans requires another level of plans. The plan would self-destruct as it was executed, existing thereafter only as a memory of an action sequence. The monitoring mechanism need not become another homunculus because it functions simply as a comparator. Plans, considered as would explain behaviour and experience.

Many scientists believe that there must be neurological devices to make plans, store, execute and monitor them (Bridgeman, 1992). The currently active plan must have access to memory and attention. It must link these functions with perception in order to guide action according to a combination of the internally held plan and the external realities of the perceptual world.

In this scheme consciousness appears in the plan currently being executed. Consciousness of events, actions and ideas is nothing more or less than a result of the operation of this mechanism, along with its requisite memory functions. Consciousness becomes not a separate neural module, but a result of the operation of the planning process. It is an active process, not a passive state. Planning seems necessary to evoke consciousness, but it is not sufficient. Some very routine plans, even quite complex ones such as driving home, seem to take place without awareness or with an episodic use of memory of certain events only. The episodic memory seems so confounded with earlier experiences of the same activity that it fails to be recorded as a separate experience.

Executing a very routine plan that does not meet these criteria seems to leave the planning mechanism free to engage in other activities. In defining tasks that require "deliberate attentional resources", Norman and Shallice (1980)[16] indicated that they

a. Involve planning or decision-making,
b. Involve components of trouble shooting,
c. are ill-learned or contain novel sequences of actions,
d. Are judged to be dangerous or technically difficult, or
e. Require overcoming a strong habitual response or resisting temptation.

Consciousness is associated with planning for action, and as such it results from the operation of the controller of motor activity. To see how the controller might be organized, a comparison of the neural organization of sensory and motor systems is useful.

Almost all of the processing is unconscious; what we perceive consciously is only the tip of a neuronal iceberg (Bridgeman, 1992). Everywhere the neurophysiologist looks, unconscious processing dominates brain function. The receptive fields, anatomical arrangements and biochemical processes of neurophysiology remain hidden from conscious experience, not by repression but by structural limitations on the planning mechanism itself. We become aware only of the plan currently being executed and of the perceptual and motor events surrounding it.

Activities and language

At this point a question arises whether planning and language share the same mechanism, or whether a new parallel planning mechanism evolved to specialize in language. The open and flexible property of the planning mechanism allows for language to be added to its functions with little or no change. The mechanism already had the capacity to handle many plans simultaneously, to organize each one, to put them into priority, and to handle plans for different kinds of actions. Once the relationship between language and planning is articulated, a 'We are acutely aware of what we say and what is being said to us'. This contrasts with non-linguistic communications, such as human cries and laughs, which we produce without planning, as incidental concomitants of other activities or emotional states. We are capable of imitating these vocal outbursts, but we cannot deliberately produce them except in the proper context as part of other activities. The essential difference is in the planning, not the perception. Perception of our non-linguistic utterances puts us in touch with our emotions, while perception of our own language puts us in contact with our ideas. This view is not without precedent. Russian psychology has capitalized on this etymology, emphasizing the enhancement of conscious function that comes from social cooperation and communication (Luria, 1973)[17]. Many psychologists have pointed out the privileged position of language in human awareness.

The appearance of language as a communicative act generated by the planning mechanism brought with it some immediate and very powerful advantages: Not the least of these is that one also hears one's own speech, so that the plan-monitoring mechanism has immediate access to the plan-executing mechanism's products. In the process of development the loop can become internal, as pointed out by Vigotsky (1962)[18] in his analysis of the importance of internal speech in human thinking. One can become aware of one's own ideas; an enhanced self-consciousness becomes possible. An action plan becomes conscious only in the process of its execution.

What is unique about the linguistic action plan is that whereas the processes that generate speech remain unconscious, the linguistic sequence can be fed back into the neurological system that normally monitors external events connected with executing a plan. Essential to this capability is the parallel-serial-parallel route from a simultaneously held idea, through sequential plan-

executing mechanisms, and back into a perceptual module that accepts sequences, all without overt behaviour. If internally planned speech is fed back to a language-understanding process without leaving the brain, ideas from one's own internal language (thoughts) can be stored in the episodic memory that normally holds the perceptual results of the plan-monitoring process. The relationship between planning and consciousness, however, remains the same for linguistic acts as for other planned sequences that act on the environment in an instrumental way.

Learning concept of CE

In CE the concept of learning is used in a comprehensive meaning. Any activity of the person that leads to a relatively lasting change is seen as an opportunity to learn. Conductive education aims at systematic and also carefully constructed development that enables the individual to internally organise and coordinate functions through a planned range of comprehensive activities. There are basic principles established at the very beginning of CE some 50 years ago. Learning theories have a range of thoughts and among them with the very modern ones neither Pető nor Hári met. This fact must mean the very advanced, modern thinking of Pető and Hári, who were many decades ahead their time.

Their explanation includes the following:

* Learning is a search for meaning. (Therefore, learning must start with the issues around which students are actively trying to construct meaning.)
* Meaning requires understanding wholes as well as parts. Parts must be understood in the context of wholes. Therefore the learning process focuses on complex wholes, not isolated facts or actions.
* In order to teach well, we must understand the mental models that students use to understand the world, and the assumptions that support those models.
* The purpose of learning is to construct one's own meaning, not to have the "right" answers by repeating someone else's meaning. Learning is inherently interdisciplinary. (On Purpose Associates, 1998b)[19]

Such learning environments should also be designed around the ideas that come forward from brain-based learning. Instructional techniques (again something, what is well known in CE) associated with brain-based learning:

* “orchestrated immersion (concentration, interest,) where learning environments are created that fully immerse students in a learning experience;
* relaxed alertness, where an effort is made to eliminate fear while maintaining a highly challenging environment; and
* active processing, where the learner consolidates and internalizes information by actively processing it"

Learning environments constructed with these principles in mind will have real meaning for the participating learners. With other terms, the components to the achievement of the development appeared already at Pető and Hári:

* setting appropriate aims,
* supporting the progress of learning motives
* arousing cognition and exploration,
* the liking for play and create
* “Alienation must give way to involvement,
* enjoyment must replace boredom,
* helplessness must turn into a feeling of control, and
* psychic energy must work for the reinforcement of the sense of self, instead of being lost in the service of external goals“ (Csikszentmihályi, 1990)[20],
* arousing social motives,
* improving cognitive ‘routines’ (cognition, cognitive communication, thinking, learning),
* establishing the persons competences,
* developing personal capacities.

It is a crucial principle used in CE that in achieving the coordinated operation of functions an indirect path leading through the cognitive, perceptive levels is more effective than direct influence. The priority is the development of the

entire personality (demand for self-realisation, motivation, volitional qualities etc.) rather than improvement of movement or single functions. Learning is active functioning rather than simple copying, transmission and reception of knowledge. CE stimulates to act in a system of meaningful activities.

Intention in CE learning concept

Intention is in the background of activity and action, of the evolution, learning and development of motor performances; it serves as their basis and affects their development. When exploring the role of intention in CE, we focus on 'what to improve' rather than on 'how to do' it.

Intention is an often used term. It is a very efficient initiative of fundamental importance, an inspiration to do something and the decision to do it. The components of intention are dynamism, volitional energy, effort and internal rhythm. Intention is a unity of intent, the decision to perform motor action and the implementation that activates the highest level of cerebral structures. Intention is intellectual, emotional and volitional activity, not necessarily manifesting itself externally. If yes, than by sounds, facial expression, gestures. Senior practitioners working with children, who have no-speech, often state, that they know what these children want to express looking at their eyes.

There are a vast number of functions from which we choose, without being aware of it. This selection occurs at the same time in the functional entirety of the nervous system. Action is a result of this selection linked with intention. Intention shapes internal, individual organisation. Intention must precede the internal organisation for otherwise the action could not be successful. The appearance or stop of a movement is linked to intention. Intention comprises the intent to carry out action, the endeavours and the unity of the subsequent action and implementation. Artificial separation of this combination would be impossible, it forms an integral whole. Perception is a crucial part of precisely organised functioning. We perform movements in such a way that they correspond to the internal image previously created through intention. The phenomenon of the cycle: intention-action-feedback (verification, control, confirmation) feedback is known in the cybernetic

controlling as well. Also known is the phenomenon of 'feed forward', a preliminary report (the nervous system announcing in advance what is to be happen) referred to as the image of execution by Pribram. Intention is the internal preparation of achieving a goal. Realisation requires to automatically selecting the purposeful muscle function from many possibilities and the elimination of redundant ones. If we learn something, we do not learn the visible series of actions only. Proper intention and the related implementation will also emerge. Internal re-organisation is a re-organisation of intention also.

Rhythmical Intention

One of the most widely known elements of conductive education is the so-called 'rhythmical intention'. A specific rhythm is characteristic of our movements. As a harmonious entirety, our movements must be carried out to appropriate rhythm to fulfil the requirement of highly developed movement. In the course of our motor development a characteristic kinetic melody emerges with our motion. CNS damages often affect this kinetic melody also (Luria, 1971)[21] and the 'melody' (harmony) of the movement breaks. It follows from all these that the ultimate aim of CE are the change of the intention via rhythmical intention.

Rhythmical Intention in CE methodology is the verbalised plan, method of execution and the proper timing of an action in one. It is a tool of learning proper intention rather than the method of learning movement; it is shaping the intent of the person with dysfunctions. Numerous different forms of Rhythmical Intention are introduced in CE methodology and practice.

These days, due to the information explosion, the knowledge we attain at school, becomes incredibly fast outdated, some people think in every 3-5 years obsolete or needs considerable brush-up at least. The development of related disciplines and the findings of research into the conditions and methods of successful learning, the expansion of our experience-based knowledge promote the development of the methodology of conductive education and encourage continuous self-improvement. The improvement of our conductive pedagogical culture and applied methods would be unthinkable if

the theoretical grounds, by now in need of amplification, were not systematised and supplemented by evidence-based knowledge.

As experts are encouraged to review, increase and systematise their knowledge and thus those interested in the theory of conductive pedagogy as well as professionals practising it feel prompted to do the same.

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An Implemental Model for Mainstreaming Children and Adolescents with Cerebral Palsy into the General Educational System and the Community

by Rony Schenker

Over the past three decades, there has been a progressive trend towards the idea of mainstreaming children with special needs into the general (regular) school system. This trend is part of the social revolution emphasizing the rights of people with disabilities, including the right to equal and inclusive education. Policy in the social sphere is based today on the "principle of normalization" which promotes the human right to life according to accepted norms, with emphasis on the quality of life.

The 'Conductive Education' approach is based on designing a comprehensive environment of the child with the disabilities in a manner that fosters motivation and facilitates an active learning process that can effect improved functioning in the regular environment and integration into the community. Accordingly, the objective of 'Tsad Kadima' is to develop the ability of the child to adapt and learn and to develop his or her functional personality. These skills are essential for achieving the active involvement, independence and inclusion of the child in an educational framework alongside with children who do not have motor disabilities.

"A step forward to inclusion" is a project based on the principles of Conductive Education and on present educational-social concepts used by the "Tsad Kadima" Association as part of its inclusive worldview. This is a pioneering project in Israel, a land-mark at the "Era of Inclusion", an era that began in Israel in the late 80's with the initiation of the "Special Education Law" in 1988.

'Tsad Kadima' (A step Forward in Hebrew) is an association of parents and professionals established in 1987 with the aim of bringing the Conductive Education system to Israel. "Tsad Kadima' together with the Peto institute had trained up until now over 50 conductors and is developing a comprehensive array of conductive services to the population with Cerebral Palsy in Israel. With its opening in 1992, the "Tsad Kadima" Centre located in Rishon LeZion (near Tel-Aviv) operated a conductive kindergarten and a complementary framework for children and adolescents with Cerebral Palsy residing in central Israel.

The developmental view and the inclusive orientation of "Tsad Kadima" serves as a natural platform for gradual development of Tsad Kadima Centre into a "Conductive Expert Center". The geographical proximity to a regular school the "Eshkolot" school, whose system of values include the mainstreaming of children with special needs, allowed for the developing of a unique inclusive program, "**Neighbouring Inclusion"** or the **Natural Inclusive Campus"**, which I will enlarge upon further on.

What is a Conductive Expert Centre?

It is comprehensive-developmental centre, which acts toward inclusion of children and adolescents with Cerebral Palsy according to the Conductive Education principals. It provides a circle of educational, didactic, therapeutic and social services in special education institutions, in the general education system and in the community for this population and its families, in order to facilitate optimum learning and inclusion in the community.

- An expert centre is a focal point for social identity from early childhood to adulthood.

- An expert centre is specializing in the creation of a complex of services for the entire disabled community scattered within the jurisdiction of a municipality.
- An expert centre is a supervising centre for inclusive educational frameworks located in both the near and far communities.

The Professional Staff at the Conductive expert Centre

At the conductive expert centre there is a multi-professional staff lidded by conductors**,** a comprehensive pedagogic rehabilitator specializing in the needs of this population. As such, the conductor is familiar with the needs, difficulties and the variety of solutions suitable for these children.

On the basis of close to 15 years' experience, "Tsad Kadima" developed models of working partnerships between the Conductors operating the "Conductive Education" frameworks in Israel and the therapeutic and consultative staffs. These models allow the integration of disciplinary professional knowledge into the conductive concept and the exploitation of unique qualities of each discipline creating a comprehensive whole.

The **"Step Forward to Inclusion"** project operates along two main axis's: one, "inclusion in stages", operates as part of the educational system and works mainly on inclusion in regular schools. The other, "complementary inclusion" works beyond the formal educational system and mainly deals with extra-curricular activities, leisure, preparation for independent living and mediation in employment for the community with Cerebral Palsy.

Inclusion in Stages

Inclusion in stages is aimed for population with Cerebral Palsy at the ages of kindergarten to high school.

The guiding line of "inclusion in stages" is the concept of **inclusion as a partnership** between the special education system and the mainstream education system and not of the assimilation of the first into the second. As such, it offers a dynamic and continuous range of conductive inclusive possibilities that starches between the special education system on one pole and the regular education system, on the other.

A number of beliefs serve as the basis for "**inclusion in stages**".

a. Every child has the natural and basic right to learn.

b. Every child has the right to learn in the mainstream educational framework.

c. The parents play a central role in the development of the child's autonomous personality. Their involvement in indispensable in the process of the child's inclusion, and is an important condition for its success.

d. Inclusion does not mark the end of the role of special education; on the contrary, it stresses the necessity for it.

e. Inclusion is a process, which begins in the special education system and is not a point in time when the child transfers to the mainstream education system.

f. Inclusion may be reached at different levels for the vast majority of the children with C.P., with special attention being devoted to providing solutions catering to the special needs of the individual child.

g. The right to study in the mainstream educational system requires the development of a variety of alternative placements that will lower the barriers that might interfere with efficient learning.

h. The inclusive and the special educational systems are essential components of one educational picture.

Inclusion in Stages is operated in a number of ways:

a. "**A bridge for inclusion**" is a partnership with those educational frameworks, which are physically distant. It is mainly designed for the children of "Tsad Kadima who are partially included in kindergarten or school frameworks which are not geographically close to the "Tsad Kadima" Center, and to children who are partially/ fully included in schools in the neighbourhoods where they live.

b. "**Neighbouring Inclusion** ("**a natural inclusion campus**) – a partnership for special education and a regular educational framework geographically close-by. I will enlarge on this framework in the course of this lecture.

c. **"Decentralized inclusion**" – The establishment of Tsad Kadima's special education branches in cooperation with the regular educational frameworks in the region of a complete educational authority. This kind of partnership is now in the development stage in cooperation with a regular secondary school (junior and senior high school).

"Neighbouring Inclusion"

As part of the search for a building that could serve the purposes of the "Tsad Kadima Center, at the early 90's, the Municipality of Rishon LeZion allotted us a building that had previously served as a kindergarten which is located near an elementary school "Eshkolot".

It turned out that the educational values orientation of the "Eshkolot" mainstream elementary school is one that encourages the inclusion of children with special needs into it, and the school works intensively towards fulfilling that principle.

Tsad Kadima's developmental and inclusive orientation together with the natural proximity of the "Eskolot" school, allowed for the development of a unique partnership for mainstreaming children with Cerebral Palsy: '**Neighbouring Inclusion'** or a "**naturally included campus**".

The term "**Neighbouring Inclusion'**" means the physical presence of a special education school, the Tsad Kadima Center, in our case, near a regular school, or even in its yard, while preserving the Center's unique character. This geographic reality and the shared values supporting inclusion allowed for the mainstreaming of a population that had been considered impossible to integrate, by creating a continuous range and a dynamic space for individualized and group inclusion.

This model provides the opportunity for children with C.P. to belong to both a special education system and a mainstream system – without compromising the relative advantages of either. This cooperation places at its core the *partnership*, which is designed to ensure the maintaining of the both unique identity of each of the two systems and the commitment of each of them to their structured cooperation, without either of them become assimilated into the other.

The 'Inclusion in Stages' sequence

The sequence of the inclusive alternatives is multidimensional and starches from the segregated to the universal:

1. **The physical dimension:** lies between studying in the special education classes at the Tsad Kadima Center (special education framework) up until full inclusion in a regular school framework (Eshkolot).
2. **The temporal dimension:** stretches from partial inclusion once or twice a week to full inclusion.
3. **The social-pedagogical dimension:** from social inclusion to learning inclusion.
4. **The quantative dimension:** from group inclusion until individual inclusion.

The principle of "the list restrictive environment" is what directs mobility along the sequence of inclusion in its various dimensions, with the parents forming an integral part of this process.

The functions of the conductor in the process of' inclusion in stages'

At the Tsad Kadima Center, there is a professional staff (conductors and therapeutic personnel), specializing in the population of children with C.P. according to the principle of Conductive Education. The approach that guides the work is that inclusion is a long and complex process, which must be started while the child is still in the framework of special education.

In keeping with this concept, an individual, progressive program is constructed for each child at "Tsad Kadima, designed to lead the child towards inclusion in three main stages:

Stage A – A separate special education framework as a base, while preparing for inclusion and providing the initial experience in it.

Stage B – Partial inclusion in a regular education framework, with the base remaining in the special education framework.

Stage C – The inclusion of the child into the mainstream education framework accompanied and guided by the school staff, including

conductors, and in addition, provision of the special needs of the child by the special education staff.

The parents are full partners in all of the educational processes from the stage at which the educational framework in which the child will study is determined up to the joint construction of an individualized educational program.

Thus, the conductor accompanies the child, the family and the inclusive school staff throughout the inclusion process from the segregated stage up to full inclusion. The conductors at the Tsad Kadima Center are conducting groups, which provide the children with a variety of everyday learning experiences incorporating a complex of skills necessary for independence in an interdisciplinary manner. In addition, conductive support and guidance services are provided for the children and for the educational staff at the inclusive school. At the "Eshkolot" school, where about 25 children of Tsad Kadima's center have been mainstreamed, there is a staff team which includes conductors, home-room teachers,, special education teachers, therapeutic staff, counsellors etc.

The "Eshkolot" School is a pioneer in Israel (and perhaps in the world) which has included conductors as an integral part of the of its teaching and rehabilitation staff and in the operation of a conductive class as part of the mainstream education set-up. Two conductors are now employed full time at the school.

The conductor at the "Eshkolot" School is mainly responsible for mediating between the child and his special needs, his family and the complex of his school environment. As such, he/she fulfils a large and varied number of roles:

a. Conducting a class made up of pupils with CP, supervising of the included pupils, teachers and teachers' aides in various classes in the course of the day;

b. finding solutions to a variety of functional problems that might arise in the meeting between the pupil with CP and the environment of the inclusive school; individualized and group conduction of pupils with C.P.;

c. coordination of the school's rehabilitation staff;

d. Parent's supervision, coordination and assistance. Finding solutions to problems arising at school and at home.

Complementary Inclusion

The guiding line of "complementary inclusion" is the concept that children with C.P. comprise a "disabled community". Whether they are included in mainstream education or are in special education, this is a social group defined by the common denominator of disability, whose members are connected by their social as well as their educational and therapeutic needs, their interests and their hopes as well as limitations and disappointments.

"Tsad Kadima, as a comprehensive conductive expert centre, has developed a system of multi-age services for this community with disabilities scattered within the municipal jurisdiction in schools of varying levels of inclusion.

This cycle of developmental services includes:

a. Group activity for children included in regular education framework (which I will enlarge upon in the lecture),

b. A training apartment preparing adolescents for independent living.

c. Permanent living accommodations for adults with C.P. and employment mediation (in the development stage).

Activity groups for children included in regular education framework

In the afternoon, at the end of the day of formal education, the Tsad Kadima Center operates a program at a mainstream school (Eshkolot) focusing on functional-rehabilitation input for children with C.P. included in the regular school, provided by a team of conductors.

The central aim of these activities is to allow this group to function as a group of equals for support, progress in the functional-motor sphere. Develop of self-identity, facing up to the challenges of inclusion and in uninterrupted unique relation to their special needs at the end of the day of formal

education (which is at 13:00 hours in the elementary school). In keeping with that concept, the Eshkolot School in cooperation with Tsad Kadima runs complementary programs during holidays in the course of the school year and during the summer holiday.

Two basic concepts are behind these complementary programs: one, that despite their inclusion into a mainstream school, there is room for devoting special attention to the differences typifying this group, or perhaps on the contrary, the similarity between its members and providing the opportunity activates them as a group of equals. The second is that despite their inclusion they still need additional input in the functional-rehabilitation sphere, that are not intensively enough provided during the hours of school activity. The consequent conductive activities, allows for the construction of a comprehensive program of activity in the framework of a long school day and an expanded school year.

Summary

The "inclusive pendulum" has been swinging over the past several decades between two poles: one was almost total isolation that segregates the children and adolescents with special needs from their "normal" peer groups. This was followed by full inclusion whose aim is to assimilate each group into the other. The perspective, which developed over the passage of time and the accumulation of experience, has allowed us to see that even if there are specific groups for which the extremes of the pendulum are appropriate, there are still groups for which new rest stops must be found along this pendulum. Inclusion that will provide answers to two contradictory special needs: one is the need to belong to mainstream groups, and the other – simultaneously – the need to belong to the group of their equals. **A Step Forward to Inclusion** offers a different model of inclusion based on partnership: on the one hand, special education, representing the identity bound up with the disability, which requires special answers to these demands, and on the other hand, mainstream education, representing the overall society with its typical normative demands. The concept of "inclusion as partnership" requires the presentation of a range of possibilities as a "partnership continuum". A continuous and dynamic range of a variety of possibilities of inclu-

sion stretching between these two poles, including “a bridge to inclusion”, “neighbouring inclusion” and “complementary inclusion” services which binds together the community with disabilities, which has been scattered among a variety of social-rehabilitation possibilities.

Only a continuum of this sort allows for the person with special needs with the necessary time and space to be able to choose the point along the continuum between the special and the general to be able to lead his life in which he does not deny his disability and is not imprisoned by it.

Cognitive and Motor Development Lateralisation and Dominance

(Some issues of hand preference, laterality and specific methods used in CE)

by Júlia Horváth

Summary

Latest researches investigate not only the differences between the cerebral hemispheres, but also the dissimilarity of the fore and rear regions and cortical and subcortical structures. Being a cognitive method, conductive education influences differences primarily through the organisation of symmetric and rhythmic activities. By the system of age appropriately differentiated activities, the aim is to increase the synergy of the two hemispheres. Symptom and age specific programme is expected to be suitable for „bilateral" development in order to be optimal for the anatomically existing but disharmonic ally used neurological structures.

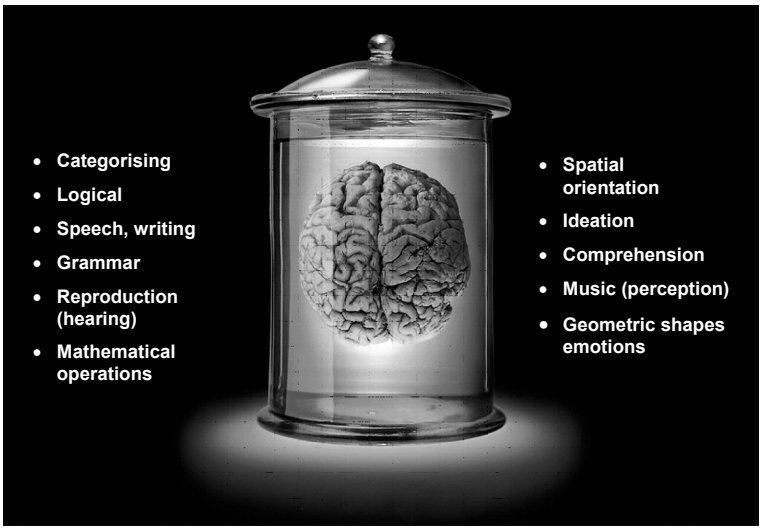
> **„***Is the brain, which is notably double in structure, a double organ seeming parted but yet a union in partition „?* *Maudsley*

> *„Brain damage no longer means simply the lack of destroyed tissues for the remainder of the individual's life it also implies responses to change in remain intact brain, not only in functional but also in structural terms…"* *Prechtl*

Since the 1820's scientists have questioned the asymmetry of the cerebral hemisphere, however the quest to finding information of reasons of dominance and lateralisation is still to this day inconclusive. The dominance of a brain has also been speculated to result from handedness. Scientific literature has treated hemispherical differences of cognitive functions, from different aspects. Asymmetry, differences the cerebral hemispheres (Hámori, 1999) the genetic determination of handedness (Annett, 1970), the hemispherical division of labour (Geschwind, 1984) are nearly constantly dealt with. Special educational investigations treat the relation between left-handedness, stuttering and dyslexia. Hungarian medical researchers deal with the connection between immune disease and handedness. Structural abnormalities in the brain may relate to language and social disturbances observed in autism. Boys with autism had significant asymmetry reversal in frontal language related cortex.

The issues of neuroplasticity and the learning processes the cells the various learning theories and the possibility of implementation constantly influence the renewal of Conductive Education.

Research into the divergent emotional characteristics of the two hemispheres was carried out already in the 1960's. Persons with injuries of the left hemisphere showed catastrophe reactions while those whose right hemisphere was damaged presented unjustified hilarity and unconcern regarding symptoms (Sackheim, 1991), giving the impression that the two hemispheres were specialised in divergent emotions, i.e. the right in experiencing and generating negative while the left positive emotions. Such distinctions are justified for the very reason that the right hemisphere has dominance in decoding material with emotional content, irrespective of the quality of the emotions. Emotional messages, coded verbally, are elaborated by the left, while visual messages by the right hemisphere, irrespective of their quality. The question bears close connection with the perception of faces where there is a special division of labour between the two hemispheres. The right hemisphere is better at detecting the familiarity of faces. That is why individuals with right-parietal injuries often fail to recognise their relatives, while the left dominates in analysing the specificities of faces.



Picture 1: Characteristic functions of the two hemispheres (Hámori, 2001)

Several studies have proved that the injury equally afflicts spatial orientation. In men, the organisation is more asymmetrical, while in women due to the larger volume of the corpus callosum the detriment i.e. the asymmetry is less severe (Geschwind and Galaburda, 1984). Research into aphasia has proved that damage to the frontal part of the brain leads more frequently to aphasia in women than in men; in men lesion of the posterior part occurs more often (Hier et al., 1994). While in women apraxia (impairment of the ability to select learned hand movements) is usually associated with lesion of the frontal part of the left hemisphere, in men it entails disturbance of the posterior part as well as speech disorder.

Numerous research methods can prove that in spatial tasks women prefer the left while men the right hemisphere. An injury of the left hemisphere causes more considerable orientation disorder in women than in men. Specialisation also affects memory processes. The left hippocampus specialises in verbal material while the right in visuospatial and image memories. In Japanese individuals, the lesion of the right hemisphere selectively affects traditional picture-writing, while damage to the left hemisphere afflicts letter-writing.

The right hemisphere specialises in gross motor movements and relies more on peripheral vision. The motor programming of the left hemisphere is much more interactive. This may account for the fact that gifted athletes frequently present a dominance of the right hemisphere (Geschwind and Galaburda, 1985). The dominance of the right hemisphere can be observed in talented musicians as well and many of them are not right handed. My own observation: 19 out of 34 pupils at the Kodály Institute were left handed male. The left hemisphere is activated considerably in experienced musicians, among other causes due to sequential analysis while the activating effect on the right hemisphere is characteristic of non-professionals only. Perhaps we may draw the conclusion that the reason why women less frequently have a speech disorder as a consequence of brain injury is not the better cooperation between the hemispheres but the phenomenon that areas involved with speech skills are seldom affected. Given that the frontal movement selection (praxis) system is close to the motor cortex, women perform better in fine motor movements. At the same time, an injury of the frontal part of the right hemisphere is much more detrimental in women than in men.

Some issues of handedness and lateral dominancy

While it is known that handedness is a heritable trait little is known how handedness varies between populations (Anett, 1970). There is some geographical variation too in human handedness. Many theories were born and reviewed the evidence for relation between anatomical asymmetries and handedness. Less of the variation in anatomical asymmetry of the cerebral hemispheres can be associated with differences between males and females than with differences related to handedness. The hand preference again is the issue, which are many theories put forward to account for hand preference can be categorized according to their environmental, anatomical or genetic and hormonal Geschwind-Galaburda emphasis. According to early views, dominant handedness is connected with the functioning of the dominant hemisphere. Apart from the hands, the dominance manifests itself in terms of sides as well, thus we may speak of lateral dominance. The dominant direction has an impact on natural positioning (Japanese artists' rolls keep the

right-left direction while the spiral stairs designed by Leonardo turn to the left.).

Studying the connection between language and spatial dominance, Geschwind and his team (1984) ascertained that the borderlines evolve during foetal life: in cases of dyslexia and left-handedness, the right hemisphere prevails. (That means that dyslexia develops as a defect but functions associated with the right hemisphere may be on a higher level.) The phenomenon is called "pathology of superiority".

In case of central nervous system injuries, especially hemiplegia cases excitatory and inhibitory symptoms, the diagnosis of the severity and the indication of CE are recurrent topics in Pető Institute's researches and publications (Horváth and Balogh 1990, Balogh and Kozma, 2000; Balogh 2003). Minus symptoms, like co-ordination disturbances, the insufficiency of alternating movements, lacking or disturbed body scheme is related partly or totally with the hemispheric division of functions. With regard to hemispheric dominance and asymmetry, several interesting and popular ideas have come about (for example, about the differences between the male and female brain). It is a scientific fact that the corpus callosum is thicker in women and the connections are stronger and faster between the two hemispheres.

Why a woman's orientation is better or why can she express herself verbally better? Although there are various popular theories concerning gender, differences, they do not seem to be primarily concerning the intellect but performance and that's what we must accept. Most men are better than women at solving orientation tasks and aiming movements rather than motor-skills. Women are better at identifying fitting details, recognizing familiar objects on a known route, dexterity and verbal communication. It is an interesting question, however, that there are hardly any women composers but many excellent musicians among women (abstraction, musical perception?). Do the differences remain in the case of hemispheric damage? Whether can a certain conclusion be drawn?

Research has dealt with various questions, for example, whether lateral dominance is congenital or acquired. Researchers have agreed on the first

manifestation of handedness coinciding with the appearance of speech. They assume that the ability to tell the difference between right or left is at around 5 and 6 but interestingly according to Piaget the image of right and left is the result of a long development and is finally formed by the age of 8. (It is a noteworthy view that may be considered when mixing up direction at the age of 6 is diagnosed as a learning difficulty!)

Tests conducted in early childhood (Liebermann, 1954) have shown that a child in a spontaneous situation holds out for an object with the dominant hand. As a result of changing the dominance, the personal space becomes twisted, which frustration is resulting in regression. Thus, changing dominance is a crude intervention in the body image, which makes instinctive adaptation more difficult. Since lateral dominance does not only mean handedness but also the hemisphere, forced change of handedness can be a source of various learning difficulties.

Even considering differing views CE can accept that the dominant hand and speech are two closely connected components of an organically determined system. The development of the dominant hemisphere is hindered by the fact that the child has to use his subdominant hand. With regard to writing as one of the most important human functions, the left-handed child writes in different ways, he holds the pencil while leaning to the right and although it looks a bit tense, the flexed wrist pulls the pen on paper. In another case the pen is leaning to the left but thus the pen must be pushed on paper (it requires a much higher level of strength) and a right-handed teacher may find it difficult to help the child. When and how can the conductor or the teacher help them?

Picture 2: Left-hander girl (School session of the International Pető Institute).

Pető Institute's investigations searched the issues of the hemispheric division of functions in cerebral palsy, congenital hemiplegia, and asymmetric tetraplegia the occurrences of epileptic incidents in hemispheric injuries associated symptoms of acquired hemispheric injuries and the related development processes.

Most issues of laterality, asymmetry and handedness could be followed in the clinical pictures of infantile hemiplegia and asymmetric tetraparesis.

The palsy is not necessarily the earliest and most severe sign of hemiplegia. The additional impairments and sensorimotor neglect are of greater significance. Impairments in hemiplegics of one side, growth retardation of affected side, strabismus (in majority) facial palsy (in minority) neglect of affected side.

Additional impairments can be: epilepsy, mental retardation, impaired vision, impaired speech, behavioural problems, perceptual problems. In the course, pathological development of EEG and/or epilepsy can be expected in 30% of the cases.

Between 1989 and 1994 in some cases were selected from scribbling to drawing in order to trace their handedness and drawing to discuss the alterations and try to explain that the specific disturbances of the body scheme is not irreversible and can be changed through planned educational influence. A population of 220 (80 girls and 140 boys) were examined and followed (Horváth, 2000). The proportion between males and females reflects Annett's division, the occurrence of the injury emphasised with the boys.

What happens if the dominant hemisphere is affected?

Symptoms faced by the teacher on the opposite side, negligation of grasp, abnormal posture, and the lack of movement pattern and notion is more characteristic than the loss of mobility of certain. It is widely accepted that the right and left hemispheric functions nearly always can be shown to have a distribution, which is different from the usual in the background of learning disorders. Functional differences and disorders are manifested in the disorder of judging spatial relations and spatial orientation. However, spatial-visual perception connected to the right hemisphere can be unaffected moreover above average in many cases.

With regard to creative talent and learning difficulties researchers in Hungary (Gyarmathy, 2002) writes that, the social environment may influence a further increase of learning difficulties. Cultures of a lower level favour facial expressions and gestures whereas apply verbalism secondarily. A child coming from such a cultural background mainly receives non-verbal or sequential stimuli but is forced to have a non-verbal and holistic approach. However, the education system lays an emphasis on verbosity, the development of the functions of the left hemisphere.

In the case of a minor damage to one of the hemispheres, the other hemisphere may take over the function of the damaged parts and although in such cases, the basic functions may suffer but at the same time, areas far from each other may get nearer to one another.

How might CE influence the development and the prognosis of hemiplegics?

CE assumes the plasticity of the brain and brings the two hemispheres of the brain into operation via cognition. In the case of cerebral palsy the dominances may be transferred or become insecure in both the dominant and subdominant hemispheres. During CE three-dimensional activities, simple and directed motor-sequences and two dimensional manipulation activities like writing at a more successful development via the cooperation of the two hemispheres. The concerted function of the two hemispheres and the inclusion of the more passive hemisphere take place with the help of cross and parallel movements, we hope. The use of cross movements is a well-known technique, which is applied in the after-care of the consequences of severe brain injuries and as a sight improving exercise. In the 1960's Doman and Delacato came to realise that the technique was not only useful for those with brain injury but children also improved in reading and writing. These exercises halted on the level of motor-practice and have become a special educational technique although nobody has disputed its success. For years special education and the education of children with visual impairment have used the symbol of infinity, the so-called sideways figure eight, which helps the inter-effect of the hemispheres with continuous movement and crossing the middle line.

Picture 3

These tasks were already present in András Pető's task series in the early 1950s**,** i.e. homolateral swinging, cross swinging (leg, arm). Picture 3, 4, & 5 shows a lying programme with crossing movements

Picture 4

Picture 5

Tasks for example: Clasping hands or moving opposite arm and leg, or cross movements – arms, shoulder, grasping the ears, or crossing, lower limbs, heel on the knee etc. (Picture 6)

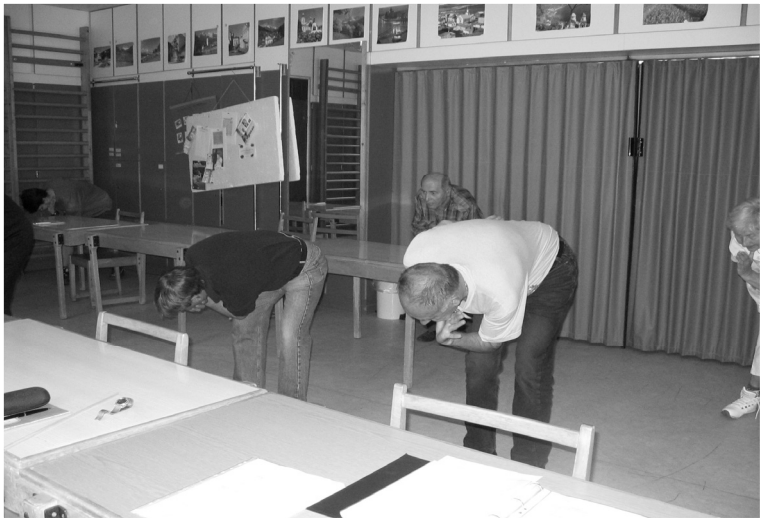
Picture 6: Cross movements during sitting programme

The neurophysiological basis of the procedures in CE might be the assumption that the more neurofibres the information arrives the closer the two hemispheres get connected. Hámori has called our attention to the verbal development of the right hemisphere, i.e. the development of musical language being a fundamental procedure towards the proportionate development of the two hemispheres.

Just like a few month old baby, the motor-disabled child is also responsive to the intonation, tone and tune of speech. Where musical education is halted or delayed at critical moments of life, nursery school age is a sensitive period in development; critical mistakes become fixed similarly to speech development.

What lesson can be drawn from the above for CE? The communication and language of the right hemisphere is represented by music and rhythm whose development based on capabilities from birth is as important as achieving

verbal and other elements. Therefore, tasks done to rhythm and singing, short, rhythmic folk rhymes and songs make it easier for our children to adapt to task situations.



Picture 7: Touching the knee of the opposite side

According to CE, the use of one versus two hands in activities like drawing and writing is not the problem. Writing is a task for hands, the dominant and the helping hand. The classical role for the dominant hand is picking up the pen and leaving trace. The helping hand may support, fix and balance. These, two handedness, the use of both hands, which is expressed and consequently enforced, does not mean that both hands perform all functions but the dominant hand must be decided on then the roles have to be defined and each hand will learn its own function. Solutions and facilitation techniques do not have to be ranked but selected to the situation. In conductive educational circles no-one disputes the use of simple, linear motor sequences at any age, however, it is useful to emphasise their necessity so that these motor sequences would be included in the developmental programme of both children and adults (Picture 7) in colourful variations thus enriching facilitation techniques and helping the inter-effect of hemispheric functions.

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Integrating Teaching Strategies for Cortical Visual Impairment in the Programmes for Children with Severe Multiple Disabilities

by Clare Cheng Yuk Kwan, Edith Yeung Yuk Shan and Lam Wing Na

The Centre

This is a presentation of a project on cortical visual impairment at the Jockey Club Marion Fang Conductive Learning Centre of the Spastics Association of Hong Kong (Fig. 1). The Spastics Association of Hong Kong has adopted the principles of CE for almost 20 years. The Centre is one of the special nurseries of the Association catering for preschool children, aged from one to six, with cerebral palsy and spin bifida. The children's abilities range from normal to being severely mentally challenged.

Fig. 1: Main entrance of the Jockey Club Marion Fang Conductive Learning Centre.

The Group

Two years ago, four spastic quadriplegic children with cortical visual impairment (CVI) as well as with severe physical, oral-motor, cognitive and

communication impairments were admitted to the Centre at the same time. In spite of the multiple challenges, the team of staff including the childcare worker, the physiotherapist, the occupational therapist, the speech therapist and the nurse decided not to undermine the focus on creating maximal amount of learning opportunities for these children based on the fundamental belief that every child can learn.

In planning their learning programmes, their visual problems were specifically targeted. Expertise in visual assessment from the Visual Assessment Team of the Child Assessment Service under the Department of Health and professional advice from the training team of an early intervention programme for the visually impaired children were recruited. The aim was to incorporate visual training strategies in the CE programmes.

Characteristics of children with cortical visual impairment

Children with CVI are known to exhibit some specific visual characteristics. They have preference for colour like bright red and yellow. Vision may be better when either the visual target or the child is moving. The majority of them are light gazers. One third of them are photophobic. They may experience a "crowding phenomenon" which means difficulty in differentiating between background and foreground visual information. Close viewing is a common strategy the children will use to reduce crowding. They have poor tolerance to visually complex target. They tend to shut off their vision from overstimulation or competition with other sensory inputs such as sound. They have visual field preference.

They often use their peripheral vision. When presented with a visual stimulus, they appear as if they are looking away from the target. They show a particular visual-motor behaviour, e.g. they look at an object momentarily and turn away as they reach for it. Novelty is another special visual behaviour of these children. That is they prefer to look at familiar objects rather then new things, behaviour totally opposite to normal children. There is latency between the presentation of visual stimulus to the child and his or her response to it.

The Programme

The multiple impairments of this group of children entail the expertise of multiple disciplines which are now often available in a special childcare centre in Hong Kong. However, the crucial point is how to make the best use of this multiple inputs of expertise to maximize the learning opportunities for this group of children. The Centre adopts the principles and practices of Conductive Education. We found the system particularly relevant to this group of children in the following perspectives:

1. All the professional staff forms a transdisciplinary team to tap on one another's expertise to plan and implement a holistic learning programme which integrates the different elements as a whole. In this way, the interconnectedness of the different challenges is attended to and consistency in handling is achieved.

2. The classroom is the stable and familiar learning environment for group learning. Interruption for taking each child to different departments for training is avoided. The classroom environment is specifically set up to meet the visual characteristics of CVI.

3. Learning in context is emphasized with a well-planned daily routine (Fig. 2). With consistency and repetition, the children can gradually anticipate and comprehend what is going on around them. The sequence of introducing visual, tactile and sound stimulation was carefully designed. Looking is encouraged and precedes physical exploration and sound stimulation.

Fig. 2: Staff and parent together walking with a child with CVI during routine.

4. Learning is made conscious with well-structured task series linking up with rhythmical intention. Care is taken to allow a time of silence between rhythmical intention and the presentation of the teaching material.

The Teaching Environment and Material

Taking into account the visual characteristics of CVI, measures are incorporated to re-arrange the room. For example, visual complexity is reduced to avoid overstimulation in a free play corner by covering a wall with a black curtain (Fig. 3). The black curtain serves as a contrasting background for targeted visual foreground. Toys are attached to the curtain by Velcro so that they can be removed easily. The child can then focus on one toy at a time (Fig. 4).

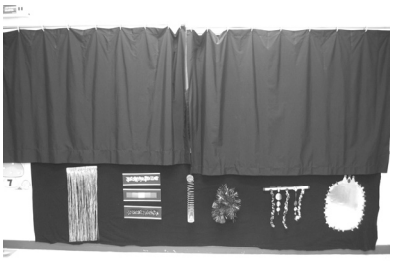

Fig. 3: A free play corner covered with black curtain to reduce visual complexity.

Fig. 4: A child looking at a suspended florescent spring in the free play corner.

The teaching material used is carefully designed to arouse visual responses. Purposefully modified material is prepared including toys which can produce visual movement effect by using reflective material (Fig. 5) or suspending targets (Fig. 6), covering the rungs of the ladder frame with bright red (commonly preferred colour) cartoon paper (Fig. 7 & 8), placing a shiny sheet on top of a floor mat to encourage the children to look at their own reflection (Fig. 9 & 10), blacking out the bottom of a tray to highlight the hand (Fig. 11 & 12) or the object (Fig. 13) in front, using white eating utensils against a black background (Fig. 14 & 15) to reduce complexity.

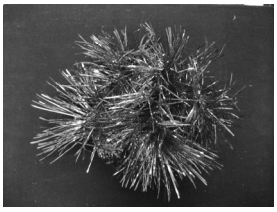

Fig. 5: A reflective red pon pon produces good visual movement effect.

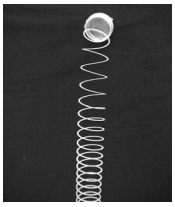

Fig. 6: A suspended fluorescence spring produces quiet movement effect.

Fig. 7: Bright red rung of the ladder frame helps the child to orientate her hand grasp.

Fig. 8: A child grasping the red rung of the ladder frames during walking.

Fig. 9: Children rolling over a shiny sheet on the top of the floor mat.

Fig. 10: Children looking at the reflection on the shiny sheet.

Fig. 11: Washing bowl with a black bottom draws child's visual attention to her hand.

Fig. 12: A child drying his hands on a black bowl.

Fig. 13: Looking at a bright yellow sock on a dark background.

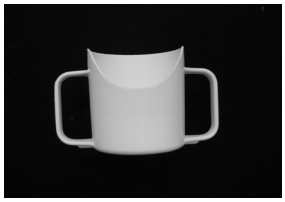

Fig. 14: A simple white cup highlighted by a dark background.

Fig. 15: A red spoon on a white plate provides great visual contrast.

The Daily Routine

The holistic principle is emphasized and every opportunity in the daily routine for using vision is availed.

The children's arousal for using vision is stimulated first thing in the morning (Fig. 16, 17 & 18). The bell and the voice of the teacher arouses the children's alertness to the environment, this is then followed by a minute of silence in order for the children to look at their own favourite colour.

Fig. 16: Roll call board: Each child is presented with his favourite object to look at.

Fig. 17: Ringing a bell and saying it, "I'm back."

Fig. 18: A silence period allows time to look at her favourite object.

Similarly, at mealtime, looking at the utensil precedes action (Fig. 19 - 25).

Fig. 19: Looking at a hand towel before wiping hands.

Fig. 20: Wiping hands with a towel on a black board.

Fig. 21: Tea time routine: Looking at a white cup on a black board.

Fig. 22: Lunch routine: Presenting a white plate on a black board.

Fig. 23: Focusing on the red spoon on a white plate.

Fig. 24: A child looking at adult filing his plate with anticipation.

Fig. 25: Use of vision is encouraged during feeding.

Task Series and Lessons

In the task series and lessons (Fig. 26), class routines to encourage the use of visual functions are developed.

Fig. 26: Good posture is learnt in a hand task.

For example, children are encouraged to look at individualized visual material during roll call in the beginning of the lesson (Fig. 27 & 28).

Time is allowed to facilitate the children to look at teaching material in every occasion the teacher hands out material and collects material after used.

Fig. 27: A child anticipating his turn to look.

Fig. 28: Looking attentively at a self-made visual aid.

A time of silence is emphasized during the presentation of the teaching material before the execution of rhythmical intention to reduce competition between visual and auditory stimulation and thus allows visual processing in the children.

For similar reason, the sequence of introducing visual stimulation (Fig. 29) before tactile stimulation or physical exploration is adopted (Fig. 30).

Fig. 29: Looking at a hand brush presented on a black board.

Fig. 30: Hand brushing to facilitate hand opening on a black board, which highlights the hand.

Taking into account of the visual characteristic of "Novelty", modified teaching material is used consistently to support the use of vision in task series and lessons (Fig. 31, 32 & 33).

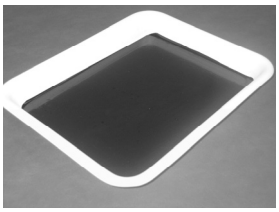

Fig. 31: A commonly used visual aid – a black bottom tray.

Fig. 32: Exploring bright yellow paint on a black tray.

Fig. 33: Hand printing with bright red paint.

Parent Empowerment

For parents, the direct relation between learning and daily living skills makes it very easy for them to carryover their children's learning in the home situation and create opportunities for practice.

Creative parents can adapt their home environment (Fig. 34) and also made their own toys (Fig. 35 & 36) to encourage their children using vision.

Fig. 34: A lower deck bed specially decorated by a mother to arouse her child's visual alertness.

Fig. 35: A child looking at a flashing light board made by her father.

Fig. 36: A collection of simple visual aids and toys made by a mother.

Preliminary Results

After a two-year of learning period, two of the children have shown marked improvement in visual function, from responding to light only to showing visual attention to large sharp colour objects (Fig. 37). The children have also shown improved learning behaviour, slowly adjusting to their environment and accepting the demands of the daily routine and the learning programmes. The non-temporal nature of visual stimulation was found to be more apt to facilitate spontaneous exploration of the environment. One of the children started to show some active reaching movement for bright objects in front.

Child	**First Assessment**	**Second Assessment**
CKY	Light perception only (Jan. 2003)	Occasional Fixation on large objects, faces, or movement (July 2003)
LWK	Light perception only (Nov. 2002)	Visual acuity around 6/24 (July 2003)

Fig.37: The Preliminary Results

According to the medical literature, about 71% of CP children have CVI. Incorporating teaching strategies in the CE programmes appropriate to the characteristics of these severely impaired children is a new area that cannot afford to be neglected.

The small progress that the children in this project have made was still far from changing their functional level drastically. However, in the process, the children have experienced the joy of learning which is part of their right no matter how severely challenged they are.

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The Three-goal System in Conductive Education (CE) and Songs as Rhythmical Intention. Move & Walks (M&W) Ideas to Develop Inlearning Process

by Eszter Horváth Tóthné, Zsófia Nádasi

Move & Walk (M&W) is a conductive education (CE) organisation in Sweden with facilities located in both Nässjö and Stockholm. This facility utilises traditional CE fundamentals. We also incorporate many innovative ideas and philosophies into the diverse programs we hold.

M&W is a special organization in that we involve parents and caretakers in the entire CE process. Because of our involvement with the Swedish health care network it is only possible to see our participants a maximum of two times a year. So we find it necessary for us to include parents and caretakers in the educational process. All children come with a personal assistant or family member so they can learn themselves how better to motivate, facilitate help, and overall how to help participants evolve in every aspect of their daily lives. We highly encourage their time with us to be a collective process. It is not our desire to remove the children from their families but to encourage them to work together towards goals. Because of this system we find that when participants are not with us many of them progress by themselves and require less assistance in their home lives.

M&W operates differently as an organisation in that we put the child's goals first in order to reach the goals of the conductors, and parents.

- We recognise that **the goal for the child** will usually be the game, the toy, or the playtime.
- The **goal for the parent** will usually be for the child to enjoy itself as well as to be as strong and smart as possible.
- The **goal for the conductor** is for the child to be as independent or to move as far forward as possible through conductive education methods.

Where is the point that the task can become the goal in itself during a session, or the point where these three separate goals can merge in the mind of the child? Is this a question of age or rather a question of mental development?

It is evident that a diagnosis cerebral palsy does not mean necessarily a mental impairment. But it is well known, that people with cerebral palsy are not having the full opportunity to take experience out of normal life. In many ways their mental development can be impaired not by the cerebral palsy itself but rather by the unfortunate lack of life experiences. It is important to keep this in mind because we should be aware of what mental age a participant might be functioning with. Goals and tasks should be parallel a participant's level of cognitive function. The games and play should perhaps not be deleted from a program until a participant has a clear consciousness of the work related goal structure. Perhaps older participants than before thought could still benefit from a song and game driven CE program.

The motion sequences can be taught to children without the child at first being conscious of the larger accomplishments he or she is progressing towards. We have found that CE methods may be more effective if we do not try to separate the tasks from the child's goal. We do this by first encouraging the play then the purpose for achieving tasks naturally becomes evident to a child. First we show and encourage a child to stretch and reach for a toy or as part of a game until the reason for the motion becomes evident organically. Thus, a child gains experience for what a movement is good for out of

experience itself. Then through the child's goal we can reach the goal of the conductors and parents at the same time.

M&W as an organisation uses András Pető´s fundamental theory of rhythmical intention. He stated that in order to provide support and help to CE participants we need three elements.

These elements are: task series, time, and rhythm.

- Task series enables the participant to voice their goal out loud helping the brain to process the information.
- The constraint of time makes the deadline for the task concrete; it says to the participant that the task needs to be completed now.
- Rhythm is important to help to define and co-ordinate desired movements.

With the knowledge of these three elements M&W has taken a unique approach to rhythmical intention by incorporating these fundamentals into specialised songs. We sing the goals for aloud for all desired motions. These songs have replaced the previous system of counting. In this way we can raise a child's consciousness about what he is physically doing following a participant's level of cognitive function.

This system can support a participant's progress until a consciousness of work is established. Since the task cannot always be the goal in itself then the game play goal must also be incorporated into rhythmical intention.

Using song also enables a participant to easily transfer skill knowledge from one challenge to the next. If a participant is asked through song to raise their arm while lying down and in a sitting position as well while hearing the same song in both instances it will not seem as if a completely new skill is being learned. In this manner the brain can easily problem solve from one situation to the next with the songs acting as a skill transference mediator. We have found that it is possible to raise task serial consciousness through singing as well as incorporating time and rhythm meeting a child's game play goal through rhythmical intention.

M&W as an organisation has introduced some new ideas to CE. We practice the inclusion of family and personal assistants into the entire learning proc-

ess. We recognise the very separate goal of the child to achieve higher levels of personal functioning. We also have devised a new song oriented and game driven philosophy of rhythmical intention.

We believe that all methods improve and are shaped through science.

Swedish Conductive Educational (CE) Centre: Move & Walk (M&W)

by Zsófia Nádasi, Eszter Horváth Tóthné

Move & Walk (M&W) is a conductive education (CE) centre located in Sweden. This centre has undergone great developments and innovations the over past 13 years. Eszter Horváth Tóthné (a Hungarian conductor) first established M&W in Budapest, Hungary in 1991, a little private school. Many children and families arrived from several countries and received CE from a small team of only one conductor and one assistant.

Among the families who travelled to Hungary for CE, the Swedish participants showed a great interest to start such a program in Sweden. They strongly encouraged the conductor to hold summer camps there. These summer camps attracted the attention of various families and media as well as gained support from officials. It became obvious that Sweden had a great need for a CE centre.

The first group was invited in March of 1997 with an enrolment of a few hundred participants. The staff then consisted of two Hungarian conductors and two assistants. To increase the number of Swedish assistants we ran two training sessions for later employees and people interested in providing personal care service all over in Sweden. In 1997 only 14% of the clients received financial support from authorities, other participants were paying tuition themselves. After 2 years by special request of Stockholm authority M&W has developed and accumulated enough interest to open a second cen

tre, which was established in Nässjö, by March 1999. As of 2004 M&W has a staff of seven Hungarian conductors, four assistants, and fourteen other employees who do their best for all of our clients.

In 2003 the centre had held 355 sessions with approximately 1800 children and adults in our database. Of these clients 70% have already received tuition from various authorities. M&W is unique in that it has evolved through the support of the health care and educational systems. Through evaluations of the practising methods the health care providers saw such radical results that Swedish authorities became willing to give either partial or full financial support to any willing participants. Because of the involvement of M&W with the Swedish health care network it is only possible to see the participants a maximum of two times a year.

It was necessary to include parents and caretakers in the educational process. All participants come with a personal assistant or family member so they can learn themselves how better to motivate, facilitate or help, and overall how to help participants evolve in every aspect. We do not to only provide a treatment, nor is it our goal to detach our clients from parents or caretakers. Rather we highly encourage their time with us to be a collective process. Therefore, because of this system we find that when they are not with us many of our participants do not show signs of regression and actually move forward on their own.

There are currently running four-week sessions with either two or four hour groups a day with an average of six trainers to each group. On top of regular sessions it will be provided four-day follow up sessions to refresh and reassess the client's skills. It is the time too to teach parents and caretakers how best to facilitate new abilities and goals.

M&W has some new ideas to contribute to CE. We recognise the very separate goal of the conductor, the parent and the child to achieve higher levels of personal functioning. We also have devised a new song oriented and game driven philosophy of rhythmical intention. Over the years M&W has had such a great response that we are able to cater to needs of almost anyone interested. We hold groups for babies, kindergarten, school age, and adult participants.

Furthermore, in the past years we have diversified and have had the opportunity to create homogenic athetoid, hemiplegic groups and as well as been able to open the doors to people with special syndromes and to participants with severe visual impairments. This year is especially exciting in that after only a seven-year acceptance we now have the opportunity to take part in a teacher-training program with the Jönköping University.

Three Movies on Children with Athetosis in Conductive Education

(Introduced firstly at the 4th and 5th World Congress on Conductive Education in London, 2001 /1, 2/ and in Budapest 2004 /3/)

by Anna Varga-Kiss

Summary

The author was invited by the editors to present three film texts for publication in readable form for the general need of written material in the care of children with athetosis.

Larger conductive education centres gather children with athetosis for years although the rate of athetosis within cerebral palsy population (8-10%) has been unchanged for decades. It reflects the over-representation of athetoids in conductive education structures. Children with athetosis show nowadays more apparently a mixture of symptoms of dyskinesia, dystonia, increased muscle tone and paretico-ataxia, contract athetosis with asymmetric posture. Pure handbook forms can hardly be found. The effect of medical and rehabilitative therapies is limited in such manifestations and because of associated symptoms.

Permanent changes in muscle tone are to some extent kept under control by the children's/pupils' self-guided movement and rhythm. Even very bizarre athetoid movements may be incorporated in purposeful motion. In spite of these children's uncoordinated movements, their ambition is precision, which

will be manifested in every activity. Possible relations between learning and employing attainments are depicted in parallel as partial processes taken from the children's learning activity linked with the phases of implementation. Excessive pathological movements do not disappear and can be induced in almost every case. Nevertheless, very subtle voluntary movements can be performed in spite of the excessive movements that may be provoked. Development is possible without time limit, thus maintaining the knowledge and skills once achieved is a lifelong process. The author's films emphasise how the conductor's role is changing, adjusting itself to various developmental phases, task and problem situations; it includes assisting goal-building, giving advice and support continuously and reassuring the child that the task can be solved.

1. Different levels of manipulation skills in 3-16-year-old athetoid children (Fine motor movement)

Dressing

The various manifestations of the co-ordination disorder are simultaneously present during the athetoid person's whole life. Dyskinetic movements usually involve all four limbs, resulting in a very bizarre, successive, inexpedient series of movements. The muscle tone tends to fluctuate, decrease or increase and spread unexpectedly from one muscle group to the other. Excessive movements are arrhythmical, with irregular amplitude and oscillation, and generate involuntary movements. Even the intention to act may increase the dyskinesis.

Our primary aim focuses on the child's subjective activity due to its importance in the development of co-ordination. In our education the pupil is an explorer; his active work, determination and intention are of great significance in promoting the abilities necessary for learning at school but also in developing co-ordination and muscle tone. Therefore, we ensure that our pupils have a good time; their activities suit their needs, demands and goals and make them happy.

Washing

Self-help activities are practised in different situations. Children are allowed to experiment with dressing and learn practices related to personal hygiene and health. We build upon their initiative and efforts for both are prerequisites of success.

Bathroom

The child's discovery, exploratory, inductive solutions and creativity are of special importance. Instead of focusing on performance, the functions underlying learning abilities are promoted through motor experience. Given that success energises and stimulates the child to repeat the activity, besides performance we register the techniques applied and the efforts leading to it. Gross and fine motor movements, motility and mental abilities are not promoted separately. The teaching-learning process means complex development of the personality.

Eating

Our pupils do not present the average level of manipulation skills or of dexterity including fine motor movements. Even learning to meet very basic needs forms an integral part of the child's system of life. In each phase of self-help skills the conductor encourages independent action, supports autonomous, active performance and planning of tasks. Excessive movement is primarily a co-ordination' problem, a disturbance of rhythm, therefore learning to control rhythm is of special significance. While the child eats, the immoderate, purposeless mimicking and the dribbling increase, chewing is slow and superficial; attempts to close the mouth mostly fail. We do not work on mimicking, chewing and swallowing directly; however, specific imitation sessions may be designed for the development of these areas. With direct help from the conductors, children learn solutions they will be able to reproduce and independently employ in different situations and possibly at a later stage in their lives. If necessary, the conductor explains every detail of the task from grasping the spoon to chewing the food and reports continuously on the changes of trunk posture and the current position of limbs in motion or at rest. The expected function is translated into partial goals that can only be

achieved with proper co-ordination e.g. dipping the spoon with continuous eye control or bringing the spoon to the mouth while holding the head in the midline. Partial goals have a guiding function, the pupil feels his stiffness decrease and at the same time through appropriate partial action, he experiences the way leading to successful eating.

Delineation

In the process of promoting manipulation skills and delineation activity, children with athetosis encounter a great number of problems. The younger the pupil, the more intense the relation between his activity and his interest and the requirements and feedback he gets from his closer and wider environment. We have to arouse interest and maintain attention as the latter considerably affects performance. The consequences of brain damage do not fully account for disinterest and indifference. By renewing the contents, offering a variety of experiences and presenting the tasks as problems to solve we can provoke interest and the tension of demand will emerge. Making the children act and differentiating indirectly we help them attempt co-ordinated motion that underlies successful action.

Within the group setting a maximum of individualisation is possible and necessary. In order to perform the given task, each member of the group follows his own method. Individual solutions are developed and elaborated in detail. The conductor's direct, manual assistance should not exceed the level that is still necessary for the co-ordination to be achieved. In a group of young children, we must support goal building, permanently offer advice and information on the development of motion, appropriate position and posture and prove that problems are solvable. We have to stimulate children's fantasy, build on their spontaneity and playfulness and at the same time entertain them and bring them joy.

Tidying things

The individual is aware of the goal he wants to achieve but does not realise how the necessary co-ordination emerges. In motor action tightening, relaxing, mitigating and intensifying is supplied and controlled by the nervous system. Once the co-ordination is developed, the daily routine must offer a

wide range of occasions to employ co-ordinated solutions. The pupil has to know the goal, reaching the goal and success and must concentrate on problem solving and not the way of performance. Each successful attempt will increase the chance of learning and diminish the time it takes.

Writing

Children are very creative in developing special ways to hold the pencil and positions for writing. Practising dynamical writing movements and dampening these at different pace the pupils use self-invented solutions, deliberately taking up unusual positions to stop excessive movements. Individual solutions like palmar grip, atypical hand position, unique sitting and specific ways to arrest over movements are accepted and appreciated but children are permanently reminded to use eye control even if they only have peripheral vision of what they are doing. (Requirements regarding the quality, quantity and tempo of handwriting will follow later.)

If necessary, the conductor helps the child plan the elements of letters, explains where the lines should start and end, provides manual support to stop excessive movements and makes the child apply rhythmical intention in order to link purpose and execution. The child's self-directed motion and its rhythm may to some extent control constantly changing muscle tone. It is based on the most important motives of learning, namely that the pupil wants to make him understood, to act and to understand his environment.

Pupils writing

The level of co-ordination that that children attain in various task and problem situations enables them to alternately tighten and relax muscles, to simultaneously perform differentiated movements, to slow down or stop before the target and to sustain relative rest position while preparing and arranging school utensils. Our pupils with athetosis produce mixed symptoms of dyskinesis, dystonia, and paretico-ataxia and contract athetosis. There is no pure form of dyskinesis, asymmetrical posture and tone increase are almost always present. Any activity of the child is accompanied by facial synkinesis. Yet there is no efficient pharmaceutical or rehabilitative treatment for these types of dyskinesis.

Synchronising children's school activities within the group is a rather complicated job. In order to ensure collective elaboration of the curriculum and choose expedient partial tasks, the conductor must be familiar with his pupils' individual capacities, the nature of their symptoms, the level of their knowledge and development

Although the particular pathological elements and successful motor components widely differ in rhythm, deliberate control of the direction, volume, duration, rhythm and energy of motion is possible on a certain level.

Arts and crafts session

We cannot enforce interest and activity, thus providing aesthetical and artistic experience and enjoyable sessions is vital. Pupils' active participation in the learning process may be increased if we offer perspective, build on individual capacities, arouse ambition and ensure social success and self-realisation. Even extremely bizarre pathological movements may be employed to serve practical movements. A pathological regression is possible both in gross and fine motor movements; however, there is a growing number of expedient movements they can be integrated into.

The educational approach and practice according to which motion can be taught demonstrates that even the learning of action is a cognitive process. We mean education to independent voluntary activity, creativity and conscious active learning and development. Time does not limit the possibility of progress, thus maintenance of the acquired knowledge, skills and abilities is a life long process.

2. Variations of posture and locomotion in 3-16-year-old athetoid children (Gross motor movements)

8-10% of people with cerebral palsy suffer from dystonia/dyskinesis i.e. from a very severe disturbance of development and self-realisation. Whether in rest position or motion, athetoid children have more movement than intended. Associated movements appear in the same limb of the opposite side or in the other limb of the same side. Hyper- or hypotonia spreads from one muscle group to another and thereby unexpectedly affects or impedes the current posture or the intended movement. Irregular, arrhythmical movement leads to uncoordinated inquietude and loss of the position. Excessive movements usually involve all four limbs and generally even the head, the neck and the trunk and are increased by any physical or mental stimulus.

Our general endeavour is to acquaint multiply disabled children with the rules of social life and the ways of communication, to teach them how to properly process information coming from the outside world and how to express their own needs and to make them creative.

If we set age appropriate requirements and offer guidance as to how to meet these on their own effort, children can learn co-ordinate their will and its assertion and harmonise the elements of the single actions in time and space. We incite intention and goal building and permanently make pupils realise the experience they are reaching a goal. Making them active and build goals is not enough: the effected activity has to be directed and used. If the child's will is working but he does not get the assistance he needs, he will develop spasm or excessive movements; unsuccessful performance blocks the will. We must teach pupils to build and reach goals, i.e. the appropriate way of enforcing their will and give them reasonable mechanical, physiological, psychological or pedagogical guidance.

To **ensure that children's efforts** are successful, we should

* build on existing abilities,
* set tangible goals,
* control the time and rhythm of performance,

* break down tasks,
* help children through the most difficult moment of task performance,
* help them sustain the achieved position,
* Prevent prospective mistakes and permanently increase their self-confidence.

Reni and Judit kneeling up and sitting up

The conductor must approach each pupil in a manner which is appropriate for that particular child; not too active but absolutely conscious. Besides direct assistance and facilitation, the conductor addresses the mind and uses motivation. Principally the conductor has contact with active pupils who want to achieve a goal, solve a problem or just play. Instead of changing functions and performances, the conductor's aim is to modify personal intentions, the internal planning of actions. Internal determination comprises the initiative, the decision to act, the energy of intention, the start of action, provision for appropriate muscle tone in the process of action, prevention of counter-movements and control over a wide range of pathological movements.

The external signs of intention can be observed in the pupil's whole attitude, even in his gestures, mimicking ad intonation. The particular pathological elements and successful motor components widely differ in rhythm. Even extremely bizarre pathological movements may be employed to serve practical movements. A pathological recurrence is possible both in gross and fine motor movements; however, there is a growing number of expedient movements they can be integrated into.

Standing up from kneeling

Vertebration, i.e. taking an upright position means different performances if carried out with a ladder back chair, a walking frame or at the wall bars. There is no uniformity in the positions adopted in kneeling or in the process of standing up, nor do we see a unified series of motor elements. In terms of education, however, the task can be clearly defined, its goal specified and easily understood. Supported by the necessary didactical means and methods,

it is the child who finds the path that will lead him to a solution. Correcting the centre of gravity, finding, and sustaining the equilibrium position are inevitable for standing. At the beginning direct and individual facilitation is given for we want to teach the child when, what and how he has to perform independently but in concert with all group members. The conductor has to arrange for appropriate conditions to promote the intended skills. The assistance, whether verbal or manual, must be provided at the right time, in the proper way and extent to ensure successful performance. A wide gait is not to be corrected if the child feels safe in the position he has worked out. The group is a medium of motivation in the conductor's hands; moreover, it represents a healthy public opinion with the power of persuasion. The group transmits expectations and consistent information while its atmosphere, energy and rhythm regulate the pupils' control over their emotions.

Walking

Instead of organisational selection, we opt for individual differentiation. Synchronising children's activities in the group is a rather complicated job. In order to plan the collective work and decide on appropriate facilitation, the conductor must be familiar with his pupils' individual and spontaneous capacities, the nature of their symptoms, the level of their knowledge and development. It is essential that task ad problem situations vary in an interesting and enjoyable fashion. Partial assistance is given in accordance with the goals and requirements set for teaching and learning. It must be the child who finds the solution even though it has been pre-planned by the conductor. Providing an opportunity for the pupils to manifest their abilities, thoughts and emotions is imperative. Attention motivation, spontaneity, problem solving skills and consciousness are of special importance. We always think long term when deciding on the type of facilitation or supported position or applying deduction to break down a task and have it performed in parts.

Hajni going out by the door

Daily activities are used for teaching interrelations as our pupils have difficulties in recognising them and combining things. According to our experience, without conduction the motor disabled individual is in everyday life unable to integrate the pieces of knowledge he has attained separately. He

must be taught to independently reproduce and apply in different situations what he has previously learned.

Boys are walking

Everything our pupils have learned by performing tasks is employed in a wide range of situations and will thereby gradually turn into skill, habit and automatism. Practising is essential for cognitive knowledge to become more and more automatic in terms of both organisation and process.

Athetoid children produce mixed symptoms of dyskinesis, dystonia, paretico-ataxia and contract athetosis. There is no pure form of dyskinesis; asymmetrical posture and tone increase are almost always present. As yet there is no efficient pharmaceutical or rehabilitative treatment for these types of dyskinesis.

Although co-ordination is not a conscious element of action, it is based on the cognitive function. If the cognitive function and the intention are dysfunctional, successful action is impossible without the permanent learning of goal building. Spatial, temporal and motor perception and speech development must be promoted as a comprehensive area.

The recent achievement of the 13-year-old boy makes us think deeply when we try to determine the duration of conductive education. He had already had 8 years of conductive education when some months ago he finally found the safe way of walking. Taking the responsibility, we can declare that development and maintenance of the achieved results is a life long process.

3. Learning and practical knowledge in children with athetosis

At the beginning of adolescence, children's continually growing need for movement is associated with a high level of motor coordination. Young people are quick to learn how to ride a bike, ice-skate, swim or dance. They care for pets or plants, passionately collect objects. Reading books, watching films, listening to music and going to the theatre belong to their daily pastimes. Their creative activities include drawing, painting, moulding and playing musical instruments. In terms of pastime activities, the leading character in our film shows refined habits, similar to her peers. She goes horse riding and swimming, has a poster collection of her favourite rock band, attends dance and drama lessons to enhance her opportunities of self-expression, writes poems, uses the computer, learns how to mould clay and make pottery.

In what way does she differ from her age group? The only difference is that when accomplishing her activities she does not follow the same melody of movement and does not automatically use the harmonious motor technique her peers do. Her hyperkinesis, which originates from damage to the central nervous system, attracts looks and arouses emotions.

14-year-old Hajnalka (Hajni) has been receiving conductive education for almost 10 years. At present she attends a mainstream 7th class at the Pető Institute. From September 2004 she will be able to leave the institute and continue her studies at a local secondary school.

At different stages of their development children with athetosis present hyperkinesis: a motor dysfunction without paralysis. Active movement is maintained but a goal-oriented process is impeded by various involuntary and inexpedient movements and associated tone increase. In most cases, performing or attempting to perform voluntary movements evokes excitement, thereby increasing and intensifying hyperkinesis. Athetoid movements may involve facial muscles as well and outsiders perceive this as grimacing. Speech may be dysarthric, scarcely audible, or grotesquely loud, in some cases totally unintelligible. Every momentum that implies changes in psychosensory processes and in the sympathetic nervous system contributes to the appearance of excessive movements.

While intending a movement, the athetoid child is supposed to use extension to stop excessive movements; however, his hypertension hinders voluntary movement. One has the impression that the motor system functions helter-skelter, the muscle tone constantly fluctuates and movements towards different directions flow one into the other in a bizarre fashion. Dystonia occurs frequently as an associated phenomenon. As the trunk, slowly twists side wards and backwards, the motion pulls the child's hands off the chair and spreads over the lower limbs as well. Perceiving that his body is going to turn aside, the child makes an attempt to resist and prevent himself from falling.

We can imagine what a gigantic effort it entails for the athetoid child to simultaneously keep excessive movements under control, loosen up hypertonic muscles and observe the goal while performing the task. Such comprehensive activity must be taught within a system, adopting a uniform approach, or else learning will be unsuccessful. Picking out the athetoid child's single dysfunctions from the integral operation of the organism would be a fruitless effort for it is impossible to restore damaged functions in isolation, using specific methods.

The implementation of coordinated activities must be incorporated into the children's life system. An outsider is unable to establish contact with someone presenting severe hyperkinesis or to estimate her/his intellectual capacity. After watching them for a while, however, the observer will be astonished to see them write, draw or paint and at the amount of fantasy reflected in their works.

The life-modelling programme is a special opportunity for both the children and the conductors. The hotel environment sways the children's development towards social integration. Given that no conductor is directly present, the programme can be seen as an assessment of the level of achievements in self-discipline, adaptation and self-restraint. Children are reliant only on themselves and this allows free play to independence as well as realistic self-evaluation at the conclusion of the programme. According to our experience this special programme is a real boost to the formation of children's psychological hardiness and life energy. The characteristics of the age group are apparent as they perform their tasks. They are aware that they have to work hard in order to cater for themselves. The challenge of having to rely on their

selves, being tested and achieving success in front of their peers increases their active participation, both cognitively and emotionally, in the learning process.

Development work is never carried out in isolation. Acquiring knowledge means that the pupils promote their own development through active learning.

The programme allows children to control their lifestyle and to test their time and energy management skills. They construct a timetable of daily activities according to self-chosen criteria. In order to prepare an accomplishable, realistic schedule they must be familiar with their capabilities and limits. The current posture, any form of voluntary locomotion and the differentiation of spatial positions serve as tools for shaping coordination. The perception of appropriate tone and coordination originates in correct partial actions and problem solving and induces related feelings. The coordination, which is essential for achieving deliberate goals, develops unconsciously and in some cases very slowly. In order to feel confident, 14-year-old Vera still has to assume a position close to the floor and needs support for her back. Putting on or taking off major pieces of clothing apparently poses a serious challenge to her.

Conductors are directly present in young children's learning process and thus, in addition to their role as educators, substitute for the children's mother and provide love. While the children are acting, the conductors constantly encourage them, reassure them that the tasks can be solved and recognise their efforts. Providing indirect as well as manual assistance, the conductors help with harmonising the elements of single actions in time and space and constantly reinforce unaided performance.

Athetoid children are light-hearted, have a good sense of humour, a thirst for knowledge and great self-confidence. In spite of their uncoordinated motion these children are precise. Their precision manifests itself in every activity and affects their entire character.

When practising standing and walking, the children use their hypertension for facilitation, in the same way as spastic people do. If hypertension fails to appear when they initiate movement, athetoid children lose confidence. Un-

der guidance they will perceive that after loosening up they are capable of coordinated, stable locomotion.

When hyperkinetic children walk, they present dyssynergy tinged with athetoid distortion and incongruous, severe inaccuracy of motion. In order to enable the children to control their constant tone changes, development work ideally must be started early, all applicants must be accepted irrespective of their age and education must be provided in a system over 8-10 years.

Our endeavour is that with the help of conductive education athetoid children turn into individuals who possess a will of their own and fully manage themselves. We want them to develop responsibility- and task-consciousness, appropriate self-confidence and a scale of values to adhere to in their actions. They have to learn how to be independent in different situations. The aim and at the same time the effect of conductive education is active behaviour, joined by initiative and creativeness. Instead of making the children practise movements we establish a system of conditions for learning. We provide for self-upgrading programmes rather than have the pupils carry out monotonous exercises.

Most individuals with hyperkinesis might have an age appropriate level of intelligence many of them stand the test in higher education as well. Most of them use their intelligence to overcome their dysfunctions. Irrespective of the best results achieved, excessive movements do not disappear and can be induced in almost every case. Nevertheless, very subtle voluntary movements can be performed in spite of the excessive movements that may be provoked.

Due to their ever-present involuntary movements athetoid children's attempted actions fail, they are restless and exhausted and exposed to danger. Incapable of locomotion or using their hands, they do not play and do not obtain kinesthetic experience; they are dependent on others. It is understandable that children with hyperkinesis are fully attended to, irrespective of their intellectual level. Pupils with such motor dysfunctions usually lack initiative, thus during play and kindergarten sessions the conductor needs to advise them on how to plan the solution, act on their own and perform the tasks independently. Through appropriately arranged circumstances the development of certain skills is promoted while young chil-

dren handle objects. Voluntary, purposeful movements, specific individual solutions are manually guided by the conductors in order to prevent that potentially appearing or increasing athetoid movements interfere with the implementation of the hyperkinetic child's intention. While children are encouraged to act, they learn to take advantage of existing opportunities to stop their involuntary, inexpedient movements.

In athetoid children lip, chin, soft palate and tongue movements are uncoordinated. They do not manage to close and open their mouth, move their tongue or purse up their lips. Feeding is difficult, building social contacts is a challenge and intellectual development is impeded. Hajni uses a fork to eat her sandwich; she has worked out for herself a neat and refined form of eating.

In the process of teaching depiction and handwriting, the development of fine motor skills is of special importance; it entails the shaping of stable sitting, maintaining rest position in the limbs that are not supposed to move and continuous control of the position of the extremities performing purposeful movement. The children are quick to find out that with certain self-elaborated fix postures they can stop excessive movements. Finally, voluntarily or involuntarily developed procedures turn into stereotypes. Time-honoured motor behaviour patterns do not become fixed immediately; for a long time they remain subject to disruption and may return to an earlier phase of their development.

As looking after themselves becomes their lifestyle, children develop better general control over their coordination. They learn to influence the direction and range of motion and the necessary expenditure of energy in various situations. The voluntary movements are accompanied by excessive over movements for several years, then the excessive movements slow down but they never disappear.

It is the same level of coordination that enables us to alternate between tension and relaxation, to keep a target or to maintain various movements parallel with rest position in problem situations as well as in direct learning situations.

Only those who have objectives and a concept of values will get their bearings in this performance-oriented world, in a complex environment, inun-

dated with information. It has been 4 years since Hajnalka learned to walk with a rollator. She is able to make the most of any situation. She has an autonomous and determined personality and the ability to constantly renew herself. In her thoughts and actions, she strives for the optimal evolvement of her capacities.

She has been learning independent walking for a year and a half. What is it that still motivates her after 10 years of heroic work at the Institute?

Her own poem gives the answer:

What if I could walk?
I'd be happy!
When the weather is nice,
I'd go to the garden.
We'd run around with my brother
And climb a tree.
What if the tree was high?
We'd climb up to the top.
If there were many bushes in the garden,
We could both hide away.
Alas, as long as I cannot walk
I cannot play tag.

Developing and Sustaining a Conductive Education Programme

by Katalin Gönczy & Gabriella Tomay

Forging our place in Early Childhood Intervention

New Zealand is a beautiful country. It has fantastic, amazing landscapes combines all the beauty that the world has: wonderful beaches, skiing fields, fjords, mountains, valleys, glaciers, grass everywhere, palms, see, ocean, etc. You can see this beauty in the series of the Lord of the Rings and the Whale Rider movies. People of New Zealand are very friendly and the whole atmosphere is very peaceful. The only disadvantage this country has is, that it is, 20 000km or 30 + hours flight from Budapest.

But distance didn't hinder people in New Zealand. Like the English parents, families in New Zealand found out, in the mid to late 1980's, that there was a place in Hungary, the Pető Institute where their children with cerebral palsy could receive the best possible intervention, they knew it as Conductive Education. These families travelled many times to Hungary and never regretted the fact. On their return they spoke about their experience, what their children had achieved and, most importantly, the skill and dedication of the Conductors who worked with their children. These parents approached the Cerebral Palsy Society to open a Conductive Education Centre in Auckland.

Anne Murphy, who is now the Chief Executive of FOCUS 2000 LTD, was at that time the Director of Services for the Cerebral Palsy Society of NZ sup

ported the development of a Conductive Education Centre and searched for an appropriate, experienced Conductor, who would have the necessary qualities to guide and direct the operation of setting up in New Zealand.

Our Centre opened in 1992.

It was determined right from the start that it would be a stand-alone Centre, adhering to the spirit, ideals, method and practises of the Pető Institute, not attached to an existing educational facility. The Auckland Centre and the number of children attending regularly have grown significantly over the years. We have outgrown two localities; in 1998 we moved into our existing purpose built premises. Currently six Conductors provide programmes for 56 children. In addition to our Auckland initiative we took over the running of another Centre in the southern city of Dunedin in 1996. This centre operated for sometime, until it was relocated in NZ's southern most city of Invercargill in 1998. Invercargill posed some new challenges for us as many of our children were from remote rural areas. Two Conductors provide programmes for 36 children. At this time we rent room but are seeking a more permanent home.

Both Centres are partly funded by the government contracts, fees and donations.

The essential components of our continued growth are:

1. Retention of experienced Conductors

The Conductor's role and personality are vital in Conductive Education as the whole implementation of this complex and unified system depends largely on the knowledge, skills and experience of individual Conductors.

We have a strong commitment to recruiting and retaining quality Conductors. We look for people who are passionate about their profession and willing to learn and improve.

The key factors in running a centre and to achieving a high profile in the community and the national scene are continuity, stability, quality work and enthusiasm from the Conductors.

2. A professional organisation providing a supportive environment for the Conductors and ensuring their continued development

A further key factor in our case is FOCUS, a private charitable company which aims to maximise the quality of life for people with disabilities. FOCUS has developed a variety of services in the community and has been very successful in gaining contracts with Government Departments.

Anne Murphy ‘s main goal and interest since we started has been to ensure the financial background for Conductive and to provide the appropriate environment to enable the Conductors to focus on their job. Anne has a wide knowledge and believes of Conductive Education and has a strong overall influence in New Zealand.

Conductors are satisfied with the work conditions, opportunities and the structure of our Centre. *Our Conductors feel they can learn, improve and perform competently and are supported to do so.*

During the past 12 years only one Conductor has left to back to Hungary because of homesickness. Each Conductor has the opportunity to have a sabbatical trip to visit the Pető Institute and other centres around the world after 5 years of service to the Centre. Our Conductors are encouraged to update themselves with current practices, issues and new developments. Each year our conductors and assistants organise two professional developmental weeks. The weeklong programme enables us as a group to focus on particular topics of Conductive Education and other related subjects.

In April last year we invited Conductors from all over New Zealand and from Australia to join to our conference. All the Conductors felt that it was very useful for professional point of view as well as was a good experience for each of us.

3. A quality programme-Conductors in sole charge

Our centre run by Conductors, from different backgrounds varied experiences and age, has one common theme that binds us as a team, that is, that we are on the same platform to deliver quality programmes for our children. We design and implement programmes carefully. These programmes are al-

ways reviewed and modified when necessary to promote further development of the group. The individual goals and tasks for the children always reviewed regularly for the same reason.

We emphasis the importance of early intervention, we strongly believe, to start conductive education early, is a key factor to integrate children with CP successfully into the society.

We run seven groups in Auckland and five groups in Invercargill, to meet each child's individual needs. We run three groups for the babies and young children from 6 months up to 3 years of age. As the children grow and improve, they advance to the Kindergarten group, advanced group and one of our Walking groups.

Four of our groups are run daily either for 2.5, 3 or 5.5 hours. Three groups run two or three afternoons a week. We also offer classes for school aged children, who have graduated from our early childhood programme. Block courses and individual sessions are available for babies younger then 6 month and children with different needs and for those living in remote rural areas.

4. Successful integration of children into mainstream educational settings

Our goal is to integrate children with motor disorder into the society. We teach them to become independent, have strong self-esteem and willingness to solve their problems. 97% of the children attending in our programme have been integrated into normal primary school. Children in our kindergarten group start to attend in pre-school or kindergarten part time, when we feel, they are ready. Children in New Zealand start school when they 5 years old, but can postponed that to 6 years of age.

We have developed a protocol to ensure the seamless transition from Conductive Education to the school. In order to achieve this, we visit the school to inform the teachers and teacher aids about the philosophy and practice of Conductive Education. The teacher/aid visit our centre to train, we follow up to ensure, that the child and teacher integrates the programme into school life.

5. Satisfied parents and achieving children

None of this would be worthwhile if we did not have satisfied parents and achieving children. The vast majority of our parents immerse themselves in the programmes and offer great peer support to one another. Their commitment increases as they experience the overall improvement of their children. Fundraising and social activities assist in carrying the culture of Conductive. Parents are involved in all activities of both centres and are particularly adept at promoting our service in the news, media and TV. The delighted face of the parent when their child takes the first step makes everything worthwhile - just one tiny step means so much.

6. Professional peer relationships with booth health and education specialist

We have finally won our place in the system. It took sometime to ripen the fruit, in our case 10-12 years, but the door now continues to open wider and wider. From the start, we actively encouraged a consultative approach with other service providers and now we are regularly consulted by other medical and educational specialist and attend IDP and IEP meetings. Our opinions are always respected.

We are now getting more referrals from educational and health specialists, and Paediatricians rather then relying on the word of mouth referrals of the first years. We have established a strong relationship with Plunket. Plunket is a national service, where their nurses became involved with new mothers from birth to 5 years old. Plunket referred 60% of the children in Invercargill.

A new approach we have taken recently is to send a written report to Paediatricians along with our information package, when a child is due to check up. We have received a very positive feedback for this initiative.

Over the years we have developed partnership with orthopaedic specialist, vision assessors, speech therapist and orthopaedic surgeons. With reference to orthotics we prescribe Pető boots, leather boots, splints etc. for our children. We are also a licensed early childhood unit with the Ministry of Education.

7. Open to new ideas but never swaying from the essence of Conductive Education

We don't believe that you can mix the traditional therapies with Conductive Education programme. Different philosophies, different approaches to re/habilitating children with motor disorder mean that compromise must be reached and this is a position we are not prepared to accept.

We remain strongly committed to conductive education. There is no gap that other professionals, e.g. Physios have to fill, as I heard many times lately. There is no gap, provided of course, that the Conductor has adequate experience, knowledge, creativity and enthusiasm.

In our practice of Conductive Education we are open to new ideas, which enhance the development of our children. But whatever we introduce we must introduce it wisely and with care

Tracing the Footsteps

(A Case Study)

by Renáta Gyimesi

Ashley's story is nothing short of amazing. In a relatively short period of time we experienced an unexpected and astonishing level of improvement in all areas of her development including personality, speech, cognition, vision, and social skills, gross and fine motor skills.

Ashley was born December 1998, after a traumatic delivery. She presented many significant and alarming signs, like foetal distress, including meconium exposure, the umbilical cord was wrapped around her neck four times plus a knot. She was incubated and ventilated for breathing problems. A CT scan in the first few days showed moderately widespread cerebral hypoxic injury, and she was diagnosed with right side hemiparesis.

At 10 months she was not crawling or progressing in her development. Ashley presented for assessment accompanied by her parents. On examination it was noted that she was delayed in most areas, significant asymmetry in posture, the range of movements and increased tone on her right side was marked. She kept her eyes closed most of the time; she was unable to sit up and only used her left hand spontaneously.

Ashley met the criteria for entry to our programme, and it was recommended that consideration be given to participate. The parents took up the opportunity and soon after the initial assessment, in October 1999 Ashley commenced at Focus Conductive Education in the Beginners Group four days a week with her mother.

This case study depicts her progress from 10 months to today and concentrates on:

* How Conductive Education unlocks the potential of a child with motor disorder to become a fully integrated member of society and
* How Conductive Education has assisted in effecting seamless transition from our centre to mainstream kindergarten and primary school.

Beginners Group

Ashley's first milestones included being able to roll both ways, to sit up and stand up from prone position at the ladder. She was soon able to take steps as she pushed the ladder in front of her.

Slowly but surely we got her to open her hand. With reduction of flexion spasm in her right elbow and the tightness in her right shoulder it meant she could now use her right hand as a helping hand. With these developments she could clap hands properly and still have a full grasp.

Ashley's motivation and co-operation were poor and it was hard to gain her attention. By the end of the first term Ashley's comprehension had improved and her responses to questions and various stimulus were better but still not age appropriate. Slowly she started to initiate interaction with her mother and the conductors, and her vocalisation showed huge improvement, as she readily copied mouth and tongue movements. Chewing was no problem for her, but she did not want to feed herself.

Advanced Beginners Group

Ashley had made quantifiable progress in the first three months; she graduated to the Advanced Beginners group at the beginning of the next term. Her level of co-operation had improved a lot. She was particularly motivated by group activities, songs, rhymes and toys. Her eye contact and eye co-ordination had developed, she could now focus on object for longer periods of time, and I enjoyed more and more having her blue eyes looking at me.

She took her first independent steps after four weeks in this group. The number of her steps and the walking distance increased gradually with time, after three months in this group Ashley was walking continuously around by herself. The rhythm of her walking was slow, her steps were small and her right foot still tended to turn out and was in valgus position. She wore SB-boots with arch support inside for walking.

She did not have any confidence on uneven surfaces, due to the fact she had a big problem with spatial orientation, as she could not recognize the spatial differences. By the end of the year she could climb up 2-3 rungs on the wall-bars. Ashley gained greater control over her right hand: she used her right hand sometimes spontaneously, to reach for toys or pick up objects, and she started to point with her slightly bent right pointer. Her play activity and cognitive skills were gradually becoming in line with her age level. Every day her vocabulary increased, and she started to put 2 –3 words together.

Self-care became a major achievement for Ashley during this time: she would sit on the potty regularly with more and more success; she learnt to take her shoes, socks and nappy off, and to feed and drink by herself. She continued to make very good progress in her development, and we felt that gap between her and her able bodied peers were decreasing further. In the next term, two months after her 2 years old birthday, it was appropriate to move her up to the Young Walking Group.

Young Walking Group

She settled down gradually and slowly in the new routine and in the situation of attending without her mother. She enjoyed being with the other children and doing tasks in a group.

By the age of three she could walk fast and had learnt to jump up with both legs from the floor. She could step up or over low objects, walked on the ramp and could independently climb on the wall-bars. She had learnt to turn up her right hand with straight fingers or to point with pointer. She became toilet trained at the age of 3-3 ½ and more active at dressing. In the following year she used her right hand spontaneously a lot more and built up strength. She learnt to hang on the wall-bars and her grasping was much stronger. She

was able to step up - down or over higher object, and she was more confident on uneven surfaces. Her posture became more symmetrical month by month.

Her communication and cognitive skills were improving and age appropriate. After her fourth birthday in the last year in this group her balance had improved, she learnt to walk on parallel and single beams, to stand on each leg for couple of seconds and to jump over objects. Her right foot was straight, but still needed arch-support to correct the valgus posture. Her fine motor skills continued to be developed; she learnt to thread beads and to hold a pen. In drawing she was behind due to her affected vision. She could dress or undress herself, and started to learn buttoning and using zips.

During the three years, of participating in this group she became more and more independent and required less assistance at problem solving. Improvement in all areas made it possible for Ashley to settle down and attend the sessions of the local Kindergarten.

Local Kindergarten

Ashley's integration to the normal kindergarten was successful. We invited her Educational Support Worker to attend a session of our centre, to see Ashley participating in her group. We also invited her local kindergarten teacher, and had a meeting with her teachers to discuss our aims, the ways of problem solving and the assistance should be given. Together we worked out how Ashley could be active in the kindergarten by applying the tasks she had learnt in our programme. During the years she has had less and less personnel help, and she has become more and more independent in the community of her able bodied peers.

Local School

At the beginning of this year, when Ashley turned 5, she started school full time. She has a part time teacher aid, but only at the time when she has difficulty because of her lack of vision. She participates once a week in the After School Walking Group to maintain the range of achievement and further development.

Conductive Education, the regular attendance and starting it at an early age has given Ashley the confidence to be the best she possibly can be, which assisted her full integration into the state education system. Ashley has been enjoying school and has made a request that she wants to catch the school bus by herself from next term. *Mum is not so sure.*

Palmomental Reflex in Motor Dysfunction

by Ágnes Szamkó and Erzsébet Balogh

Infants and young children's hands will often helped during the sessions of conductive education (CE). While the palmar side of the thumb is inevitably touched. It is often not to understand, why motor dysfunction children make grimaces during grasping or touching of the palms. If that phenomenon is carefully observed, it can be explained by the existence of a reflex only. That phenomenon refers as palmomental reflex.

Experts who assess babies and infants have detected several kinds of reflexes, which they use in clinical examination. Out of those the best known are the reflexes, which can be evoked by stimulating certain parts of the babies' body, such as:

- **Palmar grasp reflex** is one of the most noticeable reflexes to emerge. It endures through the 4th month of life, its persistence might be pathological and the disappearance of it leads to voluntary reaching and grasping.
- **Sucking reflex**, which occurs pre-and post-natally, when you touch the baby's lips, its duration is the infantile age.
- **Searching reflex** helps the baby locate nourishment. The baby turns its head towards food or bottle when part of the cheek near the mouth is gently stimulated.
- **Palmar-mandibular reflex**. When the baby is lying on his back and we touch the two palms simultaneously, it makes the baby close its eyes, open its mouth and tilt its head forward. This is also called the

- **Babkin reflex**. The author reported on the gradual disappearance of the reflex parallel to growing. Among these reflexes we can find the **palmomental reflex** and our aim was to examine this in our children.
- **Palmomental reflex** will be evoked a facial response when the base of the palm is scratched. The lower jaw opens and closes and the chin's muscle contracts, the chin's skin will be as orange.

The palmomental reflex was first described by Marinesco and Radovici in 1926. The palmomental (palma=palm, mentus=chin) reflex can be induced by the excitation or a bit harsher scraping of the palmar surface of the thenar, the forefinger or the little finger when the ipsilateral muscles contract making the skin on the chin wrinkle and move towards the chin.

We can see a variety of facts and there is a big difference among the authors.

- Magnusson and Wernsted (1935) found that in 75% of infants the reflex was present during the first week of life and those who had the reflex at birth presented it also at 4 months of age.
- According to the publication of Schachter-Nancy (1937) 28,5% of children between the ages of 6 and 12 years had the reflex.
- Lippmann (1958) said: the palmomental reflex can be found in all babies. Out of 311 cases he found it in 278 cases.
- Pál Juhász (1969) listed the palmomental reflex among the so-called liberation reflexes, such as sucking-, grasping, etc. In normal circumstances these reflexes can be detected only in early infanthood and later on they disappear in certain phases of ontogenetic motor development.
- Several handbooks list the above reflex among the dementia (deteriorating) reflexes (Horányi).
- Mark Mumenthaler (1990) wrote: "neurological sign of dementia: these signs, none of which necessarily present, may depend upon the underlying cause of disease. A variety of abnormal reflexes (deteriorating) e.g. increased palmomental reflex are found in cases of diffuse brain damages.

- A variant of this reflex is the pollicomental reflex sec. Bracha (Horányi), when only the palmar surface of the distal phalanx of the thumb is touched.

These reflexes are often detected in organic cerebral diseases in adulthood, primarily in cases of frontal lobe involvement and they are categorised among the so-called liberation phenomena (liberation or deteriorating reflexes) and definitely considered pathological.

We tried to detect the palmomental reflex in our children in the International Pető Institute crossessionally. The age range of the children involved in our research was between 6 and 24 months. The young children who were observed had been either referred to us following the hospital assessment or had come straight to the Institute, and since then every one of them was attending the sessions of the Early Development Department of our Institute. Most of them presented some problems at a very young age: hyper- or hypotonia, some of them showed postural abnormalities and in a few cases we could noticed motor milestone delay or some asymmetry between the two sides.

Examination

From the examined 32 infants 7/32 was older than 24 months and we did not find the palmomental reflex in these children.

25/32 infants' age range was from 7 to 24 months. The reflex were positive in 8 cases among them (8/25 or 8/32?!), which means that in one quarter, one third of our children the reflex could be seen. It was unexpected. These children have had different kinds of problem at birth, during or after delivery as follow: premature baby born at 29 weeks, hypoxia, (twins) Caesarean section, muscle tone alteration, kidney problem, hypertonia and apnoea.

According to our experience this reflex exists in one third of 6 – 24 month old children with motor dysfunctions but its intensity does not correlate with

- The severity of the secondary symptoms of motor injury.
- No relationship with the child's maturity level seems to be coherent.

- At present we must content ourselves with attempting to systematically study the reflex and to define the time of its fading and disappearance according to age and leading motor symptoms.

Our aim is to recall the palmomental reflex and introduce it to our conductors and to begin with a permanent screening.

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Notes for Contributors

The aim of this series of Conductive Education Occasional Papers is to promote greater awareness, understanding and development of conductive education in an international context. The series takes a broad view of the range of activities and interests which are embraced by conductive education and as such includes:

i) articles on research, research methodology and developments in conductive education and related fields such as medicine, education and social services and related disciplines such as psychology, child development and special education needs;

ii) the critical evaluation of theory and practice;

iii) accounts of current practice and reports of developments;

iv) brief reports on professional development and on-going research.

Articles are welcome from a variety of individuals working in the field of conductive education for the motor disabled. Readership is international and consists, for example, of researchers, trainers and students in the disciplines of medicine and health, education and psychology; conductors, conductor trainee teachers, physicians and paediatricians, other health service professionals, special education teachers and associated professionals.

Authors are requested to submit their manuscripts for consideration as follows:

1. One paper copy and a copy on floppy disc or sent in by e-mail in a Windows Word file to; Pulay.Eva@peto.hu .

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5. The article may be divided into sub-sections with appropriate headings. Tables and figures should be clearly labelled and numbered consecutively and their location within the text should be clearly indicated. Each table and figure should be on a separate page and, preferably, processed in Microsoft Excel. Manuscript pages should be numbered consecutively.

6. Footnotes should be voided if at all possible, but is essential they should be placed on separate pages at the end of the manuscript and numbered accordingly.

7. References within and at the end of the text should follow the Harvard system. Bibliographic details at the end of the article should not be abbreviated. Citations involving mote than two authors should be given in full on their first appearance in the text; for instance, Harper Adams and Graham (1995) and subsequently should be abbreviated to Harper et al. (1995).

8. No manuscripts, parts of a manuscript or disc will be returned to the author. The publishers reserve the right to copy-edit and proof read all the articles accepted for publication.

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