

Neuropsychological "Soft Signs" in Children and Rehabilitation According to the Montessori Method

By Christel Björkstén



The Aurora Hospital in Helsinki, Finland, has a child psychiatric facility for 5–12-year-old emotionally disturbed children. Many of these children also have marked learning disabilities. In all groups of patients diffuse symptoms of neurologic immaturity or malfunction as well as large and fine motor coordination problems are common. The children have more or less pronounced problems in concept-building and abstract thinking; their visual or auditive perception is often underdeveloped or deviant. Perception of space, including the estimation of distance, demands complex performance and therefore is sensitive to any disturbance in the part processes.

In our hospital we commonly use the following screening methods for a first evaluation of the child's neuropsychological functioning: MVPT (Colarusso & Hammill: motorfree visual perception test) and VMI (Keith E. Beery: Developmental Test of Visual-Motor integration). We have ourselves developed the Montessori triangle and a children's version of de Renzi's Token test.

MVPT is a fast-screening method, where no motor performance is needed. It gives information about different visual perception processes like visual discrimination ability, figure/ground discrimination, visual closure, visual memory and understanding of spatial relationships. The method is intended for 5–9-year-old children.

We have replaced the complex Bender test, for which it is difficult to motivate poorly performing children, with the VMI test. This can be used with children 3–15 years old. Hyperactive or poorly concentrating children, for whom it is difficult to settle at all in the testing situation, nonetheless like to draw the VMI designs, where they easily feel successful. They may not even notice their own errors.

In order to get information about other kinds of visual perception: the ability to combine a given form of parts, we use an equilateral triangle divided in 2, 3, and 4 parts. The task is to build the model triangle of these parts.

Even very disturbed children love to try, and we get an idea of the child's working behavior. Unless he really has in an analytical way "understood" the form, he does not succeed in combining the parts—often to his own surprise.

In the Token test for children, the instruction indicates for the child which token to choose among 20 possibilities, representing two forms, two sizes and five colors. The task is quick and easy, the test material simple and quite attractive for the child. It gives information about the child's auditive perception and understanding of spoken instructions and also gives the tester a picture of the child's precision and ease of performance, concentration ability, problem solving characteristics, and fine motor performance. The task can be presented to the child as a kind of game, where contact

is established using an emotionally neutral material. Manipulation of tokens and a situation relatively free from requirements to perform gives the child a feeling of security and trust, and again—he may not even notice his own mistakes.

When a child has more than 8–10 failures on a pass/fail basis we consider the need for a larger and more detailed investigation, for which we have used either NEPS (Luria) or ITPA, in some cases Oseretzky. However, we are working on a more detailed scoring system for the children's Token test, which will permit analysis of error types.

In addition to the neuropsychological testing, we of course gather information about the child's intelligence development (general methods are WPPSI, WISC) and his emotional status (Rorschach, CAT, Düss, HTP) and—for children who like to draw—the kinetic family picture. A therapeutic program can be planned only against a background of many-sided information.

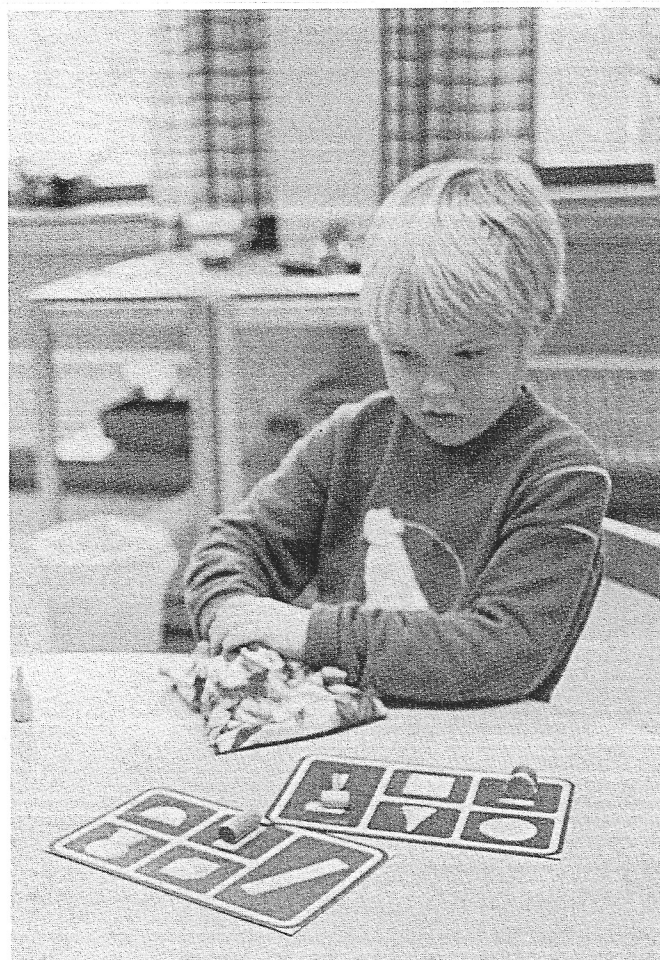
In the Aurora Hospital, we have, since 1977, used a Montessori-inspired group therapy as one of our rehabilitation programs. The reason for choosing Montessori lies in the method's foundation in general developmental theory and the attractiveness and suitability of the materials as a help for development and rehabilitation of inaccurate performance.

The view of Maria Montessori (1870–1952) was that the child's development is a creative process. The child has an inner program or plan, according to which the different abilities develop. Montessori was among the first who defined so-called sensitive periods in the child's development. These are much like the periods of crisis in Erikson's developmental theory, which are crucial for the development of many abilities and personality trends. In addition to the genetic givens, it is the quality of the environment (objects as well as personal relations) which determines how well the child can use the influences he needs during his sensitive periods in order to build his self.

The child learns through all his senses. There is nothing in his intellect which has not first been in the senses. Through the Montessori sensorial materials, the child specifically develops all his senses. The child can organize auditive, visual, taste, touch and smell sensations according to form, size, color, intensity, pitch or quality. First the child understands contrasts, then likenesses, and at last the gradual differences between contrasts.

Handling of the materials helps the child to understand what he sees, hears, and touches and he gradually learns to create order in the great diversity of sensations. In the sensorimotor stage the child learns to combine and integrate different sensations and he develops concepts. Only when these part processes are sufficiently developed is abstract thought possible and the child becomes ready for schoolwork. For many children this readiness is not yet fully developed when they are old enough to go to school. These children often alternate between concrete and abstract functioning.

The Montessori materials are meaningful and interesting for the child. He can not only actively use them, but can also develop his ideas further. The child takes delight in arranging objects and building; he can experiment with simple—often repeated—tasks, but can also develop many



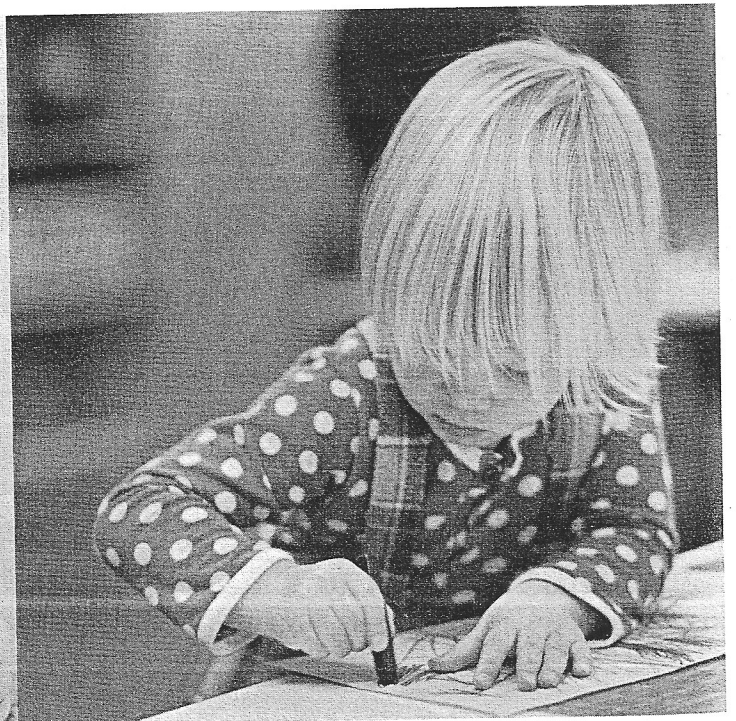
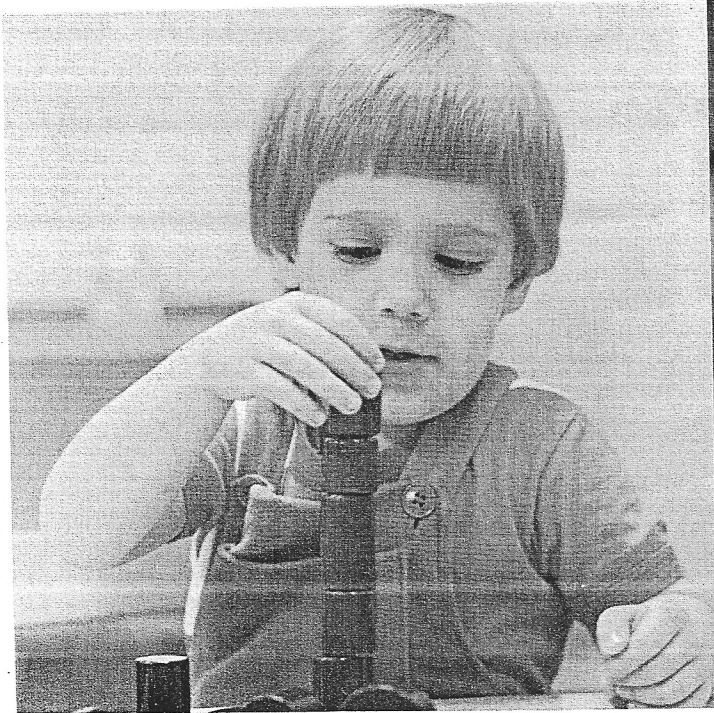
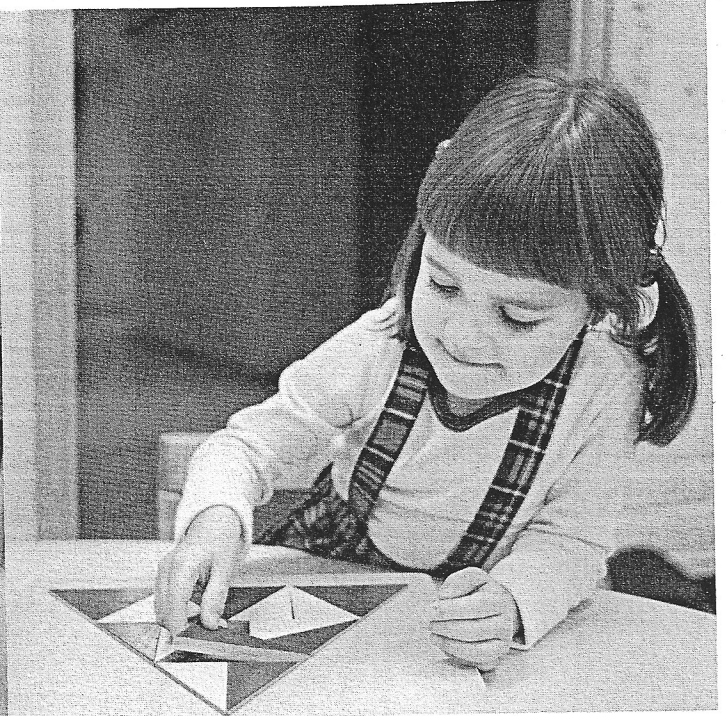
more intricate ideas, still using the same materials. Montessori has repeatedly pointed out the importance of motor activity in learning: "the hand is the teacher of the child." The activities in the Montessori room include continuing movement and learning of movement sequences, transporting of materials, and construction of various combinations.

Therefore, if Piaget and many other scientists are right when they postulate that sensorimotor integration is the base for higher forms of behavior, the Montessori method is evidently an exceptionally successful method of rehabilitation.

The purpose of the Montessori method is to aid the complex maturation processes in the child, and not just to reach certain didactic results. Social education or rehabilitation is a part of the method, because the child learns how to behave in a group and how to develop his interaction with others. The group leader is no traditional teacher and does not suggest tasks to the child or show him how to do a certain exercise. On the contrary, she encourages independence in the child through her entire conduct. Keeping in mind Montessori's assumption that each child has a blueprint or plan for his own development, helping him develop his own initiative becomes a central task for the adult. Our own experiences in the Montessori room have strongly confirmed this assumption: the enthusiasm of the children, from which the ability to choose among options and show one's own initiative originates, has deeply impressed us, the Montessori therapists. It seems that for many children the

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Montessori activity produces insight in the fact that they do have their own inner life. The more the child relies upon this being the case, the more he begins actively to direct his own development. This attitude has far-reaching therapeutical consequences.

In the group's activities, initiative is all the time carried by the children. The adult encourages, helps the child to express thoughts which arise from his work (cognitive feedback) and encourages him to seek solutions to social problem situations (emotional feedback). New points of view are sought together; the learning situation is mutual. The adult's consistent respect for the child's initiative promotes the child's confidence in his own competence both in learning and in emotional situations. The effect of this newly gained optimism on the child's development can be marked.

The Montessori method is internationally well known and widely spread. There are about 3,000 Montessori schools in the USA and Canada. Mexico, Venezuela, India, Sri Lanka, Australia and Japan have numerous Montessori schools. In Europe the main "Montessori countries" are Holland, England, Ireland, France, and West Germany. The emphasis is on preschool age, because the Montessori-defined sensitive periods especially belong to that time of life.

The Montessori method has, however, also found its use in rehabilitation and therapeutic work, mainly in the USA and Munich (integrated education, Aktion Sonnenschein). Other places have carried out experiments integrating in Montessori groups children with various handicaps, learning disabilities, or developmental retardation. Montessori group activities offer a possibility to aid children who have not had a "normal play development" or who have gaps in their development. Through the Montessori method the children can be activated, and they learn how to develop their own initiative. While learning how to work they also

develop the ability to concentrate on the task at hand and to plan their work and the use of time. The possibility to use the same materials for simple and gradually more difficult tasks gives the child the opportunity to choose work which adequately matches his developmental level. He can proceed on his own from this point. Experiences of success build the feeling of confidence in his own abilities and stimulate the child to accept new challenges.

The Edward M. Ornitz (at Southern California University) assumption of a connection between psychic disturbance and a deficiency in sensorimotor integration has stimulated us to experiment with a gymnastics program as a complement to the Montessori room activities. We have tried to carefully abide by the same Montessori principles in the relation between adult and child: relying on the child's own initiative and retaining the possibility of choice between options for the child.

This implies that some groups have met alternately in the Montessori room and in the gym. In the gym the children are given free access to equipment like a variety of swings, ropes, ladders, rings, balls of different sizes, jump ropes and hula hoop rings, trampolines, mats, jumping balls, etc. After 1½ years of experimenting we have the following observations—some of them very tentative:

- Is the age level 5–8 years a sensitive period for gross motor activity? Bad performance does not yet disturb the joy connected with motor activity; there is little competitive spirit among the children or criticism of one's own or others' performance.
- All motor activity has to do with the child's way of experiencing himself; these sensations must be integrated with the child's other knowledge and observations of himself.
- The child is continuously confronted with the task of defining himself. The starting point for this process lies in

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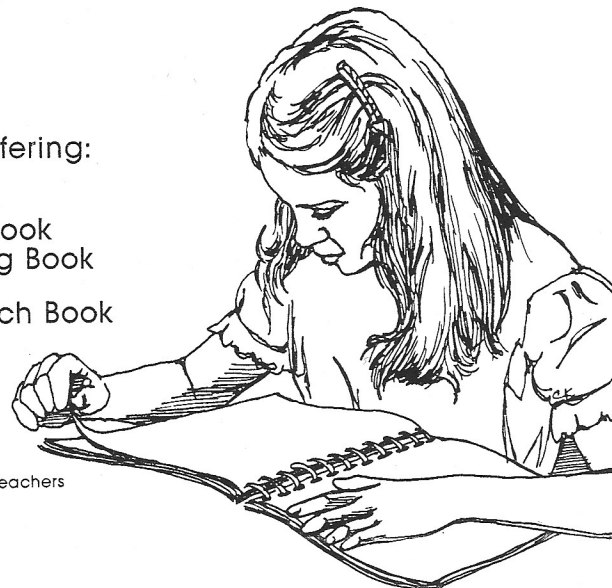
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his own activity and vitality (to act instead of react). Vitality specifically embodies the feeling of self.

• From our therapeutic work we know that acceptance of the significance of the child's feelings and doings viewed from his own perspective encourages him to try out alternative ways of behavior and to modify his views in more acceptable ways.

In Montessorian language the aims of the motor activity program are:

1. Freedom of choice; the child's initiative determines the activity. In every situation the child faces the question: what do I want? His feeling of self guidance will be confirmed. Our experience shows that the child reacts vigorously in this situation—there are no periods of passive waiting.

2. The child has the chance to select a level of performance, which matches his ability. Performance according to age level is not required of him. He has a possibility for many-sided experimentation. We can define this as "psychologic metabolism": he picks from the surroundings what appeals to him and modifies it to suit his needs.

3. The child always has the possibility of repeating his performance, which gradually will lead him towards the development of active control.

4. The child will through his activities get acquainted with both the physical and psychic dimensions of his own self.

5. The activity is closely connected with situations of social learning.

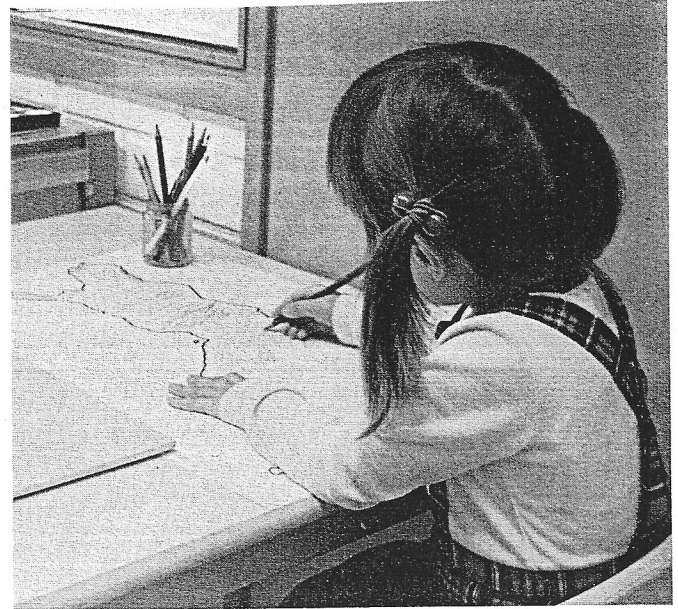
6. Feelings of trust, importance and interest prevail in the child's relation to the adult. The therapeutic attitude implies that the adult neither compels nor manipulates the child.

The Montessori gym program:

- a) activates the child's resources;
- b) aids the complex sensorimotor integration and e.g. space perception, including estimates of distance;
- c) offers possibilities for ordered discharge of emotional tension.

The Montessori group therapy in Aurora is a team work effort, involving several different professions. The child psychiatrist contributes medical knowledge to diagnosis as well as to planning and realization of therapy. Theoretical concepts, research, and development of methods is expected from the psychologist. The social worker brings in the family dynamics as well as the social background and, together with the family, tries to create an improving mental climate, which promotes the child's development towards independence. The occupational therapist brings in an emphasis on sensorimotor integration and organization of body image. The ward personnel have a direct and well differentiated understanding of the child's behavior, which they bring to the Montessori situation while searching for ways to use their knowledge therapeutically.

There is no need to use persuasion in connection with the Montessori therapy groups—the children are eagerly looking forward to their sessions. The parents—also those who traditionally find it difficult to cooperate with public institutions—seem willing to accept the Montessori therapy program as an attractive alternative to other forms of treatment.



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