# THE REACHING OF HIGHER COGNITIVE LEVELS SEEMS TO REQUIRE THE OVERCOMING OF GRAVITY - A DESCRIPTION OF A METHOD FOR SENSORY MOTOR TRAINING

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## Introduction

A methodical way of sensory motor training, Education in Balance™, with the special aim of giving the nervous system a second chance to mature, has given empirical results which indicates that overcoming gravity is of importance for reaching higher cognitive levels.
We are born with a set of ' Primitive Reflexes ' ( Fundamental Movement Patterns ) which are supposed to be inhibited during the first year of life. If one or more of these ' Reflexes ' remain uninhibited it / they will partly close the nervous system and will most probably become a hindrance for further physical and intellectual development.
The training at Vestibularis™ seems to show that vestibular stimulance is a necessary component when it comes to suppressing ' the Reflexes '.
The result of the training also gives support to McGraw's Neurobehavioral Theory of Development and Consciousness.[1]

## Method

*The Frames*

Education in Balance is a method of sensory motor training developed by Mats and Irene Niklasson ( Figure 1 ). The training is divided into five integrated parts and follow the sequence of neural development.

1. Stereotypical,[2,3] fetal and neonatal movements. Devised by Blythe and[4,5] Goddard Blythe, Niklasson and Niklasson,[7] following the patterns of the ' Primitive Reflex ' system.
" The early movements of the fetus and neonate, which were previously viewed as passive by-products of rapid neural wiring are now viewed as interactive, that is, having a reciprocal effect on the underlying structure and function of the central nervous system ". [6]

2. Vestibular stimulation, which we find to be of importance for the integration of the stereotypical movements into the nervous system.[7]
" Stimulation of the vestibular nuclei generates muscle tone and liberates the nervous system from these infantile reflex patterns ". [8]

3. Games with the special aim of enhancing muscle strength and body awareness.

4. Gross motor milestones. The unfolding of rolling, creeping and crawling mirrors the child's possibility to be disobedient to gravity.

5. Exercises in erect position. At the end of the programme the client is ready to train balance in standing position.

*Our clients and their reasons for training*

Our clients are mainly children between the ages of 5 and 15. Most of them are intellectually and physically within the normal range. They are essentially slow learners, with or without concentration problems. Some are diagnosed with ADHD or Damp (Scandinavian definition; Deficits in attention, motor control and perception ).
Initially most of our clients have low self-esteem. They usually show bad or frustrated behaviour. They are often regarded ' lazy ' when it comes to schoolwork, either underachieving despite hard effort or showing little or no interest although they are considered bright.

*Initial Assessment*

A set of primitive reflexes and postural reactions are tested as well as the clients capability to roll, creep, crawl and move in erect position. The client's ability to cope with rotation is also tested. Each test is evaluated in terms of figures measuring from 0 to 4, where 0 means no difficulties and 4 means severe difficulties."

Fig. 1

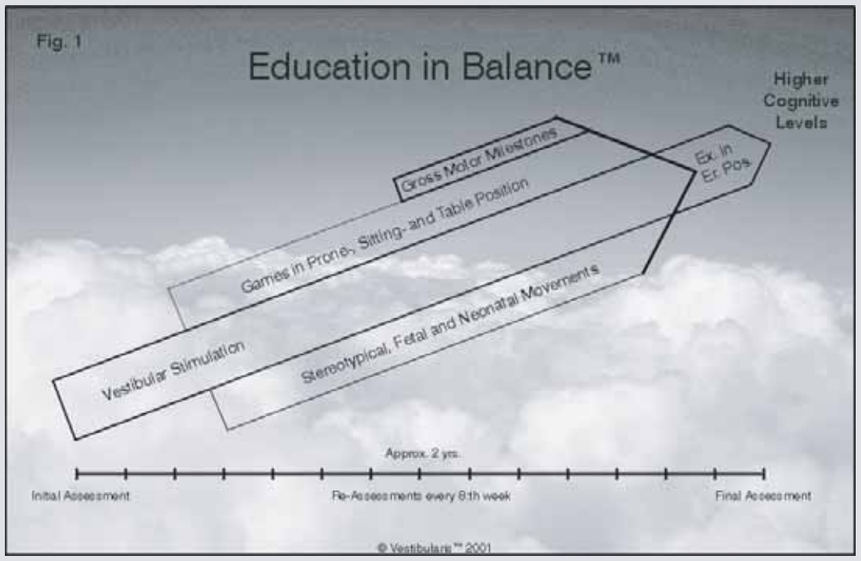
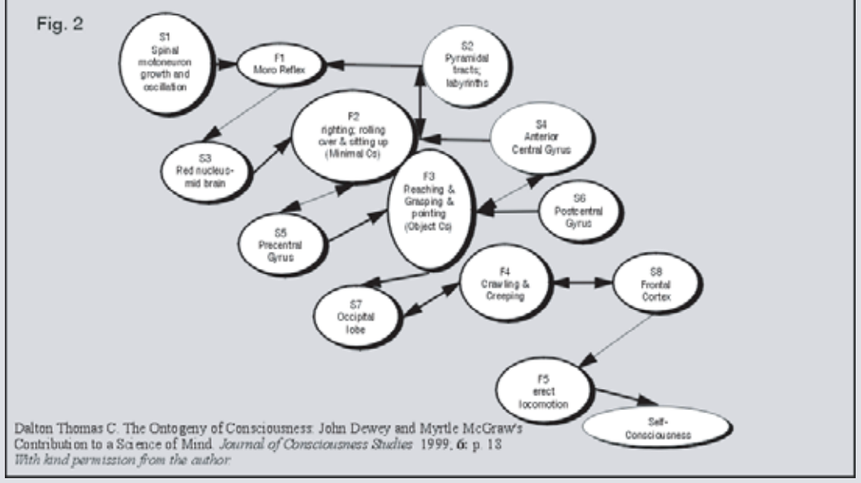



Fig. 2




Dalton Thomas C. The Ontogeny of Consciousness: John Dewey and Myrtle McGraw's Contribution to a Science of Mind. *Journal of Consciousness Studies* 1999, 6: p. 18
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*The training*

The client is training 15 min/day at home together with a parent and is re-assessed and given new exercises every eighth week over a period of two years.
During the first year of life, the ' Primitive Reflexes ' are supposed to be suppressed to leave room for Postural Reactions. As the latter appear, rolling, creeping and crawling are likely to unfold.[9]
For reasons unknown, our clients have failed to mature in this particular neurological sense. The aim of the training is therefore, as mentioned above, to give the nervous system a second chance to mature by setting back the neurological clock and repeating special and stereotyped movement pattern in a certain order.[5]

## Results

At the end of the training we find it empirically evident that, as the ' Primitive Reflexes ' are suppressed, the Postural Reactions and the Gross Motor Milestones unfold.
Our preliminary findings in a group of 60 children give measurable support to the hypothesis that it is possible to give the nervous system a second chance to mature, despite the clients age.[7] We have also found that our client's ability to handle vestibular stimulation improves during the time of training. Their behaviour also improves as well as the self-esteem and they are generally performing better at school. According to Ornitz[10] the vestibular system has the greatest responsiveness between 6 and 12 months with a level of reactivity between the age of 10 and 14 years.

## Discussion

It is my suggestion that the initially partly closed nervous system opens up as a result of the sensory motor training programme described. Another result from the training seems to be increased possibilities to reach higher cognitive levels. Sixty years ago, McGraw had a Neuro Behavioral Theory of Development and Consciousness as described by Dalton[1] ( Figure 2 ). McGraw described the importance of sequential order in motor development.[11] She also suggested that the challenge of overcoming gravity heightened consciousness.[1]
Following our results of the training, I speculate that a driving force for growth and development is man's inborn urge to overcome gravity.
The influence of gravity upon development seems to be neglected so far but has to be recognized by parents, schools and the society at large. It is not simply a matter of being able to master one's own body, but also a matter of being able to develop a value capacity. This is not fully possible unless the whole brain is involved.[12] In order to involve the whole brain especially the childs struggle against gravity must be taken seriously.

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