

Developing a new self-image with the help of the Feldenkrais-Method

Helga Bost

A lecture given at the Symposium: "Feldenkrais and Research II" in the research – workshop. Berlin, February 23. 2012

Case-study 1

Michael: incomplete paraplegia between thoracic and lumbar spine.

Some of you might know that I have been working with Michael for more than twenty years. He had a motorbike accident when he was 29, resulting in an incomplete paraplegia between thoracic and lumbar spine. The sensory pathways of his nervous system had obviously suffered more injuries than his motor pathways.

Our common work started to get exciting after about six weeks of practising Functional Integration lessons: all of my invitations to move in some way – and I was mostly suggesting basic patterns – were answered by visible movement. However Michael was not yet able to sense his response to movement. In the first feedback he described a sensation like an "inner shivering" – this was the first sensory perception beneath his lesion.

Foil 2/ Film Michael 1 / text to film Michael 1

"I knew that he had no sensation in his feet, so I had the idea to remind his system of the sensation of standing:

I pushed his spine gently from above, in a way it would have organized itself had he been standing.

The result is that his legs are moving inward. His feet are flexing.

He is getting a different tone from his feet up to his head.

He is organizing himself as if he was standing on an imaginary floor.

Obviously his nervous system is responding to my stimulations on a deep motor level. M. himself doesn't feel it at that time.

The nerves giving sensory feedback are destroyed. He has to relearn sensation."

Michael learned more and more to sense himself along the inner pathways of these big, visible movements. He wasn't able to control them at first, but he could make use of them in his everyday activities – he learned again how to walk, and his walking felt more and more safe.

Foil 3 / Film Michael 2 / Text to film Michael 2

The leg on the same side is moving like in standing.

And the other leg starts bending.

If I push down alternately, once from the left, then from the right side

Michael's legs begin making walking movements.

Foil 4/ Film Michael 3 / Text to Film Michael 3

"Its three months later and I am working with Michael lying on his stomach (his head turned to the left, lying on his right ear). I want to get a impression of his spine, an image of his spine, so I gently slide my fingers along the left side of his spine, pushing slightly inwards and upwards – this gentle touch initiates a

bending sideways, a lateral flexion, a movement that is the beginning of organizing oneself for crawling. Then his left knee starts actually bending and moving sideways and upwards on table-level. When I withdraw my hand, everything is moving back to the original, neutral position. Sliding my fingers upwards from one vertebra to the next in this way, I can evoke the same reaction each time, becoming more distinct the more I go upwards, above his lesion. With time I notice that this way of exploring and initiating a movement can be started from many parts of his body. As soon as the initiating impulse is recognized by Michael's system as belonging to a movement pattern, the whole movement can be performed. Later on I can also initiate the complete pattern from his shoulders, his head, even from his feet, from areas that are, or were, paralyzed."

In the same lesson I continue with a verbal instruction, working with language. I asked Michael to turn his head, and I can watch how the whole movement pattern is initiated. After doing it a few times Michael asked: "Is my pelvis moving?" I confirm, then to turn his attention to his knee and he asks: "Is my left knee bending?" Then I asked him to go with his attention to his feet, and notice how with his next movement his feet start bending more. Michael feels the difference too. I touch his foot when he tries again and he feels a slight tingling there. For the first time he is aware of my touch on his feet.

Michael is learning to sense himself again by becoming aware of his powerful inner responses to a movement – initiation. A new body image is developing

Three years later familiar movement patterns started to be inhibited spontaneously. Michael's comment: "I don't need these big movements any longer now. I can feel and sense them from inside." It took much more time until a controlled voluntary inhibition – controlled – was possible.

I made videos and documented this ten-year-process of shared learning in a film, together with our colleague, film producer Rotraud Kühn: "Michael – an example for learning with the Feldenkrais-method." The film also shows how Michael is managing his everyday life and how my hypotheses concerning this work were developing.

I invited Prof. Dr. Klaus Schimrigk, the former director of Neurology in Homburg where Michael had been operated on. I showed him parts of my videos and talked to him about my work-hypotheses. He had not seen such pictures yet nor had he found any descriptions of similar phenomena in literature. But he encouraged me to talk about these hypotheses and my conclusions.

Foil 5

Michael – incomplete paraplegia

- Initiation of a movement through touch in FI
- Awareness of a movement on a level beneath conscious perception
- Big movements without inhibition
- First conscious sensation: "inner shiver"
- Differentiation of perception along inner trains of movement of "primordial (central) movement patterns", (see Moshé Feldenkrais, "The potent self", p 217)
- Pulling / pushing / crossing / sliding movements, current / flow / vibration / warmth trains of movement

- A new body image is emerging
- The new body image becomes the base of a new self-image
- Conscious creation of movements
- A conscious mapping out of his life (as described in the film “Michael – an example for learning with the Feldenkrais-method.”)

Foil 6

My work hypothesis

- primordial (central) movement patterns are stored in the spinal cord and can be called forth without control of motor cortex
- sensory feedback to the brain promotes confidence into movement and flow of movement
- through becoming aware of these inner processes a new body-image emerges
- with all this as a basis deliberate and coordinated movements become possible

The film is supplemented by a full interview with Carl Ginsburg about his experiences with the “Shake A Leg” – program: “It is really part of two things, one is to simply research what we are doing but the other is to present that research in a way that people can see and understand it – and respond to it.”

I have shown the film at many regional meetings and workshops as well as in my own seminars on the topic. It is available in German and English.

After one of these presentations a woman came up to me and said: “That’s almost my own story. I had an incomplete paraplegia and have learned how to walk again.” She had published her Master’s thesis about her experiences (see Index), and had afterwards started a Feldenkrais-training. She then helped me with translating the film into English.

In my diary on Michael’s development, there were frequent entries about severe pain-attacks resembling phantom limb pain. My hand can sense this pain as vigorous movements in his legs and pelvis. We find out that pain develops when he is losing his self-image in his efforts to manage his everyday-life. I discover that pain decreases and disappears when he feels himself as whole in movement, in warmth or in tone. This is then how we begin each lesson up to now before we actually start doing FI.

Foil 7

Work-hypotheses concerning “Pain”

- loss of self-image – pain
- Reframing: pain tells me where my body is
- Replacing pain by something else that tells me where my body is – “warmth / vibration / current / flow / pulling / pushing / crossing / sliding movements”

In 1993 Michael went to Langensteinbach for a cure. The staff were surprised at his skills and asked what he had been doing about it. I got invited to speak to all the staff for two hours. At the time Prof. Anton Wernig, Bonn was starting his first experiments with the running board in Langensteinbach. The next morning he showed me around

his department. In 2002 he published a study: „Laufband-Therapie hilft Gelähmten auf die Beine“ (Link, see literature)

Quotes from the study:

- “Running-board therapy, developed by Prof. Anton Wernig, University of Bonn, at the beginning of the 1990s, enables many paraplegic people to walk short distances on their own again.
- When therapy is carried out in the right way, the patient is able to elicit and train complex movement patterns stored in the spinal cord, even when he has little voluntary control over his legs otherwise.
- This is demonstrated in a study by Prof. Wernig and his team, published in the widely respected American journal “Journal of Neurotrauma”.

Case study 2

Andrea: Whiplash trauma on one side, paralysis of limb on her left side, loss of sensation of the left half of her body.

Andrea came to my practice in 1992. She was suffering from a whiplash trauma on one side through a car-accident. She had lost the ability to sense the left half of her body, her left side was paralysed. Soon the stimuli I gave her became visible as a flow of movements in her left paralyzed side. She was just able to sense them like an inner goose-skin.

Unfortunately she could not establish more sensation in her left side - even later in practice. When she was lying in bed at night she would only realize by feeling uncomfortable on her right side that her position was somehow wrong and she needed to switch on the light in order to change it.

When I was practising with her I set up mirrors or connected the camera to a monitor so that she could watch how her left side moved.

Even though she was barely able to feel her left side kinaesthetically, her range of movements was improving very fast, so that she started playing badminton again in the first summer after her accident.

With her as it was with Michael, movements were carried out within a second, fluently and effortlessly, even from a longer distance (hand – foot).

Foil 8 / Film Andrea / text to the film-clip Andrea

“As with Michael similar big movements are elicited by my touch but only on her left side. (Andrea from behind: What’s going on here now?” She senses how her left leg is touching her right one in a movement.)

The right side is inhibited – there is a spontaneous inhibition as it is with healthy people. Her right side doesn’t perform the movement; at best it is sensed from within. But the left side is not connected to the higher centres yet. There the big reflex pattern is being triggered, the “all-or-nothing-movement.” (Compare Feldenkrais, (*The elusive obvious*”, p 217)

Both of them, Michael and Andrea, have to learn again to sense these big movements, to have them at their disposal, and to control them.

Foil 9

Case-study Andrea: lateral whiplash-trauma, left side paralysis, loss of sensation in her left side

- Initiation of a movement through touch in FI
- Movements are mirrored diagonally and performed without inhibition (pelvis - shoulder, elbow - knee / hand – foot)
- Movement is sensed from within like an “inner goose – skin”
- A Movement cannot be differentiated but can be perceived optically
- Nevertheless improvement in confidence and flow when moving
- Voluntary information and control of a movement become possible

Example: FI sitting on a chair

I stabilize Andrea by gently putting pressure on her hands lying on her thighs. I “play” with her right hand the “wiper – lesson” that we were doing with the feet. Each movement of the hand is reflected in her foot in less than a second. As when I’m lifting her fingers, her toes and foot on the left respond almost immediately by also lifting up to the heel – the paralyzed foot is bending. When I’m lifting her wrist, her heel is lifting. I move her fingers left and right – her foot lifts and moves to the left and to the right. Soon she realizes that “something is happening down there” and has a look. Now she tries to go with the movement with her right foot, and is surprised how tiring this is for her. Towards the end of the lesson I ask her if she can visualize these movements of her left foot. She considers it shortly and then answers: “Not only can I visualize it, but I also can do it.” And she starts moving her left foot and dancing the “Charleston” with both of her feet, sitting on the chair.

Many lessons with Andrea are also documented on video.

I have been observing this phenomenon of cross wise – “cross wise mirrored” movements” with some other clients with lateral paralysis. All of them have more sensation than Andrea. Their movements are barely visible – being more inhibited. But these clients describe their reaction to the initiated impulse by touch as a pull inside, as a vibration and tingling feeling along the path of movement. After this kind of experience they are able to move their paralyzed foot and feel that its contact to the floor has clearly changed.

3. Looking for answers in publications and books

I found a study by Franz Mechsner, “*Neurophysiology: A feeling for movement*”, GEO Nr 04 / 2002

Movements of the hands are probably coordinated by perception and not, as was supposed up to now, by motor structures in the nervous system...

There is an easy experiment: with hands lying side by side, palms down, move both lifted index fingers together first to one side and then to the other. It’s easy when doing it in slow pace but with increasing speed most people suddenly switch to moving their fingers in the opposite direction to each other. In 2003 I meet Franz Mechsner in Munich to share experiences. In 2004 Franz Mechsner gave the introductory speech at the annual Feldenkrais Gilde conference in Munich.

In 2008 I had an e-mail from New Zealand. Our colleague Cindy Allison had collected experiences on doing Feldenkrais work with paraplegic people worldwide. She had published a booklet and has generously agreed to my passing it on to people interested on this work. SCI and Feldenkrais – February 2009.

In 2009 I celebrated my twentieth anniversary of teaching Feldenkrais in my practice. My colleagues gave me a very helpful book as a present: Thomas W. Myers, "Anatomy trains: Myofasciale Leitbahnen ", München. 2nd ed. 2009, 1st ed.

In the next year I participated in a workshop given by Robert Schleip on the topic "Fascia" in Stuttgart.

In 2010 I was invited to a Meeting of Feldenkrais scientists at lake Constanze and met our colleague, neurologist Thomas Hassa. I felt supported and encouraged when I talked to him. He informed me that there was a summary of a lecture on the "central pattern generator" (J. Roeper, "Spinal Systems III, lecture in physiology, 11.29.2007, in winter 2007/2008, University of Frankfurt / Main)

Link: http://www.physiologie.uni-frankfurt.de/Indoor/StudInfo/Archiv/WS%202007_2008/Hauptvorlesung%20Physiologie%20WS%20200708/Vorlesung%20Prof.%20Dr.%20J.%20Roeper/07-Spinal3WS07-8-29-11-07.pdf

I found several of my work-hypotheses corroborated here in retrospect.

4. Case study

Werner: complete paraplegia - T4 to T6

I have been working with Werner for three years now. He fell from a ladder and hit the step of a stairway. Unfortunately his spine broke at the level T4 to T6 and he became a complete paraplegic. 4 months later a syrinx was discovered – a bag filled with spine fluid that additionally damaged the nerves of his left arm. When he came he could sense himself only from the fourth thoracic vertebra upwards to his right arm and the right side of his face. He didn't have clear control over his head and needed his hands to support his sitting. As a result of the syrinx, sensations in his left arm and left side of his face were severely disturbed. He had once burnt his left hand when barbecuing and had realized it only two days later when the blister had opened and left a wet trace on his desk.

After several weeks of working together, Werner noticed a movement on his side underneath his sixth rib which felt to him "like a worm that moves". Then he started to sense this "worm" in other parts of his body. This was his first sensory perception.

Half a year later he became aware of "pointed bones" in his pelvis when sitting, which improved his sitting a lot: now he was able to catch and throw a little bag filled with cherry-stones without falling out of the wheelchair.

These first sensations were expanding and differentiating. Werner became aware of push and pull, of vivid tingling and the sensation of heaviness along the long movement trains of the body.

His clear observations of movement trains along his body are supported by texts and pictures about myofascial movement trains described by T. Myers in "Anatomy Trains", 2nd edition, 2009.

Right now Werner says "I've got a body again". He can sense the location of his feet and knees... But, like Michael, he cannot sense, "the necessary pain which warns", something which often leads to complications in his life, for example when he has a bladder infection or burns himself...

Foil 10

Werner – complete paraplegia from fourth to sixth thoracic vertebrae.

- First sensation: "a worm" underneath his sixth thoracic vertebra –(rib)
- Awareness and sensation develop along movement – trains with pulling / pushing / crossing / sliding movements, and with sensing currents / flow / vibration / warmth
- Movements get safer and moving flowing
- Developing a new body image
- Based on all this a new self – image
- New life – design. Opportunity to re – create his life
- By the end of 2011 movements can be planned and carried out as well below the region of his lesion.

In December 2011 Werner is lying on his side. We are working on the topic shoulder / pelvis – elbow / knee forward and backwards. I move his shoulder forward and backwards. He feels the resulting movement in his back and pelvis. I move his shoulder forward and backward. He feels the resulting movement in his back and pelvis. I asked him to move the pelvis on his own. At first he tries to do it from his upper chest, and I asked him to visualize his pelvis as the motor and both of us are surprised – he starts the movement clearly from his pelvis being aware at the same time of the resulting movement in his back and pelvis. He is also sliding his knee forward. I see that he is organizing himself in a different way and can sense it as well. There are other groups of muscles involved in his lower abdomen now. Within this same lesson he becomes able to move pelvis and shoulder, knee and elbow together as well as separately but as well to move them in opposite directions.

(A film – clip can be shown here)

This is how Werner describes his process: First he needs to become very quiet in order to go deep inside himself and listen and then he becomes able to sense the movement inside. This experience of this inner movement continues as an internal sensation for several hours after our explorations. So with each lesson he is taking home "a new piece of this big body–image puzzle". To him as well as to his wife (who accompanied him all the time and had practised these lessons as well) this feels just like bliss and wonder. I feel the same.

I presume that this clear perception is happening along myofascial trains capable of storing information, which are recognized by the central nervous system as functional movement patterns, and are transferred to the "central pattern generator".

Werner's everyday life has changed considerably:

- In the morning he now only needs help for about ten minutes
- He is now capable of changing seats from the wheelchair to any other place.
- He got a computerized home-trainer, a “Motomed” which he sets up in front of his wheelchair. The trainer can move Werner’s legs like in biking, informing him how much he contributes on his own, and this has shown repeatedly that after a certain time he is pedalling with his own efforts (central pattern generator) which, however, works best when “pedalling backwards”.
- Because he can sit effortlessly now, his hands are free. He participates in a several–day workshop on modelling soapstone. A year later he starts acrylic painting.
- He bought an E-Bike – a so-called Handybike – which he can fix in front of his wheelchair, and he then moves the bike with his arms. He goes on extended biking tours together with his wife like they did in former times

(Bild)

- He began a part-time job in a bank and, provided the weather is fine, drives his handy-bike all the eight kilometres to his workplace and back again on a small even road.
- He got himself a wheelchair that helps him to stand up. As a result his whole system has got used to standing upright so house-work has become easier.
- He rearranged his garden in such a way that he can roll in between the beds now and do his gardening, as he did in former days.
- He bought a ride-on-mower and had a special tractor’s seat set up on it’s top so he can change seats with the help of a wooden board and thus he can take care of his big lawn as in former days.

(Bild)

Foil 11

My work hypothesis

- Feeling a movement on a deeper level – the level of fascia
- Becoming aware of pulling / pushing / crossing / sliding movements, current / flow / vibration / warmth
- A new body-image develops
- Planning and coordinating a movement below the lesion becomes possible
- The fascial network of the body is capable of storing information which can be interpreted as movement patterns by the central nervous system, and can possibly be passed on to the so-called *central pattern generator*

5. Fascia and Communication

“In other words, it is these cells that create the structural substrate for all the others, building the strong, pliable ‘stuff’ which holds us together, forming the shared and communicative environment for all our cells - what Varela termed a form of ‘exo – symbiosis’ - shaping us and allowing us directed movement. (Varela F, Frenk S, The organ of form”, Journal Social Biological Structure 1987; 10:73 – 83) Myers, see above, p.15

“It (this network) binds every cell in the body to its neighbours and even connects, as we shall see, the inner network of each cell to the mechanical state of the entire body. (...) Parts of its connecting nature may lie in its ability to store and communicate information across the entire body.” Myers p. 17

This clear perception along myofascial trains leads me to another question and hypothesis. Can this fascial network of the body also communicate with the “central pattern generator” on the level of the spinal cord; with the central pattern in turn being able to create basic movement patterns?

Foil 14

Summary to the other way round – “Rolling backwards”

- Becoming aware of and sensing a movement in the level of fascia (compare Michael, Andrea and Werner)
- Pulling / pushing / crossing / sliding movements, current / flow / vibration / warmth
- The fascial network stores information and passes it on
- This in turn can generate the “central pattern” even if fascia stimulation is initiated from distant body areas, the pattern can be recognized that way (compare Michael, Andrea and Werner)
- Proprioceptive feedbacks to the central nervous system promote security and flow of a movement.
- By becoming aware of and sensing these internal processes a new body image can develop.
- Based on that planning and coordinating a movement / movements become possible
- A new self - image can develop.

Foil 15

Literature – Index

- Moshé Feldenkrais, “The elusive obvious”
- Moshé Feldenkrais, “The Feldenkrais-method. Awareness through movement Dr. Moshé Feldenkrais at the Alexander Yanai” Volume 1 – 8
- Helga Bost, film: Michael - an example for learning with the Feldenkrais-Method” 2000 (can be ordered from feldenkrais@helgabost.de)
- Franz Mechsner, Geo –magazine Nr. 04/2002
www.Geo.de/mensch/medizin/462.html.
- Professor Dr. Anton Wernig, http://www3.uni-bonn.de/die-universitaet/informationsquellen/presseinformationen/pressemitteilungen/252_02
- Lecture Spinale Systeme III, Roeper 29.11.07, Physiologie-Vorlesung WS07/8-7
- Thomas W. Myers, Anatomy Trains: Myofasziale Leitbahnen, München, 2. Aufl.2009, 1. Aufl. 1999.
- Cindy Allison, Improving Sensory Motor Function after a Spinal Cord Injury (SCI) – The Feldenkrais approach to sensory motor education, 2009
- Irene Lober, walking on one’s own two feet: Paraplegia – A Somatic Investigation, 1987

- New: "Fascia: The Tensional Network of the Human Body". Hrsg. v. R. Schleip, Findley, Chaitow, Huijing; München, Elsevier 2012.

Foil 16

I thank for your awareness

- Thanks to Michael, Andrea and Werner
- Thanks to all who supported me on the way
- I'll be grateful for any support from my colleagues, so that more people may have access to these experiences

Helga Bost, Am Schmalzbirnbaum 6, G 66606 St. Wendel

Tel. 00496851-3174, E-mail: feldenkrais@helgabost.de

Homepage: www.HelgaBost.de