

# **Helga, Part II: Using Bilateral Rhythm Games to Coordinate and Improve a Stroke-Afflicted Side of the Body**

## **A Cognitive Eurhythmics Case Study**

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My previous study about Helga described using rhythmic movement puzzles to alleviate spasticity and greatly increase movement range and quality in her stroke-affected arm and hand. I now wanted to get Helga's newfound movement working in conjunction with the rest of her body.

To someone who has not suffered stroke, using one arm rather than the other feels like the same sort of activity, with the main difference in quality being whether the hand is or is not dominant. However, when stroke shuts down our customary neural paths, moving a stroke-affected limb can feel like a completely different activity, and using the two arms feels like rubbing one's head while patting one's tummy.

Helga confirmed that use of her two limbs felt this way and her movements showed it. We began with untimed movements that had a common spatial goal. For example, both hands were lifted six inches above the thighs in sitting. The goal was to then bring them down to resting on the thighs at the same time.

Attempting to use both limbs at once inevitably caused them to perform one at a time. With Helga, the right hand would drop down to the leg immediately while the left stood still. Then, having finished that, she brought the left one slowly down. She was of course painfully aware that they would not budge together. But her instincts were telling her the right thing. She knew the path to bringing her arms down. That path was just blocked on one side. It required a command with a whole different feeling to move the other limb. Gradually these two commands needed to be integrated.

The challenge was to get use of the two sides to feel more uniform so that movements using both halves of the body could be simultaneously invoked. It was immediately clear that the Feldenkrais method would be central. Feldenkrais used symmetries and asymmetries of the body as key tools in imparting his awareness through movement lessons. Observing a difference in performance between the two sides, Feldenkrais felt, could stimulate us to sense our movement habits afresh.

I began by going back a step, and not requesting the two arms to move together. However, this proved an excellent situation where rhythm can be used as a stepping stone to better movement. I had Helga alternate tapping her lap, but in a steady rhythm, say, 5 beats for each hand. This did not yet ask of her to coordinate the simultaneous movements, but at the same time yoked together symmetrical movements with a common rhythmic goal. This proved to be an excellent first step and she improved substantially within a few weeks, even with a variety of rhythms.

I then gave Helga several untimed games of matching movement, with common spatial and kinesthetic goals. Matching movements of the elbows, upper arms and shoulders, bringing them forward and backward together, highlighted the difference in feel in the two sides through the upper limbs.

My first step with the simultaneous material was to try to get any sensation I could in her body that would get past the "one at a time" results. I encouraged her to start with the impaired limb, get it in motion, then start the normal limb after. That way, at least the experience of triggering

the two limbs was felt simultaneously. Once the experience was generated unintentionally, it may become possible for her to replicate the movement intentionally.

It proved to be a good stepping-stone and within a few weeks, both limbs were moving together to greater and lesser degrees depending on the difficulty of the exercise. Once they could be coordinated, I added some rhythmic cues – as described in the previous Helga study, I would have her bring her arms forward in 5 counts, then 4, then 3.

The corpus callosum is the region of the brain that communicates information between the two hemispheres of the cortex, and it was Feldenkrais' theory that a movement learned on one side of the body could be easily absorbed by the other side, so easily that it could be learned merely with the imagination. Whatever the anatomical reality, the question of transference through the corpus callosum is at the forefront of rehabilitation issues with persons who have had one side disabled by stroke. The act of coordinating the two limbs, and reinforcing a symmetry between the diverse pathways Helga had to use to active them, yielded immediate results in the strength and vitality of the impaired limb. While these exercises were being done in conjunction with our previous ones, there was something in the life of the limb that seemed to change dramatically with this unifying behavior.

I added a final challenge, which has proven to be quite difficult and a project of several months to date: moving the limbs simultaneously but in alternating directions. This additional step requires coordinating actions that are not the same, and this proved to be much more difficult. Clearly we are more comfortable with a symmetric movement with a shared goal. When Helga began to try to swing her arms in simultaneous but alternating fashion, we had to go back to the beginning. The arms wanted to move one at a time again, and I encouraged her to start the impaired arm before the healthy one. Again, progress was sure, though much more erratic than the symmetric movements, and gained strength and vitality as it went.

Bilaterally symmetric movements, with common spatial and rhythmic goals, prove to be a powerful rehabilitative and revitalizing force in stroke recovery therapy. Rather than tissue manipulation, coaxing the brain into the forming of new habits, patterns, and associations proves to be the best medicine.