

Structure, Function, Integration.

Journal of the
Dr. Ida Rolf Institute®

July 2022

Spotlight on the First Full-Body Fascia-Oriented Plastination Exhibit

Body Worlds curator, Dr. Angelina Whalley, describes the science and the art involved in the creation of *FR:EIA*.

A Study in the Appendicular

Leaning into our limbs, Rolfers® pay attention to the appendages.

Adapting to COVID-19 two years into the pandemic

FR:EIA

*Fascia
Revealed:
Educating
Interconnected
Anatomy*

Also in this issue

Structural Integration poetry,
a podcast, and a host of reasons
to stop mouth breathing.



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July Cover Art

FR:EIA – Fascia Revealed: Educating Interconnected Anatomy

This issue's cover features an image of *FR:EIA*, the world's first fascia-focused three-dimensional human plastinate. *FR:EIA* is a new and exciting exhibit at the Body Worlds Museum in Berlin, Germany (bodyworlds.com/freia). The teams of experts involved with Body Worlds joined forces with professionals of the Fascia Research Society to create this full-body plastinate, to reveal and preserve the entire human fascial net. Turn to page 4 to read the interview with Dr. Angelina Whalley; she tells the story about how she and Dr. Gunther von Hagens started Body Worlds, the challenges they experienced creating *FR:EIA*, and the response they've been getting from the public visiting their fascia exhibit. The contributors to the *FR:EIA* project are well known to us with *The Journal of the Dr. Ida Rolf Institute*®, including Dr. Robert Schleip, Dr. Vladimir Chermenskiy, Dr. Carla Stecco, Dr. Gil Hedley, John Sharkey, Thomas Myers, and Dr. Jaap van der Wal, as well as Gary Carter and Rachelle Clauson with the Fascia Research Society, among many others. You can see the 2021 unveiling video of *FR:EIA* by following this link: <https://bit.ly/3yAYXNr>

Next Issue

- **Rolfing® SI in Europe**
- **Body Image**

The big tent of Rolfing Structural Integration (SI) and Rolf Movement® Integration is international, with thousands of practitioners who live throughout the world and travel far and wide to learn and practice together. In the November 2022 issue of SFI, we have articles about the European Rolfing Association, as well as articles by European Rolfers® and SI practitioners.

Ever wonder how body image and Rolfing SI overlap? The next issue has articles about the embodiment of self-perception.

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From the Editor-in-Chief

Lina Amy Hack

“Yes, bodies can change – your body can, my body can. I do not mean deteriorate – I do not mean ‘age’ in the commonly accepted sense. I mean that bodies, the average physical body of flesh and blood are actually an amazing plastic medium which can change and change quickly toward a structure more economical in terms of energy.”

– Ida P. Rolf, PhD, and Laurence E. Davis,
from the *Bulletin of Structural Integration*
(1969), Volume 1, Number 3, Summer.

Continuing the celebration of our 50th volume of *Structure, Function, Integration*, this second issue of 2022 features articles focused on the appendicular and stories about living with COVID-19 for more than two years, from the perspective of the Dr. Ida Rolf Institute® (DIRI), a Rolfer®, and a DIRI faculty member; plus, a collection structural integration (SI) perspectives and related book reviews. Thank you to all the contributors and editors for this edition and all our editions; you are the voice of this journal. This issue's theme, 'A Study in the Appendicular: Shoulder Girdle/Pelvic Girdle', complements the March 2022 issue's theme, 'The Axial Complex'; in the Rolfering® SI paradigm, the two are a pair that go together.

The authors who wrote for our appendicular theme showcase how Rolfering SI and Rolf Movement® Integration are pointing at the same outcome for clients – more freedom from tension and more choices for movement; how they explain the execution of this plan has a lot of variety and nuance. Several authors discuss how the eyes and visual feedback are connected and influence arm movement and moving through space; all of them emphasize the embodiment of the legs as support structures that feel and respond to the ground. Of particular note, we have for the first time, Jan H. Sultan's Internal-External (I-E) model published in DIRI's journal; this time, Sultan explains I-E with his over fifty years of practice and teaching. As Rolfers®, we have this I-E teaching as part of our base, yet the original publication was not 'in-house', it could be found in the notable Hans Flury publication *Notes on Structural Integration*.

I read this issue's collection of articles in the same window of time as looking at the *Bulletin of Structural Integration*, volume 1, number 3, from 1969. Ida P. Rolf, PhD (1896-1979) wrote the lead article "The Hidden Pattern." The lead article for our appendicular theme by DIRI faculty member Aline Newton is "The Missing Gesture." There is a throughline from our founding issues of this journal, through the over fifty years of Rolfers writing and editing for Rolfers, to this issue before you. In the 1969 second issue, the editor talks about how the group was sharing art side-by-side with the anatomy in Rolf's classroom; read through our perspectives section and you will find SI poetry, an SI podcast, and an anatomical look at why

we all need to keep our mouths closed a little more often. In the summer 1969 issue, they reviewed the 1966 book *A Theory of Mind and Matter* by aeronautical engineer J. H. Greidanus. Here in 2022, our reviews are books on the science of fascia, its manipulation, and the art of embodiment, by renowned physiotherapist Andrzej Pilat and Certified Advanced Rolfer, Rolf Movement practitioner Bill Harvey, respectively.

Enjoy.

Correction to Rosewood and Berne (2021)

Through an editorial error, we inadvertently referred to Gael Rosewood as a "Continuum Movement teacher" in the abstract of the article "Vision, Perception, Structure, and Function: An Interview with Dr. Sam Berne" by Gael Rosewood and Sam Berne, OD, in the March 2021 issue of *Structure, Function, Integration* (vol. 49, no. 1, pages 43 to 48). Rosewood is a member of the Continuum Teacher Association and is a "Continuum teacher." As such, she is not an authorized Continuum Movement® instructor. We regret any confusion this may have caused, and we apologize to both Ms. Rosewood and Continuum Movement® for the error.

Fascia Insights

Curating *FR:EIA*, the First Full-Body Fascia-Oriented Plastination Exhibit

By Lina Amy Hack, Certified Advanced Rolfer®,
and Angelina Whalley, MD



Lina Amy Hack



Angelina Whalley

ABSTRACT *The July 2022 Fascia Insights column is an interview with Dr. Angelina Whalley, curator of Body Worlds. The Fascia Research Society and Body Worlds collaborated on a fascia-oriented plastination exhibit called FR:EIA – Fascia Revealed: Educating Interconnected Anatomy. In this interview we learn about Whalley’s path to becoming a plastination expert alongside her husband Dr. Gunther von Hagens and how they were inspired to design FR:EIA for fascia-based manual therapists and the public.*

Body Worlds is the world-renowned original anatomy exhibition that educates visitors by presenting human bodies preserved through plastination, a process invented by Body Worlds co-founder Gunther von Hagens, MD. Together with curator Angelina Whalley, MD, they design their many Body Worlds exhibits with their teams of experts who dissect human donors and display them in elegant poses to inform the public about the factors affecting health and well-being. Last November, broadcasting live from Body Worlds Museum in Berlin, they unveiled *FR:EIA (Fascia Revealed: Educating Interconnected Anatomy)*, the first fascia plastinate revealing the three-dimensional human connective-tissue net (see Figure 1). This project was a collaboration between Body Worlds and the Fascia Research Society. For this issue’s Fascia Insights, we feature an interview with Whalley about *FR:EIA*.

Lina Amy Hack: Thank you for your time today, Dr. Whalley. Can we start by getting to know you a little bit? Have you always had a passion for understanding the human body? Is this study of the human form a curiosity you've had since your youth?

Angelina Whalley: My dream of becoming a physician started early on, when I was eleven or twelve years old. I was always fascinated with what was underneath the skin and found it very mystical. Later on, I recall being fascinated when looking through one of the first photographic anatomical atlases. I still remember the first image I saw when I opened this book. It was the anatomy of the face. It was a bit shocking, but at the same time I was fascinated by the richness of detail and all of the filigree structures. Ever since then I knew I wanted to become a physician, so I majored in medicine.

LAH: Once you became a physician, how did you choose your specialty?

AW: When I graduated from Heidelberg University, I wanted to go into surgery, but in this male-dominated world, I thought it might be a good idea to have some extra qualifications, so I decided to hone my skills in anatomy. That was when I met my husband, Gunther von Hagens, and my career took a different path.

Back then, Gunther was dreaming of immigrating to the United States, and he was offered a position in Florida. But I wasn't prepared to go with him. We ended up compromising that he would not go to the United States and I, in return, would work with him in plastination. In the beginning it was great fun to work with him. But it was also a little frustrating for me because that was not the direction I had envisioned my professional career going. A few years later, when we came up with the idea of public presentations, I knew I was in the right place. I never would want it any other way.

LAH: We, in the manual therapy profession, are so lucky that you both persevered, you've brought excellent teaching tools to the world. Did you and Dr. von Hagens imagine that plastination would become this big where millions of people learn from your work?

AW: No, never. The idea of a public exhibition never crossed our minds in the beginning. We were operating in a university setting and it was absolutely normal that the public would be excluded.

There were very strict regulations that prohibited outsiders from entering the dissection rooms. There was no chance to even gauge the interest of the public. It came together all by chance.

LAH: I hadn't thought about that, the transition from academia to the public museum was a step you both made with your work. There must have been quite a few barriers at first.

AW: Indeed, when we started, it was very difficult. People were resistant to the thought that Body Worlds could have educational purposes. Some thought the

idea would produce a spooky setting where people would have a cheap thrill and that the primary aim was to make money. Above all, we were accused of misusing human remains for artistic purposes and violating human dignity. This resulted in a very heated and harsh public debate, especially in Germany. But eventually, this made people curious; suddenly people from all walks of life wanted to participate in this discussion. Not so many years later, it was finally understood that the primary aim of the exhibits are focused on preventative healthcare.



Figure 1: Front view of *FR:EIA*. Copyright Gunther von Hagens' Body Worlds, Institute for Plastination, Heidelberg, Germany, www.bodyworlds.com.

Like our anatomical colleagues of the past two hundred years, we typically dissected the fascia away and discarded it with anatomical waste . . . When I heard Dr. Schleip talk about fascia, I felt that plastination could indeed help to add a new dimension to this young branch of research.



Over the years, we have put a lot of effort into the didactics around each presentation, in the storytelling, and in the quality of the specimens (see Figure 2).

LAH: There is a clear point of view when I look at the exhibits; they are so refined. What inspired *FR:EIA*, the fascial-focused dissection?

AW: Actually, the famous fascia researcher Robert Schleip, PhD, brought this idea to us. We are known for the very fine dissections done by our teams of experts; our specimens are used for medical training all around the world. But up to now, we had been very traditional in the anatomical understanding of our work.

We were aware of fascia, of course; we also were aware that there is more attention being given to fascia nowadays. The role of fascia is different, yet this knowledge hadn't yet changed our anatomical approach. Like our anatomical colleagues of the past two hundred years, we typically dissected the fascia away and discarded it with anatomical waste. This changed when Robert approached us. He is very smart and wonderful to work with. In his very charming and friendly manner, he convinced us to do this project. It sounded very interesting.

One major reason we agreed was that we are always striving to develop new dissection principles, which are made possible through plastination. For example, unlike with formaldehyde-fixed specimens, the polymers used in plastination solidify soft tissue (such as muscles) so that they can take over holding functions. This not only allows for new anatomical representations, but also for spectacular, lifelike body poses. When I heard Dr. Schleip talk about fascia, I felt that plastination could indeed help add a new dimension to this young branch of research. And I absolutely understood that such a whole-body plastinate would revolutionize the

Figure 2: Back view of *FR:EIA*. Copyright Gunther von Hagens' Body Worlds, Institute for Plastination, Heidelberg, Germany, www.bodyworlds.com.



Figure 3: Close view of the side of *FR:EIA*. Copyright Gunther von Hagens' Body Worlds, Institute for Plastination, Heidelberg, Germany, www.bodyworlds.com.

universal anatomical view of the body, not only among professionals.

But despite all the enthusiasm, we also had major concerns. In the first place, we pondered how we would dissect the tissue that has the function of holding everything together without destroying it too much. For example, imagine you have a peanut bar where the peanuts are held all together with a layer of caramel. The peanuts represent all the bones, and the muscles, while the caramel represents the fascia. If you were to focus on the caramel, how would you show that? You have to break it away to reveal the inside; you need to destroy quite a bit to get to the inside. That concept was mind-boggling.

The second issue was the kind of tissue; we were not sure whether the plastination process would cause major shrinkage or adhesions so that the fine interconnective fibers that had been painstakingly dissected before, would be sufficiently visible at all. In addition, we weren't sure whether the result would meet our needs and our expectations in terms of aesthetics and beauty.

In the beginning, it seemed like a monumental task. We spent a lot of hours discussing how to show the various parts of fascia without destroying it and considering what impact every cut would have on the neighboring structure. It felt as if we had to invent anatomy anew, or at least the dissection principles, for each region of the body. This process

took many hours and many discussions. Fortunately, there were volunteers from the Fascia Research Society who came to our facilities and spent hours, days, and weeks with us to accomplish this special project.

LAH: Our readers will appreciate those challenges, that the continuity of fascia is throughout the body, and dissecting anywhere can disrupt the whole form. This contrast is a double bind, we want to see inside the body, but once we've cut, we have changed it.

Was the body placement of *FR:EIA* planned out in advance? Or does the team wait to see how the individual cadaver presents?

AW: When you are working on a project like this, you need to have at least a rough schedule and a draft script that you follow. And along the way, of course, we were free to make changes while the project evolved.

The originally planned pose was very different from what *FR:EIA* reflects today. Our chief anatomist, Dr. Vladimir Chereminsky, came up with the first design, including the first dissections with fascial layers as well as a pose. That idea was to have the right arm held up, with the heart in the hand. From the drawing the pose looked nice and coherent with the dissections, so we used it as the first basis for our work. Over the course of the next weeks and months, the teams adapted the first design to incorporate many elements that reflect concepts of fascial continuity in current fascial research. There were many starts and stops as the ideas had to be adapted and changed to adjust to what the tissues would allow in a way that could all work together in one form. Slowly but steadily, everything came together.

After completion of the dissection, *FR:EIA* underwent the usual plastination process, i.e. the body was completely saturated with silicone. At the end of this process is the positioning, which refers to both the overall body pose, as well as the anatomical dissections to ensure that all structures are correctly positioned before being irreversibly cured. The team in the lab started placing her in a similar pose as I just described, but seeing her in real life, the pose didn't feel right. She almost looked as if she was throwing her heart away. In addition, I had reservations about putting the heart in the foreground. We

When working on such an important specimen, we work rather slowly. We want to make sure that we don't cut anything we might want to include later. In addition, fascia isn't normally included in our work, so it was not very familiar to our team. Therefore, our staff relied on the expertise of the Fascia Research Society.

wanted the entire body to be focused on fascia, on flexibility, on stretching, so why should the highlight be her heart? It didn't make any sense. So we needed to come up with something else, but something not too different in order not to destroy any of the fine dissections.

We ended up with a more dancer-like pose with her arm turned down. This pose very much reflects fasciae's stretching, flexibility, and movement, and all in all, I'm very pleased with the result (see Figure 3).

LAH: Yes, such a striking pose. It was captivating to see *FR:EIA* in the unveiling video (<https://bodyworlds.com/freia/>). This project must have taken years? How many people were involved?

AW: Typically our experienced team, who are very fast at dissecting, work for a year to produce a full-body specimen. But with *FR:EIA* it took three years altogether, including the discussion, the planning, and the coordination with the Fascia Research Society.

When working on such an important specimen, we work rather slowly. We want to make sure that we don't cut anything we might want to include later. In addition, fascia isn't normally included in our work, so it was not very familiar to our team. Therefore, our staff relied on the expertise of the Fascia Research Society. These volunteers brought important information to the table with both their hands-on experience, as well as their deep knowledge of recent research findings. It was a true collaboration of skilled experts in their field, that ended up being very successful. The dissection by our team alone took 800 working hours. The volunteers from the Fascia Research

Society dedicated another 3000 hours of their time.

LAH: I wondered about that, the dissection with *FR:EIA* is so precise, did your team work with more than one donor to explore different fascial inquiries? Or was it detailed work with one donor?

AW: Prior to working on *FR:EIA* our laboratory conducted several tests to see how plastination would work with fascia tissue. In particular, superficial fascia contains a lot of fat tissue, which is prone to shrinkage. We dissected certain parts from other donors, from the superficial fascia to the abdomen region.

The precision comes from being cautious with our dissections. Plastinates will remain for hundreds of years, and of course, we want to make sure that there is no mistake preserved in any specimen. This was particularly true for *FR:EIA*, a first of its kind, where the entire world and experts on fascia will be looking. We wanted to make sure to present our best work. We made extra effort to make sure we achieved the highest quality.

LAH: All that hard work is visible. Watching the 2021 unveiling video, what struck me was how the light went through some of those thin layers of fascia. Was it more difficult to plastinate fascia compared to muscle?

AW: The plastination process is always the same, whether you plastinate a muscle or a piece of cheesecake. What is difficult and different is the anatomical approach.

LAH: What is the most significant difference between fascia-oriented dissection and the classic dissections that your team usually performs?

AW: Classic anatomy is very detailed and systematic – each muscle for instance has an origin and an insertion point, as well as its own nerve supply and arteries. All details are clearly defined and distinguishable from each other. But with fascia there are neither clear boundaries nor starting and end points; everything in the fascia system is interconnected. It requires a completely different approach and understanding of the body.

Our current *FR:EIA* exhibition in Berlin sheds a different light on the body and bodily functions compared to our other exhibits. To explain fascia to the visiting public, we have supplementary displays to explain what fascia is. For example, I have included displays describing the principle of tensegrity, such as a tensegrity model analogous to the spine. This helps people understand that the bones of the skeleton do not stack on top of each other with pressure, but rather float in a series of fascial lines similar to a tensegrity model.

Another display helps visitors to understand myofascial lines in a self-experiment. Visitors are first invited to see how close they can get to the floor when bending forward. Then they are invited to massage their plantar fascia on both sides with a fascia roller and do that forward bend again. People are amazed to see that their back is a lot more flexible afterward and that they can reach further down than before, although they only treated their feet. Our visitors are mind-blown by this new awareness.

Understanding fascia sheds an entirely new light on the body and its functions. I think it is particularly important that even laypeople have access to such

information – to understand for instance that pain in the musculoskeletal system is not necessarily caused by the joints but by the fasciae. Only knowledge can lead to a change in mindfulness and behavior.

LAH: Your display in Berlin sounds immersive for the visitors, a real learning experience. When I look at *FR:EIA*, it is eye-catching that her left thoracic cavity is open and you can see the back of the pleura with the right hand seemingly gesturing to that open space, inviting the viewer to look. Are the viscera in place otherwise, is the right lung still *in situ*?

AW: Viscera have been removed. There are regions that we couldn't show, such as visceral fascia, because it would have destroyed too many other areas. We are currently working to fill the gap between *FR:EIA* and what still needs to be shown by creating other fascia specimens.

LAH: What kind of feedback are you hearing from the people viewing *FR:EIA*?

AW: People are fascinated by the entire topic. In particular, medical professionals. Many physiotherapists have come to see our exhibit and they absolutely love her. Also, laypeople appreciate getting a better understanding of fascia. Some people know fascia from yoga and they appreciate learning more about what they are working on within their own bodies.

LAH: I was thinking that as well, that my clients would enjoy seeing *FR:EIA* for their own movement practices. What comes next for *FR:EIA*?

AW: At the moment, she is in Berlin, and there is an entire section in the museum dedicated to displaying her for the long run. There is a plan to display *FR:EIA* in Montréal at the Fascia Research Society conference this fall. The conference organizers have started a fundraising campaign to help get *FR:EIA* to Montréal so that attendees can see her in person. However, she will return to Berlin afterward and anyone can come to the museum to see her there at any time.

LAH: I would love to visit Berlin. Thank you again for your time today, you've given us a deeper sense of *FR:EIA* and the collaboration that it took to produce this project.

AW: It is always worth traveling to Berlin. I appreciate your interest.

Dr. Angelina Whalley, a licensed physician, is the creative and conceptual

designer of Gunther von Hagens' Body Worlds exhibitions and the director of the Institute for Plastination in Heidelberg, Germany. Her Body Worlds work includes space and exhibit planning and installation, and presentation of specimens, organs, and plastinates for optimal aesthetic, thematic, and didactic value. As director of the Institute for Plastination, Dr. Whalley has promoted the exhibitions and made possible their presentation to more than fifty-two million people worldwide.

Lina Amy Hack, BS, BA, SEP, became a Rolfer® in 2004 and is now a Certified Advanced Rolfer (2016) practicing in Canada. She has an honors biochemistry degree from Simon Fraser University (2000) and a high-honors psychology degree from the University of Saskatchewan (2013), as well as a Somatic Experiencing® Practitioner (2015) certification. Hack is the Editor-in-Chief of Structure, Function, Integration. ■

The Missing Gesture

By Aline Newton, Rolf Movement® Instructor,
Certified Advanced Rolfer®



Aline Newton

ABSTRACT *“The Missing Gesture” is a preview of a chapter from the upcoming book, Reimagining the Body by Rolf Movement® instructor Aline Newton. Newton is a long-time student of Hubert Godard and presents teachings from his style of movement education. The discussion starts with a case study of an arm injury. The nuance of the expressive gesture is discussed and compared with instrumental movements.*

Editor's note: As mentioned in the abstract, this article is an excerpt from Aline Newton's upcoming book Reimagining the Body. It features translated quotes in italics by Hubert Godard from workshop lectures that Newton attended. They are printed with permission. Hubert Godard is a Certified Rolfer, a dancer, and a researcher who lives and practices in France; as a manual practitioner, movement practitioner, and theoretician, he has been a primary influence on the development of Rolf Movement since 1990. He is well known for his tonic function model; he has an inspiring and insightful way of teaching movement and manual therapy. Some modifications to this book excerpt have been made to fit the style of this journal.

Working with Rhea

Rhea was a cellist who came to me for a Rolf Movement Integration session by referral from another musician. Five years earlier, while riding her bike, a dog ran in front of her and she fell off, bracing herself

with her left arm to protect her head. She broke her elbow in three places and her humerus had a hairline fracture. She did intensive physical therapy for a year and was able to get back to playing but when she came to see me, five years later, she was still experiencing pain in her arm and increasing stiffness. She was also feeling back stiffness and had a bunion on the left foot. From my point of view, watching her walk, the whole left side had a diminished quality of movement.

I invited her to lie on the table on her back, including some remarks about keeping a big frame of perception. I coached her to feel her head resting on the pillow because when she was sitting and using her arms, I noticed her head position and how her way of holding her axis, or ‘center line’, restricted the arm movement. As her head rested back on the pillow, she mentioned being reminded of how she loved to float in the ocean – the feeling of support.

I put my hand under hers and asked her to feel through her hand to mine underneath it, and I invited her to follow my hand

sliding towards the foot end of the table. Then I asked her to feel the table with the inside of her elbow and to let her elbow come out towards me.

Yes, these movements helped me to investigate the range of motion of the shoulder, but there is more to it. I didn't think to myself: "I'm evaluating a shoulder joint's mobility." In my touch, I'm touching Rhea, as if I am touching her whole body at once. I am meeting a whole system, a whole person. This benefits me too: the quality of touch is one that helps my own hand/arm/shoulder find the most stability. I keep my attention peripheral, listening. I remember Hubert Godard saying:

This way, the good coordination can come 'exogenously' [from the outside]. It's not a biomechanical question, in the end, it's a relational question. Why with the arm? Because the arm is a transitional organ. It is built in the transitivity; it doesn't exist by itself.

Trying to explain what I mean or what Hubert meant by "the arm is a transitional organ" would not work for this session, but I did suggest to Rhea that the hand is organized by the world and the arm connects us to each other.

With my hand still under hers, I had her start the movement with her arm extended and connected to me. I suggested she begin a small twist with her arm, rotating away from me. I remember that she said she was imagining scar tissue growing in the space between her shoulder and her chest, and this restricted her movement. She asked me if the tissue needed to stretch – the mechanical view of the body. I encouraged the contact between our two hands, and then all of a sudden there were tears in her eyes – not because the movement hurt, but because something emotional welled up. This was not a memory 'stored' in the body. It was about reclaiming a possibility, *the missing gesture* – in this case, the sense of contact. Hubert credits François Delsarte (1811-1871) with calling the shoulder 'the thermometer of emotion' (Stebbins 1886).

Rhea's tears, she said, had to do with feeling so alone during the time of her injury, as a single parent of two children who were quite young at that time. She was trying to stifle the tears, though I reassured her (for the cortex's reasoning ears) that tears release stress hormones. Though not seeking it out in particular, it is very common for a small moment of release to arise when a pattern is

Somehow her physical complaint made more sense when she was able to connect it to a movement in the present and her emotional experience of the past. The whole process opened up new possibilities for her.

changing. The emotion is almost a reflection of the missing gesture – reaching out in longing, receiving contact – what was not done, not expressed at the time. Hubert sometimes would call this welling up the 'petit emotion'. It is a moment that allows integration and movement, not at all the old model of catharsis. Rhea was surprised at her response, and very relieved, she said. Somehow her physical complaint made more sense when she was able to connect it to a movement in the present and her emotional experience of the past. The whole process opened up new possibilities for her.

To end the session, I asked Rhea to come to standing, finding ease through the feet. When I tried the approach of giving some support to her head, she stiffened up. So instead, taking my cue from her responses, I suggested coming back to the feeling of the ocean around her, even in standing – the image of support that she had offered me at the beginning of the session.

I met Rhea only that one time when she passed through Boston. Her session is a good example of the power of understanding the missing gesture. By starting from her physical injury and inviting a simple movement – opening – along with the contact with me, she was able to reclaim the gesture of reaching, to feel the yearning from the time five years before when the problems began. The missing gesture was crucial for bringing movement to the stiffened area, but was not recognized as a necessary part of rehabilitation until our session.

Expressive Gesture

Imagine a picture of someone extending their arms in supplication, or a little child reaching up to a loved one, or someone pointing to show someone else, "Look!" All these gestures are an expression; they communicate a feeling, an interest, a shared perception, a relationship. This is part of what Hubert meant when he called the arm a 'transitional organ'.

Yet, if any of us experiences tension or pain or lack of flexibility in our arms and shoulders, it is immediately the mechanical aspect – muscles, joints, etc. – that comes to mind. To manage these problems, strengthening, stretching, and surgical procedures are the go-to solutions.

The movement of our arms in gestures of expression is intimately connected with the function of the shoulder, elbow, wrist joints, and hands. The way I touch or don't, the gestures that I allow or don't, immediately impact the stability of the shoulder. We could think about our pain at least in part as a problem of expressive gesture just as much as mechanical overuse. When I am working with a person, as with Rhea's session, I bear Hubert's perspective in mind.

The expressive quality of arms is also a matter of personal significance to me. In the Rolfing® Structural Integration (SI) pretraining, "Perceptual Body,"²¹ we were videotaped walking towards the camera, introducing ourselves, turning, and walking away. At twenty-one years old, this was the first time I had seen myself on camera this way – in 1981 we were not

The significance of the movements of our hands and arms goes deep; babies have a grasp reflex, an inheritance from when holding mom's fur was key to survival.



Arm gestures are an expressive language. Photo by Paula Corberan on Unsplash.

used to seeing ourselves all the time! I was shocked at the sight of my arms, hanging limply by my sides. Was it the result of many years of training not to touch the antiques in my childhood home for fear of breaking something? Being told not to hang on people? A way of hiding? There may be many elements behind the shape I saw. Hubert is the only teacher I have met who stresses the key place of arms in our posture. Most approaches assume that the body is built from the ground up, like any other structure. 'Grounding' and 'rooting' are powerful images that represent important functions. But an often-disregarded dimension of finding the ground has to do with what lets go from above. The pattern of holding in the shoulders and arms has to begin to let go for us to be able to find grounding, just as much as the other way around. And often the shoulder pattern has to free up first, or it prevents anything else from changing.

The significance of the movements of our hands and arms goes deep; babies have a grasp reflex, an inheritance from when holding mom's fur was key to survival. Babies begin to reach for things before they can even sit on their own. Long before infants manage to sit up or walk independently, patterns of reaching for loved ones and objects, as well as patterns of pulling and pushing away, have been established and these patterns will be there when the child stands up. For all of

us, the expressiveness of the arms, or lack thereof, is inevitably going to be connected to posture, and to others. *Transitive arms* are formed in relationship to an *other*.

Hubert was fond of pointing out that in the shoulder joint, the socket for the humerus is very shallow compared to the hip joint. Rather than being primarily stabilized by thick ligaments the way the femur is in the hip socket, the shoulder's integrity is maintained, in great part, by the muscles called the 'rotator cuff'. And muscles are under the sway of our arousal system through the gamma motor neurons/gamma loop.² This translates into the arms and shoulders being a thermometer – responding to and reflecting our moment-to-moment emotional state, and to the longer-term patterns we call 'attitude'. They don't release once and for all. Instead we can use the arms' expressive quality as a doorway for practice.

In Practice

From the first few workshops with Hubert, he emphasized the importance of our hands and arms in expression and in relating us to our surroundings. He had us work with a stick, about the size of a closet dowel. Lying on our backs, the stick in our hands, he would say to the class:

First, let yourself notice where you and the stick are touching. Notice the place of

contact – it is a two-way process: you are touching the stick and being touched by the stick at the same time.

With this quality of contact, the stick floated up, taking one joint of the upper limb at a time – only the palms, then the carpal bones, then wrists, then radius, then ulna, then each humerus, then each scapula – each joint articulating between ground and sky. Touching the stick and letting in the touch of the stick changed so much in my physical experience. Instead of grasping, there was contact, a meeting that continued to be a process of discovery, never resolving into the known and expected.

In a modified sun salutation with our hands on a chair, Hubert engaged us in practices that involved working with mechanical and expressive qualities simultaneously: we explored how we met the surfaces we contacted, how we were able or not to expand into the surrounding space. He never asked us to "raise our arms" – it was always with an imaginative framing – as if we had our best friends on either side and we were reaching for them; or projecting out into the space far away, or as I mentioned before, greeting the sun.

He would tell us:

The arm is perhaps the area where the missing gesture, le refoulement de geste, the gestures I don't give myself

permission to make, will show up the most. The arm, the shoulder, is one of the most key zones; that's why Delsarte and the others say it is emotional: it is linked with expression/impression. It is a gate to go from inside to outside, and it is the location of a lot of refoulement, of missing gestures. The gestures that I do not allow myself.

This is what is behind Hubert's cryptic saying that the arms are transitive. Go-betweens. They are often telling a story. It could be important to be in conversation with clients, while we work together, to give people space to let me know their associations or what is coming up. But even without that, it's important to bear the arms' complexity in mind.

In working this way, there is at the very same time a physical impact and a change on another level. The muscles do get stronger; coordination and balance do improve. But these changes are a consequence or at least go together with a change in the other layers of perception, body image, expression, and symbolic gesture.

In the model where muscles are given the primary importance, a person might be told to strengthen the serratus anterior muscle, the primary stabilizer of the shoulder blade. Sometimes, a little bodybuilding of specific muscles is useful; the movements involved in waking up serratus anterior bring about a kinesthetic change. This reintroduces the option of recruiting those particular fibers. Like musicians in an orchestra at the ready, they are available to play the kinetic melody. But reclaiming the potential of action is far more than serratus anterior, triceps, or any other muscle. What is reclaimed is a sense of action possible in an environment.

When I was working with Rhea, it was the quality of contact, what Hubert calls 'haptic capacity', that helped my own shoulder blade to be stabilized. If I had been touching Rhea with distaste, or in a more objectifying way, rather than from the hand's contact helping to recruit serratus anterior fibers, I would be more likely to trigger the large forearm muscles in a grasp, with no give and take in the hand itself. And serratus would miss its chance: instead, pectoralis minor would probably have worked first, pulling the shoulder blade out of its optimum mechanical position for stability.

I am going into the details to show that our attitudes cannot be separated from our mechanics. Mechanics express an attitude, they manifest it. Not just a personal one, but one that is imbued with cultural overlay. They are at once our most personal expression, and a reflection of our society.

“Throwing like a Girl” (Young 1980)

There is a long history of the significance of gesture, Hubert explained. The classic example is in the movement of throwing: seventy percent of women cannot throw. Instead they in a sense *push* the ball, with no rotation of the trunk or leaning back. This was noticed already a hundred years ago, so there are many studies on it. One of the most well-known is the one from a feminist point of view, in American political theorist Iris Marion Young's essay, “Throwing like a girl” (1980).

Hubert paraphrased French philosopher Simone de Beauvoir: *you are not born a woman, you become one*. The fact that many women don't automatically find the gesture of throwing has nothing to do with physiology; it is a social mold that is imposed from the outside. Published in 1980, Young's text continues to have a huge influence. It is remarkable that something as seemingly innocuous as throwing a ball – such a basic movement – could from an early age affect a girl's sense of self, of possibilities.

Hubert told us:

Fashion models, on the catwalk, are a good example. The male models walk with strong arms (think actor Marlon Brando), rotated internally, like a gorilla. In

the women, you see that both the teres majors, which run between the shoulder blade and the humerus, are systematically blocked in external rotation. They are not free to move in a punching or throwing manner. The implication is that the gesture that is blocked is the phallic gesture, to penetrate the space. In fashion models it is almost a caricature. You can see why Ida Rolf [sic] insisted on arms that were in internal rotation. She was living at a time when it wasn't so easy to be a woman in a university setting. So it's a lot: when you put the shoulder girdle back on its axis, you open the possibility of new gestures and new capacities of expression.

Tai Chi Arms

I can attest to this. Early in my work with Hubert, a colleague offered a portrayal of my arms as *geworfen* – flung into the world, limp and passive, as I described before. These days, Hubert's ideas come back to me regularly in my practice of tai chi. What actions are permitted and which are forbidden or avoided? How does that connect to the freedom of hands, arms, and shoulders in movements? To our posture and balance? All these themes are present.

My tai chi teacher, Don Miller, does not teach a form of twenty-four or any number. His approach is “*Essential Moves*.” I think of the practices as variations on a theme. Take the basic movements of ‘grasp sparrow's tail’ for example, translated as *ward off, rollback, press, and push*. Each one is an expression of a particular quality. Ward off is a way of expanding into self-protection. Rollback is release without collapse. Press can be more like condensation, becoming more dense,

In my normal life, I never punch. I rarely have a reason to make a fist. At first, it really did feel forbidden. At the end of the sessions, I felt like Marlon Brando, or the male fashion models, with the strong arms Hubert had described.

Expressive gestures have something to do with language and they have something to do with mind. It is as if the gestures are a part of language – language is movement, both are expressive; they are inherently related and inherently different from pragmatic, deliberate, controlled gestures.

rather than fear, tension, or aggression. And push can bring in all those qualities for strength without effortful contraction. It is a practice of transformation. And of course, being able to maintain a connection with heaven and earth, what Don calls ‘rooting’ and ‘rising’, has to be included in each gesture. The basic *premovement* is this capacity to orient to the ground and the sky, I have been working with this for years. The capacity to not fall down, while exploring new gestures. The other qualities in grasp sparrow’s tail could also be called *premovement*. Don’s form of tai chi is a beautiful expression of Hubert’s understanding of movement.

Don likes to bring in even more unique qualities: we can use free flow and fling our arms in each gesture, and then do the moves with bound flow, carefully carving each moment, agonists and antagonists engaged. We can emphasize the dragon, the spiraling quality of the hands, limbs, spine, folding, and twisting inwards and outwards. And sometimes we do all the gestures with fists – tai chi fists – which spiral in and don’t engage a big biceps contraction.

I find that the practice of varying the arms’ quality leads to better orientation, freeing the central axis, the spine, or in the image from tai chi, the strand of pearls hanging from the sky. It is the variation that leads to a strong central line. With so many transformations, the arms have to let go of any postural activity. Then the sense of two directions, extending beyond

the head, beyond the floor provides the necessary stability. And in addition, I am invited into the domain of missing gestures.

Hubert’s words come back to me:

When you succeed in opening the core stabilization and the capacity to push, then there’s a feeling that comes up, a strength. The social sphere does impose body image, and to give back another dimension, it is clear that you will have an effect on the autonomic nervous system.

In my normal life, I never punch. I rarely have a reason to make a fist. At first, it really did feel forbidden. At the end of the sessions, I felt like Marlon Brando, or the male fashion models, with the strong arms Hubert had described. The thought is, “Very unladylike.” Luckily, I have practice with allowing those thoughts and the associated feelings. The autonomic nervous system gets activated – sweating, heat rising, and sometimes trembling. The energy spent in avoiding certain gestures begins to move. A small emotional charge arises as the gestures unconsciously forbidden are finally allowed.

These muscles are also the defense of territory, (it’s not nothing!) I can push away, and I can say no, or I can’t say no; once you have found the way to organize the core, you have a lot of strength. When you have that force, even a fragile person can push. It’s a new experience and there will often be a vagal response.

It’s not nothing! As Hubert described it,

reclaiming gestures is reclaiming possible actions along with their implications. The new possibilities have to be metabolized – what if I enjoy punching? What arises when I feel dangerous?

In tai chi, after each practice, there is a chance to digest the arousal in *wu chi*, empty standing. Just standing. Feeling the ground and the surrounding space all the way to the sky. The reactivity has a chance to dissolve. Over time the movements are more familiar and even fun. It gives a different meaning to ‘range of motion’, more like ‘range of expression’.

Arms and Expression

Hubert mentioned at a class in Chandolin, Switzerland, in 2008 that there is a difference between what he called *instrumental movements* – such as lifting weight in an exercise or grasping a pen – and *expressive gestures*.

American philosopher Shaun Gallagher describes the case of Ian Waterman in his book, *How the Body Shapes the Mind* (2005). As a result of a virus, Ian no longer received feedback through his proprioceptors below the neck. He had to use vision and an elaborate routine to accomplish any instrumental movement – seemingly simple movements that most of us would take for granted like picking up a cup. Over time, Ian had learned and rehearsed how to control his gestures when telling a story. As long as he could see his hands, he carefully orchestrated their movements to match what he was saying. Gallagher conducted an experiment in which Ian sat in a chair with his hands hidden by a screen. Without vision, normally Ian would not be able to move. Gallagher got him to tell a story and watched as Ian’s hands and arms moved automatically, for the most part as yours or mine would. It was quite a surprise to discover that when in animated conversation, Ian’s hands moved on their own as he was expressing himself. Ian was unaware of what his hands were doing.

Gallagher could see a clear difference in the coordination of the movements without the screen, when they were deliberate and Ian could see them; and when they were natural, when Ian couldn’t see them. When deliberate, the pace of Ian’s speech must slow to match the movements, which are themselves slower. There was more jerkiness and

less flow in their organization. Given Ian's lack of sensory feedback, when the screen hides his hands, it shouldn't be possible for his movements to happen in an organized way. But that's what Gallagher saw.

Are expressive gestures fundamentally different from instrumental/practical/pragmatic ones? We do not yet fully understand how this works, and that's not easy for us. It challenges some givens. As the neuroscientist Michael Graziano, PhD, put it, "any complexity lurking under the surface was like Godzilla hunkering under the surface of the ocean. Something horrible, nightmarish, and revolting was threatening an orderly universe" (2018, 72).

Based on this research with Ian, Gallagher proposed that expressive gesture is linked to language, "that gesture is not a form of instrumental action but a form of expressive action; not a reproduction of an original instrumental behavior but a different kind of action altogether . . . This suggests that it is part of and is controlled by a linguistic/communicative system rather than a motor system" (2005, 117-118).

We don't know the answer yet. Hubert gave another surprising example: children blind from birth, who therefore have never seen anything at all, still gesture with their hands when they talk – even when they are speaking with someone who is also blind! And without having ever seen anyone else, their gestures still resemble those of a sighted person. The blind children's expressive gestures support Gallagher's point. The movements that come from expression may even be generated in a different part of the brain than the instrumental ones.

Gallagher suggests, French philosopher Maurice Merleau-Ponty, PhD (1908-1961), "tells us that language accomplishes thought. It seems quite possible, then, that gesture, as language, assists in that accomplishment. Even if we are not explicitly aware of our gestures, and even in circumstances where they contribute nothing to the communicative process, they may contribute implicitly to the shaping of our cognition . . . Gesture as a language may serve communication with others, but it may at the same time accomplish something within ourselves, capturing or generating meaning that shapes our thoughts" (2005, 122).

Hubert sums all this up when he says, "you need your arm to think."³

Expressive gestures have something to do with language and they have something to do with mind. It is as if the gestures are a part of language – language is movement, both are expressive; they are inherently related and inherently different from pragmatic, deliberate, controlled gestures. I was reminded of the beautiful movement of the little three-year-old children in a Duncan dancing performance I attended years ago. Rather than instruct them about how to move, the teacher came onto the stage and reached into the pouch attached to her belt. Pulling out a handful of white feathers, she threw them up in the air, and all the children with one breath said, "Ahh," reaching up in unison to catch the feathers as they floated down – movement as expression and response. When we see our shoulder problems only in terms of mechanics, we miss this whole dimension, which is so important!

Endnotes

1. "Perceptual Body" was the title of a pretraining workshop in 1981 run by the New York School of Rolfing [SI] with Louis Schultz, Owen James, and Rosemary Feitis.
2. Gamma motor neurons (also known as γ -motoneurons) increase the sensitivity of the muscle spindles to stretch. With the alpha motor neurons (also known as α -motoneurons), they are important components of the stretch reflex. For a more nuanced understanding, see Ribot-Ciscar, Rossi-Durand, and Roll (2000, 271): "Whereas in amphibia, terminal branches of α -motoneurons provide motor innervation to muscle spindles, in mammals, a separate fusimotor supply has evolved, namely γ -motoneurons. These are morphologically different from α -motoneurons, they receive different reflex connections, and they innervate muscle spindles separately and more extensively. Together this suggests that the fusimotor system might, to some extent, act independently of the skeletomotor system and could modify muscle spindle sensitivity selectively in order to make the receptors extract more accurate information about movement. The fusimotor system is indeed better thought of as allowing state-dependent parametric adjustments of length and velocity feedback rather than as simply compensating automatically for muscle shortening, a role devoted to the pre-existing skeleton-fusimotor system."

3. As already mentioned, the translated quotes of Hubert Godard in this article came from workshop lectures that Aline Newton attended. Additionally, there is also an article of an interview with Hubert Godard on the same subject: "The Missing Gesture." First published as an interview between Godard, Daniel Dobbels, and Claude Rabant in French as "Le Geste Manquant" in *Etats de corps*, no. 5, Ramonville St. Agne, Eres, 1994, pages 63-75, and available from <https://bodylab1516.files.wordpress.com/2015/12/le-geste-manquant-hubert-godard.pdf>. It is also available translated into English by David Williams in *Writings on Dance 15*, winter 1996, Victoria, Melbourne, pages 38-47, and can be found at https://hal-univ-paris8.archives-ouvertes.fr/hal-02292248/file/Godard_1994_The_missing_gesture.pdf.

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Sequential Spirals of the Appendicular

By Valerie Berg, Basic Rolwing® Instructor



Valerie Berg

ABSTRACT *This article explores the necessity of liberating the planes of motion in the appendicular system through understanding the sequential spirals existing at all levels. Rolwing® Instructor Valerie Berg reflects on her brother's experience with ALS (amyotrophic lateral sclerosis) and his loss of motor control in his appendicular structures. Berg herself has recovered from a serious accident to her own arm and hands. She applies this personal insight to teaching the true nature of the appendicular structures.*

The first time I saw my brother faceplant was after he had lost the use of his arms to ALS (amyotrophic lateral sclerosis, also known as Lou Gehrig's disease). It was horrifying. I cried. He was helped up and continued walking. This was not new to him. Over a period of twenty-five years, he slowly had lost the use of first, his right hand, then his right arm, then his left hand and arm, then, finally, both his legs, one at a time. The motor neurons die with ALS, not the sensory nerves, so he could still feel everything. He was not 'paralyzed' he just couldn't move.

His appendicular system was defunct. *Out of service.* He was a trunk and a head and a voice in a wheelchair. His spinal

and cervical muscles were what held him in balance in gravity and they eventually also became out of service. A neck brace held his head up and belts kept him upright. The appendicular system was limp rags. When he could still stand he would sometimes make movements where he would roll his trunk around and fling his arm up onto the counter where the two fingers that still worked could manipulate a toothbrush. His eyes and his voice became his way to manipulate and interact with his environment in all ways. He could bounce to musical rhythms. He would fly through space in his Bluetooth wheelchair directed by his head movements and a small screen.

With no functioning appendicular system at all anymore, the wheelchair became his stability and allowed him to move. The last movements he could make with his legs were to lock his knees in a standing position and later, only a slight abduction/adduction of his thighs.

The stillness of his arms and legs was what struck people first. They would reach out to shake his hand, the way we reach into social interaction. Nothing responded except his shining eyes and warm voice explaining, “I can’t move my arms.” One index finger maintained its movement throughout the years. Nobody knows why. So, he could manipulate a few things with that one finger. His head movement from side to side directed his wheelchair, his eye movements and voice manipulated his mouse and computer functions. Amazon’s “Alexa” turned on his TV and called me on the phone. Apple’s “Siri”, of course, was indispensable.

His ability to remain upright in the seated position was tenuous without the use of his arms. We take this for granted. Spinal and core musculature balance us in gravity, but make one quick turn and notice how important your *shoulder girdle* and *arms* become to balance for this very subtle weight change. The appendicular system keeps us vertical.

In my last article, “The Complexity and Reasoning of Keeping 3D Hands and Fingers” (Berg 2020), I emphasized and showed the essential knowledge and use of the spirals/diagonals in the finger joints and hands. I also had temporarily lost the use of my arms and hands due to an unfortunate accident, where my car rolled over my left humerus and right hand. My balance was very fragile without the use of my arms. The dependence of my verticality on my arms was painfully evident. Hiking up hills without the ability to move my arms freely made me very unstable.

The Feet and Hands are the Antennae of our Appendicular System

Think about reaching for something. Eyes locate the object and most likely one sees texture, size, and distance as the hands prepare for grasping and holding. The shoulder girdle’s main purpose is to send our hands into space to interact with the environment. Most of us create enormous tension in the upper

body to hold onto something or even to reach. We begin the movement with the shoulder musculature instead of the finger antennae.

The same three dimensionalities I found necessary in the hands are necessary for the feet. The feet and hands are the antennae of our appendicular system. Think about standing up and notice your feet searching for and finding their stability (or not!). The terrain is perceived by the foot and it organizes itself and its fascial complex to be able to support the body segments up to the pelvic girdle and onto the spine.

so as not to pull or restrain its movement, then the spine can move in its spiraling fashion, which in turn gives our arms and shoulder girdle the range and mobility they must have to move into the world.

The shoulder and pelvic girdles, legs, feet, arms, and hands give us the stability and mobility in spiraling mode. It is the focus of this article to emphasize the spiraling sequences of the appendicular system that liberate and fuel our spine. Spiral sequences of the appendicular system allow for joyful movement and the ability to balance our heads in space, to allow us to orient, and to see where we are going.

His ability to remain upright in the seated position was tenuous without the use of his arms. We take this for granted. Spinal and core musculature balance us in gravity, but make one quick turn and notice how important your *shoulder girdle* and *arms* become . . .

Gracovetsky’s Spinal Engine: Contralateral Movement in the Appendicular (1987)

Many are familiar with Serge Gracovetsky’s, PhD, videos that show a limbless person walking across the room on his ischial tuberosities.¹ His point was to demonstrate that spinal rotational movement is the engine that moves us, not the legs. The legs fuel the spinal engine.

The pelvis, even without the femoral joints, would still need to be balanced. Dr. Rolf’s phrase ‘horizontalize the pelvis’ was all about the necessity for balance in the ilia so movement and force are transmitted to the spine via the ischial tuberosities in a balanced and mobile manner. With legs, the movement of the femoral head in the joint requires its full range of motion so as not to drag on the ilia via the myofascial components. The legs are either the fuel or the brake for the spinal engine (Gracovetsky 1987). If the freedom of the femoral joints and ilia movement exists

The first creatures to stand on two legs were dinosaurs. They stabilized with a very long tail, huge toes, and flexed knees. Large, powerful legs were necessary without skeletal support under their pelvises. We were made to move. Our structure is such that our femoral joints from the pelvis to the feet are in line with gravity, perpendicular to the ground. But it is not a rigid line. There are myofascial sequences and transmissions of fascial connections all representing the three planes of motion. Our legs developed as limb buds growing out of the sides of the embryo and then they rotated around to the front creating fascial spirals.

Gracovetsky discusses the three planes of motion in the vertebrae and the movements they allow for: sidebending in the coronal plane, flexing and extending in the sagittal plane, and rotation in the transverse plane. Sidebending and rotation are the main drivers of the spinal engine. His theory of transmission of energy from the legs has three distinct

The linking joints and segments of the lower body can begin with the ‘juicy paw’ . . . Losing the fine and resilient movement in the foot and ankle sets us up for the look and feel of an aging person. A locked foot or ankle stops the spinal movement from occurring with ease.

pathways - superficial, middle, and deep – based on the spiraling movement of the foot and toe hinge that begins the whole process. *Appendicular components have to have the three planes of movement to feed the spinal movement or we see the imbalanced structures that walk through our office doors.* When the feet, lower legs, or thighs become bound and unable to complete their spiral potential, there is inhibition or restriction in the spinal movement. The ilia will show these restrictions that can begin either below or within the pelvic girdle soft tissue system. The ‘trouble’ can be ascending or descending. Restrictions could start with the feet and move up or start with the femur or lower leg and travel both up and down the body from there.

Chains of Movement

‘Chains of movement’ is not a new concept. Physiotherapist and anatomy/physiology instructor Françoise Mézières (1909-1991) worked on the subject in the 1940s. Gracovetsky has his transmission chains (1987) and physical therapist Luigi Stecco has myofascial chains or sequences (2004). All these concepts are valid because no movement is performed by one muscle connected to two bones, but rather by interdependent chain links that travel through the whole fascial body. “All are based on different theories but agree on the spatial organization of these connections. Dissection shows that these connections are found in the myofascial expansions and create an anatomical continuity between different

muscles involved in the same directional movement” (Stecco, C. 2015, 242). The importance of the spiraling nature of every muscle fiber and their fascial wrappings is the key to seeing and working with freeing the appendicular system to its full function. A dynamic balance is necessary along the ‘chain’. Dysfunction shows up at a distance from a spiral gone rigid!

Lower Body Appendicular

The linking joints and segments of the lower body can begin with the ‘juicy paw’. In my article, “Structural Aging - Part 1” (Berg 2014), I mention the twenty-six bones in each foot that need to rock and roll. Here are the sensitive antennae of the toes that do not function properly in many people. We need small movements in the tarsals and metatarsals that play the earth like the hands can play the violin. Pronation and supination need a navicular and a cuboid that can move. Thus, in landing on the lateral arch, the foot can pronate across to ‘toe-off’, feeding the knee and hip to find full extension. The biceps femoris then acts on the sacrotuberous ligament which translates to the opposite side of the lumbodorsal fascia feeding the contralateral motion of the two girdles. The functional foot sends the hip joint back into extension and keeps us from staying in a flexed hip, no-gluteal-use posture. Losing the fine and resilient movement in the foot and ankle sets us up for the look and feel of an aging person. A locked foot or ankle stops the spinal movement from occurring with ease.

In another fascial layer, the iliotibial (IT) band is stretched by a spiraling femur internally rotating, going to the gluteal muscles and latissimus dorsi to fuel the contralateral motion of the limbs. Spirals feeding spirals. The pelvic girdle is the transitional juncture for these potentially beautiful movements. It is the dynamic link between the spine and the lower legs. The spirals of the lower appendicular structures fuel the spirals of the spine if they are free to make their natural movements.

Pelvic Girdle as Transition

“The two girdles, pectoral [sic] and pelvic, determine the motor competence of the body. They implement the desire of the individual for movement and offer him [sic] the opportunity to exert a physical effect on his material environment. To some extent they are structurally homologous. However, the differences in primary function-motility in the arms versus weight support in the legs have blurred their similarity” (Rolf 1989, 212).

The pelvic girdle is a dynamic link between the spine and the lower legs. It is composed of three bones: the ilium, pubis, and ischium. It is like the switch on railroad tracks. Assuming there is balance at the pelvic level, movement and transmission of weight down into the feet – as well as moving up from the ground – will cross over at the pelvis into the trunk and upper girdle. There is potential for balance in all planes.

Sequences from Below

The foot is a sagittal plane pivot. The feet have a lateral and medial arch both sensing the ground. The medial and lateral components of the thighs mediate in the coronal plane. Each metatarsal has rotational, sagittal, and coronal plane ability, and each phalanx has the same. We all know how a bunion or hammer toe locked in its joint ‘decision’ changes the entire walk. The sequence of connections moving up is inhibited. It is useful to know the pathway that has been restricted by this one block. Then one can begin to see the compensations made based on the restricted plane of motion.

Forward movement in the sagittal plane and internal rotation ends in the hallux. If a bunion has now stopped the sagittal and rotational movement in the hallux, the rest of the foot must compensate,

up and into the ankle and lower leg. "Before aberrations in the upper body can disappear, ankles must be reconstructed. Their lines of transmission freed, and structures made sturdy for their job of transmitting weight" (Rolf 1990, 45). Once the heel and forefoot are in contact with the ground, the ankle is the next site of movement. The ankle joint needs to dorsiflex and must expand to the widening surface of the talar dome. This is all dependent on the motion of the fibula rotating up and in and the reverse motions with plantar flexion. If the foot does not pivot sagittally it will negate the responsive hip motion for extension. Gracovetsky even goes so far as to state, that failure of the sagittal plane pivotal action of the foot results in a cyclic breakdown in maintaining an erect posture and actually causes flexion deformity via a compensatory process (1997).

Transmission of weight requires all planes of motion to be spiraling down into the foot, back up to the pelvis and spine, and then generate the freedom of movement for the shoulder girdle. The sagittal plane task requires the control of the hip, knee, and ankle angles during standing. We all learned 'toes up, knees up' in Rolf's

yoga. This is cementing the sagittal plane between the joints.

Abduction and adduction fascial sequences end in the middle toes with external rotation and the return movement ends in the little toe. Again, the toes are the antennae organizing all this sequencing above. The horizontal plane has to balance the sagittal for the vertical in order to not collapse. What we see in the aging structure is the shuffling gait characterized by a narrow focus in the 'sagittal only' plane of movement. Support and movement education in the coronal plane is essential for balance. Weakness in abduction/adduction leads to falls with any perturbation from the side.

The lower limb fascia, as seen in see Figure 1, is composed of vertical, oblique, and horizontal fibers that are woven and interlaced together. "The system is continuous with the fascia of the trunk through the gluteal aponeurosis" (Paoletti 1998, 53). The legs were made to function and move us in all directions. "If stress is to be relieved, it is important that no myofascial component contribution to pelvic balance be overlooked" (Rolf 1989, 125). Understanding the fascial

sequencing of the three planes is more useful than just working with muscle/fascia restrictions.

Gracovetsky's 'transmission paths' as stated earlier start with landing on the foot, spiraling the foot to a toe-off that sends the knee into *screw home*² and the thigh into extension with the lateral hamstring activating the sacrotuberous ligament. The screw home requires the rotation of the tibia and fibula, and then an unwinding of them as well. The femur is also adducting and abducting, rotating in and out through the entire gait movement. Then the movement comes into the pelvic girdle in the hopes that the ilia will anteriorly and posteriorly tilt in response to the spiraling movement coming from the foot to the rotating femur. Gracovetsky adds a third, deeper transmission sequence that triggers the multifidi and transverse abdominis to support the spine in this movement (1987).

Loss of internal or external rotation in any of the lower limb bones due to myofascial restrictions is going to change the range of motion of each joint, as well as change the spinal movement and restrict the ability to move in all planes of motion for the entire body. Weak hip adductors destabilize the hip in the coronal plane in a unilateral stance. Seeing legs free of each other and not hooking the pelvis means tracking where the spirals have lost their transmission to the next sequence. A rotating pelvis is what can bring the acetabulum forward in the gait. The pelvic girdle needs to rotate as a unit on the femoral heads in the transverse plane toward the weight-bearing limb.

Thus, the ligamentous bed of the femoral head is crucial for the three planes of movement of the leg. In external rotation the pubofemoral ligament is taut and the ischiofemoral is slack and in internal rotation, it is the opposite. In abduction and adduction, we are dealing with the ischiofemoral, iliofemoral, and iliotrochanteric ligaments - all needing to be either taut or slack. All these ligaments prevent excessive movement, but respond to the three planes of movement necessary in walking.

Where might we work with a restricted femoral joint?

1. Adductors at the ramus and the knee ('Fourth Hour') so the leg can reach without closing at the pelvic floor;

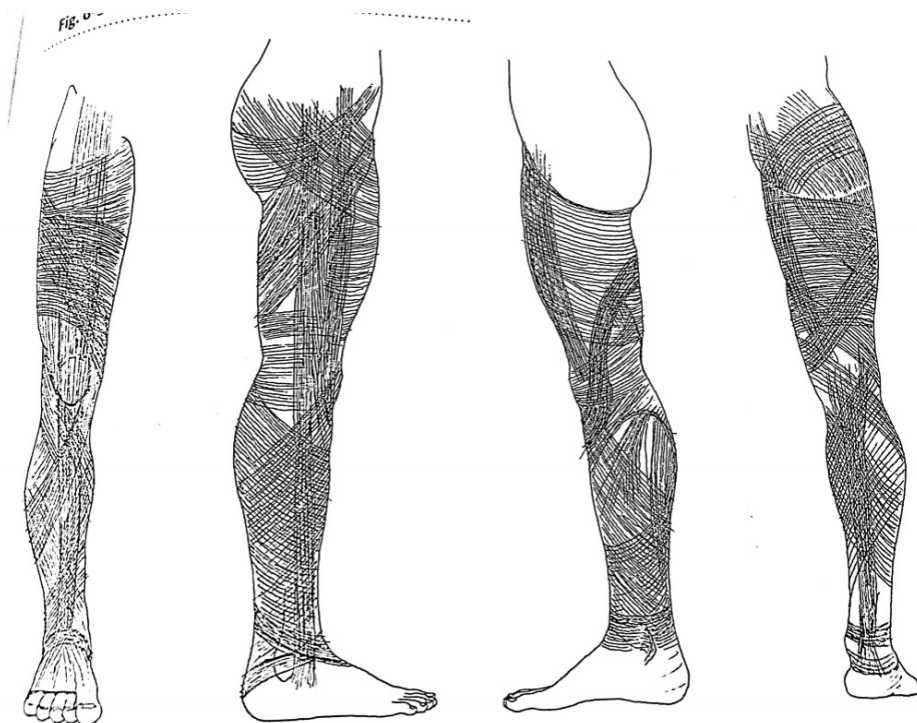


Figure 1: Fascia of the lower limb. Image used with permission (Paoletti 1998).

2. Gluteal muscles and IT bands so that the leg extension and toe hinge can trigger the pull to the limb into contralateral movement;
3. The six deep lateral rotators, including the piriformis, that hold tight onto the femur;
4. Pectineus and iliacus ('Fifth Hour') for restriction in the front sagittal plane;
5. Sacrotuberous ligament and obturators in the back of the pelvic floor to liberate the pelvis from the leg spirals.

**It is necessary here to mention the vestibular system of the inner ear . . .
If there is vestibular inhibition or an inner-ear problem, the hip and ankle joints will flex and brace.**

It is necessary here to mention the vestibular system of the inner ear. The three pairs of semicircular canals, literally, are an example of the x-, y-, and z-axes – all three planes of motion. If there is vestibular inhibition or an inner-ear problem, the hip and ankle joints will flex and brace. With focal vision, vestibular function is inhibited and changes the gait stride length. Thus, even our eyes need the full range of motion to keep the gait free. The vestibular system links directly to the brain where motion happens on spatial planes, not on individual muscles. Our entire functioning from our feet to our inner ears is in three planes of motion in relation to gravity and is always working to stay vertical. It's not surprising that our appendicular system needs a sense of the horizontal plane as well as the coronal plane for balance, i.e., the need for quick stability in side-to-side motion in the hip joints, the quick response of our arms to reach out to steady ourselves, our inner ears signaling to our brain where we are, the femoral joint stabilizing in the coronal plane all the way down, to the ankles stabilizing in the sagittal plane, and, of course, all the

spiraling movements of the twenty-six bones of the foot to sense the ground.

Appendicular: The Upper Body

As I mentioned, losing the use of my left arm and right hand for around six months from my car rolling over me, led to a deep study of my own movement and an understanding of what was needed to regain complete dexterity and range of motion. Watching my brother's gradual

of his wheelchair, he could change his spatial orientation. The water allowed planes of movement to return to his body. I would roll him over with his face briefly in the water, floating on his belly.

It was interesting that his eyes became his hands. He could move the mouse on his computer screen with his eyes. "The geometry of eye movements within the orbits corresponds remarkably to that of the head of the humerus within the shoulder joint - the brain points the arm and finger as accurately as it points the eye" (Wilson 1999, 88). Also, the ocular muscles have a connection with the myofascial sequences. His eye movements were like shoulder movements if he could have moved. Later, when he would lose the ability to speak, his eyes again moved a computer cursor that would speak for him. Eyes, inner ears, and humeral joints all keep us vertical through spirals in the horizontal and all planes of movement. We can also track the spirals in the arms and shoulder girdle that are responding to the spiraling motions of the spine fueled by the planes of motion in the feet and legs if the gait has sent that 'fuel'.

Missing Planes

Luigi Stecco (2004) uses his concept of myofascial sequencing to describe how to work with restrictions. In all movements it is useful to ask our clients to watch for the 'missing planes'. So often we ask the client to "raise your arms up and out to the side." The variability of how people move their arms is huge. Emotions ride in our arms and hands. We reach, we push, we pull, and all these are influenced by our interactions, present and past, with the environment and with our relationships. Spreading our wings fully takes some attention. The restriction of the multiplanar movements in the arms, starting even with the fingers, can impede the trunk and spinal movement. Where does the arm start losing its ability to rotate as it comes up and out?

The forward and backward movement of the arms in the sagittal plane helps maintain our verticality. Internal and external rotation of the arms helps to maintain coordination in the horizontal plane. Think about our contralateral movement that is inherent. Our arms swing forward but they also (given freedom) can inwardly and outwardly rotate. They abduct and adduct to

balance our legs, moving in different directions, throwing our equilibrium into a balancing act. Each ulna and radius also rotate opposite each other. The ulna has important evolutionary freedom that changed from direct attachment to the carpals to a detachment that gave us brachiation and more range of motion. It used to be attached to the carpals. The rotation of our thumb in relation to our elbow is because the radius rotates at the elbow joint. Our forearms have pronation and supination. Each finger has its own myofascial sequence connection up to the shoulder girdle and to the cervical spine. Even the fascial fibers have multiplanar arrangements. The spirals of the upper appendicular complete the spiraling spine and fuel the upper thorax motion, while stabilizing our head and eyes.

The Shoulder Girdle

The shoulder girdle is composed of the clavicle, scapula, and humerus. The scapula has upward rotation (from the upper and lower trapezius), lateral movement (from the serratus anterior), movement down and out (from the lower trapezius), and finally, elevation (from the upper trapezius). The scapula steers the clavicle into its sternal socket. Any restriction of these movements will change the movement of the clavicle and humerus. In the Gracovetsky chain, the shoulder girdle and arm swing are fueled from the opposite leg and hip through the latissimus dorsi pulling the rib cage and shoulder back (1987).

The clavicle can rotate slightly at the sternoclavicular joint and it can elevate and depress. This is the only direct bony attachment the shoulder girdle has to the axial skeleton. The humerus has the most range of motion due to its need to be 'in

the world' in order to manipulate, grasp, and order. Abduction and adduction, internal and external rotation, flexion and extension, and circumduction all happen at the glenohumeral joint. The need for differentiation becomes very clear at this joint. Our freedom in the arm swing is crucial for the stability and efficiency in our movement.

The Elbow

The elbow is where the shoulder and the hand meet. There is both hinge and rotational movement from the humerus meeting the ulna and radius. It has sagittal plane movement, stabilizes lateral and medial movements, and rotary movement at the head of the radius. Extrinsic myofascia of the hand comes from the forearm. The interosseous membrane anchors four of the muscles that move the thumb, which need to have multiplanar movement for manipulation. Many structures from the upper arm meet at the elbow.

The cubital fossa is a key area to address in any arm work. It is a place where forces meet and can become glued. The lateral and medial intermuscular septa can be accessed here allowing for rotation of the humerus. The distal bicipital tendon and proximal brachialis meet here and almost always need differentiation. The pronator teres fascia crosses the bicipital aponeurosis. The coracobrachialis and flexor carpi radialis meet here and all are contained in the antebrachial fascia forming a spiral.

The back of the elbow is where the triceps brachii aponeurosis meets the wrist and hand extensors at the lateral epicondyle. These are all myofascial sequences that do not stop and start, they are continuous

with each other and need the freedom to meet the demands of rotation and hinging. The elbow is the mediator for how our shoulders send our hands into space. One of the earliest imperatives for maturing is our impulse to reach or grasp. The elbows held rigidly in can impede this basic impulse. The arm basically stops at the elbow and the rest is modification and adaptation to the spiraling needs. This is like the lower leg and its need to adapt.

The Wrist

The wrist cannot be left out as the movement here is crucial for everything we do with such small articulations. The ulna does not articulate directly with the carpals, so in pronation, it slides distally up two millimeters in relation to the radius. There is flexion, extension, radial deviation, and adduction. Go ahead and gesture like a conductor in front of the orchestra counting the beats, right now, with just your hand and fingers with an imaginary baton, and see the nonstop spiraling movements – hopefully! It is an interesting fact that we have five fingers, four distal carpals, four proximal carpals, two lower arm bones, and one upper arm bone, all supporting the next segment. A good body reading for the upper appendicular is to ask your client to crawl and watch the arches of the hands and the angle of the elbow. Where do they initiate movement from? Do they reach, do they push, and does the humerus rotate and extend? Explore the ranges of motion by bringing the arm up and putting the hand behind the head or the arm behind the back. Where is the loss of the spiral? The humerus? The elbow? The forearm? The wrist? The fingers?

Evolutionarily, the coronal plane was the first plane of movement to be mastered

He said the hardest thing was not being able to touch anyone and fewer people touching him. Losing the use of his arms and hands seemed to be a bigger loss than his legs and his ability to walk . . . Touching, reaching, making things, ordering the environment, and making the world as we want it happens through our arms and hands.

The humerus has the most range of motion due to its need to be ‘in the world’ in order to manipulate, grasp, and order. Abduction and adduction, internal and external rotation, flexion and extension, and circumduction all happen at the glenohumeral joint . . . Our freedom in the arm swing is crucial for the stability and efficiency in our movement.

in the aquatic environment. Coming on land developed the sagittal plane and our humerus became important. Later, with complex motor activities, the horizontal plane developed. The humerus has influence over all these movements, which help keep us balanced in the vertical.

Myofascial Sequencing of the Arm

The deltoid and pectoral fasciae are involved in almost all the myofascial sequencing of the arm. The three heads of the deltoid need to be differentiated to liberate the spirals. The balancing of the latissimus dorsi and pectoralis major attachments on the humerus in the 'Third Hour' is key to the internal and external rotations. The deltoid exerts traction on the intermuscular septum, while the brachioradialis and extensor radialis carpi are also inserted here. These need to be differentiated for lateral motion and abduction. The deltoid heads lie on top of the brachial fascia. The latissimus fascia spirals from the back to the front of the humerus and the teres major fascia moves into the brachial fascia, and all of this goes on under the deltoid heads.

For forward motion, the myofascial sequence goes from the clavicle to the pectoralis major to the bicep brachii, then to flexor carpi radialis, and to the thumb. When you see a restriction in this plane, track the fascial binding in this sequence. "In all vertebrates, the retro-motion (extension) sequence is always located on the ulnar side of the upper limb" (Stecco, L. 2004, 126). This sequence goes from the trapezius to the deltoid, to the triceps, to the extensor carpi ulnaris, to the little finger. One can imagine if you break your little finger how it might interfere

with this plane of motion. According to Luigi Stecco (2004), adduction of the arm goes from the latissimus to the biceps to the triceps to the flexor carpi ulnaris to the lateral arch of the palm. This fascial sequence also comes into the axillary fascia, which is where we work in the Third Hour. An interesting side note here is that the pharyngeal fascia connects to the axillary fascia, thus another appendicular connection into the axial. With abduction, one wants to look at the connection of the trapezius to the deltoid, the extensor carpi radialis, and the interosseous membrane.

The internal rotation sequence is from the pectoralis major to the subclavius, to the subscapularis, to the pronator teres, to the flexor digitorum, and then to the lateral three fingers. External rotation goes from the supraspinatus to the supinator, to the extensor digitorum longus, and to the lumbricals of the fingers. These describe Luigi Stecco's myofascial sequences (2004). All of these sequences are spirals in nature. The appendicular is our spatial perception that communicates with the brain and eyes. Even the architecture of the fascial fibers reveals the planar structures. Reaching out into space begins with the rotations, extensions, and flexions of the fingers into the different movements of the ulna and radius, flexing and rotating at the elbow. The humerus is fed by the movement of the scapula rotating and flexing towards the desired object and hopefully coordinating with the exquisite movements of the eye and, of course, managed by the inner ear.

Structural aging, which I define as loss of planar movement in the body, can be helped by our work. Structural aging looks like a structure that lives in a small, limited space. The eyes mostly look

sagittally and down. The shoulder girdle lives in the sagittal plane and a restricted range of motion here drags the rib cage forward and down along with the head. The feet, not moving as juicy paws, hold tight at the ankles, which are not moving in their full, delicious flexion and extension – thus, no spirals in the tarsals, but now a painful shuffle, which prevents the joyful hip extension in the full gait. We break down into living in the sagittal plane, bent over and looking down. Loss of the lumbar curve, flattening of the cervical curve, losing shoulder girdle range of motion, and more hip pain and knee pain, all lead to balancing that is challenged. The appendicular fuel no longer feeds the vitality of the spiraling movement of the spine. Contralateral movement is halted. Reduced arm swing creates compensatory hip imbalance and low back pain. Our expression is blocked or limited.

We can see the person under the wing of the shoulder girdle. How does it fit? How does the shoulder girdle move over and around us? Where is the freedom of the base of support - the pelvic girdle - to translate the gait as the dynamic link between the spine and the lower legs? Does the person have a stable base from which the upper girdle can function? The years in age do not matter. A teenager can have this structural aging.

Our winding, vertical, diagonal, and oblique fibers that intertwine and weave together throughout the appendicular system and into the axial spirals help to keep us expressing complexity and variability. Watching the recent olympian win the gold medal in ice skating showed the nonstop spiraling of his appendicular system. Marcel Marceau (1923-2007),

a famous mime, pantomimed the act of sewing. People sitting very far away could tell what he was doing because of the way he moved his arms, letting his sternum direct the movements. All the planes of the movement were exaggerated – each finger movement to the forearm, then to the humerus, and finally to the chest. These qualities are the hallmark of healthy human functioning. We were made, down to the very fiber, to interact with the world, and each other, in multiple planes with our spiraling appendages.

Endnotes

1. <https://www.youtube.com/watch?v=XguuJXVsb2k>
2. Screw home mechanism of the knee joint is when the tibia externally rotates slightly and the femur internally rotates slightly during extension (Physiopedia 2022).

Valerie Berg has been a Certified Rolfer® since 1988, a Certified Advanced Rolfer since 2000, and a member of the Dr. Ida Rolf Institute® faculty since 2003. She is also a Rolf Movement® practitioner and has been influenced by her history as a modern dancer, by Hubert Godard, and by yoga. She worked in Guatemala for five years doing Rolfing sessions during that country's civil war and, thus, pursued Peter Levine's Somatic Experiencing® trauma training afterward. She has been practicing in New Mexico for thirty-two years and alternates that with working in San Diego, California. Tango, kayaking, sculling, and yoga keeps her moving and interested in the vitality of our bodies continuing through the years. The joy of movement for the human body is what brought her to become a Rolfer and now continues to be what she teaches to anyone of any age through Rolfing SI.

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Appendicular Awareness – Working from the Outside In

An Interview with Russell Stolzoff

By John Schewe, Basic Rolwing® Instructor and Russell Stolzoff, Basic and Advanced Rolwing Instructor



John Schewe



Russell Stolzoff

ABSTRACT *This issue of Structure, Function, Integration casts a spotlight on the appendicular skeleton – the shoulder girdle and arms, the pelvic girdle and legs, along with their associated tissues. We have invited Russell Stolzoff to speak on this important topic and, in particular, how he relates the appendicular skeleton to the overall concept of integration.*

John Schewe: Hello, Russell. Thank you for being willing to do this interview on a subject that is so important to Rolwing Structural Integration (SI). To start, let's have you introduce yourself to those of our readers who may not know you that well. Can you give us a brief Rolwing résumé? When did you become a Rolfer®? What drew you to this work?

Russell Stolzoff: Okay, thank you, John. I became a Rolfer in 1989 and what drew me to Rolwing SI was the experience of a Rolwing Ten Series. I was a student at the University of Colorado in Boulder and I had the opportunity to be a model for a class at the then Rolf Institute® (now known as the Dr. Ida Rolf Institute® [DIRI]). That was a profound and life-changing experience.

JS: Were you a student model or an instructor model?

RS: I was a student model and my first Rolfer was a Brazilian practitioner. She trained in that first wave of Rolfers from Brazil, a little after Pedro Prado [PhD, DIRI faculty member]. It was a small class and John Lodge [(1922-2008), an early student of Dr. Rolf] was the instructor. I think it was the only class that John taught. I didn't know what to expect going into it; I didn't even know why I was doing it. I had never had a massage or bodywork before that. Suffice it to say, it was very profound. It really blew my mind and freed me up psycho-physically in a way that captivated me. And I didn't have a real career direction at that time. I was a social studies type of student in college. I got my degree in sociology and economics, and after college, I traveled for a couple of years. That gave me a lot of time to contemplate and sense the effects of the Rolwing experience over time.

I had Dr. Rolf's book and I took it with me everywhere I went. I read it backward and forwards. At that time, there wasn't much written about Rolfing SI, it wasn't like it is now, we have so many written resources that reference the work. At the time, you couldn't get the osteopathic literature either and there was nothing written about fascia. So, I read Rolf's book, felt my body, and kept being interested in it. And it was a big deal for me to apply, I took it very seriously. Just being accepted into the training felt like a real hurdle. It was all great. I have great memories of all my Rolfing training experiences.

JS: Yes, me too. And when did you become an instructor?

RS: I was first asked to be an assistant in a class in 1999. I didn't really have designs for being an instructor. Now I feel like I'm on fire and all-in on being an instructor. It was 2003 when I became a Basic Rolfing Instructor for the Phase II and Phase III courses, and then about five years ago I joined the Advanced Training faculty.

JS: I'm one of the anatomy instructors for the Phase III lead-in class and I've taught that class for twenty years now. I always talk about the two skeletons of the body – the axial and appendicular skeletons. This, of course, is a reductionist approach where we take the body apart to help understand it better. We all know that the human body doesn't have these distinctions. It just works as an integrated (or sometimes, a not-so-integrated) whole. For the purpose of learning, when you look at axial and appendicular regions and how they interact with each other, how do you approach this content, especially with beginning Rolfing students?

RS: If we're talking about Rolfing SI, we have to approach it with the essential nature of the body as a whole. And yet, students can't really wrap their awareness or perception around this wholeness very easily. When they do, it's not inclusive of all of the body's constituent parts. When a practitioner is at the beginning of learning this material, I support them to have an intellectual understanding of wholeness and continuity in the body. Certainly, the fascial tissue unites everything in the body, so we have this tissue as a symbol that unites everything in the body.

Then, as you said, John, we have to go about learning the details. Dissection is a great way to learn the essential details. I encourage students that once they feel they have mastered that understanding

Learning this work is a series of revelatory experiences, at my stage of the game, there are too many to recount . . . Past a certain point, at least for me and my path, it has been to try and get closer to experiencing the body as it is.

of the practical level of anatomy, then the task is to try and get back to wholeness in practice.

JS: Yes, we've got to walk before we can run.

RS: Learning this work is a series of revelatory experiences, at my stage of the game, there are too many to recount. Some of the earlier ones I had were me thinking, "Okay. I think I'm feeling this thing that I've studied, in fairly clear detail, within the whole. That's kind of a cool experience to have. There are all kinds of interesting things here." Past a certain point, at least for me and my path, it has been to try and get closer to experiencing the body as it is. To know anatomy is to understand the body as it is, but most of that stuff is unknowable, at least from the outside. For me, this is how I think about how we work most of the time. We're never touching the thing directly and we're never a hundred percent certain. We may be certain about what it is we are contacting but we're not really certain about what happens to it when we're touching it, we are on the outside.

JS: That's the age-old question, what's really going on down in there? All these decades that we've been doing this work and we're still looking at it, talking about it, and trying to explain it.

So, when you get a new client, for example, a person with a 'random body' as Dr. Rolf would say, what in particular do you notice with your shoulder girdle and pelvic girdle lens?

RS: Early on in the body reading, in terms of the upper girdle, I'm looking at what is its relationship to the thorax and the axial complex. Specifically, how the tension

and use patterns of the hands, arms, and shoulders are presenting. I evaluate how these structures interact with their thorax - does it limit the expression of breath and movement? Also, I pay attention to the transition between arms and shoulders with the thoracic spine, cervical spine, and head. I think that the arms are always very much involved in the tension patterns in that whole region.

If we consider the classic 'First Hour', we're looking at shoulders but not arms. We consider how the shoulders impinge on the client's breath. And certainly, that's good for directing our manual work, but I don't think that it goes far enough. Sometimes my First Hour includes quite a bit of arm work. And I will keep coming back to the arms throughout the Ten Series because we're bringing that tissue along with the rest of the body. As the spine and thorax become more integrated through the sessions, the 'whole' calls on us to look further, to see how the reflections of the way the body was may still remain in the arms. You can go back to the arms and keep bringing them along to match the improved integration that you have in the thorax and in the spine.

Arm structures are not just related to the thorax. For example, the latissimus dorsi goes all the way down the back. Often, when I'm working in the arm, even the forearm, I'm aware that I'm affecting down by the sacrum with my interventions. I can feel a response all the way to the sacrum from the arm. I have a theory that, because the arms aren't weight-bearing there's more possibility for this kind of random fascial response pattern to develop out into the arms in response to the spine and rib patterns. There is so

. . . in terms of the upper girdle, I'm looking at what is its relationship to the thorax and the axial complex . . . I pay attention to the transition between arms and shoulders with the thoracic spine, cervical spine, and head. I think that the arms are always very much involved in the tension patterns in that whole region.

much to say here. It's very interesting to me that, in order to get a good change in the axial skeleton, you have to deal with the arms in order for it to be fully realized.

In terms of the lower extremities, one of the things to say is what I sometimes refer to as Rolfing SI's 'secret sauce'. What I mean by that is our consistent emphasis on the principle of support. In practical terms it means working on the legs and feet. This gives us an advantage over other methods – we continually relate what's above to what's below. Naturally, we can think of the body and the principle of support, but it serves our effectiveness to take it further and consider that the legs are reflective of the whole-body pattern as well. The pattern in the spine is going to be reflected in the legs, and to the extent that we work to get change above, we have to make sure that there's integration. And by that, I mean transmissibility of weight through the center of the legs so that the body's weight is better shared between both legs than it was before our Rolfing interventions. That is a very real strength of our profession.

In the mainstream medical world, like with our physical therapist colleagues and others, they're often more constrained by a diagnosis and focused on regional treatment, which doesn't allow them free range to address the entire body. We have the freedom to follow the patterns of strain throughout the structure. If you think about the basic 'Recipe', it keeps alternating between the upper body and the lower body, up and down, up and down again. We keep going back to the legs all the time and that's part of our 'secret sauce', in my opinion.

JS: I agree, it's interesting the way you framed that. Now, I would like to take us

back to the arms, considering everything you've said. When I was training back in the late 1980s I had Ron Thompson as my auditing anatomy instructor and Louis Schultz as my practicing anatomy instructor – two Rolfing SI heavyweights from back in the day. We had gone through all the palpations, and studied the structures, session by session as outlined in the Recipe; then, at the very end of the last day of class they both said, "Oh, and the arms." They just threw them in there at the end, almost as an afterthought. The teaching of arm work wasn't connected to anything else, and even back then, I remember thinking that seemed kind of strange.

Now, I don't think there were all those repetitive use injuries of the hands and arms that are so prevalent today. Added to that, the arms and hands are not weight bearing, and so, were given short shift. I work like you do. I always check in on the arms in that first session just to get an idea of what's going on and I go back to them throughout the series. In this day and age, it seems pretty crucial territory.

RS: What you're bringing up is very important. Repetitive patterns get sort of burned into our arms by typing and texting, doing all the things we do with our arms and these are frequent activities that nearly all people are doing. When I first start working with someone, I'm trying to feel around, palpate, and figure out where to start a session. Even if it is the first session, I'll touch the client's arm and wrist, usually, it's the right one, and I'll often suddenly become aware that there's a pattern related directly to their eyes.

I'll be curious and say, "Do you use a mouse a lot in your work?" and usually, they do. Sometimes I'll ask more, "Do

you do things like spreadsheets? Or what kind of computer work is typical for you?" What I've discovered is that hand-eye coordination is often palpable in the tension of the arm, and it goes right to the eyes from there. If you think about this idea, the client is spending hours every day moving this little cursor around and they are putting it in little places with their hand. This pathway between eye scanning and fine motor control in the hand and arm become very coordinated. I would argue that for some people it is overly coordinated. I think that this often impacts the whole physical structure in terms of the function of the shoulder girdle and beyond. We are working with these patterns every day and I think about working to decouple and differentiate, to give them more freedom from the tension and more choices for movement. But some of this is up to them.

I like to give clients who present like this, homework. I'll say, "When you're done with your computer at the end of the day, try to look in the distance, try to consciously stop using it. Tell your body it's over, until next time."

JS: That's a really great suggestion. So, moving on and to stay within our theme, let's get back to the legs. When you have a new client, what are the first things that you look for in the hips and legs that start to draw your attention when considering where you're going to want to work?

RS: I've been teaching continuing education courses about this lately. For a long time, I looked at the legs as being two of the same thing. There is a real temptation or trap that's easy to fall into. As Rolfers, we can make a decision that one leg is doing its job better than the other one. And while that may be true to a

certain extent, it's misleading in a sense. My contention is that we're not trying to make two of the same thing.

In some ways, this gets us back to reductionist thinking and mechanistic thinking. It's my view that the legs are always working together in concert with one another. What that means to me in practical terms is that the legs, separately, are never doing the same thing. In other words, the pattern in one leg will likely not be mirrored in the same way in the other leg. And when I say pattern, I mean tension, strain, use, and developmental trends. There are a lot of words you can hang on a pattern that you're looking at in the legs, but I'm talking about the visible arrangement of each leg. I tend to pay most attention to where the configuration is most dense and it won't be the same places in each of the legs. For example, you'll never have the retinaculum presenting itself bilaterally in the same way. You might find the density on the lateral and anterior side on one leg and it'll be on the posterior side and a little higher up on the other leg.

So, you have this kind of spiraling pattern that goes across the limbs, front and back, that leads to each individual leg having different fascial loading. This is more advanced thinking, but I don't think it has to be overly complicated. When students are at the beginning of learning this material, I try to help them understand, see, and feel what this means in their own bodies. I haven't taught a Basic Training course in a little while, but hopefully, new Rolfers can make these distinctions between the legs and try and follow what is happening in each of them, and respond in a way that doesn't try to make them the same. To improve the function of both legs, we need to address each in their own unique ways.

Now, of course, this follows up into the pelvis, right? And you're going to find the same thing as you go up into the pelvis – the hip joints are not the same. The tension patterns around each hip aren't the same. In a sense, you have these two pillars of support that are leading to the pelvis, and from there you have this single, bigger, spatial mass that is the trunk. From here, you have Rolf's central vertical 'Line' that ascends from the bottom of the pelvis to the top of the head. In terms of weight transmission, this Line splits into two lines of transmission at the pelvis and those two lines have to be able to relate well and support the one central

mass above. So, I don't think that's an advanced concept, that's pretty much our basic concept.

JS: Right, that's a great answer. It makes me think of one of the things I've always done with students. I'll have the class stand up and I'll say, "Everyone take one step forward and stop." Then we see who put their right foot forward and who put their left foot forward. I believe that people are 'right-footed' or 'left-footed' - they are always going to start off the same way, and there is not always a correlation to right- or left-handedness. That is one of those usage patterns that you're talking about, the legs have different roles.

RS: Right, exactly, and that begs the question, why does that happen? Can we point to something structural about

the thought process that follows with that? First, work with each leg as it is. We've got to engage with the pattern and as the pattern starts to respond, then I pay attention to the elements brought forward by that response and try to make sense of it. You don't make sense out of it before you engage with the tissue. There is something about the pattern that draws you to it – engagement, response – and then you'll start to get your result in the tissue. And then I like to track that moment as far as I can. I would do the same thing with the other side, more or less. And since you started on one side, you then realize when you get to the other side that you're working on the way the legs are relating with each other. As practitioners, we learn about our clients individually. The patterns are not the

When I first start working with someone, I'm trying to feel around, palpate, and figure out where to start a session. Even if it is the first session, I'll touch the client's arm and wrist, usually, it's the right one, and I'll often suddenly become aware that there's a pattern related directly to their eyes.

that habit or tendency? Then we're really talking about the whole neuromuscular system. The thing to remember is that we are spiral-like in nature. I think that is something that is pretty fundamental.

JS: Yes, absolutely. So when you see a client come in and there's a real difference in their leg patterns and it's obvious that the legs relate to the pelvic girdle asymmetrically, is there any specific approach you take with that? I know you're not trying to make them look the same, but what have you picked up over the years that you like to do in a case like this?

RS: When you see two legs that look really different from each other, what's

same in each leg. That's always been what's interesting.

When I get to the second leg and find that my tracking is not going to be the same as that first side, it makes me realize that perceiving and following is how we get this work done. We follow that line through the body. We know how to find it, listen to it, and work with it. Part of the intervention is following the response in the client through as much of their structure, and their body, as I can perceive.

JS: I'm curious about how you teach that 'Eighth-' and 'Ninth-Hour' approach to the girdle decision?

RS: I want to answer it in a broader way, which is to reference again the notion of

trying to treat the body as a whole – as it is. The body doesn't know the Recipe. The body doesn't know sessions one through seven or eight and what that means. However, one of the things the Recipe does is gives us a progressive set of considerations to be able to learn the body's pattern. The Recipe teaches how the body is as a whole and that is very useful. It's clear when you're learning sessions one through seven, that these have pretty distinct territorial considerations. Then when you get to session eight, there's no map for that, and it's always been kind of vague. How do you decide what to do in eight and nine,

practitioner, at the point where you have to make that upper or lower decision of the Eighth Hour, hopefully, you have an understanding of their pattern that allows you to ask yourself, "okay, now how do I take this pattern that I know runs in this kind of curvy way through the body to the next level? Where do I have to work to do that?" This is a lot of what we cover in the Advanced Training.

Over time, doing this work, you learn to respond to these patterns in a more direct, maybe even deeper way, with greater perception in your hands and focused purpose with your interventions.

When you see two legs that look really different from each other, what's the thought process that follows with that? First, work with each leg as it is. We've got to engage with the pattern and as the pattern starts to respond, then I pay attention to the elements brought forward by that response and try to make sense of it.

and add to that, what is a 'Tenth Hour' really? In some ways, it's an artificial distinction. But, by the time we reach this point in the series we're led to be working with the bigger pattern.

If you've been diligent with the work of sessions one through seven, then by the time you reach session eight, you have an understanding of your client's body pattern as a whole, whether you can articulate it verbally or not. By then, you know that the twist in their upper thoracics relates to the twist in the lower lumbar vertebrae, that their sacrum is rotated in such a way that affects the pelvic innominate bone and the leg of that side. And, the other side is doing a different thing, right? And so, as a

We want Rolfers, later in their careers, to not just be uncovering a bunch of stuff and then discovering it as a surprise. With advanced work, we want to empower you to see it sooner and interact with these patterns more intentionally. I think that's where this idea lands, this question at the eighth session, is there enough support from below to sustain changes from above? You want to make sure that the support is adequate before you start trying to work above there.

To summarize, the most important thing by the end of the Seventh Hour is to understand what the client's patterns are, track them through the body, and work on improving them across a larger area in the body. At that point, ultimately, it is

time to be working these things through the whole body. And that is what sessions eight, nine, and ten are about.

JS: Way back in the 1980s, and I'm pretty sure this came from Neil Powers who was one of the early Rolfing instructors – he taught the 'lupper' which is a lower and an upper session eight. For me, in the beginning, I did mostly lower-body sessions for that Eighth Hour but I got into the 'lupper' mentality pretty soon after.

RS: It's daunting at the beginning of a Rolfer's career. It's hard to remember everything all of the time. When I get in the classroom, I just meet them where they are and interact with their thinking process. From the instructor's point of view, you can see how the participant makes contact and whether they're working in too small of an area or whether they're starting to notice that there's an effect that's going beyond the place that they're working.

JS: How much emphasis do you put on client education? Do you give them things that can help break that sense of being stuck in some kind of pattern when they go home?

RS: When I first start working with someone, I want to see what happens before I start telling them what to do. I think it's a sensitive issue. You probably can tell by the way I answer the question here, I start way out there and I circle in. In the beginning, you're setting up a relationship with your client and a lot of times they don't know how to relate to the Rolfer. They don't know what this work is all about. There is so much to consider. First, there's how you as a Rolfer think of yourself in the relationship with your client, and how you're managing that relationship. This bears on what kind of things you offer them in terms of movement and awareness. Typically, in the beginning of the relationship with a client, I'll just ask them to notice what happens between the initial session and the next session.

I always want to know what their awareness is and at first, usually, people come back without much detail of what they noticed. They forgot, but they're aware of the next thing that is bugging them, or they stay focused on the reason they came in in the first place. And that is all information. They are telling us how much they are in touch with themselves. As the relationship goes on, then I'll figure out ways to relate to them that include

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suggestions about things they could do in between sessions. Sometimes I'll ask people if they like homework, and for those few diligent people that always follow all the instructions, I'll come up with something for them and it almost always includes walking. Walking is just the best thing that we can do for our bodies. Regardless of whatever else we do, walking works the structure better than anything that I know of in terms of movement.

Sometimes I'll do things where I'll invite the client to investigate the mechanics of sitting, or some specific activity that they do, and explore that a little more deeply to help discover new ways of moving. But movement sessions are not really the bread and butter of my work. I think this is because my initial experience of Rolfing SI didn't focus much on movement, and yet it affected my movement so much! That is still my experience – I go to the Rolfer's office, I lie on the table, the Rolfer gives me manual interventions, my body changes, and I feel and move better.

The client has taken the step to come to us. We're seen as having some expertise, and now it's up to us to demonstrate it and to make an impact on them, however we do it. Maybe it's helping them realize they're responsible for something, or they need to take responsibility for something. In general, I feel like the 'meat and potatoes' is the hands-on experience that we're transmitting to their bodies, and that's what we give. So, I don't like to get too cerebral about it.

JS: I was definitely living in my head when I was a new client to Rolfing SI back in the mid-1980s. My Rolfer, Ed Hackerson used to say to me, "Well, John, what have you noticed about your body since the last time we saw each other?" And I'd

say, "Well, geez Ed, nothing hurts . . . so nothing!" I was that kind of client. My feet were somewhere down on the floor and I didn't think much about them. As long as things were working okay, I just went about my business. Going through those sessions with Ed, I always remember what it was like to start noticing things about my body. And now, for me as a Rolfer, that's the whole idea – helping people to become more aware of what's happening in their bodies and what's going on when they start doing things differently.

RS: To encourage awareness, to ask people what they're feeling, it lets them process what is happening. Yeah, exactly.

JS: Any final observations about specifically addressing the appendicular skeleton?

RS: We work from the outside in and I think it's very important. It's not everything, but without it, we don't get as far. You still have to be able to work in the axial skeleton as well. Going between those regions is a very important skill set.

Currently, some of my learning is focused on the interface between the viscera and the musculoskeletal system. That's something that takes a long time to be able to master and so I'm still working at it. Having support through the legs is critical to be able to get the deepest change in the spine. And similarly, to establish good continuity through the cranium and cervicals, in the thorax, you need to be able to make sure that the shoulders and arms are not creating too much drag on those transitions. The appendicular structures are an essential part of our work.

JS: Well, again, thank you very much, Russell. This has been a very informative chat.

RS: Thank you for having me, John. Great having this chance to connect.

John Schewe completed his Basic Training in 1987 and his Advanced Training in 1991. He has been a member of the Life Sciences Group at the Dr. Ida Rolf Institute® since 2007 and has taught numerous anatomy lead-in classes. Though his academic background is in geology (MS, Louisiana State University, 1979), John has had a keen interest in the biological sciences as they pertain to bodywork in general and Rolfing SI in particular. His desire is to make the study of anatomy and physiology interesting, informative, and enjoyable. He lives in Athens, Georgia with his wife, Laura, and maintains a practice there.

Russell Stolzoff is a lifelong athlete whose understanding of Rolfing SI's impact on embodiment and performance dates back to the dramatic improvements in balance and quickness he experienced from his first Ten Series in 1983. For the past thirty years he has devoted his professional life to elevating his skills as a practitioner and instructor. In 2010, Russell founded Stolzoff Sportworks to bring the benefits of Rolfing SI to professional athletes. He was instrumental in helping members of the NFL's Seattle Seahawks stay in the game and perform at the highest level en route to two consecutive Super Bowl appearances and the 2013 Super Bowl NFL Championship. Stolzoff's diverse background includes scientific research and studies in Somatic Experiencing® trauma resolution and Bodydynamic Analysis (a developmental approach to body psychotherapy). Russell is a member of the Dr. Ida Rolf Institute (DIRI) Advanced Faculty. He lives and practices in Bellingham, Washington. ■

Knees, Old and New

By Jeffrey Burch, Certified Advanced Rolfer®



Jeffrey Burch

ABSTRACT *Certified Advanced Rolfer® Jeffrey Burch has worked with people who experienced knee pain and then had their knees replaced, as well as having also personally experienced knee pain and both his knees replaced. This article is a discussion of what he experienced and learned from his own knee replacements, through his manual therapy lens.*

In this article, I describe the replacement of each of my knees, including the events leading up to the replacements, details of the surgeries themselves, and the recovery periods. I present myself as a case for you to learn from, and to add to your knowledge bank of ‘what can happen’ with knee replacements. There were unusual features to my knee replacements. Yet, I have worked with many people who have had good results from knee replacement surgeries, and rarely have I seen a case for a client that did not do well – with a good surgical result. I have encouraged many clients to get on with having their knees replaced. People who had a good result from knee replacement surgery just get on with their lives. We tend to hear more from people whose surgeries did not go well. They have legitimate things to complain about. The few whose surgeries did not turn out

well are more likely to tell their stories in the first place. While the final result of my knee replacement surgeries is fairly good, several elements of the process were quite arduous, and I offer my lessons here for you to consider. If I had to redo all those years of knee dysfunction and associated surgeries, I would still choose to have both knees replaced and I would make some related choices differently.

To present my case study, I will contrast my experience with a brief description of a friend’s knee replacement that occurred in the same week as my second knee replacement. This is to highlight how there were unusual elements to my particular situation, and also as a demonstration of the information I had available to me at the time. My case should not be taken as an example of what most people can expect from knee replacement surgery.

Let me be clear about what I would have done differently: I would have had each knee replacement surgery earlier (I did not need to suffer that long); if I had gotten to the point where both knees were painful I would have considered having both my knees replaced on the same day rather than consecutively; I would not have accepted the straightening of both of my tibias; and I wish I could have prevented the problems I had with infection, although this element was not within the control of either me or my surgeon.

My Doctor Friend's Knee Replacement

My friend was recently retired from a long career as a medical doctor when both of his knees began to be painful at about the same time. We met in junior high school and have remained lifelong friends. He suffered his knee pain for about six years before he elected to have both his knees replaced on the same day. This is a typical time period of delay between the onset of knee pain and knee replacement surgery. After this double knee replacement, he was expected to walk with the aide of a walker within a mere hour of waking from surgery, and physical therapy began the same day. It is standard practice to have patients walk immediately after surgery to limit the formation of adhesions.

After surgery, with both legs having been operated on, he did not have a good leg to stand on. For the first two weeks, he could not get out of bed or rise from sitting by himself. He described himself as feeling helpless during that period. His wife is a registered nurse with orthopedic experience. He was fortunate that she was there to be his primary caretaker during those early weeks. If he had lived alone, a stay in a rehabilitation facility would have been necessary.

He progressed rapidly with physical therapy. Within a month, he was walking independently without a walker. Within two months, he was walking a mile a day. Within six months, he was fully capable of moving through his life on his new knees. After the harder episode of the first few weeks after surgery, his recovery was expeditious and reached an excellent resolution. When I first heard that my friend had both knees replaced on the same day, I thought he was quite mad. When I told my physical therapist about this, he blanched. But although the first

few weeks were harder than mine, he progressed rapidly and had a good result.

The Start of my Knee Pain

I began to have some pain in my left knee in 2009. Standing x-rays of both knees showed thinning of articular cartilage, slightly greater in the right knee than in the left. The degree of osteoarthritic cartilage loss is weakly correlated with pain. This is, at least in part, because knee pain can come from sources other than osteoarthritis, and it is common to have more than one condition. An MRI of my knees showed a left medial meniscus with multiple splits and grade two arthritic changes to the articular cartilage of the left knee. The meniscus tear likely contributed to the greater pain in the left knee. There may have been additional factors contributing to the pain.

Osteoarthritis degeneration is graded on a four-point scale. Healthy articular cartilage has the appearance and elasticity of a white pool cue ball. As the cartilage begins to soften in the early osteoarthritic stage, the cartilage still looks like a cue ball, but when it is pushed on it is a little softer. This is grade-one osteoarthritis. Then the cartilage begins to fray so it looks furry. That is grade-two osteoarthritis. Once the cartilage is worn through to bone in one or more small focal areas, that is grade-three osteoarthritis. When most or all of the bone is exposed, that is described as grade-four osteoarthritis.

In 2010 a surgery was performed on my left knee to trim the split meniscus and to shave the cartilage smooth again. After a brief recovery, I was pain-free, and my range of motion was excellent for four years. During that time, I received a succession of three stem cell injections into the knee. The stem cells were

centrifuged from my blood. If the bone is still covered with cartilage, stem cells may contribute to some regrowth of cartilage. Stem cell injections will not grow cartilage on exposed bone. For me, these injections may or may not have slowed the degeneration of my knee cartilage.

Eventually, my left knee began to be painful again and to lose range of motion. I well remember the day when I could no longer ride a bicycle due to reduced knee flexion. At that point, I had a new MRI taken of the left knee that showed grade-three osteoarthritis. I continued with Rolfing® sessions, chiropractic care, and physical therapy muscle strengthening and agility exercises. Pain and reduced range of motion waxed and waned over time, slowly increasing.

In the summer of 2019, I began to have some pain in my right knee. A new MRI showed the right knee was now at grade-three osteoarthritis and the left knee was grade four, i.e., bone on bone. I scheduled a replacement surgery for the left knee to be performed in November 2019. As preparation for the surgery, the surgeon had standing x-rays taken of both my whole legs and pelvis to look at overall alignment. I had always been mildly bow-legged. The x-ray showed that this *genu varum* was entirely due to a focal inflection at the superior end of each tibial shaft (that is to say, the bone shape of my upper tibias each had a bend contributing to the outward curve of my legs producing a space between my knees I'd had my whole life). *Genu varum* can have other expressions including a curve along the whole length of one or both of the long bones of the leg. The surgeon said he recommended an angled surgical cut to the bone of the tibial plateau. The tibial plateau is cut to receive the distal half of the prosthetic joint. An angled cut would be designed to vertically align the shaft of

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A half an hour after I woke, a physical therapist got me on my feet and had me walk down the hall using a walker. As already mentioned, prompt walking after knee surgery helps limit the formation of adhesions. The first walk was painful and arduous.

the tibia under the knee. This appealed to my sensibilities as a Rolfer, so I accepted this intervention.

Also, in preparation for the surgery on the left knee, I requested and received a viscosupplementation injection to the right knee so that it could be as comfortable as possible during the rehabilitation for the left knee. This is a treatment for arthritis where hyaluronic acid is injected into the joint. It is a thick fluid and may help reduce the pain and swelling of an arthritic knee.

My First Knee Replacement

The surgery was performed in November of 2019 and the surgery itself went smoothly and expeditiously. The initial incision was vertical down the front of the knee, once the skin and superficial layers were breached, the flesh was dissected medially, passing over the patella to reach the medial portion of the knee joint capsule. A vertical incision was made there in the joint capsule. The patella was then rotated laterally 180 degrees around a vertical axis, laying it laterally, which exposed the deep surface of the patella for surgical intervention and further opened the surgical aperture to the femorotibial joint.

Using jigs, a more or less transverse planar cut was made across the superior end of the tibia, removing the original articular surfaces and flattening the top of the tibia. A hole was then drilled into the center of the tibial plateau and two dado trenches were excavated at right angles to each other centered on the central hole. The purpose of this hole and dado troughs was to accept the anchoring portions of the tibial portion of the prosthetic joint. Next, using a succession of jigs, a series of five planar cuts were made, removing the femoral articular surface and leaving a five-faceted set of surfaces where there had been a curve. A large central hole was bored vertically in the distal end of the femur to accept the

stem of the femoral prosthesis, and some dado cuts were made to further anchor the prosthesis. The articular surface of the patella was similarly sawn flat and scored to accept a prosthetic surface.

All three titanium alloy prosthetic pieces were installed into the bone, and secured with both pressure fitting and biocompatible glue. A polyethylene glide surface was introduced between the femoral and tibial prosthetic elements. This polyethylene element resembled the meniscus in structure and function. The incisions were then closed. Total surgery time was about seventy minutes.

I awoke in a recovery area about fifteen minutes later. A short-acting anesthetic had been used, requiring several re-administrations, but making for rapid waking after surgery. Upon waking, I was shortly taken to a private hospital room. There was significant bruising above and below the knee. I could see the handprints where surgical assistants had forcefully side bent the knee opening the medical aspect for the surgeon to make the bone cuts and introduce the prosthetic elements.

A half an hour after I woke, a physical therapist got me on my feet and had me walk down the hall using a walker. As already mentioned, prompt walking after knee surgery helps limit the formation of adhesions. The first walk was painful and arduous. I well understand the importance of walking during recovery, starting promptly after the surgery. Physical therapy exercises began later the same day in a group session with others who had had knee replacement surgery that day. I went home about thirty hours after the surgery.

I received physical therapy for six months, initially twice per week tapering gradually to once every other week. Physical therapy included exercise prescription and practice, agility exercises, and manual therapy. I practiced the physical therapy exercises daily at home. Walking was an important element of therapy, gradually

extending the distance and speed I could walk. I was done with my walker in about ten days. Pain was well controlled with a mix of opioids and Tylenol. I had tapered off the opioids within two weeks. Tylenol use continued and tapered down for another month.

The function of the left knee improved rapidly. However, at the same time the right knee continued to become increasingly more painful. A second viscosupplementation injection to the right knee was not useful. Also, the left tibia was now straightened while the right one was not, creating an additional type of imbalance. Throughout the recovery period and beyond, I had to consciously control every step.

My left tibia, which responded to the change by remolding my bone cells according to Wolf's law, went through an extensive succession of changes in contour as it adapted to the new way weight was transmitted through it. It was fascinating to observe. Sometimes I felt my left tibia resembled a lava lamp for all the slow-moving change.

My Second Knee Replacement

In May of 2021, sixteen months after the left knee replacement, I had my right knee replaced by the same surgeon. Although I was suffering from the pain in my right knee, I waited this long for my left knee to heal more fully before having another big surgery. Surgical recovery takes a great deal of physiologic energy. The same procedure was used as for the right knee, including the angled cut on the tibial plateau to straighten the tibial shaft. Unlike my left knee, prior to surgery, my right knee had lost almost no range of motion.

The post-surgical bruising of my right knee was much greater than it had been for the left. My right quadriceps were

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Jeffrey Burch

As with my left tibia, the right one went through lots of bends and twists as it adapted to the new and shifting load on it. During this, the left tibia went through some further adaptive shape changes.

bruised to their full depth and the femur itself was bruised. Apparently, there was a big wrestling match to get the prosthetic pieces into this knee. There was deeply indented bruising at my mid-thigh where the tourniquet was applied. The immediate post-surgical process was the same for the left knee. I was home twenty-four hours after the surgery, with a walker, and physical therapy began immediately. Initial pain control was again easy.

After five days I noted marked inflammation on the anterior-medial aspect of the right knee. I was able to see my surgeon that morning. He diagnosed it as an allergic reaction, perhaps to surgery preparatory cleaning agents or bandaging materials. He prescribed Benadryl. I promptly began to take this as directed. The inflammation continued to spread rapidly to more of the leg. Forty hours later, severe inflammation encompassed the whole leg, toes to groin. The whole leg was very swollen and red. I went to an emergency room where, after eliminating many other possibilities, cellulitis was diagnosed. Cellulitis is an infection of the skin and superficial fascia. Any of several infectious agents may be involved, various streptococcus and staphylococcus are common agents, though others are possible. Left untreated, cellulitis infection soon spreads into the rest of the body's interstitial tissue as generalized sepsis, leading to death. In the era before antibiotics, I would at least have had my whole leg amputated, and could easily have died.

The doctors in the emergency room debated among themselves whether to admit me to the hospital for intravenous antibiotic treatment or to send me home with oral antibiotics. Since this was during the COVID-19 pandemic and the hospital was full of COVID-19 patients, they took a hybrid approach, giving me a bag of

intravenous antibiotics in the emergency room and sending me home with an oral antibiotic prescription.

The infection resolved in about a week. However, the skin and superficial fascia were quite damaged by the infection, leading to extensive fibrosis. The skin and superficial fascia stiffened and contracted around the whole leg like a too-tight sock. It was tight enough to significantly reduce circulation to the leg. I received bodywork from others and was to some extent able to work on myself. The formation of fibrotic tissue continued for about six months requiring repeated manual intervention to relieve.

The combination of the surgery itself, the severe deep bruising of the leg, and the cellulitis-induced fibrosis made recovery more arduous. There was also the succession of compensatory gait patterns from the long-standing pain and limited range of motion of my left knee, the phases of recovery while the left knee was recovering from surgery, while the right knee was deteriorating, and one tibia was straight while the other was still *genu varum*.

About three months after the right knee replacement surgery, I had persistent deep pain in the right hip. I saw an orthopedist for this. An x-ray showed only mild age-related arthritic changes to the hip joint, not nearly ready for joint replacement. The deep hip pain was apparently due to new very different demands on the external rotator muscles. Over several months, the right hip pain migrated first to the right sacroiliac (SI) joint, then to the left SI joint, then the left hip, before vanishing. In the middle of that succession, I had a month of lumbar pain, something I had not experienced for thirty years.

I am grateful to the skillful physical therapists I worked with who were perceptive, made good assessments, and communicated well. They led me through customized treatment protocols that led me finally to greater comfort and stability. It appears that one element of the hip pain was related to the reduction in *genu varum* at the knees, which brought the femurs into a more adducted position at the hip joints. This required substantial reorganization of fine muscle coordination, as well as new and different loading on the joint capsule. I was discharged from physical therapy nine months after the surgery.¹

As with my left tibia, the right one went through lots of bends and twists as it adapted to the new and shifting load on it. During this, the left tibia went through some further adaptive shape changes.² At one point both tibias were relatively stable with a medial inflection mid-shaft, almost recreating the pre-surgical focal bend at the proximal end of the tibia. In time this too straightened. On the one hand, having my tibias straighter under me feels well supported. On the other hand, almost a year after surgery my legs still feel unfamiliar. These are not the legs I knew for more than seventy years. They are springy and track well, and I am still getting to know them. Over time I didn't have to think about how to walk as often. I can ride a bicycle again. My walking distance and speed gradually have increased, I am up to about two miles.

In the past week, I noticed that my shoe soles are now wearing off on the medial aspect of the heels. All of my life, my shoes have had the typical wear on the lateral aspect of the heel. Normal walking mechanics are to have first contact lateral on the heel. Weight then transfers up the lateral aspect of the foot, and finally medially across the metatarsal heads. In barefoot walking, the lateral heel builds more calluses in response to this, and then those calluses wear off with abrasion on the ground so that an equilibrium of callous accumulation is maintained. Wearing shoes would then lead to the lateral aspect of the heel wearing down. More than about three millimeters of wear on the lateral aspect of the heel of a shoe will create prompt knee, hip, or low back pain for most people. Shoe maintenance is important.

For me, the shift of weight to the medial aspect of my heels is consistent with the elimination of the focal medial inflection of the tibia at the superior end of the tibial

shaft. During my recovery, I experienced episodes of foot-sole pain. I had thought this pain was due to walking more since I had not walked much for a long time due to knee pain. While that is likely to some extent true, I now see that the substantial change in weight distribution on the sole of the foot also likely contributed to the foot sole pain. I am currently exploring how to restore the normal mechanics of foot-gait mechanics. This is not simple.

Postoperative Life

These days my quality of life is good and improving. I am grateful to no longer have pain in my knees, which I endured for many years. My energy level is good. More frequently, I can walk without having to think about each step. I am less conscious of my legs feeling unfamiliar.

When I think of my friend's experience and where he's at now compared to mine, I see several things. We both waited the typical five or more years from first knee pain to having the replacement surgery. In hindsight, we would both have been better off having the surgery earlier. Each of us had some challenges in the early weeks after surgery, but of different kinds. With both knees operated on the same day, he was initially helpless. I suffered a severe infection. After the first few weeks, his recovery was quicker than mine.

The unusual elements of my situation included first the beveled cuts to align my tibial shafts under my knees, second the rapid deterioration of my right knee while recovering from the replacement surgery for the left knee, which added a layer of compensation, and third the severe infection soon after the second knee replacement.

I have an increased understanding of how deeply embedded compensatory patterns can be both in the nervous system and in the connective tissue matrix and this now influences my work. Pain is a powerful reinforcer. A longer time in a compensatory pattern anchors the pattern more firmly. Change may involve more and smaller steps than I had previously realized.

I hope that my friend's and my knee pain-and-replacement sagas can be useful to my Rolfing colleagues. Specifically, I hope that you will appreciate the following aspects of my experience:

1. Knowledge of exactly how a knee replacement surgery is performed.

2. Encouragement to maintain an open awareness of the many dimensions of each client, including expecting the unexpected.
3. Increased awareness of the time scale involved in bodily change. Surgery may be done in an hour, but full healing and adaptation often take two years, if not longer.

In our interventions as Rolfers, we can see a change in an hour, but the client may continue to adapt to those changes for weeks afterward. What we do can alter them for all time. The power of our work cannot be exaggerated. To know this is to humbly remember that, there is no static stability in our bodies, our bodies change continuously. Given that reality, we can strive to acknowledge the possibilities, favorable and unfavorable, and to try to influence the direction of our, and our clients', future development towards the former.

Endnotes

1. I experienced soreness in several muscle groups, including quadriceps, hamstrings, hip abductors, and external rotators of the hip, as the muscles and associated portions of the nervous system adapted to their new roles. This was more noticeable after the second (right) knee replacement. In particular, for the second knee replacement, there was a lot of hamstring soreness, more distally. These muscles were severely and deeply bruised. Also, the medial incision for the knee joint capsule extended vertically through the distal end of the vastus medialis. I was aware of shifts in the firing order of the elements of the quadriceps during walking, including confusion in some stages of the adaptation period. I experienced frequent right hamstring cramping as the muscles and associated nervous system. Straightening of the tibias reduced the *genu varum*, yet this medial displacement of the knees called for a few degrees of positional adduction at the hip. This seemed to put a large new demand on the hip abductor muscles, both the tensor fascia lata and the gluteus medius. I experienced an extended period of soreness in these abductors as they strengthened. I also experienced great soreness in the external rotator muscles of the hip and the pectineus muscle. This was also more noticeable after the right knee

replacement. This led me to be curious about how this might affect pelvic position and motion, I looked for and did not observe any change in anterior-posterior tilt, the extent of a hip drop in gait, or other aspects of the pelvic position in motion.

2. The extended series of changes in the shape of both of my tibias after the surgeries were visible to the naked eye and quite palpable. Medial-lateral deviations, more or less in the coronal plane, were palpable by placing two fingers on the tibia at its distal end, one on the medial edge, and the other on the lateral edge, then while maintaining contact with these edges, I could feel the changes as I glided my fingers to the proximal end. Similarly, to feel the deviations in the sagittal plane, placing one or two fingers on the anterior surface of the tibia distally, then stroking the surface, gliding superiorly, the bone difference was obvious. During this time of change, x-rays were not taken. Given the easily palpable changes in contour, I am confident such x-rays, if taken, would have shown the succession of contour changes. This would have been quite interesting.

Jeffrey Burch received bachelor's degrees in biology and psychology, and a master's degree in counseling from the University of Oregon. He was certified as a Rolfer in 1977 and completed his advanced Rolfing® Structural Integration certification in 1990. Burch studied cranial manipulation in three different schools, including with French osteopath Alain Gehin. Starting in 1998, he began studying visceral manipulation with Jean-Pierre Barral, DO, and his associates, completing the apprenticeship to teach visceral manipulation. Although no longer associated with the Barral Institute, Burch has Barral's permission to teach visceral manipulation. Having learned assessment and treatment methods in several osteopathically derived schools, he developed several new assessment and treatment methods that he now teaches, along with established methods. In recent years, he has developed original methods for assessing and releasing fibrosities in joint capsules, bursas, and tendon sheaths. He is also beginning to teach these new methods. Burch, as the founding editor of the IASI Yearbook, regularly contributes to it, as well as to other journals. ■

Internal-External Is a Perception of the Nature of Structure

A Post-Rolf Point of View

By Jan H. Sultan, Advanced Rolwing® Instructor, and Lina Amy Hack, Certified Advanced Rolfer®



Jan H. Sultan



Lina Amy Hack

ABSTRACT *The internal-external model, originally published in Notes on Structural Integration, titled “Towards a Structural Logic,” in 1986 by Jan H. Sultan, is a foundational understanding of the nature of the human structure. Sultan has written a second edition of this model, informed by more than fifty years of practice and teaching. He describes the inspiration for and the history of the internal-external model and the value of the structural types – congruent internal, congruent external, and incongruent-mixed types. The internal-external model is a structural language that was early to identify lines of force transmission. It is a structural description of the inherited direction of growth and adaptations visible in the fascial network.*

Authors’ note: This article is written in the voice of Jan H. Sultan. It is a consolidation of many conversations between the two co-authors, putting to the page the Sultan legacy teachings for the Dr. Ida Rolf Institute® (DIRI).

It has been thirty-six years since I first published the internal-external model in *Notes on Structural Integration* under the title “Towards a Structural Logic” (Sultan 1986) and I want to re-open this discussion, to infuse it with my decades of experience teaching and practicing. Internal-external (I-E) is a perception of the nature of human structure and how people adapt their inherited form (genotype) to the demands of their lives (phenotype). It is a way to understand and coherently describe both form and function from a morphological perspective. I-E is concerned with the biology of form and the relationships

between the segmental elements of body structure. While the anatomy of humans is similar throughout the range of our genetic types, there are some functional differences in the forms that we exhibit. I-E is a body-reading tool in the Rolwing® Structural Integration (SI) paradigm that follows our Principles of Intervention (Sultan and Hack 2021) and gives us information about patterns of how the body manages the forces of movement, incongruencies, and interruptions of fluid flow, and places where manual interventions can be targeted to increase intersegmental alignment in gravity. I-E provides a client-centered approach. This is the bridge to Rolwing SI after Rolf. The I-E perspective uses the geometric consideration of the body in gravity and takes it a step further by describing a range of spatial structural patterns that are innate to human biology.

The History of the Internal-External Model

Ida P. Rolf, PhD (1896-1979) taught the SI 'Recipe' as a sequential pattern of interventions. Some of the elements of this Recipe were expressed as general goals for each session. For example, lengthen the front of the body, lengthen the back, lengthen the sides, differentiate the function of the adductors from the hamstrings and quadriceps, and in her fifth-session Recipe the mandate was to organize the relationships of the psoas, diaphragm, and the rectus abdominus. She wanted to see legs that moved as if they came from the diaphragm, not just the hip joint.

Each unit of her Recipe has a directive. Rolf would insist that her newly trained partitioners stay with doing her Recipe for five years, "or until we knew what we were doing." Even as I stayed loyal to that directive when I moved to New Mexico in 1970, the demands of the rural community into which I moved often bade me to use the elements of the Recipe in response to the needs of people who came for help. I was a thousand miles from any other Rolfer, and because Rolfing SI was so new and unfamiliar, literally no one knew what Rolfing SI was; I became the guy who lives in the valley who "works on people."

Certain truths emerged for me as I observed and worked with hundreds of clients over those years. Rolf's Recipe was more than a set of goals but also had process directives. For example, if you observed ten people receiving the third session of the Recipe, you would see a session that looked more or less the same, even as any ten clients would have

a lot of variation in their individual forms. This discrepancy between the Recipe and the variations of structure I was seeing in my private practice led me to consider the ultimate validity of applying a universal template: What about the legs? It seemed to me that some folks had very pronounced *genu valgum* (knock-knees, X-legs), while others had very pronounced *genu varum* (bow legs, O-legs). And there are many people that present variations between these extremes. Did all these people need the same second session of the Recipe? It was discrepancies like these that awakened my curiosity about wider applications of the method Rolf taught us.

The Genesis of an Idea

I had been puzzling over the dramatic difference between *genu varus* and *genu valgus*, and the different stresses inherent in each type. I noticed that some of the patterns were rotationally congruent with femur, tibia, and foot being either internally or externally rotated. Others had an incongruent pattern with internally rotated femur, and an externally rotated tibia and foot. Also I saw people with an external femur rotation and an internal lower leg and foot, taken together I started to think that there were structural 'types'. As I worked to understand each type, I postulated that there would be a 'line of transmission' of kinetic energy as each person moved. Assuming a theoretical line of force existed as each leg came through the weight bearing phase of the gait, it would follow that each of the different types would have their own musculofascial shape that was adapted to the way the limb was oriented.

Further reflection showed that the line of transmission of kinetic force went all the way through the body and where it traversed, it created predictable structural responses in the way the musculofascial tissues developed.

In the early 1980s, John Upledger, DO (1932-2012) [founder of the Upledger Institute International], provided me with a stunning perceptual leap. Upledger came in person to the then Rolf Institute® (now Dr. Ida Rolf Institute®) and presented his craniosacral osteopathy observations and methods to a group of our faculty members. His teachings elaborated on the physiologic circulation of cerebrospinal fluid, and how those pressure changes were reflected in the cranium, spine, and sacrum as part of a whole-body response. He observed that when the cranium is going into 'flexion', it will be reflected in a patterned expansion of the cranial bones. This flexion is due to pressure changes in the cerebrospinal fluid circulation. In this cranial expansion, the whole body displays a subtle external rotation away from the midline. And when the cranium is going into what he called 'extension', which is a retraction of cerebrospinal fluid pressure, the whole body would internally rotate toward the midline.

Upledger noted that some people would present with whole-body fixations in these rotational extremes, "Flexion-lesion heads, in general, belong to externally rotated bodies," which correlated with the person's head being "wider and proportionately shorter in its anterior-posterior dimension" (Upledger and Vredevoogd 1983, 108). And he described how the body extremities intrinsically rotate internally during

Internal-external is concerned with the biology of form and the relationships between the segmental elements of body structure . . . I-E is a body-reading tool in the Rolfing® Structural Integration (SI) paradigm that follows our Principles of Intervention (Sultan and Hack 2021) and gives us information about patterns of how the body manages the forces of movement, incongruencies, and interruptions of fluid flow, which indicates where manual interventions can be targeted to increase intersegmental alignment in gravity.

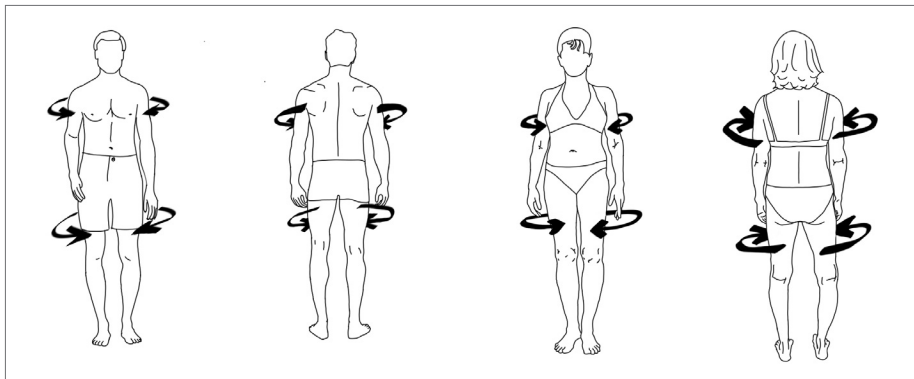


Figure 1: Four different people with the internal presentation.

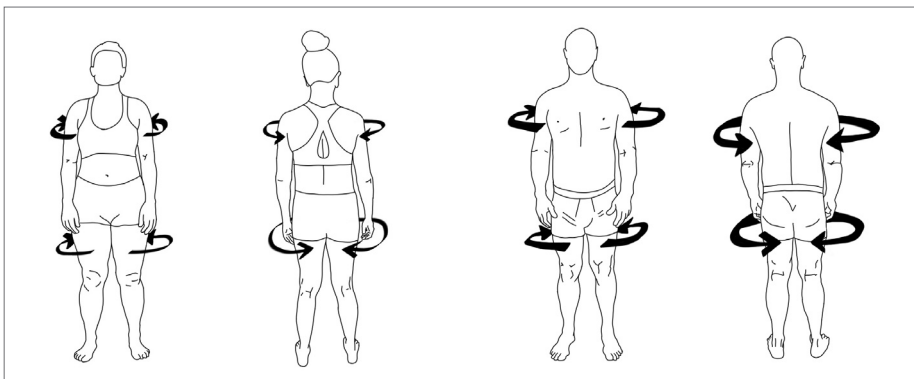


Figure 2: Two different women and one man, front and back, who present as having external structures.

cerebrospinal fluid retraction, with their heads trending toward being long and narrow in the transverse plane.

This information about the interface between structure and physiology was the missing piece that helped explain the variations I saw in my practice that did not always match Rolf's Recipe and its directives. In *Craniosacral Therapy* (1983), there are a pair of line drawings of Upledger himself in both external and internal rotation. The first drawing showed his body in the expansion phase (cranial flexion), with his arms and legs turned out, in external rotation, and his chest raised, as if in inhalation (Upledger and Vredevoogd 1983, 108). The contrasting

drawing was Upledger demonstrating how the body internally rotates on cranial extension (retraction) toward the midline. Here, the legs and arms rotate in, and the rib cage was lowered (Upledger and Vredevoogd 1983, 110). I was thunderstruck when I saw that.

Now, while Upledger's illustration was to dramatize the whole-body response to the fluctuation of pressure in the cerebrospinal fluid system, his illustration had a secondary meaning to me that I'm not sure he intended. What I learned from this, that there are body types that exhibit a genetically driven preference for *internal* (see Figure 1) or *external* (see Figure 2) rotation, as an expression of their

inherited form, and prior to the subtle shape changes driven by the craniosacral movement fluctuations.

Once I got the idea that there were expansion types as well as retraction types, I couldn't see anything but this range of types. I realized that the design of Stetson hats being available in two different head shapes, rounds and ovals, was an accommodation for external and internal cranial shapes, respectively. Levi's original jeans fit nicely on people with internally rotated legs and anteriorly tilted pelvises, while they slide right off the buns of an external whose differently proportioned buttocks lack the contour to hold them up.

**Rolf told us that fascia is the organ of form and adaptation.
The first adaptation is the genetic blueprint that executes the production of form from embryo to adulthood. Relationships between the major segments of the body begin at this point, as every person is born as an end point of evolution and is a structural blend of inheritance from our mother's people and our father's people.**

	External Congruent	Internal Congruent
Head	<ul style="list-style-type: none"> - vault broad - prominent frontalis - retracted mandible - flat occiput 	<ul style="list-style-type: none"> - long narrow vault - jaw delineated - prominent occiput
Spine	<ul style="list-style-type: none"> - low amplitude primary and secondary curves 	<ul style="list-style-type: none"> - high amplitude spinal curves
Thorax	<ul style="list-style-type: none"> - inspiration fixed - wide chest - narrow back 	<ul style="list-style-type: none"> - expiration fixed - wide back - narrow chest
Shoulder Girdle	<ul style="list-style-type: none"> - drawn posterior-medial toward the back 	<ul style="list-style-type: none"> - drawn anterior-lateral toward the front
Pelvis	<ul style="list-style-type: none"> - ilia tilted posterior on the axis through the acetabula - narrow tuberosities - broad across crest 	<ul style="list-style-type: none"> - ilia rotated anterior on acetabular axis - wide tuberosities - narrow crest
Femurs	<ul style="list-style-type: none"> - external rotation referenced to the sagittal plane - <i>genus valgum</i>, X-legs, knock-knees 	<ul style="list-style-type: none"> - internal rotation referenced to the sagittal plane - <i>genu varum</i>, O-legs, bow legs
Calcaneus	<ul style="list-style-type: none"> - short - anterior 	<ul style="list-style-type: none"> - long
Sub-talar foot	<ul style="list-style-type: none"> - arches fixed high, often rigid 	<ul style="list-style-type: none"> - low to flat arches

Figure 3: Features of a congruent external and a congruent internal.

These are some of the searchings that led to finding the I-E model, it was inspired by cranial osteopathy, yet I took it a step further to the realm of structural types. Using the I-E model entails the systematic observation of the contours of the body. It is a tool to observe whole-body's structural patterns, and a language to describe them. In part, it is a reflection of the craniosacral rhythm generating form as it is transmitted through the fascia. And yet these patterns are also tied to our ancestral lineage. People from regional gene pools have particular shapes and characteristics, and each member carries those characteristics to some degree.

In my practice, I begin my initial interview by observing the client's whole-body structure: sitting, standing, and walking. I consider it the representation of a lineage, or *the end point of an evolutionary line*. In working with an injury or postural problems, the tissue's matrix is the genetic blueprint and the context in which the client's current events are happening. Environment and experience are organized around this ancestral baseline.

In biology, they evaluate the 'nature/nurture' equation. When we see a femur has a preference for external rotation or perhaps the pelvis with a preference for posterior tilt positioning, it may be a part of this genetic legacy and not an aberration of normal structure.

In application, then, these structural elements are not problems to be solved, but rather elements of blood- and gene-driven patterns. When we begin to talk about posture, we need to keep in mind that much of what we see is foundation organization. It is within this fascial matrix that we work to provide the possibility to 'behave' differently. And if there are injuries and adaptive patterns, they are happening in this preexisting matrix. So, we are working to organize around the segmental arrangements we were born with. Consider the injury of whiplash, people experience this same injury, but the ramifications differ between individuals depending on the general typology of their structure, one element being whether they tend toward internal or external structures. When we do our Rolfing SI body readings, we hold

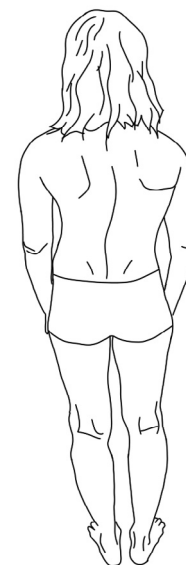


Figure 4: Woman with internal presentation as well as scoliosis.

this context in mind while we assess the body segment relationships with the symbolic vertical 'Line' as a template, and from there we observe limb rotations, the amplitude of the spinal curves, and pelvis position. This gives us a lot of information to work with.

Towards a Structural Logic

Rolf's premise that gravity is a major environmental factor in the well-being of every human body is compatible with the internal-external mode of seeing patterns of human structure and function. She observed that when a person's form was geometrically organized around gravity's influence, they would be relatively free of compression and could gain support and even acceleration from the gravity dynamic. To visualize this, think of someone walking fast. As they lean into their gait, the body is effectively falling part of the time. This is like free energy to move oneself forward quicker. Rolf's mastery was her ability to see and intervene manually with the body's segmental organization, especially individual segments that were displaced away from that same central vertical axis. People who have pain and limitations in their movement often have what Rolf described as compressional loading and an adversarial relationship with gravity. Rolf's teachings made this visible.

The I-E model gives us a language to describe these patterns of strain in the

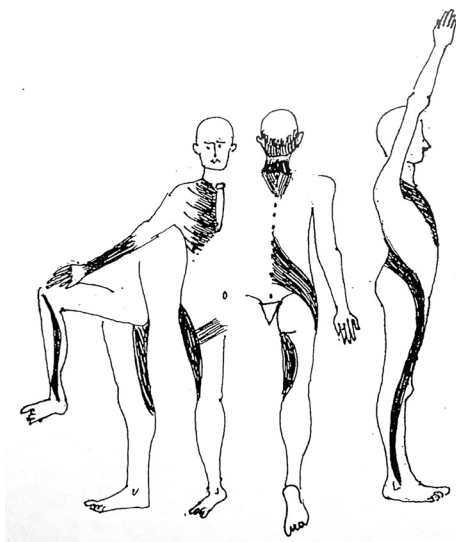


Figure 5: Lines of fascial force transmission for congruent internal type.

three-dimensional web of connective tissue. This lens of viewing whole-body physiology makes the body reading before the interventions, both manual and with movement, work really efficiently. It makes the selection of interventions simpler. Rolf told us that fascia is the organ of form and adaptation. The first adaptation is the genetic blueprint that executes the production of form from embryo to adulthood. Relationships between the major segments of the body begin at this point, as every person is born as an end point of evolution and is a structural blend of inheritance from our mother's people and our father's people. The second adaptation is what happens

from that conception point forward, both the factors for growth and accumulation of injuries. Connective tissue "can change the direction and density of its fibers with changing demands on the body" (Sultan 1986, 12). People who display a preponderance toward the internal structural type have different working patterns in the fascial web than people who present as an external type.

At first, this post-Rolf thinking led me to realize that there could be two Recipes, one for internals and one for externals. Then I realized it went beyond that because 'pure' internals and 'pure' externals are rare. They are theoretical structural patterns to be found in describing the extreme of a spectrum (see Figure 3). While there are people that have a congruent pattern of an internal or congruent pattern of an external, it is rare to see a pure type. More common is the third possibility that describes a lot of people – incongruent-mixed type. These people present a unique mix of internal and external segments. Those transition points of the incongruent segments are often motion restricted and are the structural stress points. The incongruent shift is a useful place for Rolfers to do their manual and movement work, to release the motion restrictions that accompany counterrotations. Viewing the body through the I-E lens gives information about the strain and the direction to promote ease in the client's spatial organization. Being able to identify the *dominant structural type* of internal or external will determine the nature of the compensations for incongruent-mixed types (see Figure 4).

Congruent Internal Structure

I-E model has become part of Rolfing SI's Principles of Intervention, it is embedded within wholism, the way of seeing that has everything to do with shape and especially trait (Sultan and Hack 2021). When looking at the congruence or incongruence of a person's structure, we are looking at the dominant traits this person has inherited and been moving with for their lifetime. Congruence is a quality where the relationship between the major segments are showing the same trends. An organized structure is one that has neither extremes of internal nor external, and is also congruent from head to toe with itself. Structures like this exhibit a graceful flow in movement, ease with themselves, and optimal adaptive capacity to stress and insult.

As already mentioned, the congruent internal is a cranial retraction structural type first described by Upledger (Upledger and Vredevoogd 1983). This is when the whole body is rotating into the midline, that is to say, the arms and legs are turned in, the rib cage comes down, and the pelvis is anterior tilted. In general, the internal pelvis has a soft tissue pear shape, where the person appears narrow at the crest of the pelvis and wider between the tuberosities. In motion, a congruent internal person's knees point inward on the swing phase of the gait. They will have a characteristic rolling gait, with strong contralateral movement. In standing with feet together, the legs show as *genu varum* (O-legs, bow legs). The

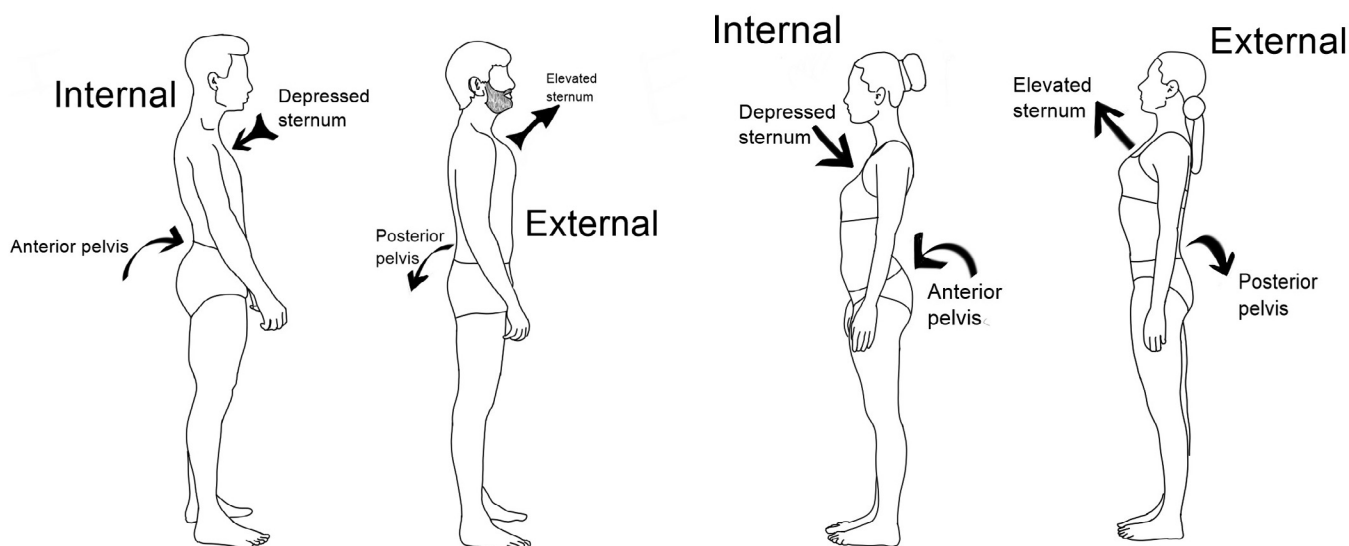


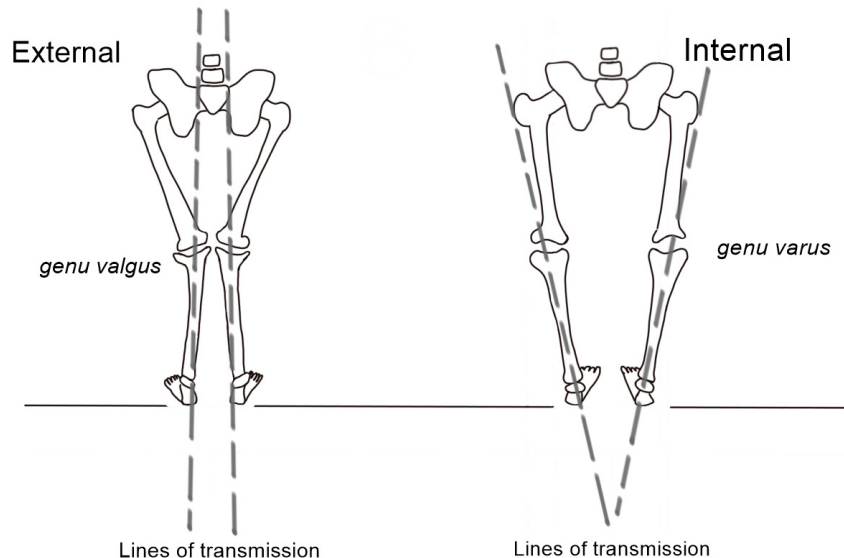
Figure 6: Profile comparisons of four different people, internal and external types, side by side.

lateral view of the spine will present with relatively high amplitude spinal curves. This is seen as a deeper lumbar curve, a more pronounced kyphotic curve, and a significant cervical curve. The profile of their sacrum will appear almost as part of an arc of a circle – a crescent sacrum. Internally rotated femurs are fairly easy to spot and a good place to start, then lead your inquiry systematically through each segment. If a client presents with most of the qualities of the internal structure, they are a congruent internal type.

Transmission lines for a person who is congruent internal has a relatively flexor dominant, ventrally oriented body. Palpation of the craniosacral rhythm will reveal a longer excursion with the extension phase, and the circumference of the head will be more ovoid, long in the anterior/posterior direction. In viewing the body from the side, the congruent internal fascial line of transmission can be found at the posterior cervical compartment, crossing from back to front along the clavicles, the ventral ribs are relatively exhalation dominant, the transmission line follows to traverse the abdominal obliques, to the iliacus. At this point, the force transmission line that found the iliac crest and the iliacus also traverses the inside of the pelvis and continues into the medial hamstrings. From the iliac crest, the transmission line also goes into the tensor fascia latae and vastus lateralis, and into the lower leg, the lateral gastrocnemius, behind the fibula, and then reaches the plantar fascia by way of the lateral arch (see Figure 5). The congruent internal has low flexible arches in the feet. As Rolfers, we take in this pattern as one event happening in the tissue. That means that intervention along any part of the line of transmission affects the whole line.

As the differences in I-E types emerged, I realized that Rolf's Recipe was biased in her perception of what Upledger called the cranial extension or retraction-type of body, what I came to call the internal. From the design of her Recipe, it seems that Rolf just didn't see people with external structural traits as a counterpoint (see Figure 6). All her primary directives of posture were for people with internal structural traits – addressing high amplitude spines, collapsed rib cages, and pelvises anteriorly tilted. The objective of her intervention was to bring that 'flexed' body into an upright posture. And for this type of structure, her Recipe is brilliant.

Figure 7: Lines of transmission of the legs for the congruent external compared to the congruent internal, while standing.



Congruent External Structure

The congruent external structure has predictable lines of transmission in comparison to the congruent internal structure (see Figure 7). As viewed from the side, the external line involves the anterior cervical compartment and then crosses from anterior to posterior at the thoracic outlet to focus on the relatively flat mid-thoracic region. It then traverses into the prevertebral space from posterior to anterior and finds the crura of the diaphragm and the psoas. Following the psoas, it crosses the groin

and into the femoral triangle. From there, the transmission line follows the pelvic rotators out from the pelvic basin, down the lateral hamstrings, crosses behind the knee, traverses to the deep posterior compartment of the lower leg, to emerge on the medial tibia distally, and then goes through the medial arch to the plantar foot (see Figure 8).

In those early days of training with Rolf, Judith Aston [founder of the Aston® Kinetics] and I were chatting, and she asked, "So when Ida tells you to get your waistline back, what happens to you?" I responded, "Well I try and get my

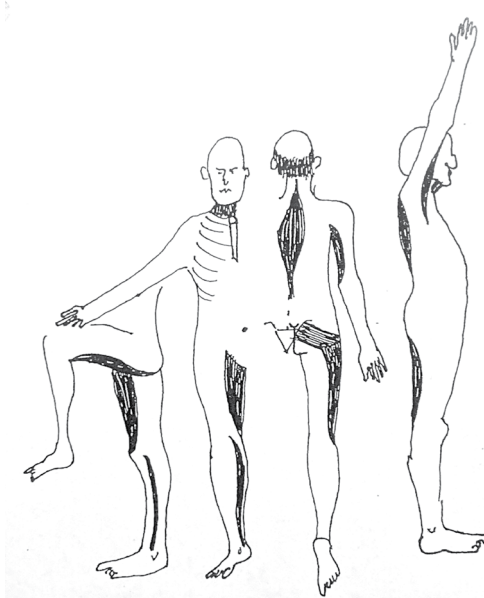


Figure 8: Lines of fascial force transmission for

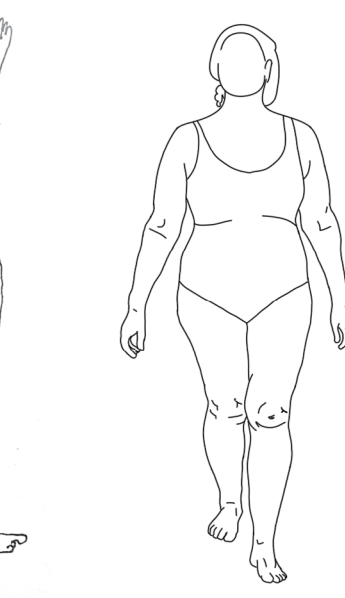


Figure 9: A congruent external woman walking.

The chances are that those transition points where external meets internal are most likely where the structure would be motion restricted. These places are called the incongruent shift. These regions will have high-fascia strain and often match the self-report of pain from the client. These crossovers are also where injuries are likely to happen. To some extent, these relationships also predict where adaptations and compensations for a local injury will land in the body.

waistline back.” And she said, “Your back already has a diminished lumbar curve. You have no ass. Where is your back?” She went on to say, “If I were directing you, I would have you bring your tail up a little bit and get a better lumbar curve, and have some more resilience because of the curve.” Aston saw what Rolf did not, but Dr. Rolf was my teacher, so what did I say? “Thanks, Judith, but I’m still going to keep my waistline back because Ida was very adamant about it.” In the course of getting my Rolfing sessions, my back went from achy to acute pain. I endured years of that. On reflection, it’s amazing to me that I persisted even as both sensation and logic pointed to the obvious. Judith Aston had already predicted the I-E range of structural types in 1974, and I had denied it.

After Rolf died, I was teaching and working with a lot of people, and I was struggling with all this information. I’d look at somebody prior to a first session and think, I don’t want to lengthen the front for this person, they are already

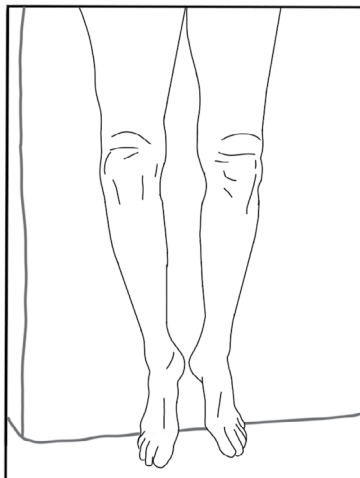


Figure 10: Legs of a person with an internal structural type lying on a practitioner’s table.

long in the front in a banana-like posture. Finally, seeing the expansion body type by Upledger, this congruent external structure opened my eyes (see Figure 9). This is post-Rolf technology, to see and work with people according to how their genetically determined structure presents in terms of the internal-external perception of their form. This is client-centered structural integration.

Fairly early in this internal-external conception, I realized that, as there was a Recipe for internals (see Figure 10), which Rolf had given us, there was also a Recipe for externals. There are further distinctions to be made for people who are the incongruent-mixed type of the I-E model. What are we to do when a person presents with internally rotated legs and an externally lifted rib cage? Or vice versa? Or a person with externally rotated femurs, the *genu valgus* knee pattern, and an internal thorax? These possibilities are mixes of the segment types, and clients will present with any blend of presentations from both columns in Figure 3. The chances are that those transition points where external meets internal are most likely where the structure would be motion restricted. These places are called the incongruent shift. These regions will have high-fascia strain and often match the self-report of pain from the client. These crossovers are also where injuries are likely to happen. To some extent, these relationships also predict where adaptations and compensations for a local injury will land in the body.

Knowing the baseline congruent types gives the SI practitioner insight when faced with a client who is an incongruent-mixed type. Then the work becomes client-centered instead of recipe-centered. This is the bridge to Rolfing SI after Rolf.

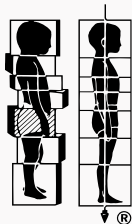
Jan H. Sultan’s initial encounter with Dr. Rolf was in 1967 as her client. In 1969 he

trained with her. In 1975, after assisting several classes, Rolf invited him to become an instructor. After further apprenticeship, she invited him to take on the Advanced Training. Over the next ten years, Sultan taught several Advanced Trainings with Peter Melchior, Emmett Hutchins, Michael Salveson, and other faculty members, collaborating on refinements to the Advanced Training. Sultan currently teaches Basic Trainings, continuing education, and Advanced Trainings for the Dr. Ida Rolf Institute and continuing education to the extended SI community. He feels strongly that his responsibility as an instructor goes beyond simply passing on what he was taught, but also includes the development of the ideas and methodology taught by Rolf.

Lina Amy Hack, BS, BA, SEP, became a Rolfer® in 2004 and is now a Certified Advanced Rolfer (2016) practicing in Canada. She has an honors biochemistry degree from Simon Fraser University (2000) and a high-honors psychology degree from the University of Saskatchewan (2013), as well as a Somatic Experiencing® Practitioner (2015) certification. Hack is the Editor-in-Chief of Structure, Function, Integration.

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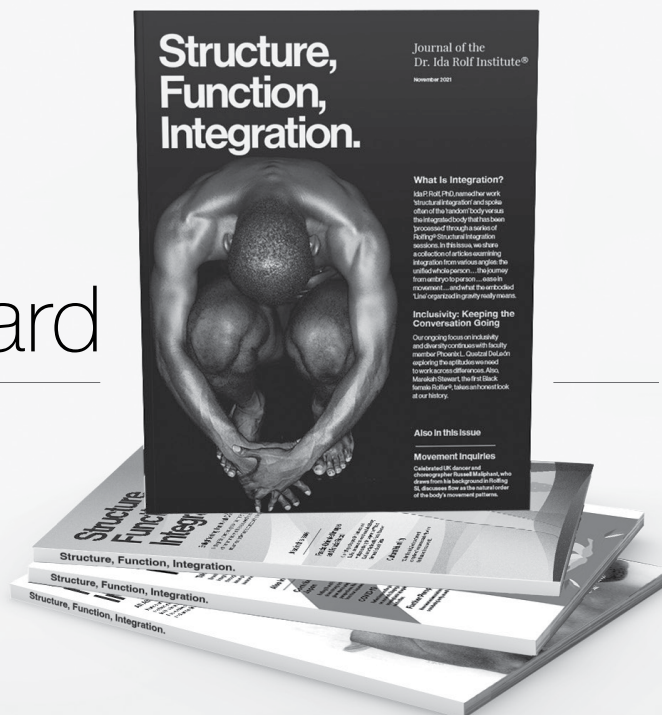


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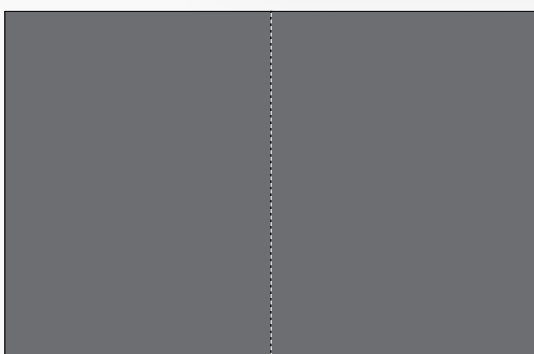
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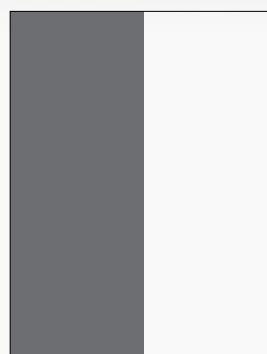
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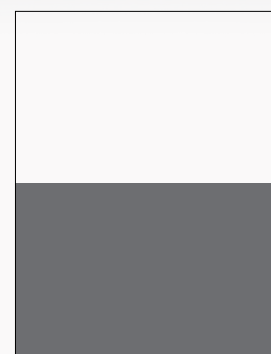
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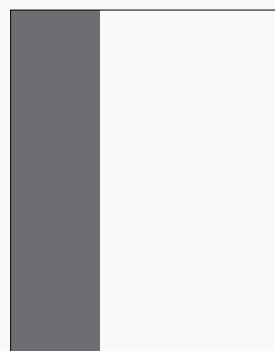
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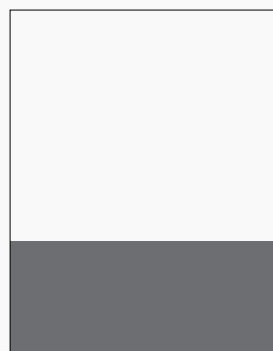
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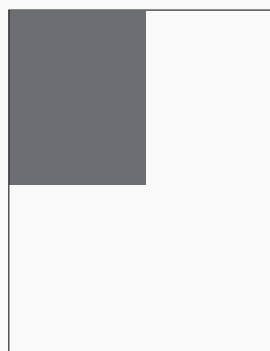
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In the Business of Expanding Perception

The Adaptability of the Dr. Ida Rolf Institute® During COVID-19

By Lina Amy Hack, Certified Advanced Rolfer®, and Libby Eason, Chair of the DIRI Board of Directors, Basic Rolting® Instructor



Libby Eason



Lina Amy Hack

ABSTRACT *In this conversation with Libby Eason, the chair of the Board of Directors for the Dr. Ida Rolf Institute® (DIRI), Lina Amy Hack learns about how DIRI is doing after two years of pandemic conditions while teaching new Rolfers®.*

Lina Amy Hack: Hi Libby, thank you for meeting with me today, you are the Chair of the Board of Directors of the Dr. Ida Rolf Institute® (DIRI). Here we are, two years into this global pandemic, how is DIRI doing from the perspective of the board of directors?

Libby Eason: The school now is doing great. In early 2020, DIRI had to close because of COVID-19, and all of the staff were laid off. But we came back in September 2020, with Tessy Brungardt [DIRI faculty] teaching the first Basic Training.

LAH: That was a remarkable feat.

LE: COVID-19 protocols were discussed between the faculty and administration, and then the policy was officially set by the board based on their recommendations, and in keeping with the City of Boulder and the State of Colorado's Departments of Public Health. DIRI is still following those public health protocols as they have been updated, and following faculty wishes to have everyone wear masks, which are provided.

LAH: That sounds fair.

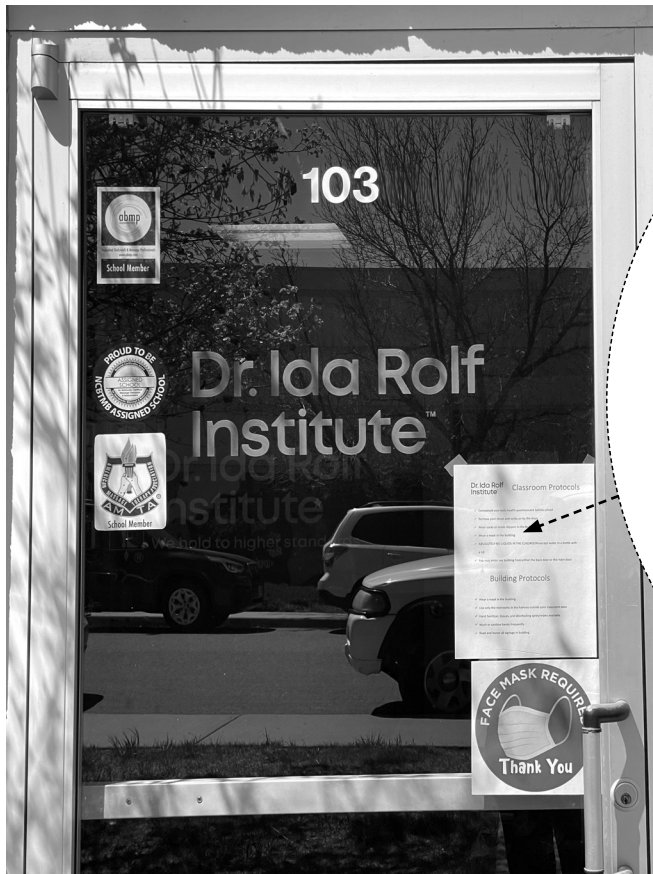
LE: The really great news is that we have not had to stop a single class. In the two years of the pandemic, once classes resumed, we stayed open. Some students elected to move to later training programs, and they were accommodated.

LAH: How did you handle the situation if a student had COVID-19 symptoms?

LE: Students had to get tested and be confirmed negative before they could come back into the classroom. Some portions of classes could be attended online, other parts had to be made up later. We didn't have COVID-19 spread throughout any class.

LAH: What happened to the board of directors when the shutdown happened?

LE: We kept meeting! There were important negotiations with the landlord for a rent reduction, which he was willing to do for us on a two-year basis. That agreement expires in October of this year, so we will be negotiating again. The landlord also let us drop the smaller space downstairs, suite 103, which has since been rented by another firm.



DIRI classroom door.

Dr. Ida Rolf Institute® Classroom Protocols

- ✓ Completed your daily health questionnaire before school
- ✓ Remove your shoes by the door and leave socks on
- ✓ Wear socks or inside slippers in the building
- ✓ Wear a mask in the building
- ✓ You may enter the building from either the back door or the main door.

Building Protocols

- ✓ Wear a mask in the building
- ✓ Use only the restrooms in the hallway outside your classroom door
- ✓ Hand Sanitizer, tissues, and disinfecting spray/wipes available
- ✓ Wash or sanitize hands frequently
- ✓ Read and honor all signage in building

DIRI classroom protocols.

LAH: Hats off to DIRI's administration and board of directors for getting the school back up and running during this pandemic.

LE: Yes, we have to give a great deal of credit to Christina Howe, our Executive Director and Chief Academic Officer, for her quick thinking and action. All staff members were laid off in 2020 for four months. Some of them returned and others moved on to other employment. Right now, we have our executive director and only three staff: Samantha Sherwin, Mary Contreras, and Shellie Marsh. We should eventually add two more staff to fill open positions, but we're staying 'lean and mean' at the moment. The staff that are with us are amazing. They go above and beyond for DIRI – all of them.

In 2020, DIRI was offered and received, a half-million-dollar grant from the US Department of Education, due to our affiliation with the department of education and our various accreditations through local, state, and federal agencies. This enabled us to not only stay open but to fund upgrades to our curriculum and

other needed projects that improved the training. Neal Anderson, Education Executive Committee Chair, worked closely with several faculty and with Christina Howe to complete these projects and prepare for future work on rubrics, standards, and now curriculum mapping.

LAH: It seems like the foundational principles that we rely on in our Rolfing® Structural Integration (SI) practices, have served us here. This is the *adaptability* principle that you are describing.

LE: That is a wonderful thing, yes, adaptability, and support. The tension between the opposites – finding a balance that allows us to teach, while maintaining safety for both students and faculty in the classroom.

LAH: I know at the time, DIRI was already planning to connect with the members, but when the COVID-19 shutdown happened, as a member, it seemed like DIRI was connecting more with us members. There were more opportunities

In 2020, DIRI was offered and received, a half-million-dollar grant from the US Department of Education, due to our affiliation with the department of education and our various accreditations through local, state, and federal agencies.

to hear from our executive director and faculty with 'ConnectMembership' events.

LE: Yes, and many videos were recorded that members can still access in the members-only section of the DIRI website. We had faculty members doing talks and demonstrations. To make that content available so quickly, faculty and members jumped into the deep end of the pool of providing online content and tried to help members to stay inspired and feel connected. Someone cleverly named them *CO-videos* [a word play on COVID-19 videos]. There's some really great stuff in there. That was all volunteer work on the part of the faculty and other members who contributed.

LAH: I enjoyed the ConnectMembership meetings, I would watch the video after the meeting happened, and I felt connected to the people at a time when I felt really separate from my work.

LE: We did those ConnectMembership meetings once a month, which produced quite a few recordings. This year, the intention is to have the meetings quarterly and focus on the work, especially hearing from our legacy faculty.

LAH: What else has been happening at the institute this year?

LE: The board had an outside facilitator lead us through a strategic 'visioning' process. The question was, how do we align the heart of the work that our faculty teach to with the heart of our business strategy? The facilitator helped us do this.

From this, we made a draft of the key strategic goals, had a faculty summit

to discuss and add to that draft, and now have a final draft of the plan. We have really delved into – where is DIRI's heart? Where's the fire? What can we say to people who are looking to study Roling SI? Why do they want to come to DIRI to study? The answers led us to talk a lot about embodiment, about the kind of thought leaders we have in our organization, and how DIRI's legacy faculty members have developed the work and articulated it.

My thought, which is a little too abstract perhaps for a vision or strategic statement, is that DIRI offers an embodied culture. We want people to come to our school because that's what they want. Not just to learn a ten-session series, you can go to a lot of places for that. I really do feel that we have the best program and the highest standards.

The board has completed the strategic planning process for the three-year period 2022 through to 2025 [see also, Institute News on page 76]. We got a lot of good information from the 2021-member survey that board member Dan Somers [Certified Advanced Rolfer] designed. Members were asked what is important to them. The thing that scored the highest, that was most important for most people, was protecting the service mark. The second was research.

Focus groups were also conducted with membership, staff/administration, and faculty. Those results were folded into the strategic planning process. As I already mentioned, the board, along with staff and some of the longer-term faculty, met

in early November 2021 for a strategic planning process facilitated by Susan Skjei [PhD, PCC]. Susan led the board in coming to a consensus on our main focal points for the upcoming three years.

LAH: I remember answering the questions of that member survey and going to the ConnectMembership that discussed the results, those two things were my top two as well. And I was very pleased to see that the third highest ranking was DIRI producing *Structure, Function, Integration*. Really good to see that members support this journal.

LE: The board of directors has paid special attention to these results of the member, staff, and faculty feedback; we asked ourselves the question – are we doing for the members what they need and want from us? According to those results, we are.

Christina Howe started as our executive director in 2015 and she put a lot of infrastructure in place. There was no policy manual. Everything was done via paper documents. Now we have a learning management system online. The students can upload the homework directly to that system, and faculty can score and comment on it directly on that platform. This is huge. Then in 2018, we started to develop the school's 'higher standards' further by creating rubrics that articulated what we want students to know and be able to do. This process helps students, but also helps faculty to cover all of the curricula fully. The result is greater consistency in outcomes. This has also been an immense undertaking. We are bringing the school up to the level of a professional institute of higher learning. We are also seeing students coming into the training a lot more prepared.

LAH: Is that because they are more aware of what is going to be expected of them?

LE: It's much clearer. It is a big commitment to complete DIRI's Basic Training program, not just financially, but also personally; people have high expectations of us. They should. And we continue to improve on what we deliver.

LAH: I agree, and that is what I tell people who ask me as well. What is up next for DIRI and the board of directors in 2022?

LE: This upcoming time is about relationships. How can we continue to be engaged with members, and further our presence in the health and wellness communities that we inhabit?

The board had an outside facilitator to lead us through a strategic 'visioning' process . . . where is DIRI's heart? Where's the fire? . . . The answers led us to talk a lot about embodiment, about the kind of thought leaders we have in our organization, and how DIRI's legacy faculty members have developed the work and articulated it.

The challenge for the school is how we invite prospective students to come and get training at DIRI – that with us, they will learn sophisticated, gravity-based, body-reorganizing training . . . to communicate the transformation the students experience by learning about our profession. The work is transformative for the person who practices it, as well as for clients.

In terms of the strategic plan, we're continuing to ask ourselves and talk about what we are in this profession for? How can we communicate what our faculty are in it for?

LAH: What I'm hearing you say is, that COVID-19 rendered a blow to our school and we got support because of our existing accreditations with the US Department of Education, and we survived the 2020 shutdown. Now, it sounds like the board of directors, faculty, administration, and members have been digging deep, asking and answering for ourselves why we are in this profession. This is an outside-the-box kind of work and we are all in it together. So now, we are full steam ahead, rebuilding and improving.

LE: We can only take these sets of problems one step at a time. That's part of what we, on the board of directors and faculty, are thinking about. We are also talking about another thing that I like – taking people from a two-dimensional experience of themselves, in the context of the work, into a three-dimensional experience.

The challenge for the school is how we invite prospective students to come and get training at DIRI – that with us, they will learn sophisticated, gravity-based, body-reorganizing training. We talk at the board meetings about how to communicate the transformation the students experience by learning about our profession. The work is transformative for the person who practices it, as well as for clients.

As practitioners, we engage our clients in a lifelong learning process as they experience the Ten Series, and at the same time, Rolfers also experience lifelong learning in the delivery of this work. So, we are pitching to the people who are curious about learning from us – are you looking to inhabit yourself more

fully? How do you get at that luminosity that is you, how do we reveal that? Like a sculptor reveals the form by manipulating the stone, Rolfers work with a person's structure and movement education to empower people to a more coherent organization in gravity. This feels good.

On the board, we ask ourselves this question about our students: how do we support them in revealing to themselves who they really are and who they want to be? We are in the business of expanding perception. And we have to translate that in an authentic way to the public.

For graduates, one of the hard parts of a new practice is how to frame themselves in their regional place of practice. They need to stay true to the training and yet speak the language that their local community will recognize. For them, we are in the process of creating a business development module that will be available to new graduates, as well as established practitioners.

We are also in the process of building an ethics module for our members' education and reference. This will qualify for continuing education credits with state licensing boards.

LAH: In this time of a global pandemic, this health crisis that we've all experienced over the past two years, Rolfing SI's foundational teachings have been at the heart of my ability to handle stress – to feel and know my center, to take the time to relate to gravity in a meaningful way – through movement.

LE: Feet on the ground. Head in the clouds. And everything in between.

LAH: Yes. And to just feel.

LE: And to act from that place. You may not always be able to get there, but you know where it is, you've experienced it, and you can bring yourself back there.

Marinating in conversations like this, the conversations between colleagues, like the ones we have on the board, this is also transformative, while facing these challenging times. I feel like I'm a better Rolfer when I listen and immerse myself in these dialogues. I feel re-inspired and reignited with our work on the board and with DIRI in general.

LAH: I echo that sentiment, here with the journal. I really enjoy being in conversation with our authors, our editors, and our readers. It is a rich experience to connect about this shared work and shared passion. Thank you so much for your time and thoughts today.

LE: You're welcome, and thank you very much for your work on the journal.

Libby Eason is the current Chair of DIRI's Board of Directors, she is a Certified Advanced Rolfer, Rolf Movement practitioner, DIRI faculty member, past president of the International Association of Structural Integrators®, and a past president of the Ida P. Rolf Research Foundation.

Lina Amy Hack, BS, BA, SEP, became a Rolfer in 2004 and is now a Certified Advanced Rolfer (2016) practicing in Canada. She has an honors biochemistry degree from Simon Fraser University (2000) and a high-honors psychology degree from the University of Saskatchewan (2013), as well as a Somatic Experiencing® Practitioner (2015) certification. Hack is the Editor-in-Chief of Structure, Function, Integration. ■

Working Online After COVID-19

Integrative Practices Emerging in Response to the Needs of a Digital Era

By Kevin McCarthy, Certified Advanced Rolfer®, Rolf Movement® Practitioner



Kevin McCarthy

ABSTRACT *The COVID-19 epidemic of the past two years challenged manual therapists and movement educators around the world in ways that few could have previously imagined. While COVID-19 severely limited the conventional practice of structural integration (SI), it provided a unique opportunity for innovation in the online space. Applying a biopsychosocial model of engagement and integrating Rolf Movement®, Rolfing® SI philosophy, and Somatic Experiencing®, the author Kevin McCarthy illustrates the possibilities of working outside the limitations of a touch-based model. Discussing the legal, ethical, and practical approaches involved in making a transition to an online medium, McCarthy uses a case study to illustrate methods and approaches that translate effectively to both online and in-person offerings. Drawing heavily on his expertise in trauma work, pain science, and client education, McCarthy demonstrates how manual therapists may adapt to the limitations of a pandemic-challenged practice, and offers options for bringing manual therapy into the digital era.*

Author's note: I use they/them in the case study presented in this article to promote an inclusive point of view with regard to gender. The use of 'they' as the default pronoun in this article instead of 'he' or 'she' is intentional.

I have a personal theory, blossomed now after COVID-19, into full-blown superstition. It's this: when I swear I'll never do something career-wise – swear on my honor, right hand raised, cross my heart and hope to die – I end up doing

exactly that thing I'd sworn not to do, likely in short order. I have a long track record here, starting in the first grade. Back then it was handwriting. Horrid stuff. Decided then that I'd never be a writer. This is a core memory. I can still play it start to finish, thirty odd years later. And now you're reading my article. Case in point.

I should know better by now. But as late as February 2020, while working as a Rolfer focusing on trauma via Somatic

Experiencing® (SE), I vowed the one thing I'd never do was work online. "The human experience is too central to this work!" I swore. So when lockdown came along, Friday the 13th of March, 2020 for us in Minnesota, superstition once again became reality. I spent the weekend retooling just about every aspect of my practice and started work on Monday by sitting down and logging on, rather than driving in and rolling up my sleeves.

And now, I'm a bodyworker who no longer works *on* bodies.

I'd been working for years primarily as an SE practitioner who moonlighted as a Rolfer. I've been a Rolfer since 2007 and plied the trade for ten years before catching on that I was interacting with more than just fascia. This led to a study of Rolf Movement Integration with the dearly missed Dr. Ida Rolf Institute® (DIRI) faculty member Monica Caspari (1953-2019). Then my inquiries led me to study the nervous system/pain science via physiotherapist Diane Jacob's book *Dermo Neuro Modulating: Manual Treatment for Peripheral Nerves and Especially Cutaneous Nerves* (2016) and G. Lorimer Moseley, PhD and physiotherapist David S. Butler's book *Explain Pain* (2003). Eventually, I completed the full trauma certification Somatic Experiencing, the work of Peter Levine, PhD.

The throughline in my transforming practice has been the recognition that posture is performative to the extent to which it relates to behavior and perception – most often unconsciously and (my bias) most often adaptively to trauma. Hence the manipulation of behavior and perception, much like that offered through physical manipulation, can bring about lasting change in posture and healthier adaptation.

To this end then, it became clear in March of 2020 that I was going to put this hypothesis to a true test: could my SE/Rolfing® SI practice go digital? Could I do what I'd sworn not to do and create a truly successful online practice?

As it turned out, yes and no.

First, some background: I work in a trauma-focused practice called Mend Therapy that I co-founded with my wife Carrie Miller, a licensed marriage and family therapist. With COVID-19 restrictions, our practices contracted. We were forced to let go of our employees, close our workshops, and cancel our various groups and offerings. We

... it became clear in March of 2020 that I was going to put this hypothesis to a true test: could my SE/Rolfing® SI practice go digital? Could I do what I'd sworn not to do and create a truly successful online practice?

worked nights and weekends, adapting our website and online presence, and researching and implementing various telehealth tools and programs. At last count, we've used six different video conferencing platforms: Zoom; Skype; Google Suites; Doxy.me; Jane.app; Facetime; even Facebook Messenger – pretty much everything except tin cans and string!

Add to this the struggle to understand and manage the complexity of laws and regulations that apply to our blended practices. State and federal laws governing telehealth were far behind the capabilities of the technology before the pandemic. When COVID-19 hit, large exceptions were made nationwide, allowing more platforms to be used, relaxing the abilities of providers to practice between states, and shifting privacy statutes to allow for more flexibility and innovation. While bodyworkers are not subject to the legal burdens of mental health professionals, I work in the borderlands of psychotherapy, offering trauma work as a bodyworker via telehealth. As such, I've always erred on the side of caution and have maintained strict adherence to the applicable professional laws and ethics of the psychotherapy industry.

The most difficult and exciting aspect was grappling with the limitations of the medium. How can I translate a SE session, or even a movement session, to telehealth? How can I ground a client, who is spiraling into traumatic activation, when I'm no longer in the room with them? These were crucial and urgent questions in the beginning of the pandemic as our

practice shifted online and the answers demanded creativity and improvisation. The learning curve was steep, at times brutal, but also exhilarating.

At first, I was leery. While I'd been practicing for years with sessions that did not involve touch (touch is often difficult and at times contraindicated for people working with trauma), physical presence, I felt, was essential. Indeed, most of my interventions in SE stem from Rolf Movement Integration with the understanding from SE that we're trying to affect the balance of perceived safety versus threat in the nervous system and body. Pushing, pulling, standing, walking, and sensing out into space and back into the body, tracking intention and premovement – all of these were essential elements of my practice and could not be mimicked in an online session. Or so I (and unfortunately, some of my clients) thought!

Early on, people who'd been seeing me for SE quit as often as those who'd been coming in for Rolfing SI. For some, the lack of touch was perceived as too great a loss to overcome. For those who stayed, many couldn't afford our previous rates. Out of compassion, but also desperation and the need to stay busy, we made a sliding fee scale available to anyone who asked to continue working with us. Between March 2020 and March 2021, we offered \$20,000 worth of free and discounted sessions.

But, surprisingly, telehealth was a great teacher. The first lesson? Humility. It turns out my clients don't need me as much as I thought (or wanted to think) they did.

Touch, when well tolerated, especially in an SE mindset, typically has a regulating effect on the body and nervous system. Without it, clients are forced to use their own resources in order to regulate. Telehealth forces this self-sufficiency and, as a consequence, allows clients to take ownership of their process and regulation from the outset of treatment.

I began to realize that my physical interventions with clients had fostered a dependence on external regulation. Typically, this meant leaving them to work out, often problematically, post-session internal regulation and support. But via telehealth, they started understanding and practicing better self-regulation faster and with more agency. I also realized, more fully, that I cannot 'do' anything. As much as we, as bodyworkers, try to release this desire (I'm thinking of biodynamic craniosacral and visceral work, where I worked so long and hard on this), it's difficult so long as we are physically present. We see ourselves as part of the process; telehealth challenged me to even more fully surrender the sense of 'doing'.

I had been trying to move from an *operator model* to an *interactor model* for years. Introduced by Diane Jacobs and Jason Silvernail (2011) and stemming from the larger framework of the biopsychosocial model introduced by George Engel (1977), this conceptual approach essentially teaches that we can't fix people, but we can help them heal themselves. Ironically, it was the disembodied medium of telehealth that finally showed me both the extent of my difficulties with this paradigm shift and a way to more honestly embrace its basic premise.

Emerging Methods of Working Online

When I am working with a person online, my primary tool honed over many years of SI, is body reading. I consider everything that a person says and does to be an element or indicator of their mode of organization in their body. And as an SE practitioner, I'm acutely aware that significant trauma, complex or acute, is often one of the defining elements around which that person is organizing consciously or, more often, unconsciously.

As I listen to a client, whether in an intake or at the beginning of a session, I'm looking for tension, imbalance, habituated

posture or movement, and signs of emotional intensity or autonomic nervous system activation. Any hint of something off or missing, active or overly engaged is a clue that may provide insight. Most often the real work of a session begins when I ask a client to notice something I've seen. Whether I'm right or wrong, once their internal awareness is piqued, change tends to follow.

Case Study

I began seeing the client (we'll call them Jessie to preserve their anonymity) in the fall of 2020. They presented with post-surgical jaw pain and headaches after having been through multiple jaw surgeries and related traumatic experiences. Their goal was a reduction of their physical symptoms. Some specific aspects of Jessie's situation indicated to me that online work would be not only beneficial but preferable to in-person work:

1. Jessie's situation was primarily acute. Compared to complex trauma, whose presentation often involves chronic, more ingrained symptoms (slower to respond to SE or Rolf Movement Integration), acute cases lend themselves to working primarily with a specific concern, a focused event or set of events, and thus a more tractable pain pattern.
2. Jessie's symptoms were related more to an appendicular pattern than an axial one. Appendicular patterns, especially in clients with relevant trauma histories, often arise out of adaptive compensation to threat responses. Think about fight, flight, or freeze – our body's primary means of managing threatening or traumatic situations. We manage these situations through the facial muscles and the appendicular aspects of the body by engaging first through social means (facial muscles), then fight/flight (jaw, arms, and legs), and finally freeze/collapse (appendicular and axial in combination).
3. Jessie already had received support via multiple avenues. They had physically healed, to the extent possible, after surgery and had found a physical therapist whom they trusted and could work with safely. They also had a history of previous psychotherapy. My intervention was as an adjunct to a system that already had support and some elements of basic safety in place.

Our work progressed through a typical SE pattern: identifying resources and establishing a felt-sense connection to a healthy baseline of autonomic nervous system regulation; constructing a timeline of the traumatic events and identifying key elements where heightened nervous system activation was present; and allowing emergent sensations from their varied trauma responses, whether emotional or physiological, to surface. Ultimately, my work was an effort to support their ability to feel an emergent sense of agency in response to previous experiences of overwhelm.

While this process typically brings some element of physical change and symptom relief, what was remarkable in Jessie's case was the benefit they received from verbally guided embodiment. With my Rolf Movement Integration guidance, their sessions became an opportunity for them to connect safely to points in their body where previously they'd felt only pain and fear. With emotional support and verbal guidance, they were able to feel instead a sense of self-regulation and comfort. When people feel agency where previously they've felt only traumatic activation (e.g. triggers), they experience a felt sense of being able to live without fear of future challenges or past traumatic events. They are able to experience deeper embodiment and can allow change in their emotional and physical structure without resistance as they are no longer bracing against traumatic activation. This is resilience in action and, I would argue, an experience of integration that is the hallmark of healing, both in Somatic Experiencing and in Rolfing SI.

At various times different Rolf Movement elements were called for, including:

1. Pushing and pulling. This intervention has the client use what is available in their immediate surroundings – pushing or pulling on a desk or standing up to push and pull against a door frame or wall. This intervention activates and allows for awareness of fight-or-flight response. Most clients have a preference for either pushing or pulling, and typically there is an inhibition in one of the movements. Exploring these movements allows for multiple insights into the trauma pattern. Frequently, these movements have a therapeutic effect and clients can use them to manage symptoms outside of the session.

We are not limited by our physical presence in accessing these realities, as they do not belong only to the physical encounter, they are inherent in the person themselves. Our job has always been to bring this conscious awareness to light. Online or in-person is immaterial. There are fewer limits to our practice when we understand our work for what it is – a partnership of experience and facilitation of the unknown to the known. How we do that is up to us.

Kevin McCarthy

I began to realize that my physical interventions with clients had fostered a dependence on external regulation. Typically, this meant leaving them to work out, often problematically, post-session internal regulation and support. But via telehealth, they started understanding and practicing better self-regulation faster and with more agency.

2. 'Melting' facial muscles. Jessie's jaw had been wired shut on two occasions, and they displayed extensive *inhibition* and *freezing* of many muscles related to emotional expression. Guided self-touch offered a way for Jessie to become familiar with the many holding patterns and became a consistently beneficial tool for self-care. 'Following' the releases as they moved through the face and body with both touch and internal awareness gave Jessie increasing insight and symptom relief.
3. Self-guided mouth work. This proved to be the icing on the cake. Once Jessie was settled enough to feel the nuanced change in their body and head, they were able to engage in mouth work that involved clenching (working through the previously unconscious fight response) and support (releasing unconsciously held tension that was being used to brace against both the ongoing pain and the traumatic memories).

Through the above-mentioned series of work, Jessie experienced a ninety percent reduction in pain and other related symptoms, and acquired an extensive toolset to manage their remaining issues. Jessie's emotional state became significantly more regulated and positive.

They felt a sense of agency and control that provided comfort and hope around their condition and, indeed, any future concerns relating to this problem.

While I would caution anyone not trained in trauma work to engage with clients in the way described above, it is important to stay within the training and credentials we hold. For this article, I'm showing one way of making this transition to telehealth, the potential and relevance of an online application of Rolfing SI and Rolf Movement Integration philosophy and practice. Rolfers are used to looking for what's missing. We are used to looking for health in the body and recognizing both its absence and its potential. Think of the goal of a tenth session – *uniform brilliance* – as I was taught by Ray McCall (DIRI faculty member).

We're all confused when taught this manual therapy work initially, but we all come to know it through the beautiful vehicle of our practice. We learn how to lead people to a novel experience of their body, how to feel connection, joy, and increased awareness of their surroundings and themselves. These skills defy the limits of their applications! We are not limited by our physical presence in accessing these realities, as

they do not belong only to the physical encounter, they are inherent in the person themselves. Our job has always been to bring this conscious awareness to light. Online or in-person is immaterial. There are fewer limits to our practice when we understand our work for what it is – a partnership of experience and facilitation of the unknown to the known. How we do that is up to us.

Conclusions

The happy conclusion to this process is that our practice is now busier than before. Our services are streamlined and we can adapt, as needed, to either hybrid (in-person or online) sessions or return, as we did in December of 2021 during the Omicron variant, to 100% online work. We can now work from anywhere, we have shifted to a single physical office space, decreasing overhead and increasing our ability to see clients when and where convenient. Our practice is entirely electronic – all forms, notes, billing, and scheduling is done online. Working under Minnesota's laws around licensure and practice, I am able to see clients around the world. This flexibility allows us more access to clients, new and established.

While not necessarily drawbacks, there are several considerations for this type of online offering. I've worked diligently with our practice's lawyer and my professional supervisors to define and adhere to a strict scope of practice. Our informed consent process is extensive and legally reviewed to remain in compliance with state and local requirements. We work within an integrated system of adjunctive therapies to ensure our clients are adequately resourced for the kind of work we do. And, as a clinic that integrates mental health practitioners, my bodywork practice adheres to ethical standards beyond those generally required of bodyworkers, as well as complying with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and other relevant and applicable laws.

There are novel opportunities for bodyworkers interested in expanding their practices to include offerings previously unimaginable to most of us. And if you find yourself swearing you'll never work online while reading this article, beware of the consequences. You've been warned!

Kevin McCarthy is a Somatic Experiencing® Practitioner, Certified Advanced Rolfer®, and Rolf Movement® Practitioner specializing in the effects of trauma and chronic pain on the body. Becoming fascinated with the interplay of emotional patterns that shaped and restricted his client's posture and perception, McCarthy was led to explore trauma work after years spent exploring some of the many aspects of manual therapy, including osteopathic manipulation, craniosacral therapy, visceral manipulation, energy work, and myofascial release. His training in Rolf Movement with Monica Caspari [DIRI faculty] in São Paulo, Brazil became a bridge that tied together McCarthy's deep appreciation of Rolfing® SI and Rolf Movement theory and practice with the foundations of trauma work he learned through his three-year training with Somatic Experiencing International. His work online and offline is a process of education, insight, and support that aims to free people of the physical and emotional burdens of trauma.

In 2017 McCarthy co-founded Mend Therapy, a thriving private practice in Minneapolis, Minnesota with his wife Carrie Miller, a licensed marriage and family therapist. Mend Therapy centers on the collaboration between psychological and somatic practice necessary to integrate and heal the body/minds of individuals, couples, and families that have been affected by trauma. He regularly consults with and educates health providers, manual therapists, and psychotherapists on the importance and role of somatic intervention in the effective management of trauma.

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COVID-19 – The Gift That Came Wrapped in Thorns

By Jan H. Sultan, Advanced Roling® Instructor



Jan H. Sultan

ABSTRACT *In a personal letter to his colleagues, Jan H. Sultan writes about his recent experience with COVID-19 and the post-COVID symptoms he's been experiencing. He offers this personal narrative about what interventions got him through this health challenge.*

My dear colleagues,

This narrative is to give you an insider's account of COVID-19. I contracted COVID-19 officially on November 1st, 2021, after a plane trip in late October from Los Angeles, CA to Albuquerque, NM. As a health care practitioner, I am in a unique position to comment on my first-hand observations of this infection. Here is my report, my up-close study of what happens to human physiology when under attack by this coronavirus, as well as my simple act of personal survival.

When I contracted COVID-19, I had been double vaccinated with the Moderna vaccine as of February of 2021. I never had a doubt whether I should vaccinate,

as the business of Roling Structural Integration (SI) involves high personal contact. I neither wanted to risk carrying the infection nor catching it. I worked through the pandemic, and along with my wife, who is a chiropractor, we were able to keep the office open as 'essential providers'. Our office observed rigorous sanitary procedures at all times.

In particular, I want to focus on the new things that I have learned while experiencing long-haul COVID-19 (also known as post-COVID) that will be of benefit to Rolfers®. You may already be seeing clients suffering from a range of symptoms involved with this condition, or you could be suffering from these

symptoms yourself. This is also a letter of gratitude to Rolfers, to my SI colleagues all around the world, thank you for your support. When I got sick, I was in a time of profound need, people dug deep into their pockets to help, and that GoFundMe stabilized my life so I could focus on recovery – your generosity touched me.

I thank you.

COVID-19 left me in bed for two months, two weeks of which were in the hospital COVID-19 ward, on the edge. Previous to that moment, I had been managing my cardiovascular health with baby aspirin and the blood thinner Plavix. COVID-19 raked my body over the coals. I suspect that it was a bigger factor for me because it interfered with my existing cardiopulmonary activity, but it is important to know that thousands of people are now affected by a range of symptoms involved with the post-COVID condition, even if they had mild flu symptoms during the infectious period of testing positive for COVID-19. What makes this important to talk about is that *it is new*, we don't know exactly what this is, and medical professionals have not found a consensus on what to do about it.

There are three stages that stand out for me and the path of this illness that I experienced: the cytokine storm, postural orthostatic tachycardia, and breathing patterns that supported recovery.

Cytokine Storm

Let me tell you about a cytokine storm. First off, a cytokine is a class of protein involved in the immune response. Getting COVID-19 seems to evoke a cytokine storm in many people where the immune system turns on and sends out the alarm that there is an *invader*. There is the entry of a virus into our bodies, and the immune cells realize, "We don't recognize this guy," as this particular virus is not something that the human immune system has dealt with before. And because this is a new invader, the body does not have antibodies to quickly remove the problem like usual. So the immune system rushes to suppress the invader with a corresponding broad inflammatory response. The inflammation during a COVID-19 infection is the body's *response* to the problem. An elevated temperature is the first line of defense, as many potential invasive organisms are

very temperature sensitive, and have a narrow range of tolerable temperatures. The problem is the presence of this rapidly reproducing unknown virus. The body starts an inflammatory response to make the defensive line of the war zone with the virus in the lungs. For some people with COVID-19, it is the very defensive cytokine storm that kills them. The inflammatory response fills up the lungs with fluid and they suffer self-generated pneumonia.

The first few days that I was in the hospital, I was deteriorating, having a harder time breathing, and I was on a kind of oxygen support called Thermovent. This is not intubation but warmed-up and humidified air that is put under pressure in a mask to keep your blood oxygen up. At the same time, they give antibiotics to suppress secondary infections and steroids to lower inflammation. Thermovent is the standard, and this is how we treat COVID-19. This is to maintain the level of oxygen in the blood. Normal ranges are 100 percent at best, and down to 94 percent, which is still very functional. Less than that is cause for alarm. If the blood oxygen levels drop even though the Thermovent is at maximum output, that's when they intubate. This is the

threshold and the cytokine storm is the reason that happens.

One of the nurses explained this to me when I asked, "What's happening to me?" This is my distillation of what she told me. With that information I began to consider that my immune system is basically binary. Those defensive immune cells are assessing invaders: on one side is 'me', the other side is 'not me'. If roaming immune cells programmed to destroy viruses encounter stuff that is 'not me', the immune system's job is to recognize it, store this information, and essentially burn it out of there [by digesting the viruses into their component parts and flushing them out of the body]. The cytokine storm was part of this recognition process. The immune system recognizes those viruses that were 'not me' and mobilizes a broad immune response to cope with them. In that process, the immune system overruns itself because it does not recognize this particular invader. The result is that the local tissues (lungs) get bogged down with mucus and immune cells, blocking the fluid flow out of the infected area, and when tubes get clogged, fluid fills upstream body cavities. In the case of the lungs, precious surfaces that are normally an interface for air and red blood cells to exchange their gasses become covered

I want to focus on the new things that I have learned while experiencing long-haul COVID-19 (also known as post-COVID) that will be of benefit to Rolfers®. You may already be seeing clients suffering from a range of symptoms involved with this condition, or you could be suffering from these symptoms yourself.

The immune system recognizes those viruses that were ‘not me’ and mobilizes a broad immune response to cope with them. In that process, the immune system overruns itself because it does not recognize this particular invader. The result is that the local tissues (lungs) get bogged down with mucus and immune cells, blocking the fluid flow out of the infected area, and when tubes get clogged, fluid fills upstream body cavities.

with this backlog of fluid and lose the ability to expel carbon dioxide and take in oxygen.

So, there I was in this state, and in this moment, I said to myself, “Well, I am going to have a little talk with my immune system.” I had nothing else I could do; I was stuck in that hospital bed. This was around day five of my COVID-19 infection, it was dark, it was probably two in the morning, and I looked up at my monitors and my usually robust pulse was fifty beats per minute. This was not cool. Something happened at that moment, I made an internal shift, and I thought, “Stop fighting it.” I told my immune system to stand down with the message, “You’re killing me.” And then I intentionally dropped into a trance. As I entered the altered state, I had a huge flood of gratitude go through me, full of caring, love, and appreciation. I was swimming in this gratitude. It was beyond anything that I normally feel, this was some other thing than usual gratitude.

Even though I was surprised and a bit shocked, I decided to go with it because I was trying to help my immune system. I was creating the message of *I-am-fine* and my immune system did back off a little bit, I could feel that the cytokine storm in my body did stop fighting so hard. I learned something in that first ‘journey’. After that, every chance I got I went to this place. I chose not to panic

when I began to feel oxygen demand. I just said to myself, “Don’t go there. Don’t be frightened. Just go low.” For five days I kept going to this place and I would go there whenever they left me alone. Having all those monitors right there, I could see when my pulse got low, I was learning to open a physiological door within myself. One morning, around 3:30am, I was deep into the ‘pink zone’ as I called it, and all of a sudden it stopped and I came up to full consciousness in the dark. I looked around, my vision was clear, I could hear things down the hall, and the next thought was, “I’m going to live. I’m back.” Reflecting on it all, what I had done was bring my immune system off its high alert to a more modulated defensive reaction to the COVID-19 viruses. I was not in the cytokine storm anymore.

Postural Orthostatic Tachycardia

Now we get into the post-COVID struggles, if you read the full description of ‘long COVID’ described by the Centers for Disease Control (CDC), on July 26, 2021, they published the long list of symptoms of the post-COVID condition that qualify as a disability. They report that each person often has a unique number of these symptoms and a wide range of severity. Once I got released from the hospital and was back home

with oxygen, I was struck with postural orthostatic tachycardia.

Postural orthostatic tachycardia is a blood circulation problem where a person’s heart rate rapidly increases and their blood pressure dramatically drops when they go from sitting or lying down to standing. It is characterized by an increase of at least thirty beats per minute and a drop of blood pressure (20mm Hg drop in systolic or 10mm Hg drop in diastolic) in the first three minutes of standing upright. In addition, the saturation of oxygen in the blood can plummet to 85 percent (or worse). The symptoms that accompany this experience include light-headedness, the risk of fainting, difficulty thinking (poor concentration, brain fog), intolerance to exercise, headache, blurry vision, palpitations, loss of taste and smell, body tremors, and nausea (John Hopkins Medicine 2022). I can tell you, it is not fun.

The medical community has been slow to recognize and respond to post-COVID postural orthostatic tachycardia. In general, researchers don’t fully understand what causes it. In my case, I had to fire my first pulmonologist due to his ignorance of this problem. I had to go to his office in a wheelchair because I couldn’t walk from the car without getting out of breath and being faint. I said to him, “Where is this tachycardia coming from?” and he dismissed it as a problem with my breathing. “You’re just not getting

enough air,” he said to me. But in my estimation, it was not oxygen demand that made my pulse race. Standing up is not aerobics! I came to think that I was dealing with a vagal problem. It seems to me that my vagus nerve, also described as the vagal brake by Stephen Porges, PhD (2011), was losing its neural impulse that would normally keep my heart rate regulated in the transition from sitting to standing. Tachycardia is not dependent on oxygen demand. And once I got a hold of my mind long enough to research it, it is well known that postural orthostatic tachycardia is a disorder of the autonomic nervous system, yet the medical community isn't looking at that aspect. They have a long way to go to address vagal participation.

Once I was home, I had a nurse that would come to the house twice a week to do my vitals and check on me, and I had a physical therapist. The first physical therapist didn't understand this COVID-19 induced tachycardia, they kept treating me like I was in a gym and I needed to pump myself up. According to them, I was to breathe deep, stand, and pump myself up with exercise. But the tachycardia kept me from being able to do that because as soon as I tried to actually move, I would get this oxygen drop and high pulse. It was a 'catch-22'. Not the kind of help I needed.

The second physical therapist was trained in the Philippines and this person was not bound by traditional protocols, she evaluated me and thought about what I needed specifically to get me going. Her method was very much in line with what Peter Levine, PhD talks about – titration (Levine 1997). The first exercise was to go from sitting to standing without regard to tachycardia. I was basically going anaerobic in an instant, that state was stuck in the 'on' position. So, she worked with me by titrating me between resting aerobic state, pushing the aerobic up a little bit and only briefly, and then coming back down to rest. By following my aerobic and anaerobic states, alternating sitting to standing, first doing fifteen rounds three times a day, and then building my capacity to stay aerobic while getting up. After about five visits with this approach, I started to get better. I could go between sitting and standing without becoming breathless, and then I could get on my Pilates reformer and do some systematic work to get the blood circulating in my vessels.

It feels important to communicate that common exercise-type physical therapy is not going to address postural orthostatic tachycardia, which may in fact just aggravate the person's already strained autonomic nervous system. Moving between the aerobic and

anaerobic states made a difference. Over time I was able to do more and I learned to mediate my own anaerobic response by myself. My message to you is that you can't exercise your way out of this particular symptom. I think this element is a hidden factor in why long-haul COVID-19 becomes so deeply chronic for some people, the medical community is expecting their patients to 'just get over it' when they need an autonomic nervous system approach. I'm really curious about the scientific role of the vagus nerve in all this. My approach was strictly empirical, trial and error.

Oxygen Advantage® is a Breathing Advantage

Lastly, I want to tell you another element in how I got myself back onto the road of wellness. This is a story that starts with the Buteyko breathing method as taught by author and breathing expert, Patrick McKeown, MA (2015). The Russian physiologist Konstantin Buteyko, MD, PhD developed a set of breathing exercises originally intended for treating people with asthma, chronic obstructive pulmonary disorders, chronic hyperventilation, shock, and trauma. McKeown is Irish, educated at Trinity College in Dublin, and completed his clinical training in the Buteyko breathing

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. . . you imagine something like a feather, and only breathe through your nose in a way that you barely move the feather . . . the body begins to generate nitric oxide . . . The nitric oxide from the breath work goes into your bronchi and tells them to *dilate!* Get this – minimal breathing stimulates the bronchi to open their capacity to handle more air.

method at the Buteyko Clinic in Moscow, Russia. McKeown's book and online presentations about *The Oxygen Advantage* are grounded in research and his breathing exercises are geared for fitness and sports performance. Yet, this information made a big difference in my recovery from COVID-19, those breathing exercises got me back to breathing on my own without supplemental oxygen.

I encountered McKeown's body of work when I was struggling with breathing while lying in bed and I was scared, I felt like I couldn't breathe. When I found McKeown's videos, it was the teaching that I needed. If I were only focused on the 'physical therapy' breathing exercises, I think I could not have recovered. They had me breathe in and out for a count of five, with a focus on the diaphragmatic excursion and on lung capacity. Big breaths, that is standard practice.

Contrast that with McKeown's exercises. Here is one example, you imagine something like a feather, and only breathe through your nose in a way that you barely move the feather. After a few minutes of that, what happens in the body is that you start getting an oxygen hunger because your body says, "Oh, I'm not getting enough air." The trick is to learn to ride this edge where you're hungry for air, but you don't breathe deeply. The secondary thing is, that the body begins to generate nitric oxide, the nitric oxide is a naturally occurring chemical involved with smooth muscle activity. The nitric oxide from the breath work goes into your bronchi and tells

them to *dilate!* Get this – minimal breathing stimulates the bronchi to open their capacity to handle more air.

There were moments where I would be riding this quiver when I would think, "Wow, I need a breath." I needed to catch a deep breath. But staying with this edge and riding this feather breathing, the body starts pumping out the nitric oxide, and low and behold, the bronchi dilate. Then, I started to learn to not trigger the deep breath response. It is completely counterintuitive and exactly backward from conventional advice. Conventional medicine had me taking deep breaths, blowing air out forcefully. While McKeown says that when you force air out of the lungs by blowing, we are blowing out carbon dioxide, which we need in order to trigger the oxygen uptake. Feather breathing is a back door to breathing better. I did this twice daily for three months and it set me on my way to getting off the supplemental oxygen.

Taste and Smell

It is well documented that one of the post-COVID functional problems is the loss of taste and smell. I suffered from this as well. A few weeks ago, Liesel (my wife) suggested that I inhale essential oils to stimulate my olfactory sense. We got peppermint, cinnamon, lemon, sage, and thyme. I would sniff one at a time, for about an hour. The other day, I finally smelled my coffee for the first time in five months. My smell and taste are returning. Now maybe the cynical among you might

think that the senses would have returned spontaneously. Well enough, but I'm sharing my process, not defending it.

In Summary

The moment right before getting COVID-19, I was strong and taking all that normalcy for granted. Now, having had to do the rehabilitation to recover from long-haul COVID-19 and all the challenges it brought me, it has made me not take my health and well-being for granted. I am now having to work for health and well-being, and it's given me a new perspective on our whole body of work. Like, what does it mean to have an organized body? It's dependent on having your underlying vitality to organize the drive that keeps your homeostasis stable and how important this is in the big picture. Basic vitality and the ability to maintain homeostasis, when we are strong, is happening in the background of our awareness. I learned I was taking this for granted. My personal health journey has been underscoring that one of the great values of what we do for people is to set up the structural matrix so that vitality can express itself.

I call COVID-19 the gift that came wrapped in thorns, that is, it opened my understanding of the body in ways that probably only somebody who is on the kind of inquiry that I'm on, could utilize. It would've been easy for me to feel victimized, except as I was being pummeled by this adversary, I was also studying how my body was reacting to it. I was curious about what I needed to

do to keep afloat while I was in this battle with COVID-19. It brought me back to the whole point of my professional life, which is to bring joy and happiness to people, and to make it possible for them to have more verve and vitality in their lives. I am grateful to be starting back to work, and I am grateful to you, my colleagues. I felt the support on all levels.

Jan H. Sultan's initial encounter with Dr. Rolf was in 1967 as her client. In 1969 he trained with her. In 1975, after assisting several classes, Rolf invited him to become an instructor. After further apprenticeship, she invited him to take on the Advanced Training. Over the next ten years, Sultan taught several Advanced Trainings with Peter Melchior, Emmett Hutchins, Michael Salveson, and other faculty members, collaborating on refinements to the Advanced Training. Sultan currently teaches Basic Training, continuing education, and Advanced training for the Dr. Ida Rolf Institute® and to the extended SI community. He feels strongly that his responsibility as an instructor goes beyond simply passing on what he was taught, but also includes the development of the ideas and methodology taught by Rolf.

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Kathy McConnell

The First Three Sessions

Validate – Connect – Create

By Kathy McConnell, Certified Advanced Rolfer®, Rolf Movement® Practitioner

Ode to Session One

Free to Breathe

I see sorrow
In your slumping shoulders.
I see resignation
In your chest.
Ribs held tight, close in,
Tethered to your injured heart.

Who told you
to hide in the dark?
Who told you
not to breathe?
Who jailed your spirit
and took away your air?

Whatever they said,
it's not true.

You are free
to breathe
here.

Let me show you.

Ode to Session Two

Loving Gravity

What if you could:
Meet the ground
beneath your feet.

Let go your fear
of letting go.

Drop the blocks
that keep you boxed.

Clear a pathway
of connection.

Re-imagine the spring
in your step.

Here's how:

Take off your shoes.

Open the eyes of your feet.

Let gravity flow through.

Allow the Earth to love you back.

Ode to Session Three

Earth to Sky

Now that
your breathing is freed
and your feet can see,
press down with your legs,
reach up with your arms,
creating a field to be planted.

Dig deep with your mind,
unearthing gems
in the veins of your flesh.

Embrace the adventure
of this gesture
as love.

The seeds you sow
will sprout.

Keep reaching out,
hug tomorrow with trust.

Trust in your ground.

Kathy McConnell is a Certified Advanced Rolfer and Rolf Movement Practitioner in the San Francisco Bay Area. During her twenty years of practice, she has assembled an eclectic palette of formal and self-directed training that influence her work, including craniosacral therapy, medical qigong, and Western esoteric studies. Through her poetry, she is experimenting with the language of embodiment that is awakened by Roling® Structural Integration and Rolf Movement. ■

Excerpt from *Touching into Presence Podcast*

Episode Thirty-Three, Published
December 28, 2020

By Andrew Rosenstock, Certified Rolfer®, and Nikki Olsen,
Certified Advanced Rolfer



Andrew Rosenstock



Nikki Olsen

ABSTRACT *During the COVID-19 shutdown, Rolfer Andrew Rosenstock started a podcast called Touching into Presence. In this part of the transcript, Rosenstock and his cohost, Rolfer Nikki Olsen, discuss the insight they've gained from doing the podcast interviews with structural integration specialists and somatic education practitioners.*

Editor's note: This article is a reprint, it was originally published in the IASI 2020/2021 Yearbook of Structural Integration, volume 17, pages 45 to 47. We have made some modifications here for our journal style.

During the beginning of the COVID-19 pandemic, spring of 2020, I found myself [Andrew Rosenstock] out of work and with a lot of time available. For many months before, I had been looking for a podcast on the profession of structural integration (SI) and specifically Rolfering® SI, I was looking for embodiment topics that I could relate to. Many of the podcasts I had previously found felt, to me, either too masculine archetypal, too feminine archetypal, too millennial or just didn't fill the void I was looking for. I believed others may feel similar and I decided to start my own podcast to fill this void.

Born into New England white male life, I was sure I would have bias based on

my culture and upbringing experience, and knew that this would limit what the podcast experience could offer. So I went about to recruit a cohost who could help expand the horizon of what I alone could see. I was fortunate to meet fellow Rolfer Nikki Olsen on a Dr. Ida Rolf Institute® (DIRI) hosted Zoomcast. We hit it off well from the get-go and seemed to have enough similar overlap in our modalities around our work, but also many differences in our views of the work and of our lives, so that the space and presence we could hold when in conversations with guests would be expansive and still also firm. Nikki was the third guest on the podcast and on the fourth episode she was the cohost.

Along the way, what I originally planned and wanted for the podcast has shifted and grown. Below is a transcription of one of our episodes where Nikki and I are talking about some ways the show

While our podcast is way more than just discussing the split of RISI in the early 1990s, the listeners get to hear many points of view on how and why it happened. As our episodes were building, it later occurred to me that this is an important topic to discuss – not for a blame game, but to get a better understanding of the unrelenting passion some people had about Rolf’s work that caused founding members to divide.

has shifted and grown. A topic we seemed to pick up along the way about cross-cultural SI and the question of, is there a need to bridge the gap between International Association of Structural Integrator® (IASI) member schools before we drift even further away.

Summing Up

Nikki Olsen: We wanted to use this opportunity to reflect on the guests we have had and what we have learned. It has been a wild journey.

Andrew Rosenstock: Yes, this has been a journey.

NO: What has been your favorite part of the journey or takeaway?

AR: There are three things I have enjoyed the most. First, is being able to meet like-minded people who I have never met before. Second, it has been a rewarding experience to learn from the wisdom of

our guests. Third, our conversations have still been able to have a personal vibe, even though these conversations are via Zoom. These have been my highlights. Nikki, how about you?

NO: Mine are very similar to yours. What has been super fun for me is that our conversations have not been exclusive to structural integrators just from DIRI. We have had interesting conversations with people from the Guild for Structural Integration and Anatomy Trains Structural Integration. This has really illuminated how we are way more alike than different. Also, recognizing how the slight difference in the various SI schools can be of service to different types of learners. Historically, the split of the original school, the then Rolf Institute® of Structural Integration (RISI, now DIRI), carried some weight that one way was better than the other. While I recognize the pain that was experienced by the founding members with the split, I do think it was a mixed blessing. Different

schools and their uniqueness has helped to spread the genius of Ida P. Rolf, PhD (1896-1979) around the globe.

While our podcast is way more than just discussing the split of RISI in the early 1990s, the listeners get to hear many points of view on how and why it happened. As our episodes were building, it later occurred to me that this is an important topic to discuss – not for a blame game, but to get a better understanding of the unrelenting passion some people had about Rolf’s work that caused founding members to divide.

AR: Yeah, on that note, I will share how I have enjoyed witnessing the biases I had to other schools. I used to assign characteristics to fellow colleagues based on what school they went to. Having these conversations illuminated how silly that was. I could feel my bias melt away. The conversation with Dario Di Lorenzo, who is an advanced SI practitioner who graduated with the European Guild for SI, got me all jazzed up on how the Guild is not all that different from DIRI. I am really hoping that our listeners are also feeling how the various structural integration schools have way more similarities than one may realize. Basically, building the bridge back home.

NO: Couldn’t agree more. In the early stages of the podcast, the original intent was to get information to practitioners of structural integration and somatic practices and also for people who have a curious mind about this type of work. Coincidentally, through the conversations we had, these historical questions came up because we are asking where they studied, who were their mentors, and what were the influences that brought them to SI. We have gotten a lovely opportunity to see how passionate people are about Rolf’s brilliance. At the end of the day, it really is about how we come together to be of service to help people feel better in their bodies. This platform has been so enlightening to get answers that we have wanted to ask.

AR: So true! And to get answers to questions we didn’t know we had. I think about the conversations we had with Kaila June, a registered somatic movement educator, and Magdalena Weinstein, a somatic trauma specialist. Neither are SI-based people, but somatic practitioner powerhouses.

NO: Oh, yes! Those were definitely great talks. What I appreciated about those talks was speaking about the ‘ripple

effect' of how personal somatic work can influence your surrounding community and so on. Sometimes when we are deep in our own process, narcissist tendencies might happen. Becoming a little righteous in one's self-care. Kaila and Magdalena offered great insight into how somatic work can create meaningful sociological changes.

AR: There are so many of our guests that come to mind that are doing such amazing work. It would take too long to go through it all. It is awesome that we created lots of episodes in such a short amount of time. How lucky are we to have this opportunity.

NO: Great love to everyone that showed up for us. What a blessing – for them to give us time to have a chat with our grassroots podcast. Isn't it awesome that after every guest we would report to each other how fun that was? Who knew such rich and meaningful conversations could happen through Zoom.

Touching In

This is a short excerpt from a longer talk that Nikki and I had for a host-only episode (Episode 33). It is meant to highlight just some of what we talk about and what we have learned along the way. This by no means highlights all of what we talk about, there is much more waiting for you to listen to and join in on the conversations.

We'd like to continue to bridge our SI field of work that follows in the footsteps of Dr. Rolf and to do this we need to hear from you! Please follow us at *Touching into Presence* on your podcast player of choice or listen to us here <https://touchingintopresence.podbean.com>. Nikki and I are also reachable via e-mail at andrew@andrewrosenstock.com and connect@nikkiolsen.com.

This is just the start of what we all can do, and it's done together. We look forward to serving the SI community at *Touching into Presence* and building the bridges that bring us and our work back together.

Andrew Rosenstock is a Certified Rolfer, Board Certified Structural Integrator, Certified Yoga Therapist (C-1AYT 1000), meditation teacher, Esalen® Massage practitioner, and a whole bunch more. He is also currently studying towards certification in Rolf Movement® Integration and Biodynamic Craniosacral

Therapy. Outside of bodywork, Rosenstock enjoys travel, reading, and time with his wonderful wife. Find out more at andrewrosenstock.com.

Nikki Olsen is a Certified Advanced Rolfer and Rolf Movement Practitioner. She is currently practicing in Boulder, Colorado. In addition to SI, Olsen is also a personal trainer. She holds a variety of movement certifications ranging from traditional strength training, kettlebells, Pilates, and Gyrotonic and Gyrotonics. You can learn more at nikkiolsen.com. ■

Shut Your Mouth and Save Your Life

By Matthew Berean, MBA, Certified Advanced Rolfer®



Matthew Berean

ABSTRACT *Breathing is important. The recent COVID-19 pandemic, and the need to wear masks, has raised the awareness of our breathing efficiency, or lack thereof. We can last for days without food or water, but for most people, uncomfortable breathing for only a few minutes will bring on a serious stress response. Given its importance, it is surprising how little was known through rigorous scientific study of the nuanced mechanics and biochemistry of integrated, efficient breathing, particularly when sleeping, until only the past decade or so. There are, however, modern clinical breathing practices, which draw on the cumulative observational knowledge of cultures and civilizations tracing back into antiquity. One such approach, the Buteyko breathing method, has been shown in clinical trials to significantly improve the symptoms of asthma (Thomas and Bruton, 2014), while also being effective in addressing sleep apnea (McKoewn, O'Connor-Reina, and Plaza 2021).*

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Background

During the first half of the nineteenth century, the artist and protoanthropologist George Catlin (1796-1872) traveled extensively beyond the burgeoning

American frontier painting and observing the lives and customs of the Indigenous population, which had yet to have significant contact with the westward wave of European expansion driven by the fledgling tide of industrialization and modernity. In the latter years of his life, Catlin published a book titled *The Breath of Life, or Mal-respiration and Its Effect Upon the Enjoyments and Life of Man* (1864), which was later retitled *Shut Your Mouth and Save Your Life* (1870). In this book, Catlin observed that

among the many qualities separating these Indigenous populations from their European counterparts was that the former breathed entirely through their noses, even during physical exertion. Among the Europeans, mouth breathing was rampant, and the prevalence of mouth breathing was correlated with increases in poor health and physical ailments.

On the other side of the world in India, British and European scholars were investigating the links between Sanskrit and the philosophical practice of yoga. It is pertinent to note that the physical practice of postures (asanas), which many in the West associate most with yoga, were traditionally seen primarily as a preparatory step for breath (pranayama) and meditation practices. The prominence and variations of asana practices in modern yoga can be primarily traced to the students of Tirumalai Krishnamacharya (1888-1989) and their widespread introduction of yoga to the West during the middle of the last century. The seminal text on yoga dated prior to the fifth century of the common era and credited to Patanjali defines yoga thusly:

Yogas-citta-vrtti-nirodhah – Sutra 1.2

Yoga is the intentional stopping of the spontaneous activity of the mind substance (Campbell 1963).

Many of the traditional pranayama practices involved progressive instructions for reducing the rate and volume of the breath to conserve and retain the prana (energy) within the body. Some of these progressions of reduced breath related to measuring the decreasing distance the breath could be felt by the hand in front of the face during different activities until it was not felt at all (Buteyko Clinic International 2021). Due to the subtle somatic nature of these practices, it proved difficult to convey the essence of these experiences to Westerners. One of the key principles of Krishnamacharya's approach was to teach what was appropriate for the individual (Mohan 2010). There are accounts from his immediate disciples that he determined that the habitual breathing patterns of early Western students were sufficiently poor as to make them unsuitable for the more advanced pranayama practices (Buteyko Clinic International 2021).

Anthropological studies indicate that the volume of the human visceral cranium,

the size of the face and jaw, has been progressively decreasing for historical populations, which subsequently switched from primarily hunting and gathering to agriculture (Katz, Grote, and Weaver 2017). These changes begin to further accelerate in more affluent subsets of these agrarian populations with the increased access to refined sugars, softer foods, and further changes in diets for those expanding subsets during the early- to mid-eighteenth century (Larsen 1995). One can speculate what, if any, the compounding effects on a population of progressively decreasing volume of the upper airway and exposure to declining air quality due to the increased urbanization and industrialization of Western nations in the nineteenth century may have had on the respiratory health of their citizens during this period. With time, the Western emphasis on speed and efficiency made the less subtle, more physical, practices of yoga far more accessible and palatable. This eventually led to breath practices in the West that mirrored this more robust approach and included fast-paced or large-volume breathing.

Nearly a century after the first Western texts on yoga were produced, Ukrainian-born Soviet doctor Konstantin Buteyko [MD, PhD, (1923-2003)] observed that as his patients' health deteriorated, their respiratory rate increased. He also observed that the high blood pressure he was experiencing was also linked to his chronic hyperventilation. His search for answers eventually led him to early books on yoga and traditional Asian medicine.

Given the information available to Western medicine during the mid-twentieth century, Buteyko reasoned that carbon dioxide was responsible for the change in respiratory rate. He devised a treatment protocol for initiating and habituating slow nasal and abdominal breathing. This protocol eventually became an accepted approach for treating asthma in the Soviet Union. As Western medicine progressed towards the twenty-first century, many of the theories Dr. Buteyko devised about the actual mechanisms by which carbon dioxide affected the breath and body fell out of favor. However, from a clinical standpoint, his practical methodology for habituating nose breathing, and slowly reduced abdominal breathing, still produces results for patients with many forms of breathing pattern disorders.

Dysfunctional Breathing

Breathing pattern disorders (BPD), hyperventilation, or dysfunctional breathing (the terms are interchangeable) are abnormal respiratory patterns that are specifically tied to breathing in excess of metabolic needs, or over-breathing. These patterns, which over time can become habituated, exist on a scale from occasional mouth breathing, frequent sighing, and upper chest breathing, to severe asthma, chronic obstructive pulmonary disease (COPD), upper airway resistance syndrome (UARS), and sleep apnea. BPD plays a part in many chronic conditions such as anxiety, brain fog, chronic fatigue, constipation, daytime

Catlin observed that among the many qualities separating these Indigenous populations from their European counterparts was that the former breathed entirely through their noses, even during physical exertion.

Children who breathe through their mouths have pharyngeal airways that are structurally smaller in volume than children who breathe through their noses (Alves et al. 2011).

sleepiness, depression, diabetes, fibromyalgia, incontinence, insomnia, neck, low back and pelvic pain, panic disorders, premenstrual syndrome (PMS), autonomic disorders (dysautonomia), and more recently, post-acute COVID-19, also known as long COVID (O'Rourke 2021).

Much of the research in the growing field of BPD seems to indicate a couple of disturbing trends. The first is that, left unaddressed, mild symptoms tend to progress on the severity spectrum with age. The second is a significant under-reporting of milder symptoms. With this in mind, the current research indicates that breathing pattern disorders are present in 9.5% of the population (Barker et al. 2013), with 14% of women exhibiting BPD compared to 2% of men (Thomas et al. 2005). It also is present in 30% of those with asthma and 75% of those with

anxiety (Courtney 2016). Women are two to three times more likely to experience panic disorders (Gargaglioni, Marques, and Patrone 2019) and women with panic disorders experience a worsening of their symptoms during the premenstrual phase of their cycle (Nilni, Rohan, and Azolensky 2012; Sigmon et al. 2000).

Sleep Disordered Breathing

Sleep disorder breathing (SDB) is a blanket term that includes UARS and obstructive sleep apnea (OSA) and refers to abnormal respiratory patterns during sleep.

Sleep Apnea

Dr. Christian Guilleminault (1938-2019), a pioneer in contemporary sleep medicine, first coined the term obstructive sleep

apnea syndrome (OSA; Guilleminault, Tilkian, and Dement 1976) and was responsible for the first clinical definition of sleep apnea: any cessation of airflow during sleep of at least ten seconds. Sleep apnea is currently divided into two main categories: obstructive and central, with several phenotypes. A hypopnea is a 50% reduction in airflow, also for ten seconds. The apnea hypopnea index (AHI), later devised by Dr. Guilleminault, is the number of events that occur per hour of sleep, during a sleep study, otherwise known as polysomnography. The AHI is used to classify the severity of sleep apnea (Ruehland et al. 2009).

- Normal: AHI < 5.
- Mild sleep apnea: AHI 5-15.
- Moderate sleep apnea: AHI 15-30.
- Severe sleep apnea: AHI > 30.

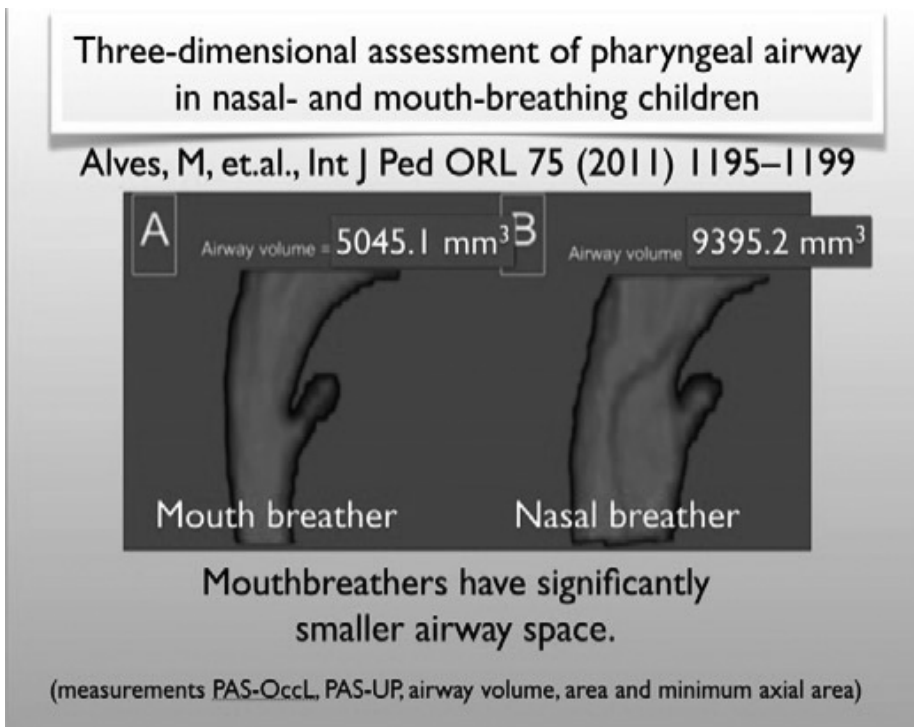
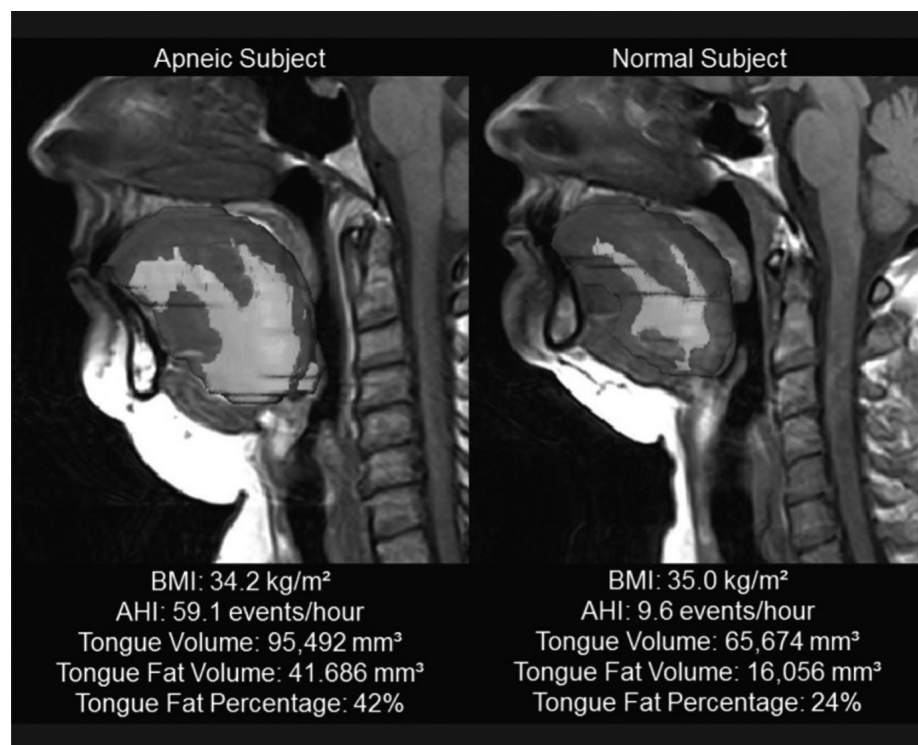


Figure 1: Three-dimensional assessment of pharyngeal airway in nasal- and mouth-breathing children (Alves et al. 2011; Copyright Elsevier Ltd., used with permission, order license ID 1204224-2).

Figure 2: Three-dimensional volumetric reconstructions of tongue and fat within the tongue from a series of 3mm contiguous axial magnetic resonance images. The apneic tongue on the left is much larger and there is increased tongue fat deposition throughout the apneic tongue (Kim et al 2014; Copyright Oxford University Press – Journals, used with permission, order license ID 1204224-3).



The apnea hypopnea index has limitations and at best is an imprecise measure of the physiological impact of OSA and other BPD on the body, particularly when using polysomnography for evaluation.

Upper Airway Resistance Syndrome

Expanding on the study of OSA, Guilleminault and colleagues later identified UARS, which is characterized by increased respiratory effort during sleep, which does not typically present on polysomnography as OSA, and as such will not register as a measured event for the apnea hypopnea index but will result in repetitive alpha wave electroencephalogram (EEG) arousals during sleep (Masri and Guilleminault 2013). These arousals, which are often undetected by the individual, will result in sleep fragmentation and reduce the amount of time spent in deeper restorative stages of sleep. UARS can be thought of on the sleep-disordered breathing spectrum as existing somewhere between snoring and OSA, frequently presenting as excessive daytime sleepiness.

Structural Integration Significance

Of the four phenotypes of OSA the one probably of greatest relevance for the field of structural integration (SI) is pharyngeal critical closing pressure (Pcrit). Along with UARS, both evaluate the habituated relationship of breathing to the neuromuscular structural integrity of the pharyngeal airway volume.

Pcrit is the measure of negative fluid air pressure required to cause a collapse of the pharyngeal airway (Osman et al. 2018). The faster the air moves through the walls of the airway, the greater the inward suction pressure on the walls of the airway itself. Think of sucking a thick smoothie or milkshake through a straw. The faster or harder you draw it through the straw, the greater the likelihood the straw will collapse in on itself. UARS results in a neurological stress response due to the increased respiratory effort, but lies below the collapse threshold of Pcrit.

Children who breathe through their mouths have pharyngeal airways that are structurally smaller in volume than children who breathe through their noses (see Figure 1; Alves et al. 2011). Children who breathe through their mouths also have a higher incidence of attention deficit hyperactivity disorder (ADHD; Goyal et al. 2018). Children with excessive daytime sleepiness have ten times the risk of learning difficulties (Triana, Ali, and León 2016).

A healthy pharyngeal airway ought to be about the diameter of a person's thumb. Unfortunately, in addition to mouth breathing, obesity can often reduce the airway size to the diameter of a pencil due to increased fat deposits in the tongue and other tissues in the throat (see Figure 2; Wang et al. 2020).

Mouth breathing tends to lead to faster breathing and a two-and-a-half-time increase in upper airway resistance (Fitzpatrick et al. 2003). Paradoxically, mouth breathing during sleep also increases the tendency for the tongue to fall back in the mouth due to a low resting position, partially or completely blocking the airway. The collapse of the airway can

These heightened levels of carbon dioxide sensitivity result in frequent unnecessary arousals that can lead to sleep fragmentation, similar to UARS, and increase the risk of morbidity.

Nitric oxide also is a bronchodilator and vasodilator in the lungs. Mouth breathers have been shown to have lower levels of nitric oxide in their respiratory tracts compared to nasal breathers (Triana, Ali, and León 2016).

lead to an apnea event, and depending on the duration and frequency, lead to an increase in carbon dioxide in the body, eventually dropping oxygen levels in the blood (also known as oxygen saturation) below the normal concentration of 95% to 99%. One OSA sleep study showed that mouth-breathing subjects spent 36% of their time during sleep with oxygen saturation below 90% compared to 5% for those breathing through the nose (Subramani et al. 2017). These changes in gas concentrations in the blood can eventually lead the body to rouse from sleep sufficiently to resume breathing. OSA is presently found in about 26% of the male population age thirty to forty-nine and in 9% of premenopausal women within the same range (Guilleminault, Tilkian, and Dement 1976). George Catlin offered the following observation in his book more than a century before Dr. Guilleminault's definitions of UARS and OSA:

That man knows not the pleasure of sleep; he rises in the morning more fatigued than when he retired to rest – takes pills and remedies through

the day, and renews his disease every night (Catlin 1870, 13).

It would be reasonable to conclude that the greater the duration of each apnea event, the greater the risk of severe complications or morbidity (see Figure 3). However, the research suggests that a different phenotype, arousal threshold, has a stronger correlation (Butler et al. 2019). Arousal threshold is tied to carbon dioxide sensitivity: the lower the threshold, the greater the carbon dioxide sensitivity. These heightened levels of carbon dioxide sensitivity result in frequent unnecessary arousals that can lead to sleep fragmentation, similar to UARS, and increase the risk of morbidity.

Unfortunately, as we age, the data on OSA goes from bad to worse. People over the age of forty are six times more likely to breathe through an open mouth during sleep at least 50% of the time (Madronio et al. 2004). Once women reach menopause their risk of developing OSA increases by 200% (Larsen 1995). In adults aged fifty to seventy, OSA affects 43% of men and 27% of women (Guilleminault, Tilkian,

and Dement 1976). Beyond weight loss, the current gold standard for treating sleep apnea is with a continuous positive airway pressure (CPAP) machine, which can be thought of as a vacuum cleaner in reverse. One of the main limiting factors with CPAP use is compliance: 8% of users discontinue use after the first night and 50% discontinue within the first year (Askland et al. 2020). The CPAP approach also addresses symptoms rather than the root causes of the apnea and breathing pattern disorder.

Biomechanics

The key mechanical objective in respiration is to transport the air down to the air sacs of the lungs, the alveoli, at the terminal end of the airway for gas exchange and then expel that air. The upper third of the airway, from the nasal airway to the bronchi, which has a volume of approximately 150 milliliters, is not involved in any gas exchange. The average lung volume for humans is about 4.2 liters for women and 6.0 liters for men (Tortora and Derrickson 2016). Due to the shape of the ribs and the position of the heart in the thorax, the majority of the lung volume, and more critically, alveoli concentration for gas exchange, is inferior and slightly posterior to the relative geographic thoracic center. Transporting air into the inferior portions of the lungs via diaphragmatic contraction is key for optimizing functional breathing mechanics along with the visceral connective tissue glide planes of all the organs and membranes superior and inferior to the diaphragm. Nasal breathing offers increased resistance, which leads to greater diaphragmatic amplitude compared to mouth breathing (Trevisan et al. 2015).

Allergies	Diabetes	Enlarged tonsils or adenoids	Forward head posture
High blood pressure	Mouth breathing	Narrow Maxilla	Nasal congestion
Obesity	Sleeping on the back	Smoking	Snoring

Figure 3: Risk factors for sleep disordered breathing.

Ventilation Rate X Tidal Volume = Minute Volume

	VR		TV		MV
Body	20	X	300mL	=	6L
Alveoli	20	X	300-150mL	=	3L
Body	12	X	500mL	=	6L
Alveoli	12	X	500-150mL	=	4.2L
Body	6	X	1000mL	=	6L
Alveoli	6	X	1000-150mL	=	5.1L

Figure 4: The slower we breathe, the more air we actually get (McKeown 2020). [note that the "150mL" correlates to the approximate amount of air with each breath in the upper respiratory tract that never makes it low enough in the tract for gas exchange at the alveoli.]

Biochemistry

Fortunately, the body is equipped with a number of built-in systems that aid in functional breathing.

Nitric Oxide

One of the more intriguing molecules, which in recent years has been shown to play an important role in respiration, is nitric oxide. Nitric oxide is produced by the lining of the sinuses and nasal airway at about ten parts per million (Martel et al. 2020). It has been shown to have antimicrobial and antiviral qualities while also stimulating ciliary movement in the linings of the airway (Triana, Ali, and León 2016). Nitric oxide also is a bronchodilator and vasodilator in the lungs. Mouth breathers have been shown to have lower levels of nitric oxide in their respiratory tracts compared to nasal breathers (Triana, Ali, and León 2016). Conditioned nose breathing during exercise for six months has been shown to increase breathing efficiency by 22% (Chaitow 2014).

Carbon Dioxide

A common misconception about carbon dioxide in the blood is that it is primarily just a waste gas of aerobic cellular respiration. While this is indeed correct, carbon dioxide is also the primary driver of respiration via the chemoreceptors in the brain stem and carotid arteries. By volume, carbon dioxide currently makes up about 0.04% of the earth's atmosphere, which results in partial pressure of 0.3mmHg (Wikipedia).

However, the ideal partial pressure in the body needs to be *much higher* at 35mmHg to 45mmHg (Messina and Herbert 2021). Carbon dioxide in the blood actually facilitates the release of oxygen from hemoglobin in the red blood cells (Lum 1975). Interestingly, one of the primary effects of over breathing is expelling excessive carbon dioxide from the blood and developing hypocapnia, carbon dioxide of less than 35mmHg. Hypocapnia, particularly during sleep, can result in bronchoconstriction along with a reduction in the activation of the upper airway dilator muscles (Sterling 1968; Jordan, McSharry, and Malhotra 2014). While there are additional drivers, there is clear evidence that carbon dioxide plays a role in respiratory rate and other physiological disorders (Courtney 2008). Modern yoga and other breathing practices which involve rapid cycles of hyperventilation followed by long breath holds are simply a byproduct of artificially dropping carbon dioxide levels to significantly delay the stimulation of the chemoreceptors to signal a regular respiratory response.

Habitual Respiratory Rate

Dr. Buteyko's observation of the relationship between health and respiratory rate still holds as a vital sign of health in the body today. For an adult, a resting respiratory rate of twelve to sixteen breaths per minute is considered normal (Barrett et al. 2012). Hyperventilation, a ventilation rate in excess of sixteen breaths per minute, is a sign of stress and increased activation of a sympathetic

nervous system response. For women, symptoms of premenstrual syndrome are directly related to hyperventilation as progesterone levels increase in the blood along with carbon dioxide sensitivity. During the luteal phase of a menstrual cycle, carbon dioxide levels can drop by up to 25% (Ott et al. 2006). Mild asymptomatic asthma is not associated with hyperventilation but is associated with decreased arterial carbon dioxide (Osborne et al. 2000).

As a habitual ventilation rate (VR, breaths per minute) increases, the depth of each cycle of ventilation tends to decrease [also known as tidal volume (TV) measured in milliliters of air]. Since the upper 150 milliliters of the airway ends up being dead space with respect to alveolar gas exchange, as the VR increases, the minute volume (MV = VR x TV, volume of air per minute) at the alveoli decreases. Respiratory minute volume is the amount of air inhaled or exhaled from the lungs in one minute (Gibson 2012). The key factor is not how much air is taken but rather where in the respiratory tract it goes. The good news is that decreased respiratory rates towards a ventilation rate of six breaths per minute have been shown to increase tidal volume at the alveoli and improve ventilation efficiency by 20% even while the minute volume remains the same (see Figure 4; Russo, Santarelli, and O'Rourke 2017).

Of course, the ancient yogis in their texts on prana (energy) and pranayama hit upon the importance of reduced breathing and autonomic nervous system regulation at least five centuries prior in the *Hatha Yoga Pradipika* (Muktibodhananda 2014).

Asthma during the night	Cold hands and feet	Cough or wheeze	Difficulty falling or staying asleep
Dry mouth upon waking	Excessive talking	Fatigue first thing in the morning	Frequent sighing or yawning
Incontinence during the night	Lack of physical exercise or exercise induced bronchoconstriction	Nasal congestion upon waking	Snoring

Figure 5: Some of the symptoms associated with breathing pattern disorder.

When prana moves, chitta (the mental force) moves. When prana is without movement, chitta is without movement. By this (steadiness of prana) the yogi attains steadiness and should thus restrain the vayu (air) – Chapter 2, Verse 2 (Muktibodhananda 2014, 150).

Assessment

Control Pause: One simple way to begin to evaluate where on the spectrum of functional efficiency of breathing a person is, particularly with regards to sleep, is referred to in the Buteyko breathing method as a control pause. The control pause provides an initial reference point of the efficiency of breathing mechanics along with the body’s sensitivity to carbon dioxide in the blood. The control pause is best measured first thing upon waking, or after resting for five to ten minutes, and requires a stopwatch. While sitting upright or laying down with the spine elongated:

1. Take a normal breath in and out through your nose.

2. At the bottom of a normal exhale, pinch the nose with your fingers and hold your breath. Do not contract muscles to expel more air than normal.
3. Time the number of seconds from the bottom of your exhale until the *first* definitive desire to breathe is felt, or the *first* involuntary contraction of the diaphragm or the secondary muscles of respiration.
 - a. This is not a measure of how long the breath can be held.
4. When this *first* desire to breathe or contraction is felt, note the time, release the nose, and resume breathing normally.
 - a. If the first breath upon resuming breathing is of greater volume and speed than the previous breath, the breath was held for too long. Wait at least several minutes and repeat steps 1 to 4.

Initial control pauses, which are taken later in the day after waking, can be anywhere upwards of 20% higher than upon waking. Women who are in the luteal phase of

their cycle can also expect a reduction in their control pause of upwards of 25% (Pizzorno, Murray, and Joiner-Bey 2015). A control pause of under twenty to twenty-five seconds is indicative of some form of BPD and may present with a collection of symptoms (see Figure 5).

Modern Buteyko breathing practices are designed to teach how to breathe light, slow, and low. The practices do this by improving nasal respiration and diaphragmatic contractions to lower breathing depth while decreasing the speed of respiration and the body’s sensitivity to carbon dioxide. Regular practice will slowly change the body’s biochemical benchmarks of oxygen and carbon dioxide along with pH. Over the course of weeks, months, and years as the control pause increases, the severity and frequency of many of the above symptoms will abate. The severity and duration of symptoms will strongly influence how long they will persist even with regular practice. A typical client will initially see an improvement of two to five seconds in the first several weeks. Progress could slow considerably for six to eight weeks after that as the body adapts to the physiological changes.

Each time the control pause improves by five seconds, there will be a measurable improvement in symptoms for the client. As the control pause moves above twenty-five seconds, it is expected that symptoms will not be present unless exposed to stress. The control pause will be negatively influenced by higher altitudes and positively influenced by the amount of regular physical activity. If the control pause regularly measures forty seconds or greater, which can take a year or more to achieve, the symptoms will no longer be present even when exposed to moderate stressors.

If a client’s breathing pattern disorder is not effectively addressed within the greater context of the goals of SI, it will be more difficult to facilitate the change the client and the practitioner are looking for.

Implications

Whether an SI practitioner is working within the formal structure of a session series progression or taking a more non-formulaic approach with a client, tracking breathing as a means of monitoring neural activation is an integral part of connecting the physical form with its space potential in gravity. Several sessions in a traditional series progression may have a greater direct focus on the anatomical mechanics of integrated respiration. However, since many of the symptoms that clients present tend to be chronic, it is prudent to examine the habitual breathing patterns particularly as it relates to the quality of sleep.

The vast majority of tissue repair occurs during deep and rapid eye movement (REM) sleep (Adam and Oswald 1984). Clients who are not able to consistently obtain restful sleep are at greater risk for many of the chronic conditions outlined previously. If a client's breathing pattern disorder is not effectively addressed within the greater context of the goals of SI, it will be more difficult to facilitate the change the client and the practitioner are looking for. When working with clients who report experiencing any of the symptoms of BPD or if clients do not seem to be retaining changes between sessions, examining their functional breathing could be a key missing piece to support lasting change.

Applications

Session Observations

Track the observations in Figure 6 during individual sessions and longitudinally over the length of the therapeutic relationship.

If BPD are suspected through observations, a control pause evaluation, or through a medical diagnosis, there are several simple approaches that can begin to reduce the severity of the impact on the body system as a whole.

Education

Becoming more familiar with one's own breathing patterns is the first step of titration for clients. Conveying the importance of breathing to clients, even with levity, is typically an easy sell. Much of the detail outlined in this summary can be included as needed into any session interaction to build greater awareness of the imperative of efficient functional breathing.

Shut Your Mouth

Having built an awareness and an increased desire to take action to breathe through the nose twenty-four hours a day, seven days a week, and keep the mouth closed, particularly when sleeping, there are several easy at-home ways of doing this with tape.

- *3M Nexcare/Paper Tape 1"* – Medium hold, 4-6" strip covers both lips
- *Simply Breathe Lip Seal* – Prepackaged contoured strips, covers the lips
- *Myotape* – Prepackaged Kinesio tape, encircles lips, does not block mouth, has stretch, stimulates cutaneous nerves of the lips to contract

Have a client test the mouth tape and their comfort in breathing only through their nose for twenty minutes or more during their waking day. If their control pause is under five seconds, mouth tape is not

recommended until the control pause increases. If a client is uncomfortable taping their mouth, experiences any feelings of panic or anxiety, has a history of drowning or suffocation, or finds it difficult to breathe only through their nose, mouth tape is also not recommended. It is contraindicated to cover the lips of children under the age of five with tape during sleeping. A product that surrounds the lips while not blocking them, such as the Myotape, is preferable and should still be tested for comfort during waking hours and prior to sleep.

Buteyko Breathing Method

If a client presents with a more complicated list of BPD symptoms, a control pause under five seconds, or simply wishes to explore integrating functional breathing more fully into their process, working with a Buteyko breathing method instructor will support the session goals of SI. Similar to SI, Buteyko breathing method is focused on long-term transformation. Customized individual sessions or group workshops will provide clients and students with a structured daily practice to increase the control pause through:

- Unblocking nasal congestion,
- Improving diaphragmatic breathing efficiency,
- Decreasing carbon dioxide chemosensitivity,
- Improving cellular biochemical gas exchange.

With the Buteyko breathing method, over weeks, months, and years, an individual will learn to breathe *light, slow, and low* through the nose. For more information about the Buteyko breathing method and certified instructors, please visit Buteyko Clinic International at Buteykoclinic.com.

Lips that are apart at any time when not speaking	Yawns or sighs occurring at least every few minutes	Any shifts from nasal to mouth breathing at times during hands-on or movement work
Changes in the speed of inhalation and exhalation	Upper chest breathing or a VR>16 (1 breath every 3.75 seconds or less)	Regular changes in volume of breath

Figure 6: Observations to track throughout SI sessions.

Conclusion

The wisdom of the integration of breath and health has been discovered and lost - only to be discovered anew, time and time again. In its current iteration, we have the ability to understand through technology what the ancients undoubtedly knew instinctively for nearly all of human history. By embodying this rediscovered wisdom, buttressed by the clarity of scientific research, we can return to our biological roots with a physiological form more seamlessly integrated on a biomechanical, biochemical, and habitual level with the breath.

Matthew Berean, MBA, Certified Advanced Rolfer, Registered Yoga Teacher – 500-hour, Orofacial Myofunctional Therapist, Certified Buteyko Breathing Method Instructor. In addition to his SI training, Berean has extensive training in osteopathy-based visceral, neural, vascular, and cranial manipulation. He is a Certified Buteyko Breathing Method Instructor, Orofacial Myofunctional Therapist, Hatha Yoga teacher, and meditation instructor in the Drikung Kagyu lineage of Tibetan Buddhism. For more information, please visit MandalaAwareness.net

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Reviews

Books by physiotherapist Andrzej Pilat; and Certified Advanced Rolfer®, Rolf Movement® practitioner Bill Harvey.

Myofascial Induction™ - An Anatomical Approach to the Treatment of Fascial Dysfunction, Volume 1, The Upper Body by Andrzej Pilat (Handspring Publishing, 2022)

Reviewed by Peter Schwind, PhD, Advanced Rolting® Instructor

Andrzej Pilat is a physiotherapist, an author specializing in the fascial system, and his newest book, *Myofascial Induction – An Anatomical Approach to the Treatment of Fascial Dysfunction, Volume 1, The Upper Body*, would be quite useful for Rolfers® and structural integration (SI) practitioners. He gives a detailed description of the practice of myofascial induction, accompanied by high-quality photos and videos of fascia, offering a profound conceptual framework for manual therapists. This review does have some bias, as I am impressed by Pilat's body of work overall; he has made a significant contribution to fascia-oriented manual therapies. Pilat has been thinking, rethinking, reflecting, and speaking on the world of fascia for years. I remember meeting him at conferences and in personal talks, he had such a unique perspective on our profession and the details of fascia research. And so, I state upfront that you may find this review is not an objective critique; it is warm support for a colleague that I have been a fan of for many years, so of course, I recommend this seminal text he has published.

The standout brilliance of *Myofascial Induction* is the illustrations and accompanying videos of unembalmed cadavers to demonstrate the connectedness and interrelatedness of various systems. Pilat's images are more than great photography; there is an aesthetic dimension, a sense of the beauty of the living organism, and deep respect for the structures that are not alive anymore. Each time I read a new page, I felt invited to explore new paths of learning about human tissue. There are practical manual demonstrations and valuable

complementary drawings, all of which offer a new way of observing form and understanding the interconnectedness of the fascial system underneath the skin.

The written content is an ocean of scientific research about fascia and manual therapy. It seems to me that Pilat has been following all the progress of modern fascia research with dedication, intelligence, and respect – studying this multidisciplinary field from atop a philosophical 'hill' and pondering this ocean of knowledge for the benefit of his physical therapy clients. He encourages the reader to be skeptical of some of the biases baked into our contemporary scientific approach concerning complex systems.

For the Rolfers who have had the chance to participate in human dissection, it most likely has been with embalmed cadavers. This allows us to learn about the topographical location of the parts of a person's body; however, it does not show us the actual connectedness of all these systems. This is especially relevant as we want to understand the dynamics of the inner spaces within our bodies, the three-dimensionality of the cavities, and the sub cavities within. Medical institutions that offer classes with fresh cadavers could give more reliable information to manual therapists, but in practice, these dissections are often focused on pathologies and little attention is paid to a systemic perspective. This is the space that Pilat's book fills.

The author starts the first of the seventeen chapters with a concise introduction about myofascial induction and an abundant amount of research regarding the efficacy of myofascial induction. The reader is invited to consider the difference between Pilat's interventions and most of the other manual approaches that work with the fascial system. It's a matter of distinguishing the meaning of 'induction' from the meaning of 'release'. This difference is a throughline in all seventeen chapters.

These are the chapters that had the most impact on me: Chapter 4, embryological aspects of the fascial system; Chapter 7, movement and force transmission in the fascial system; Chapter 8, the neurodynamics of fascia; and Chapter 9, fascial trauma and dysfunction. These four chapters cover a wide spectrum of research, the results of which have led to a revolution in the way we look at fascia today. Pilat reviews these findings,

evaluates their meaning for manual therapy practices, and considers where his ideas may be open to criticism as part of rigorous scientific standards. Following his discussion is a second part of the book where numerous manual therapy techniques are presented.

I first met Pilat in 2017 at the "Myopain Conference" in Bangalore, India, where I listened to his lecture and participated in his workshop. It was there that I realized, Pilat possesses a unique ability to bridge the views of the fascia researchers and the views of practitioners. Frequently these two groups are in conflict, if not opposition. On the one hand, practitioners tend to emphasize a sort of practical 'empiricism'; that is to say, we weigh heavily our experience of success with single cases, sometimes spectacular cases. On the other hand, researchers prefer to focus on the 'objective' details that can be documented or measured from large-scale studies. Historically, these two groups have been at odds. Thankfully, in recent years there is a path along which the two do not necessarily exclude each other, where one can inform the other, and vice versa.

Since that conference, I have been awaiting the publication of this book, and thankfully now it is here for us to enjoy. I did tell you, full disclosure, that my review comes with a positive bias for the work of Pilat. I cannot help but recommend this work as a milestone for all schools of manual therapy. ■

Breathing, Mudras and Meridians: Direct Experience of Embodiment by Bill Harvey

(London: Handspring Publishing Limited, 2021)

Reviewed by Katy Loeb, Certified Rolfer®

From its title alone, *Breathing, Mudras and Meridians: Direct Experience of Embodiment*, one may imagine that our colleague, Rolfer, Rolf Movement® practitioner, and biodynamic craniosacral practitioner, Bill Harvey, has cast an ambitiously wide net into the murky seas of embodiment. As someone with little knowledge of mudras, meridians, and their origins, I wondered if this book would provide an accessible entry point. Harvey's text presents a clear mission from the get-go: to be an experiential and experimental manual to find ourselves in these times of disinformation, distrust, and disconnection. Harvey postulates

that our lived experience of embodiment is our most trustworthy power, the key to our overall health, and the clearest way to perceive our vitalities – the breath, mudras, and meridians provide trusty centuries-old inroads. It is clear through the content and voice of this book that it is written to be of service.

Harvey presents his material in short, approachable chapters that progress naturally. He opens by asserting that we must “reconceive the body” by moving away from anatomy and toward vitality (Harvey 2021, 10). Harvey gives several reasons why anatomy and even fascia’s existence alone cannot be our organizing principle – the most compelling for me is his reminder that anatomy has never been “neutral” (Harvey 2021, 1). Anatomy has been weaponized for centuries to support many evils, including the transatlantic slave trade. (I respect Harvey for not wasting page space explaining this; it is not his job. Any resource on the history of phrenology and physiognomy during the aforementioned historical period will elucidate.) Even those of us touch practitioners who stress about remembering detailed anatomy and *knowing where we are* cannot discount the criticality of breath to our work and the secret sauce of embodiment. The structure of Harvey’s argument to retreat from anatomy, however, does betray the possibility of, say, a constellation paradigm for embodiment. Maybe it is anatomy – along with its torrid history – and breath – and other factors that form a dimensional web of understanding.

To transition into the meatier, didactic portion of the book, Harvey locates his exploration of this material in the personal, in this case, his own journey as a human, practitioner, and teacher of how to integrate bodily sensations, spirituality, and verticality. Harvey brings a vast exploration of Rolfing® Structural Integration (SI), biodynamic craniosacral, Ayurveda, and traditional Chinese medicine (TCM) to the pages of this volume to explore the throughlines of breath and movement to improve our vitality and wellbeing. It is, frankly, impressive how Harvey has structured this book by layering and titrating the importance of breath and sensation. As a newer practitioner, his text provides accessible language and techniques to explain why breathing is critical for my clients and me. From being a direct pathway to our autonomic nervous system, to the more

spiritual or meditative aspects, Harvey advocates clearly for how breath can be a barometer for progress, self-awareness, and even self-regulation. Most compelling for me is Harvey’s assertion that “breathing adds the dimension of the present time to all the processes in which we engage” (2021, 19). The breath anchors us within ourselves in time and space. This is empowering in our current political, social, and personal realities.

The middle of Harvey’s volume offers an introduction to mudras and meridians and how to use them to contact places within ourselves. Harvey makes it easy to follow along with color photographs, didactic images of meridians, and written descriptions throughout. Several chapters offer mudras to work with specific organs, diaphragms, Ayurvedic Vayus, and TCM meridians. He also provides step-by-step experiential exercises to cultivate “inner spaciousness” (Harvey 2021, 173). Harvey packs in so much information that this book demands titration, revisiting, and layering on more experiential exercises as desired.

I found Harvey’s chapter on ‘skin-breathing’ particularly helpful, even as a ‘pre-mudra’ entry point. Harvey patiently walks readers through various combinations of hand and finger positions, inviting us to notice how the breath changes location or feeling within the body. He believes that our “superpower” is our ability to sense breath with a well-intentioned touch, so breath and attention are “intertwined” (Harvey 2021, 43). It is a kind of magic, the sensation of blood, warmth, and attention simultaneously coming to a body part.

Harvey’s background in biodynamic craniosacral therapy very much strengthens his work. He states that modality presupposes that the client is already in the process of self-healing and that we as practitioners do not fix people. Our job is not to sculpt but to guide. Throughout the instructive chapters, Harvey’s voice is compassionate, full of humility and respect for his work and the traditions he has studied. For example, at multiple points, Harvey acknowledges that, having not grown up within Ayurvedic traditions, his entry point to the work yields a different experience and meaning. He does not appropriate the tradition, but rather shows his curiosity and respect. His languaging around this is a worthwhile model for any of us who work with traditions not indigenous to our culture or society.

He drives home his mission by modeling how to prioritize one’s phenomenological experience and, as such, does not pretend to know how it ‘should’ feel or assert to have had an authentic experience of, say, a Vayu of Ayurveda.

Moreover, Harvey gives us plenty of leeway to just experience – to try something new. He is quick to assuage that for those of us who do not come from a meditative tradition; it may seem very challenging to connect with meridians. Harvey maintained my curiosity rather than let me fall into overwhelm with the amount of material, perhaps revealing his experience as a seasoned teacher. Again, this serves his objective to foster self-awareness, as throughout the volume, he allows us to come up for air from the density of the material to remind us that this is all meant to serve. These practices and mudras are meant to ground us so that we are more equipped to show up in our lives.

In case you were concerned that this book excluded any discussion of Rolfing SI, fear not. Harvey discusses and eventually concludes, for example, that the ‘Line’ is TCM’s central channel, or Ayurveda’s Sushumna. He asserts that “fascia is the bridge between Western scientific knowledge and Eastern phenomenological, evidenced-based scientific knowledge” (Harvey 2021, 68). The Line allows us to converse with many traditions and concepts simultaneously if we allow it. Harvey also devotes a chapter to meridians and a functional walking pattern, posing the inquiry of how qi plays a role in effortless movement.

Harvey concludes with the same compassionate message he began with, reassuring us that the Western mind-body split does not have to be a permanent fixture. Through breath and meditative practices, we can reclaim our connection to self, as well as our inherent connections to the Earth and our individual spiritualities. Always centering the applicability and real need for awareness, he writes: “We are our own authorities for any question we may have about our lives. We can pose the question, connect ourselves to above and below, then we will feel the true answer. That answer is never going to be racism, nationalism or violence” (Harvey 2021, 178). Not only is this an ambitious and powerful conclusion, but it elevates the hope that in our work with ourselves and our clients, any change gained has the potential to be bigger than we may perceive. ■

From the Chair of DIRI's Board of Directors

Dear Members,

The Dr. Ida Rolf Institute® (DIRI) Strategic Plan* for 2022-2025 has been completed by board of directors. This was an extensive process, involving input from members, faculty, executive director, and staff [see also page 44 for more information]. A member survey was composed and administered by board member Dan Somers, Certified Advanced Rolfer®, Central and Mountain USA Representative of DIRI's Board of Directors, who also presented two ConnectMembership meetings with quantitative and qualitative data. The video is on the 'Member Only' page of the DIRI website. In addition, input was gained during a faculty meeting (see below).

Focus groups were designed by Christina Howe, executive director, and Orange Identity (OI), DIRI's marketing ally. An OI member conducted the focus groups in order to provide a space for anonymous feedback. Faculty, staff, and members also participated in focus groups, and comments were collected and ideas incorporated into the strategic plan. The board was dedicated to bringing in the voices of all stakeholders in the DIRI community and is pleased to be able to represent as many voices as possible in this process.

Finally, the board of directors met in November 2021 for a face-to-face facilitated meeting to bring together feedback from all attendees, to brainstorm on where our passion lies with our work, and how to bring that into a preliminary draft plan.

In addition, a faculty summit was held online, with faculty members, discussing the vision for how this thriving organization can look in the years to come. There was much discussion, and richness, that emerged from the talks. An important focal point was revealed – that our work, community, students, faculty, and board, are keenly invested in the embodiment elicited in our work. We tried to capture this overall sense of purpose in the final draft of the strategic plan.

What is embodiment and why does it matter? Most of us have a sense of the transformation that occurs when one goes through the Rolwing® Structural Integration (SI) Ten Series. As Rolwing SI professionals, we are aware of the further changes, including the embodiment of the work, that happened while going through the DIRI training. This is difficult to adequately describe in words, though most of us do have an idea of what it feels like.

How do we describe that to prospective students? Transformation, embodiment, grounding, and space – those qualitative descriptors are appropriate but do not communicate the entire experience. When I trained, I know I was not the same person coming out of that training in March of 1992 that entered the training in September 1991. That change has continued to the present time and is enhanced daily by working with clients in my office. This, and the fact that I am always presented with opportunities to learn, are two great attractors for my continuing work past the first thirty years of my practice.

How would you describe your experience working with the Rolwing SI process with your clients? When clients ask how they might become Rolfers, do you encourage them? At present, DIRI faculty member Brett Linder is working with a group of Rolfers and students to create a brochure that you can give to those who are interested in becoming Rolfers, outlining the privileges and possibilities of doing this work to help people become more of who they can be through transformation and embodiment within the DIRI training. Do you have some ideas about how that could be transmitted to potential future Rolfers? Please reach out to us at info@rolf.org, and share your ideas.

The ConnectMembership meetings have been on hold this year as we attend to other matters. However, we would like to restore them to a regular schedule. Would you be interested in helping to plan and schedule speakers to share particular aspects of the work or other topics of interest? Please reach out to info@rolf.org.

Again, many thanks to our members, faculty, staff, and board, for helping to create a strategic plan to guide Rolwing SI and Rolf Movement® Integration fully into the forefront of the health and wellness communities, enhance our membership experience, and position DIRI as the leader in SI, Rolf Movement Integration, and somatic embodiment education. We, the board, administration, staff, and faculty of DIRI are grateful to you, the members, for your participation in keeping this work alive and well represented in your communities throughout the world.



Libby Eason, Board Chair

* For a copy of the 2022-2025 Strategic Goals, go to the Members Only section of the DIRI website.

Institute News

Basic Overview of the Key Strategic Goals and Key Strategic Initiatives.

A host of action items has been added to each of these initiatives, in order to map the process of getting to completion over the next three years.

1.0 DIRI is recognized as a top-tier accredited school in the fields of manual, movement, and somatic embodiment education.

1.1 Curriculum for the certification programs meets the highest standards in the field.

1.2 A proposal for a professional degree program is developed in cooperation with a major university.

1.3 The DIRI journal is the leading publication in structural and movement integration.

1.4 DIRI supports research in the field of embodiment.

2.0 Member practices are thriving.

2.1 Proof of concept for a membership/client DIRI application (a DIRI app) for mobile phones is researched, developed, and planned.

2.2 A regional membership network is created and active.

2.3 The Rolfing SI brand is nationally recognized.

3.0 DIRI is financially sound through expansion in and of the marketplace.

3.1 Three campuses are established with fully enrolled programs.

3.2 The trademark value assessment is completed and communicated to membership as part of a capital development plan.

3.3 A planned giving campaign is in place, including policies, public endowment, and planned giving management for receiving annuities, property, etc.

Upcoming USA Classes 2022-2023

2022-2023* Rolfing® SI Basic Training

BOULDER, CO CAMPUS

Program	Start Date
P4.22	October 3, 2022
P1.23	March 13, 2023
P3.23	July 10, 2023
P4.23	October 2, 2023

2022-2023 Rolf Movement® Integration Certification (Intensive)**

BOULDER, CO CAMPUS

Course	Start Date
RMI 1.23	January 23, 2023
RMI 2.23	March 20, 2023
RMI 3.23	May 22, 2023
RMI 4.23	July 24, 2023
RMI 5.23	September 18, 2023
RMI 6.23	November 27, 2023

2022-2023 Advanced Training

BOULDER, CO CAMPUS

Program	Start Date	Instructors
AT1.22	Part 1 / September 5, 2022 Part 2 / October 31, 2022	Russell Stolzoff with Bethany Ward
AT2.23	Part 1 / June 5, 2023 Part 2 / September 11, 2023	Juan David Velez with Rebecca Carli-Mills
AT1.23	Part 1 / October 19, 2023 Part 2 / February 15, 2024	Tessy Brungardt with Valerie Berg

* All classes including continuing education can be found at rolf.org/courses

** The RMI classes listed are for our 30-Day Intensive Program and includes six parts. We also offer a Workshop Format that can be completed over time for added flexibility from various USA locations.

Dr. Ida Rolf Institute Europe

For Rolfing SI and Rolf Movement Integration courses in Europe, look at <https://rolfing.org/find-a-course> and contact Martina Berger for more information. martina.berger@rolfing.org

Upcoming Continuing Education Courses

The Dr. Ida Rolf Institute® is committed to cultivating academic growth and therapeutic skills in all of its graduates. Continuing education studies can cover a broad range of relevant subjects. Certified Rolfers® may take workshops in specific manipulative techniques or may explore other related subjects such as craniosacral therapy or visceral manipulation. Classes are continually being added – please visit www.rolf.org/courses for the most recent updates, or to register.

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