Structural Integration

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Cover image: Briah Anson and some of the many animals she has worked on using the principles of Rolfing Structural Integration applied to animal structures.

Ida P. Rolf developed and taught Rolfing® Structural Integration (SI) for the human body, but that has not stopped our community of innovators from applying the Rolfing conceptualization of structure in gravity and fascial touch to animals, usually starting with our own pets. Some Rolfers™ have taken it much further, and made work with animals a centerpiece of their practices, particularly those working in the equine (horse and rider) communities. But how many of us have considered applying Rolfing methodology to an eagle, or a hamster? Briah Anson has ventured deep into this territory, as the photo gallery on the cover of this issue attests.

Anson's article, and a chapter about working on a wild moose (from her book *Animal Healing: The Power of Rolfing Structural Integration*), open our Rolfing SI and Animals theme, followed by Lauren Harmon, Sue Rhynhart, and Robert Rex addressing aspects of the work, both structural and movement, for horse and rider. Then we hear about Igor Simões Andrade's Rolfing practice in the Amazon, which includes aquatic work assisted by *boto cor de rosa*, the pink river dolphins. We round out the theme with stories of how domestic animals have initiated engagement with Rolfers, and what transpired: Heather L. Corwin shares how play with her cat deepened her experience of Sensory Awareness, and Liz Gaggini relates how a perceptive Chihuahua made good use of her presence, directing the session she wanted from the visiting Rolfer.

The discussion of animals leads us to the fact that we humans also are animals. We know this from Darwin's theory of evolution, but how far have we have drifted from understanding our animal nature and its implications? Test this in yourself by considering a question posed by Norman Holler: "What might the cultural/spiritual shift be if we were to consider all doctors of medicine to be veterinarians?"

Let that percolate and consider what we have to offer in this theme of The Human Animal from a variety of angles, first the study of anthropology and/or paleontology that Matt Walker, Michael Boblett, and Richard F. Wheeler bring to bear. Walker opens our theme with a contemplation of the human animal vis-à-vis the other 'earthlings' among us. This is followed by Boblett's consideration of the evolution of bipedalism and the human foot, drawing on the latest discoveries. Then we have Wheeler's thesis, drawing on vertebrate paleontology, that Rolf's 'lateral line', as depicted pictorially in her book, needs modification to account for the curvilinear structure evident in all bones. As he states: "There is linear order in the body and it is curved."

Further articles take us into particular systems: Lina Hack offers a concise outline of polyvagal theory, and Barbara Drummond shares how humans have both reptilian and mammalian respiratory mechanisms and the implications of that for structure/function. Then we conclude the theme with considerations of how the human animal lives in his environment – both the outer environment (Brooke Thomas's interview with Frank Forencich) and the biological environment of our animal bodies (Holler's plea that we 'acknowledge the animal under our suit').

This issue also brings an interview with Hiroyoshi Tahata on The Art of Yield (a significant development in Rolf Movement® Integration), reportage from the Fourth International Fascia Research Congress and the First Biotensegrity Summit, a meditation on 'a personal and professional relationship with gravity' from Caryn McHose, and further considerations on 'the three-dimensional foot' from Michael Boblett.

Anne F. Hoff
Editor-in-Chief

Rolf Movement® Faculty Perspectives

The Art of Yield: An Interview with Hiroyoshi Tahata

By Hiroyoshi Tahata, Certified Advanced Rolfer™, Rolf Movement Instructor and Kathy McConnell, Certified Advanced Rolfer, Rolf Movement Practitioner

Note from the Editor: In 2016, U.S. workshops on the Art of Yield will be held in Santa Cruz, California: Yield 1 dates are April 13-16 and Yield 2 dates are April 19-22. Contact Carol Agneessens for more information at carolagneessens@mac.com.

Introduction by Interviewer Kathy McConnell

'The Art of Yield', developed by Rolf Movement instructor Hiroyoshi Tahata, has been described by Mary Bond as "an exploration in being fully present and in observing the whole again and again."

I attended a workshop on The Art of Yield with Tahata in April 2015. Since then, I have been weaving various aspects of his innovation into my sessions with good results. In his method, sessions begin with the practitioner bringing awareness to his/her own body sensations, then grounding him/herself, and finally expanding awareness to include the client, and the space in the room. This all happens before making physical contact with the client, and is what creates the 'field'. The practitioner then employs a technique called 'conditioning'. Conditioning prepares the body for change by applying a light touch, most often with the back of the hand, in various places on the body. The purpose is to ground the client, set up scaffolding for cells, and animate subtle waves of motility. Once this first part is complete, the rest of the interventions are equally gentle and brief. After each one, the practitioner steps away from the table to scan and track changes. The client's system will give directions about where to go next when the practitioner is acutely receptive. Typically, more time is spent away from the body than actually touching the body during a yield session.

In my own practice, I have found that beginning sessions mindfully, with the intention of creating a field of change, sets a tone that helps me maintain a rich presence throughout the session. As long as I keep bringing my awareness back to my body, specifically my belly, I am able to engage the flow within the field. Time slows down and

Hiroyoshi Tahata

Kathy McConnell

my intuitive perception emerges. My hands seem to know where to go, before thoughts about what I want to accomplish invade the space. Everything feels more malleable; my breath, my body, and, best of all, the client's tissue. Strategizing with my thinking mind has become secondary to staying present.

Feedback from clients has been very positive, in part because integration is inherent to each contact. They have been surprised at how effective the light touch is, as have I. One of my longtime clients expressed it this way: "It seems like you are doing less and I am feeling more." The essence of my practice is evolving in a new direction. The work now is in being present with myself, the client, and the third organism that is activated by the relationship (the field).

This interview was done via email, and as English is not Hiro's native language, it has been edited for clarity.

Kathy McConnell: Please describe the Art of Yield approach to Rolfing® Structural Integration that you have developed.

Hiroyoshi Tahata: The Art of Yield stimulates the motility response in living tissue, which promotes a system-wide coherency that has profound transformative potential. The practitioner's touch invites a very deep relaxation in the whole body-mind system, facilitating decompression of joints and core-space expansion. It evolved in response to the need to provide structural integration to people who could not tolerate the classical myofascial release techniques typically used in Rolfing SI. The Art of Yield demonstrates that effective structural change can be achieved through gentle and brief, but precisely timed, touch. It is based on the concept that change becomes more lasting and meaningful by engaging the client's own self-regulatory intelligence, rather than forcing change that the practitioner believes needs to happen.

The perceptual state of the practitioner is key for this work. It is important to attend to your internal sensations, as well as the sensation of the space around you, including the client, consistently throughout the session. This state enables a palpable flow that assists the practitioner in tracking the emergent wave of motility. In addition, orienting around perception and interoception engages presence, which is essential.

KM: How did the Art of Yield evolve?

HT: I am relatively sensitive to pressure, so I was looking for a way to touch people in the way that I would like to be touched. I saw many Rolfers hurting themselves by using too much pressure with elbows, knuckles, or fingers in their practices. We are body/wellness professionals teaching others how to live and move with more ease. There should be a consistency between what I am doing and what I am teaching the client. I wanted to find a way to work with more ease.

Just after becoming a certified Rolfer in 1998, I took a gentleman in his eighties through a Ten Series. He was very satisfied with the work because his tinnitus improved. However, the Series didn't yet feel complete for him. I gave him a post-ten session using a prototype of the Art of Yield touch in which I simply put my fingers under him and followed the motility. He really appreciated it, and I felt a true 'closure' of the Series that had resulted in meaningful structural change. Soon after that, another client came to my office. He was suffering from severe constipation. His skin was so slick and waxy that I finally had to give up using manual techniques to affect his structure, and took him through the Ten Series using exclusively movement work. Interestingly, by the end, his constipation was resolved and his skin became more normal. These cases, together with various other people who had skin conditions or other reasons for not being able to tolerate direct fascial manipulation, forced me to improvise. They ended up becoming great resources for the development of the Art of Yield.

[There were other influences too.] In my Advanced Training in 2002, my left shoulder was strained, so it was difficult to use my elbow during practice sessions. Fortunately, I was able to have a private Rolf Movement session with Vivian Jaye. During that session, the epiphysis of my humerus found 'home' with a loud pop, and my shoulder was completely fixed. It was a dramatic change, and I was able to experience the power and potential of movement work in a very deep way. Before that, an event happened during my Rolf Movement training in 1999. The instructor, Carol Agneessens, gently touched my low back and head without stretching or forcing decompression. I felt my spine elongating spontaneously. It was the first time I had felt this kind of motility response. This experience ignited my curiosity to find a way to evoke this kind of reaction more frequently.

Also during the Rolf Movement training, we were introduced to the concept of *yield* as the first movement underlying all movement.[1] With this new foundational understanding, I recognized a bridge between my experience in cellular biology and the practice of structural integration. It dawned on me that this touch may act to stimulate a collective response in cells, providing scaffolding for enhanced motility. That was the turning point in my Rolfing career. Since that class, I have been actively experimenting with the yield touch in my practice. I find that when I intentionally use the touch to introduce cellular scaffolding, the client responds more easily.

KM: Why do you think this minimalist intervention can create such significant change?

HT: Imagine the body as if it were jigsaw puzzle. As Rolfers, we know that if we only change one piece without including the entire picture, the change will not hold. Trying to keep track of the jigsaw puzzle while we are working has the potential to block us from sensing the living, breathing whole. By working at the cellular level, it becomes possible to bypass the individual pieces of the puzzle. One tiny shift of a cell transmits information to all the cells and holographically affects the whole field. This results in systemic coherency, or what I call 'palintonic harmony'. The cell is different from a jigsaw puzzle piece, it is more dynamic and more responsive.

KM: How does Art of Yield fit within with the traditional Rolfing paradigm?

HT: I blend Rolfing SI, Rolf Movement, and the yield touch with the Ten Series, taking photos before and after the sessions. The Art of Yield evokes structural change and integration in a new way by using the client's system to make the decisions about where to go. I use the classical territory of the session as a portal to the system, instead of trying to change the part that I am touching. We establish a functional goal at the beginning of the session as you would in any Rolfing session. However, I use my internal sensations, as well as my awareness of the field, as the primary tool to create change. Each time I touch the body, I am feeling for the resonance of the entire body in that place. For example, when I put my hand lightly on the knee, I feel for the resonance of all the diaphragms through the knee. I often find the change starts to happen after releasing my hand from the body and stepping back to observe the wave.

KM: Is there anything else you would like to share?

HT: People often ask me if this intervention is a kind of energy work. I do not see it as energy work, despite the very light and brief interventions. I see The Art of Yield as a movement intervention. It allows the practitioner to discern and follow a more extensive range of change. In the early stages, I thought I would be using the Art of Yield only for pressure-sensitive people, but over time, I am finding it is appropriate for everyone.

Hiroyoshi Tahata is a Certified Advanced Rolfer and Rolf Movement Instructor. Prior to becoming a Rolfer, he worked as a research biochemist at Hayashibara Biochemical Laboratories, where he became intimate with the colonizing behavior of cells. Also relevant to the development of his current work is his training in Somatic Experiencing®, completed in Tokyo in 2011. He lives in Tokyo with his beloved wife, son, two dogs, two cats, and a turtle. To find out more and see photos, go to: http://rolfinger.com/.

Kathy McConnell, RCST, is a Certified Advanced Rolfer and Rolf Movement Practitioner. She is also certified in Biodynamic Craniosacral Therapy and Medical Qi Gong. She has been practicing in the San Francisco Bay Area since 2000.

Endnote

1. The Art of Yield approach is a derivation of 'yield' touch being taught in some Rolf Movement trainings. A key difference is that integral in Tahata's approach is the ongoing inclusion of the practitioner's perception, which creates the field the work occurs in. For more information, see the article entitled "Yielding" in the June 2012 issue of *Structural Integration*. From that article: "Yield is the first developmental movement. Often misunderstood as a passive surrendering or a 'doing nothing', yielding is in fact an active coming into relationship and is the fundamental movement behavior underlying all others." The issue also includes an article by Tahata called "Case Studies with Yielding," where you can read more about his process and see before and after photos of his clients.

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Reflections on Three Decades of Rolfing® SI for Animals – and the Story of Mike the Moose

By Briah Anson, Certified Advanced Rolfer™, Rolf Movement® Practitioner

Reflections on Three Decades of Rolfing SI for Animals

For over sixty years, Rolfing Structural Integration (SI) has helped reverse the effects of trauma, illness, injury, and the everyday impacts of gravity for tens of thousands of people worldwide. The ideas and principles Dr. Ida P. Rolf embodied in her development of the basic Rolfing series and advanced work, as well as her realization that movement work is important, are central to the success stories we've all experienced in ourselves and witnessed in our human clients.

During the early months of my Rolfing career – which began in 1979 – I wondered if these same benefits could extend to animals. That hunch came naturally to me given my childhood affinity with animals. My first efforts came about as I thought of applying the balance and alignment principles to my medium-sized poodle. As a young Rolfer, I was consumed in exploring more deeply the principles and goals of the sequentially arranged sessions and how they related to Rolf's (1978, 31) belief that, "This is the gospel of Rolfing [SI]! When the body gets working appropriately, the force of gravity can flow through. Then, spontaneously the body heals itself." At the time, my poodle, Kore, was experiencing movement and gait restrictions in her pelvis and back legs. Could the freedom, lightness, and resilience I felt in my own mind and body as the result of Rolfing SI be possible for her?

I started with the premise that a four-legged will have two sets of vertical lines where I'd need to organize structure and energy throughout her body: starting from the paws, through the front legs, and then into the shoulder, and also up the hind legs into the pelvis. I then imagined a lateral midline through her torso, neck, and head. Thus seeing an anatomy of form, I was able to observe gait problems, where Kore was 'tied up', and what needed to be released. I worked in layers to find the balance from side to side and top to bottom (just like the human process) so she could function better.

Practicing Rolfing SI on Kore was a circular procedure – I worked to establish balance with my hands, and then observed the results in the dog's movement. It was a sculpting process of science and art coming together. With just a couple of hour-long sessions spaced a week apart, I was successful in working a new alignment into Kore's structure. As the weeks progressed, I continued to see remarkable changes in my dog. She became 'younger' in her body movements and disposition – more playful, less hyper, and more at ease in every way. It was fun to watch her blossom into more of who she really was!

When one of my equestrienne clients asked if I'd be willing to work on his lame, competition-jumper thoroughbred, I was given a second animal Rolfing opportunity. The veterinarian route had been slow in yielding results. Could Rolfing SI cure a lame horse? When five two-hour sessions allowed me to sculpt this misaligned horse into a regal creature with stately conformation and great movement, I knew I was onto something.

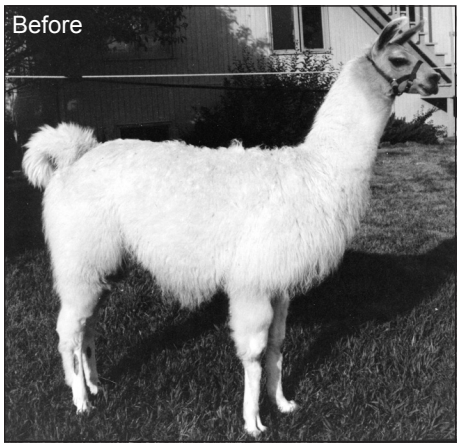
I've been applying Rolfing SI to animals ever since, and it's been a thirty-six-year journey. It led me to write a book: *Animal Healing: The Power of Rolfing Structural Integration* (Anson 2011). In it I present over three dozen profiles and 170 photographs of fifty-six different animals – domestic and wild – as they experience the Rolfing process. All the animals, of any type, and suffering from movement limitations resulting from injury, disease, surgical trauma, and even old age, experienced relief and recovery.

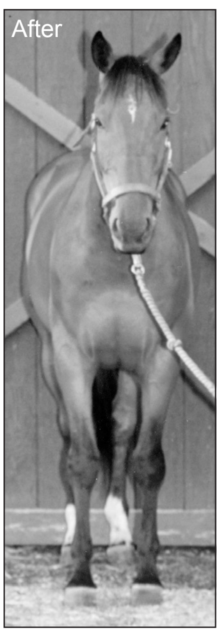
Rolfing SI can also be done as a preventive measure when animals are young to lay the foundation for a longer and healthier life. As a regular part of training, Rolfing sessions can give performance animals (hunter jumper, dressage, eventing, and race horses, as well as show dogs and working and agility dogs) an extra edge.

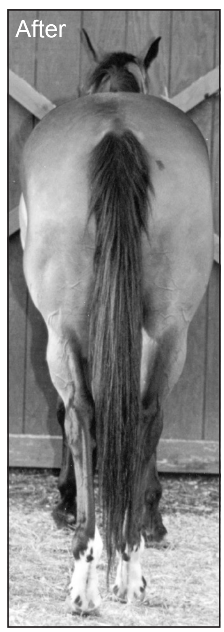
Working with a large population of cats, dogs, and horses, as well as llamas, eagles, an owl, hawks, guinea pigs, a rooster, frog, donkeys, rats, goats, a deer, and even a wild moose, I was able to witness how quickly and naturally the animals took to the work. It gave me profound insights into the nature of the energetics of trauma, armoring, and PTSD responses in my human clients as well.

I feel very grateful for the different energies I have learned from these animals. They have deepened my sensitivity and understanding of presence, connection, mutual respect and understanding, and the dignity of each animal I worked with. This has truly helped me to be a better and more sensitive practitioner with people.

Here, and on the cover, you will see photo galleries of the various species I've worked with. The stories of the work with many of these animals are in my book *Animal Healing*. The following story of "Mike the Moose from Montana" – an up close and personal encounter with this magnificent wild beast – is also from the book.







An Excerpt from *Animal Healing: The Power of Rolfing Structural Integration*

Mike the Moose from Montana

Briah recalls her experience in the Big Hole, Montana

I moved to Minnesota in July of 1998. I quickly rediscovered the wonders and beauty of the North Shore of Lake Superior and had some exciting moments seeing majestic moose on the side of the road grazing. The moose is a state icon in Minnesota and anyone who had any kind of encounter with one regarded it as a fine event. It was then that I gave birth to the intention of doing a Rolfing® session on a moose. It occurred to me that I would gain a greater understanding of these Nordic people and their ways if I could find a moose to work on. I found myself announcing to people that somehow I was going to give a moose a Rolfing session. Each time I made this known, people would burst into laughter and proceed to tell me that that was just impossible. But I believed that working on a moose would help me more fully understand this Scandinavian land that felt so foreign to me.

Mind you, I had only moved 450 miles north from Kansas City, Missouri, to St. Paul, Minnesota, and yet the cultural background was very different than what I was accustomed to. I found people here to be emotionally held in and their physical structures mirrored this tradition. Expressing a range of emotion both positive and negative, the highs and lows, seemed to be more foreign to people in this Nordic land. I came to understand the lone introverted nature of the moose to be in rhythm with the Scandinavian temperament. I knew that I had moved to a place of educational, cultural and artistic excellence; to a land of hardworking, determined people. However, I have always felt that the animal world functioned as my teacher to better understand the people with whom I worked.

I had no idea how I would find this moose. However, every kind of animal that I have done Rolfing sessions with came from my clear intention first to work with that particular species. Then through synchronicity it would come to pass.

A few months later, I was at my parent's home in Florida for Christmas and was

looking through all the Christmas cards that my parents had received. I came upon a photo card of "Mike the Moose" drinking water out of a kitchen sink. I immediately thought to myself, "There's my moose." This moose lived on a 40,000-acre ranch in Wisdom, Montana, the birthplace of my father and the ranch of one of his best friends, Jack Hirschy.

I asked my parents to tell me about Mike and found out that Mike was an orphan that one of Jack's cowboys had found on the ranch. He'd brought the calf to Ann Hirschy to see if she could work her magic to keep this little one alive. She fed Mike and nursed him so that he would thrive, and they set him free to roam on their ranch. The Christmas photo of Mike had been taken when he was under one year old. He would now be two years old.

My parents thought this was another of my ridiculous and dangerous ideas and just laughed it off. A month later, Jack and Ann Hirschy were visiting my folks from Montana to attend the Super Bowl. During their visit, my parents learned that Jack was having terrible back problems and was facing back surgery. My mother enthusiastically shared with Jack my book of Rolfing stories, *Rolfing: Stories of Personal Empowerment*, which Jack read from cover to cover. He then proceeded to ask my mother if she would contact me to help them locate a Certified Rolfer™ who lived in his area.

This was my moment to seize. It just so happened that one of my best friends and Rolfing colleagues, Marilyn Beech, had moved from Kansas City to Missoula, Montana, which was only a two-and-a-half-hour drive from Wisdom. I proceeded to talk with Jack and propose to him that I would personally fly out to Montana from Minnesota and give him and Ann some free Rolfing sessions with the hope of being able to see Mike the Moose. Ann told me that Mike was over two years old, which meant that his testosterone was elevated and he was getting quite wild. She also told me that they have very infrequent visits from Mike nowadays and that there was high probability of not seeing him at all. It mattered not to me. My desire was so strong that I intuitively thought that Mike and I would meet.

I arrived at their ranch close to dinnertime on March 5, 1999, which was my Dad's eightieth birthday. I was in his hometown of Wisdom. There had been no sightings of Mike for weeks, and yet I had this incredibly jittery feeling that I would soon be meeting Mike. I had a couple of months to chant about this through my Buddhist practice. I felt that the encounter would be imminent, as I had already connected with Mike spiritually.

When Marilyn and I arrived, Ann came out to greet us. She had been experiencing some troubling dizziness. I immediately went in to the house and set up the Rolfing table. I did a cranial session on Ann before dinner. Dinner was in the cookhouse where all the cowboys and the Hirschys ate their meals together.

There was two feet of snow on the ground; it was still winter in Montana. Halfway through dinner I looked over to the window and saw this big animal walk by. It was Mike the Moose coming to meet me. Everyone was excited. The cook instantly gathered up leftovers for Mike to enjoy. They had built a big pole that went up four feet and nailed a large pan on top where Mike could feed. This was my opportunity. CARPE DIEM.

I followed Ann out since she had the connection with Mike. As he was hurriedly eating dinner, I stood next to Mike and started to do a little Rolfing SI on his left shoulder. One of my clients who was into Shamanic practices had given me the assignment of cutting a piece of moose mane for her medicine pouch. I whipped out my Swiss Army knife and cut a few locks of Mike's mane. I smelled his fur; it smelled clean and sweet. I figured I had better take him all in, not knowing if there would be another encounter.

As I was working, Mike suddenly stopped eating and raised his head up. The next thing I knew he had lunged about fifteen feet forward and gave a karate kick to a skunk that was in the process of climbing in the big pan of food scraps for the dog. He did this so quickly and precisely that the skunk never knew what hit him. This skunk did not even have time to spray us. We all thought that the skunk was dead. Mike quickly returned to his dinner and I noticed that my heart was beating a million miles an hour. I was processing how fast and ferocious this seemingly gentle creature had become. I knew then that you better not mess with a moose. I suddenly appreciated all of the stories that people had told me about their fearful and healthy respect for this animal. I had seen a moose in action. He was fast and frighteningly precise.

A few minutes later we saw the skunk emerging out of the dog's pan and quickly staggering away. He wasn't dead after all. We were all amazed that the skunk never sprayed.

I returned to this impromptu Rolfing session and I noticed that Mike, even as he ate, was leaning into me just like the horses I'd worked on, so I knew that he was accepting this work. As he finished his food, he seemed to get a bit aggressive and I knew it was time to scoot back into the cookhouse. The next thing we knew, Mike was gone into the hills of the 40,000-acre ranch. All pretty exciting to me.

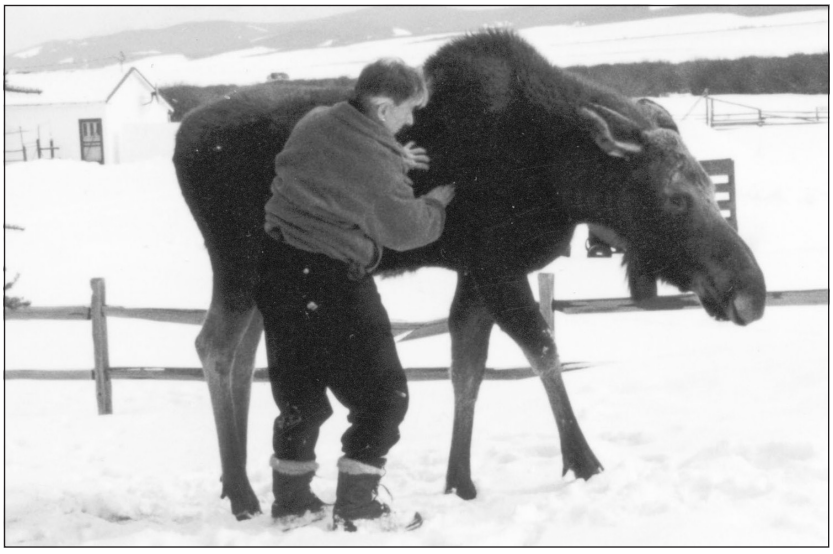


Figure 1: As I worked into his shoulder, Mike stretches down and out, cooperating with his own release. Photo by Marilyn Beech.

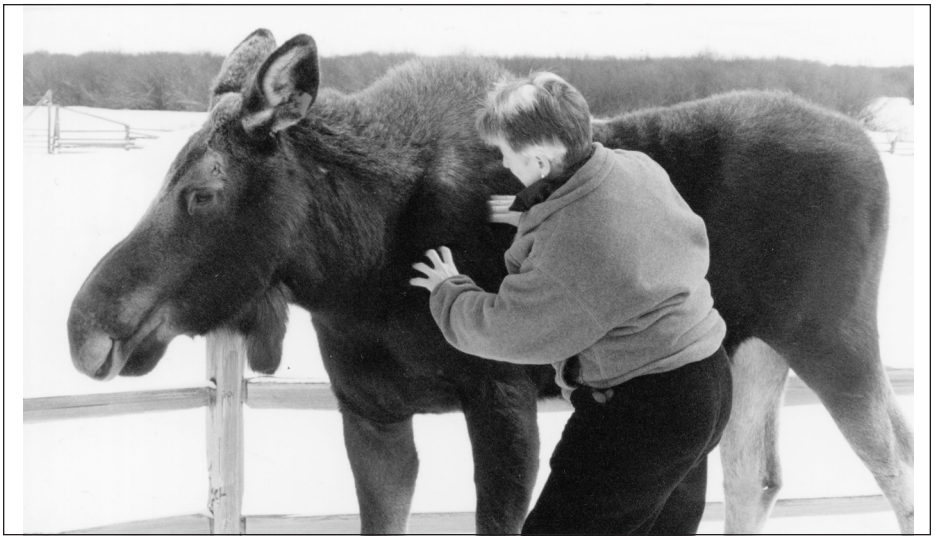


Figure 2: Mike returns for another session. Photo by Marilyn Beech.

Breakfast was at 5:30 AM, which felt like an ungodly early time to eat. While we were having breakfast, Mike showed his face again at the window. I was no longer interested in breakfast. Ann and I went outside. Mike had his head down and seemed more feisty and aggressive. In fact, he seemed interested in chasing us a bit and didn't seem to be too friendly. He sort of followed us, chasing us back to the house where we quickly disappeared.

I was feeling rather disappointed at that moment. Ann was cautioning me that Mike had reached the age where his behavior may be less predictable due to increased testosterone levels. Ann came up with the idea of getting some dried fruit, as that was his favorite treat when he was younger. We went out with assorted fruit and Mike quickly and rather aggressively took it from us. Ann then said she thought we better call it quits for the day with the moose.

I remember feeling disappointed that I might not have any more Rolfing encounters with Mike and just did not want to give up. I stood inside and looked out the window. I saw Mike standing outside. I remember thinking "What is he waiting for? More fruit?" After watching him I decided to quietly exit the house and see if I could make some contact with him. He just stood still as I stood next to him and once again I carefully and slowly started doing a little Rolfing SI on his left shoulder. He remained calm and I continued. Once again he leaned into me and I knew I had found my way in. The connection had been made.

I worked on him for fifteen to twenty minutes. It was all going very well until suddenly Mike lifted his head and intently looked forward towards the pasture that was only 200 feet away. There was a string of five mature wolves walking across our line of sight. I had never seen a wolf in the wild, let alone a pack of five. Knowing that the main predator of moose is wolf, I stood next to Mike for several minutes while he watched into the distance not moving a muscle and remaining as still as a statue. I could feel his fear. I could hardly contain my excitement as I realized how much Rolfing SI I had just done while sharing this experience with Mike and the wolves. It felt like he and I had bonded and it was an awesome experience.

Since I could not contain my excitement any longer I rushed into the house to tell Ann about working on Mike and the pack of wolves. Ann was amazed. She had been watching through the window and couldn't believe Mike had been acting so docile. She then told me that ranchers in the area had been having trouble with the wolves occasionally attacking their cattle and because wolves were on the endangered species list it was against the law to shoot them.

It was time for me give Jack a Rolfing session. During the next two hours of my session with Jack, Ann kept giving us updates on Mike's location on their property. As I was doing the session in their living room, I would occasionally take a momentary break to look out the window to see Mike. Frankly, I could hardly wait to complete the session on Jack. At one point Ann reported that Mike was lying down in the snow under a pine tree near the house, seventy-five feet away with two feet of snow on the ground.

When I finished Jack's session I went outside and slowly made my way over to Mike. Mike lay there and made no attempt to get up. I found this fascinating. When I reached him, I knelt down and once again continued the interrupted Rolfing session on him. I started in on his left shoulder and gradually worked my way back through the torso. He calmly welcomed the work.

About half an hour into his session, Jack's son, Fred, who was in his forties and owned the adjacent ranch, pulled by in his truck, got out and loudly exclaimed "Oh, that moose hates my guts!" I quietly asked Fred if he would get my camera and take some photos of this experience. As Fred got closer to us, Mike stood up, and so did I, and the strangest thing happened. Mike started licking my entire face with his big long tongue and Fred was able to capture this on film! I have a priceless photo of this. It was the largest tongue that I had ever seen and I was ecstatic with joy. Then Mike did an even more amazing thing – he turned directly around and lay down again, presenting the other side of his back and shoulder to me so I could continue working the other side of him. He knew he needed both sides worked on and wanted to make sure I got the message.

Figure 3: An extraordinary moment. Mike giving me many licks. Photo by Frederick Hirschy.

I went back into the house as Fred had to leave, and found that Marilyn had finished a session with the cook. I asked her to come outside with me and take more photos. Mike had moved to a different location on the property. He was by a wood fence bordering the yard. I approached Mike, who was standing, and I started to work on him again. As we worked, Mike would stretch his head toward me, into the work, as horses do when I work on them. Marilyn moved closer to take more photos and suddenly Mike felt trapped, with the fence behind him and Marilyn approaching. He put his head down and went after her. Luckily Marilyn was close to the house and escaped in the nick of time. I did not feel any fear for myself as it was clear he was not upset with me, so I continued the session.

As this point he even decided to kneel down, which was amazing not only for the act of submission but it made it easier for me to work on his back. It was as if he knew that this would facilitate his Rolfing session and be much more comfortable. Mind you, Mike stood at least five and a half feet tall, foot to back. I could not have used my elbow to reach his back and torso had he not cooperated by kneeling down in this amazingly intuitive way. It was clear to me that Mike was fully conscious of how this Rolfing session was helping him. So for those people who believe Rolfing SI to be a painful experience, if you could witness these wild animals and their response, you would have an entirely different impression.

It was time for lunch so I suspended my Rolfing session with Mike. I was in the house waiting for Ann to call us to the table. I noticed Mike at a seven-foot high gate outside, standing there, and suddenly from a dead stop, I witnessed him leap over that fence. I could not believe his athleticism. I was beginning to have an appreciation for the design of his structure. To me, a moose had seemed to be put together by committee, like a wildebeest. But now I could appreciate how his structure enabled him to be so quick and agile and athletic. I was amazed.

We then left the ranch to go into a nearby town for Ann's doctor visit, other errands and to visit their distant relatives in the valley. This would be our last night in Wisdom at the ranch and I was wondering if I'd see Mike again. Breakfast was in the cookhouse at six o'clock on Sunday, and when we left the main house, lo and behold, we saw Mike standing a mere 100 feet away. He had his ears up as if to eagerly greet us, and about another 150 feet away there was a pair of female moose. He had brought along his harem! After breakfast Mike hung around. I had the opportunity to do a little more Rolfing work. I truly felt as if I'd made a new friend.

I remember calling Ann a week later to check up on Mike. She told me that Mike stayed around the house for three days then disappeared. She thought he was waiting for his Rolfer to come back! I think it was about a month later that I learned that a writer and photographer for *People* magazine had come to Wisdom to do a story about Mike. Mike had appeared and they were able to get a photo of Mike kissing Ann. However, during the photo shoot, Mike managed to kick the photographer. I did call back within the next couple of months and they had not seen Mike. As I mentioned in the beginning of the story, it was breeding season and Mike was of mating age. He had other things on his mind.

Briah Anson, MA is a Certified Advanced Rolfer and Rolf Movement Practitioner with over thirty years of experience. She is the author of Rolfing: Stories of Personal Empowerment *and the producer of a video on Rolfing SI and children,* Growing Right with Rolfing. *Briah is a pioneer in the field of Rolfing SI for animals. She has a private practice in St. Paul, Minnesota. Her website is www.rolfing-briahanson.com.*

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Rolfing® SI for Horse and Rider

By Lauren Harmon, Certified Advanced Rolfer™

When a horse and rider move in harmony together, it is a spectacular melding of two beings becoming one. There is a balance in the connection that allows them to move effortlessly through space and gravity. The mind-body maps of horse and rider merge, and they become something more than their individual selves.

This harmony between rider and horse is as unique as it is beautiful. Other than in folklore and Hollywood movies, it doesn't just happen; it takes keen awareness and the ability to communicate across the interspecies language divide. The application of the principles of Rolfing® Structural Integration (SI) to both rider and horse make this communication and the resultant grace more likely. Even if the Rolfer works only with the rider, it can still greatly impact the connection between horse and rider, as the horse will have a more balanced partner to work with.

The challenge in riding occurs when the rider, horse, or both rider and horse are blocking movement and inhibiting transmission through the fascial web. There are many variables that can cause this disruption. Rolfing SI can identify and remove holding patterns, thus improving the relationship between horse and rider by facilitating better communication.

Lauren Harmon and her horse Hawkeye.

Structurally, the horse and rider must each be able to activate their respective prevertebral spaces, enhancing hind-end support for horse and pelvic girdle support for rider. This creates the possibility of reach and extension in the front end of the horse, and adaptability in the rider for lift through her spine.

Body Awareness and Movement for the Rider

Riders often present with holding patterns, possibly from injury or from the discipline of riding itself. What follows are some common movement principles that apply to riding. The movement work was developed by various practitioners in our Rolfing SI community, and for the purpose of this article has been adapted for riders.

Breath

Breath is the foundation. If the rider stops breathing, the horse will feel it and respond accordingly. Holding the breath decreases fluidity through the rider's body and raises her center of gravity. This 'pulling up' causes her to lose her 'seat' (fluid response to the horse's movements). As she loses her seat, she is likely to compensate by gripping with adductors and the medial portion of knees, and calves. As Ray McCall says, "If the tissue can't lengthen, it will rotate." Thus the rider's legs will shorten and rotate laterally (instead of resting long and easy around the horse), decreasing responsiveness of her pelvic floor and creating instability through her structure. As a result, she is now putting a vice grip around the horse's rib cage, hindering its ability to breathe and feel connection between its front and hind end. This is very commonplace for beginners and timid riders.

As a Rolfer you can begin working with this pattern by helping the rider bring awareness to her breath. Instruct her to exhale into different places in her body while alternately placing hands on her sacrum, ischial tuberosities, serratus anterior, clavicles, diaphragm, feet, and occiput. These areas represent centers from which she will cue her horse. Educate the rider that moving her breath lower and into her back space is a subtle and effective way to half-halt the horse without creating an imbalance. The half-halt is used to collect the motion of the horse, like compressing a spring. It stores the potential energy so that the horse is prepared to go into extension. Without this skill, the rider cannot effectively communicate with the horse, and the horse cannot access its full power or fluidity.

Seat and Line Awareness

The adaptability the rider gains from movement in the breath leads to the next important lesson, which I call 'Line awareness' (up/down, left/right, inside/outside, anterior/posterior). It is an adaptation of one of the standing exercises Ray McCall uses to begin class. The rider must be able to find her 'Line', regardless of her pattern, to keep from falling off and/or unbalancing the horse. This is especially important in disciplines with tight turns, intricate movements, and fast speeds.

Helping the rider access her Line on the ground first will make it easier once she is on the horse. Have her sit on an exercise ball, similar to how she will sit in the saddle (see Figure 1). While on the exercise ball, instruct her to shift her weight left and right until she finds a place that is neither left nor right, but center. Next, have her do an extreme anterior and posterior tilt until she finds sagittal-plane center.

The next two exercises take a little more sensitivity and awareness. To find up/down balance, have her arms hang freely while she imagines her fingers reaching to the ground. Next, she imagines the energy in her fingers coming back up as far as necessary until she can feel balance between up/down. It will feel like a vibrational energy or a wave moving down the body then back up. Once she accesses this, have her explore inside/outside balance. Ask her to sense her skin from the inside and take deep slow breaths, imagining her breath is meeting her skin. If this doesn't resonate, she may need to imagine her skin is meeting her breath at a deeper place, such as slightly muscle deep. She is searching for a place where her insides match her outsides.

Once Rolfer and rider have gone through each of these explorations, repeat all of them one more time in a more succinct way. The more she practices, the easier it will become. Once on the moving horse, the rider will constantly need to refer back to her Line.

Going through this process helps the rider to find balance in her ischial tuberosities. Differentiation and awareness herein is crucial, as she will be asking the horse to move according to how she uses her weight on the sit bones. The Rolfer can track the ischial tuberosities to increase awareness and differentiation. Seat the rider on a bench with sit bones lightly higher than knees, and with your hands cradle

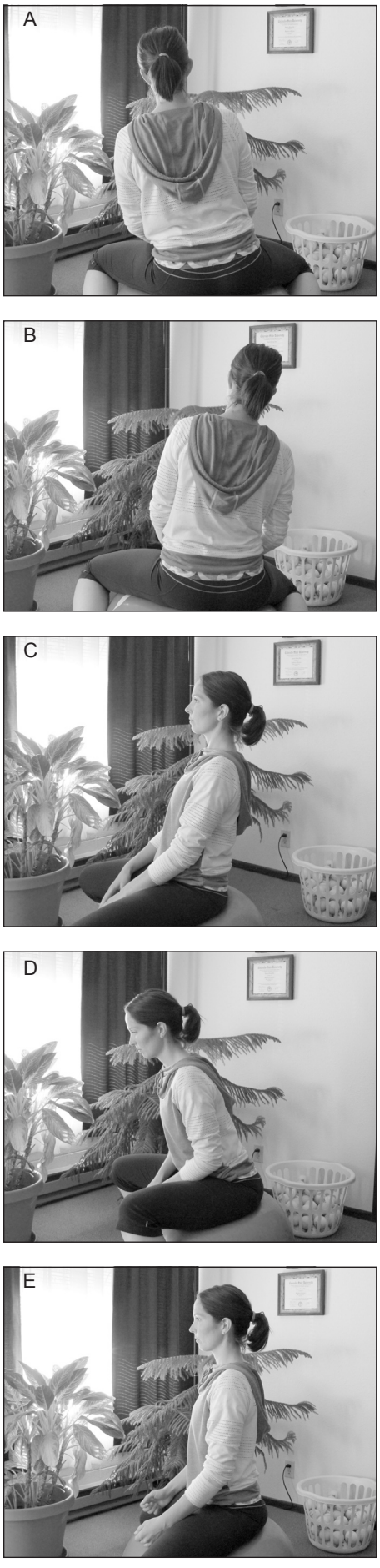

Figure 1: Working with seat and Line awareness: have the client shift her weight left and right (images A and B), and tilt her pelvis posterior and anterior (C and D), until she finds center in both planes (E).

her ischial tuberosities (you may want to put a blanket down for padding). While connecting into her feet, the rider hinges forward slightly at the hips, and you track the ischial tuberosities evenly in a posterior direction. Then ask the rider to shift back to neutral and repeat until the hinging motion feels smooth. This is how she will move with the horse as it trots (a two-beat, contralateral gait). Encourage her to keep her psoas relaxed by having her exhale into her pelvic floor and relax the front of her sacrum and use her feet to connect with her prevertebral space during tracking.

Breath is also a very effective way to balance the ischial tuberosities. Riders tend to sit heavier into one sit bone than the other. The horse will compensate for the rider's weight imbalance; it may adopt patterns of rotation or side preference which, over time, can result in unequal muscle development To help the rider distribute weight evenly through both ischial tuberosities while in the saddle, ask her to identify which is raised, and have her exhale into it. This should help anchor/settle that side. When the ischial tuberosities are balanced and receptive, the pelvic floor can help the transmission of support upward.

Arms

Once the rider has a sense of her seat and Line, help her find lift, and connection from her arms to the lumbodorsal hinge (LDH), the serratus anterior, and her back space. It is very important for a rider to have: 1) her scapulae resting on her rib cage, 2) fluid movement through the shoulder girdle, and 3) access to serratus anterior. The serratus anterior muscles stabilize the scapulae when using the reins to connect to the horse through the bit. To help the rider find her serratus anterior muscles, ask her to sit, supported, with connection through her feet. To simulate the riding position, have her bend her elbows as if holding the reins. Stand behind her with your hands on each of her serratus anterior muscles, and have her take a deep, slow breath, then exhale while slightly drawing her elbows in towards the rib cage. As she does this, you should feel the serratus anterior activate and the rib cage rest while connecting into the LDH. If one – or both – sides don't activate, repeat the action more slowly while lightly tractioning her serratus muscles downward to help her access the sensation. Repeat to retest the movement. To reinforce awareness of her back space, have the rider inhale into her clavicles and exhale down her back, over the scapulae, all the way to her coccyx.

The rider needs clear transmission through her arms to keep connection with the horse through the bit. She allows for a bend in the elbows and keeps them close (but not tight) to the torso, as discussed previously when connecting to the serratus anterior. From the elbow to the bit there should be a straight, fluid line as the horse and rider move together. This allows for clear, undisrupted communication between the horse and rider and gives the horse a place to move into as it lengthens through its topline. For the rider to be able to accomplish this, it is necessary to have open and adaptable interosseous membranes and an understanding of the ulna/radius. In order to keep the interosseous membrane open, the rider learns to keep her hands closed around the reins with her thumbs up and slightly bent, bringing the bones in the forearm into parallel relationship (see Figure 2).

Restrictions in the interosseous membranes reduce the rider's ability to connect to the horse through her shoulder girdle, while adaptability in the forearm and interosseous membranes fosters fluidity between elbow and bit so the rider can cue the horse effectively. Differentiating the ulna and radius gives the rider better access to this connection. This is a great opportunity to do some movement work with the ulna and radius to demonstrate to the rider how each bone relates to different lines of connection through her body. (This movement piece was presented to me by Suzanne Picard and has been adapted to the needs of the rider.) The ulna line relates to the rider's back space, while the radius relates to her serratus anterior and anterior line into her neck. This means that as the rider holds the reins, the ulna stays in relationship to them, giving the rider that connection into her back space. The radius 'belongs' to the horse, creating a bridge through the rider's front line, between herself and the horse's topline.

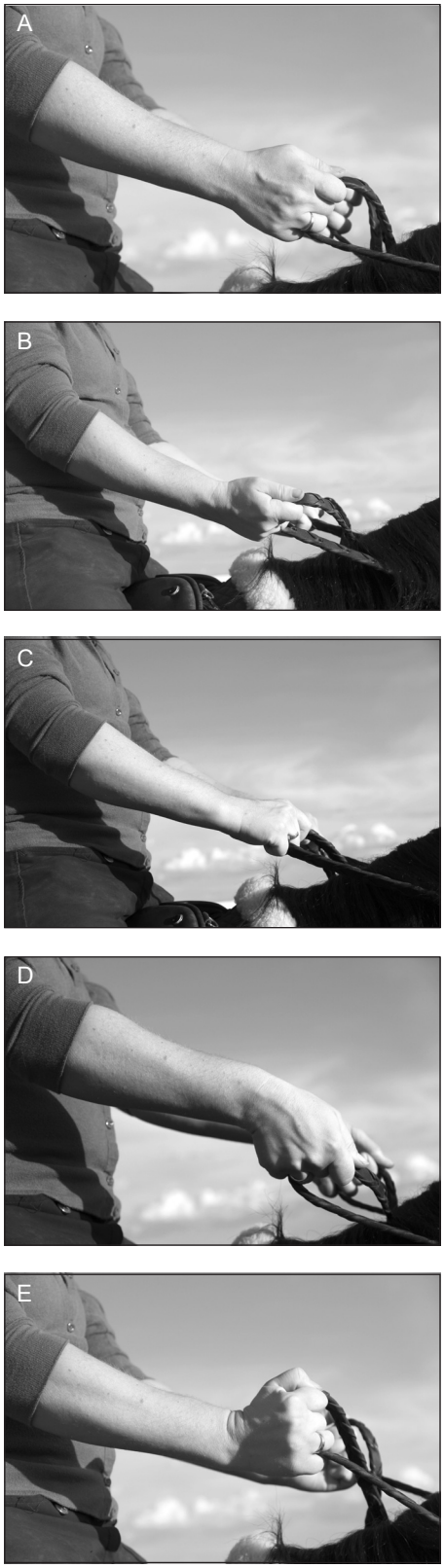

Figure 2: Working with arm and hand position. Image A shows a neutral, correct hand position with the bones of the forearm in parallel relationship to allow for transmission through the interosseous membrane. Images B-E show common ways in which the rider interrupts the connection through the interosseous membrane due to rotation or compression.

To increase connection to her back space through the ulna, have the rider lie supine, arms by her sides and palms down. Places one of your hands under her scapula and the other along her ipsilateral ulna. Have her imagine the ulna and fifth phalanx growing longer from the scapula. Try this as well with radius/ulna in parallel relationship. Once she has a sense of how to find length, play with 'lengthening' the bones and then relaxing back to neutral. Do the same exercise with the radius alone, asking for intrinsic length through the thumb (pollex) from the radius. Have her imagine the bones are growing long. If she is unable to access the sensation of lengthening from a stabilized scapula, try the exercise starting from her elbow downward.

Another way to explore the ulna and the radius in parallel relationship is with the rider in a seated position, her elbows bent as if holding reins. Place your hands on her scapulae and have her feel 'lengthening' through the ulna and back into the scapulae. Do the same for the radius. When working with the radius, remind the rider that this is her connection to the bit.

Eyes

The final piece is to bring awareness to the importance of the rider's eyes and how micromovements there create movement in the spine. This is incredibly important: even the smallest shift in the rider's eyes can change her weight distribution, which cues and/or throws the horse off balance. This connection of eyes to spinal movements can work for or against the rider. It is important to check if her eye movements are part of a bigger pattern and, if so, facilitate differentiating the eye movements to allow for better awareness of spinal micromovements.

To help the rider access these smaller movements, work with her in a supported, seated position while her eyes slowly move up and down, as well as left and right. Have her notice what happens in her body first. If she cannot sense movement in her spine or a shift in her ischial tuberosities as she moves her eyes, you will need to help her feel it. Place your hands on either side of her thoracic spine while she looks up and down. Next, with your hands under her ischial tubersities, have her eyes move left and right. In both cases, there will be a slight weight shift.

Holding her sit bones while she looks up and down is also effective to show her the importance of keeping her eyes on the horizon: when she looks down, her spine flexes and her weight shifts to her posterior tuberosities, thus losing her seat. As a cue to avoid looking down, invite her to imagine her favorite smell, so as long as it is not food. A food smell will draw her in and down, bringing her further into flexion, while a non-food smell will help her find lift through her eyes.

In summarizing this section on work on the rider, know that, without ever touching the horse, if you work with the rider, you help the horse.

Working with the Horse

Unlike the basic Ten Series we use with human clients, the Equine Natural Movement School, where I studied, teaches a five-session series. (Various other SI practitioners have come up with different models.) However, just as with human clients, we can also do non-formulistic work, applying the Principles of Rolfing SI: holism, support, adaptability, palintonicity, and closure.

First Considerations

When working with horses, it is very important to relate to your Line and be grounded. You can use the same centering exercise, 'Line awareness', elucidated above, but do it standing. Horses are prey animals and herd animals, so staying grounded and being aware of your back space will help them feel safe and relax. In the herd, some horses act as lookouts while the others rest or eat. When you work with them, you become the lookout, creating a safe place. Moreover, gaining rapport is important for when you get to areas in their bodies that are more guarded. The horse must learn to trust you and your touch. When you start your session or do your initial palpation, keep these concepts in mind. This is particularly important when you work with horses that are higher energy, nervous, or have a history of abuse/neglect. One way to gain rapport is to make your initial contact in an area that isn't of concern to the horse, so that he may learn how to feel safe receiving a Rolfing session.

Horses are exquisitely sensitive animals. Their skin and superficial layers are so sophisticated that they can sense a fly landing and twitch the skin in that isolated area. Keep this level of sensitivity in mind when starting work with the horse. When working with different spectrums of touch, err on the side of inherent motion or cranial touch. The tissue will invite you in as the deeper layers become available. Less is more. Working with the superficial layer from the very beginning not only prepares the fascial system for change at the deeper layers but is part of gaining rapport. Most horses haven't received this type of work, so it is important to take the time to acclimate them to your touch. You can start your session through palpation or take time to watch the horse move. At the walk (a four-beat gait) and trot (a two-beat gait), their movement, like ours, is contralateral. (The exception to this is in Pacers – the Pacer trot is a deliberate ipsilateral pattern in which front and back legs on one side move forward while both legs on the opposite side move back.) As with people, contralateral movement through the spine is a sign of myofascial health.

Common Structural Patterns

While there are as many different patterns in horses as there are in people, two main patterns consistently present themselves. A note on language: when talking about horses, dorsal is synonymous with posterior line and ventral with anterior line.

Anterior Tilt/Extension Pattern: In this pattern, where the horse lacks connection to its hind end or hasn't been asked to collect its movement, the horse tends to go into anterior pelvic tilt. Its body is slightly held in extension. The quadriceps are short and tight, the hamstrings long and tight. You may see the lumbar spine in a slight lordosis as the pelvic floor isn't supporting the spine. The psoas major and minor are held long and tight. The horse's spine looks short through the dorsal line and long through the ventral line. The rib cage can feel braced as if stuck in exhalation. The angle created by the scapula and the humerus (scapulohumeral joint) is closer together than a neutral scapula position; this shortens the triceps, and the biceps are long. The dorsal side of the neck is shortened, creating a constricted nuchal ligament. The horse also tends to be restricted on the dorsal side of the atlanto-occipital joint, which can lead to strain in the temporomandibular joint.

Posterior Tilt/Flexion Pattern: These horses look like they need more space in their bodies, as if they are wearing too small of a blanket. The spine is held slightly in flexion. The pelvic bones are in a posterior tilt, which creates long-and-tight quadriceps and short-and-constricted hamstrings. Lengthening the hamstrings will help the quadriceps return to a more settled place. The ischial tuberosities are drawn closer

together, creating lateral rotation in the femurs and bringing the hocks (metatarsals) closer together. The horse is short and tight through psoas major and minor. The rib cage is compressed up and forward. (Working the last rib in a horse is just as important as our twelfth-rib work with human clients.) The angle created by the scapula and the humerus (scapulohumeral joint) is farther apart than a neutral scapula position allowing for a steeper angle in the scapula. When the shoulder is steep it shortens the horse's stride through the shoulder. This condenses the biceps and keeps the triceps in a long-and-limited position. The ventral side of the neck is held short and rigid. The nuchal ligament is held long and tight. There is hypertonicity in the throat, and a need for space around the hyoid bone.

Final Considerations

Other important factors to take into consideration when assisting with the connection between horse and rider are dentistry [a horse's teeth erupt (grow) its entire life, so must be maintained], saddle fit, nutrition, foot care, etc.

Conclusion

Applying Rolfing SI to horses is a specialty within our field and must be studied and practiced for refinement and skill. SI for horses does not require more strength than work for people, because horses are so sensitive. It is critical, however, that the Rolfer stays on her Line in order to access this sensitivity. In service of rapport, the Rolfer must invest in learning the horse's language. While beyond the scope of this article, the horse will let you know in a number of ways whether your touch is welcome or not. If you wish to learn more about this work, one option is to check out the Equine Natural Movement School (http://equinenaturalmovement.com); the founder, a Hellerwork® SI practitioner, developed a five-session series of SI for horses. (I will be one of their teachers starting in 2016.)

Lauren Harmon is a Certified Advanced Rolfer™ who specializes in working with riders and horses. Before studying Rolfing SI, she received a BS in equine science from Colorado State University (CSU). Her time at CSU, along with her twenty-plus years in the equine industry, have given her the background to help horses and riders through Rolfing SI. In addition, this work has personally helped her recover from a back injury so that she could literally get 'back in the saddle'!

Rolfing® SI for the Performance Horse

By Sue Rhynhart, Certified Rolfer™

Author's Note: I have been a Certified Rolfer for fourteen years, and trained with Joseph Freeman at his Equine Natural Movement School about nine years ago. My approach to Dr. Ida P. Rolf's work has always been filled with intrigue. My work style is a fusion based on her principles combined with Freeman's work. The corresponding techniques and style are based on many years of studying conformation: form and function. Additionally, feedback from trainers and riders, particularly Tracye Ferguson, trainer at Meridian Riding Club, has shaped my personal interpretation of structural integration (SI) for the performance horse.

Introduction

My current primary focus is within the showing segment of the hunter/jumper spectrum. My model is based on a five-session series that includes both pre- and post-performance components, as well as pre- and post-shipment care. Many of these horses show throughout the country. Another component of my practice is rehabilitation for the injured equine athlete.

An Equine Five Series

Horses are prey animals hardwired to hide what is wrong with them: in the wild, either sickness or visible injury is a sure-fire way to get eaten. This changes the session protocol significantly – in every session the body is covered twice. The first half of the session includes the notion of releasing the autonomic nervous system, to soothe and lift the veil of what the horse has suppressed. The second half involves more accurate diagnostics and application of a direct line of correction; this almost always leads to a deeper dialogue unfolding with the horse.

Session #1 – Trust, Respiration, and Rapport

When walking into my first hunter/jumper client's stall, Phillip Dreissigacker, the trainer, noted my lack of fear. I told him, "Being afraid of horses is a dangerous enterprise." Each session requires mindfulness; it begins by picking up the halter and stepping through a portal where a sacred interaction is about to take place, where the practitioner is required to touch, speak, and connect.

Often, what is recovered in the first session is respiration. A deeper level of respiration can often occur as relaxation and a newfound level of trust builds between the horse and practitioner. Direct work on the external and internal intercostal muscles allows for greater rib expansion. A release of the inner lines of the rear legs into the pelvic floor also assists in this process. The imprint of this first interaction is hopefully one of calm and trust, a dialogue of sorts. Horses like to be talked to and nurtured; our voice becomes one of our most dynamic tools. The relationship has begun.

Sue Rhynhart with her horse Skye Traveler, who passed on October 6. "My dear friend came to me (starved) at twelve years old and died at twenty-seven-plus years. We had a good run of it."

Session #2 – Differentiation of Shoulder and Pelvic Girdles

We again work through the body once covering the chest, shoulders, rib cage, hips, hind end, the barrel, top line, and then into the neck. The primary focus is freeing both the shoulder and pelvic girdles, differentiating neck to shoulders, then rear legs to pelvis. The shoulders are freed by opening subclavius and unravelling the neck out of the shoulder girdle with detail to all cervical musculature. Differentiation of rear legs to pelvic girdle is accomplished by freeing all the upper rear leg muscle groups: gluteals to sacrum, hamstrings (often freeing entanglements of the hamstrings from the adductors), quadriceps, and adductors.

Session #3 – Connection of Barrel

Often, there are reasons that the horse's pelvic and shoulder girdles are not connected. A primary cause is a disconnection through the 'barrel' (i.e., the thorax), which can make a horse seem disconnected emotionally, even dull. A strong connection through the barrel is operative to finding balance. In this session, the entire body is covered in fifteen steps:

1. shoulders
2. pectorals to sternum
3. forearms (flexor/extensor compartments)
4. freeing of rib cage via the intercostals
5. lower back (lumbodorsal fascia/psoas) region
6. quadriceps
7. gluteals
8. hamstrings
9. adductors
10. tibial region / 'gaskin'
11. direct work at girth, fanning out the barrel (latissimus and ventralis) muscles
12. topline: sacrum to withers
13. withers (includes trapezius, rhomboids, and nuchal ligament)
14. freeing of the shoulders (subclavius)
15. detailed work to all cervical musculature.

This work takes us deep into the inner line of the rear leg. A good session often finds the horse lathering between its legs as it releases those stiff tendons and the tissue takes on a plasticity. It is essential to connect the inner line of leg from pelvic floor into the barrel via the obliques, transversus abdominis, and aponeurosis (a fascial sling). This session creates support and connection from the front to the hind end and back to clarify the placement of the four legs. Horses often seem more embodied after this treatment.

Session #4 – A Refinement

I often consider sessions four and five in this equine series to be akin to sessions eight and nine of the Ten Series. I ask, "What hasn't come along for the ride?" This is where the conformational eye comes into play. I determine how to take what is a conformational weakness and bring it more into a self-correctional place. Communication by the fourth session is amazing: horses will often point out what they need with their noses, or by biting what is incomplete (e.g., daunting displaced ribs). *Always listen to the client!* I have often had a hind end pointed my way as a way to say, "You've missed some pretty important stuff here." This is where organic work is fused with the horse's wisdom; this is often where the level of trust is upgraded!

Session #5 – Fine-Tuning / The Performance-Horse Closure

Where Session Five for the *performance horse* differs from other five-series equine work or the Ten Series in humans is that it is 'a closure for now.' These horses will need more sessions: pre- and post-performance, and then again to relieve the stress of transport (pre- and post-shipment). This session is a refinement of what the horse needs specifically in the here and now and, effectively, "See you later!"

> The horse teaches us self-control, consistency, and the ability to understand what goes on in the mind and feeling of another creature, qualities that are important throughout our lives.[1]

The Principles of Rolfing SI for Horses

My own personal oath that I take every day is to apply Dr. Rolf's principles to my work, combining them with a commitment to an active conscience and a duty to higher learning.

Support: I learned long ago from an Irish horseman (my mentor), that the hoof is the second heart of the horse: care of the legs and feet are of primary importance. Trainers are where I turn for knowledge, as they use different veterinarians and farriers. I have often worked at re-setting imbalances after these talented forces have come in and treated the client. I include deep work down the legs with the 'rose breath'.[2] The restoration of proprioception is quite amazing with this technique; horses will reveal the depth of their relief by sighing, licking, and snorting.

Adaptability (the key): Our work is to alter structure so performance can be modified. My interpretation for horses is to establish greater sling support through the shoulder girdle and greater impulsion through the rear legs into the pelvic girdle, which often creates more suspension and lift, thereby increasing the horse's ability to jump freely and to be organized on its landings.

Dynamic Balance: This is often referred to in Rolfing SI as palintonicity. Dynamic balance in the human is the connection of man to both heaven and earth; in horses, I understand it as being connected to heaven and earth and *connecting from front to back and back to front*. This is when the horse has attained physical equilibrium. In appearance, the horse stands equally into all four feet. In movement, there is elasticity in both the shoulder and pelvic girdle; this continuity is attained through connection of the barrel (see Session Three). A horse in movement that has attained dynamic balance is true beauty.

Worldview (my personal interpretation): What has this horse's world been like? One must consider the breed, the conformation, its job, its past experiences (including trauma, which often has a human imprint), and especially its personality. The portion of 'worldview' that is the personality is golden: you must find a way into what the horse is; often that inroad is the real treatment and the only road to travel.

Holism: The horse must be treated as a whole creature. In my template, holism includes the trainer, the rider, the veterinarian, the farrier, the grooms, proper nutrition and conditioning, and sometimes (I thank my lucky stars) the Rolfer. An often-overlooked component is the horse's stabling. Is it stressful? I spend a lot of time lingering in barns; ideally, it is a place where spirit and heart meet.

Profiles

I wanted to share these profiles to document how the sessions differ with what is at hand. Each horse receives a session tailored to its specific needs. The information provided is taken directly from my session notes. I sometimes take a full page of notes for each session; it serves as a great tracking tool and helps to communicate with the client/trainer about what was actually done. It is a great honor to share these amazing athletes with you!

Old Injury / Recently Gelded Stallion

Hornero

Hornero is an thoroughbred imported from Argentina. He is currently showing in meter 15 jumpers and 3'6" - 4' in hunter equitation.

Old injury right front: medial scarring above coronet band/below pastern. Displaced sternum left: put sternum back in (direct work pectorals into rectus abdominis). Sore forearms: flexor/extensor compartments.

Hornero, Age 9
Junior Rider: Lyndsay Gersoff – 16 years old
Owner: Wellsbridge Farms, Parker, Colorado.
Trainer: Paul Rohrbach

Striation in tissue of right shoulder: worked on breaking down adhesion and creating differentiation. Hornero was only gelded seven months ago and still has stallion tendencies – they often bite and kick, and are just more expressive! Within five minutes of our interaction, Hornero figured out I was going to help him and kindly licked and groomed me throughout the entire session.

Normally, the first-session goal would be the establishment of respiration and rapport. When a horse has an evident incongruence, such as an old blunt trauma, I will veer off of the model – especially when a horse is extremely athletic, it is kinesthetic and catches on rapidly as to how this soft tissue work can re-set and re-organize. Hornero was gelded late – quite often the appearance is telling: big bodied, large-necked, with a fiery attitude. In this case, he has scar tissue on the inner lines of his rear legs (adductor to pelvis). The scarring is a direct result of being gelded, especially at a later age. We spent extensive time working on this; scar tissue can often inhibit proper lead changes at the canter or can cause 'swapping' (an improper switching of rear legs) within the gait of canter. Direct work: sartorius, gracilis, adductor femoris, vastus medialis. We are breaking down scar tissue; he is super-responsive to this!

On the second go-around on Hornero, I find more injury related to his right front. He has had blunt trauma to his right rib cage with multiple ribs displaced. I put the ribs in by gently working the intercostals, passing through the rib cage multiple times. He responds by closing his eyes and snorting deeply. At the end of the session we de-rotate his sacral and lumbar spine (craniosacral technique); the vertebral column was rotated anteriorly to the right. Lyndsay later called me to tell me how great Hornero felt afterwards, and that he was showing well.

The Clean Machine

Argonaut/Argo

Argonaut/Argo, Age 10
Breeding: Holsteiner
Owner/Rider: Elizabeth Hund – Bridlewood Farms
Trainer: Michael Dennehey
2014 Zone Champion for his division
7th in the country 2014 for Amateur WCHR (World Champion Hunter Rider)

Argo competes in the amateur/owner hunter division: 3'3'-3'6", and he also performs in the hunter derbies. I consider this horse to be a clean machine! He is 'short-coupled': each vertebrae is more dense, so his appearance is that of a shorter back, though the actual vertebral column has the same number of vertebrae. This conformation is known for their ability to change direction with agility. I believe this work has supported his foreleg scope and increased his flexibility. We are talking minute particulars here: this is a horse with beautiful conformation – and he also has a great mind and an elephant's memory!

Post-performance/post-shipment (returning to Colorado from the Oaks, a horse show in California) Wednesday June 17, 2015.

Normally a pattern for horses that travel long distances when being shipped may include: sore hamstrings and adductors into the pelvic floor, crimped ribs, and stiff necks. The findings on Argo today are more based on post-performance, e.g., a very athletic performance.

Wrenched neck toward the right: trapezius, splenius cervicis, sternocephalic, brachiocephalic, complexus, longus capitis, longissimus capitis. Worked both right and left sides; especially right. Sternum off to left side: worked subclavius, ascendus pectoral, transversus and descending pectorals. Did direct work on sternal attachments. Put humerus back in on right side (caught to rib cage – subscapularis). Ribs displaced right: did intercostal work. Worked on lumbar region to assist in diaphragmatic function. All of this work is applied to support his shoulder girdle in suspension and respiration. Afterwards, he appeared much more comfortable.

Loss

Keiri Kaneps and Nautilus/Echo

Nautilus/Echo
Owner/Rider: Elizabeth Hund – Bridlewood Farms

I have included this photograph as it is important to acknowledge that we all experience losses in this life. In the horse world, this can often be even more so. We lost Keiri Kaneps to cancer August 7, 2012. She was one of the finest riders and trainers (Studio Farms) that I have ever known – a great friend to horses and people alike.

Nautilus/Echo passed on March 17, 2015, a young horse with problems stemming from his dam's DNA.

May we take pause for their brilliance, and how love for them forever marks our hearts.

Soothing the Nervous System

Ravissant/Maggie

I worked on Maggie twice during show season last year. This year, Heather Chenault, owner of Indeo Acres, has had her worked on every week. She has had a Five Series, and is now being treated weekly pre- and post-performance. She has muscled up immensely – there had been divots in her hind end because of a lack of quadriceps development, which was actually due to adductor suppression. The inner lines of her rear legs needed to be freed, and her quadriceps needed to be turned on as well. The dramatic improvement in Maggie is due to change in diet and conditioning (training) plus the Rolfing work she has received.

Ravissant/Maggie, Age 14
Breeding: Danish Warmblood
Leased by: Indeo Acres
Trainer: Phillip Dreissigacker

The minute particulars of her structural issues are located around the sternum: pectoral work, wither (the relationship of sternum to wither), aligning them so there is no puckering at the wither (softening of the nuchal ligament insertion and trapezius). Direct work on the shoulders: biceps, triceps, deltoid, supra/infraspinatus, serratus, subscapularis. Stifle region: worked to finely tune the quadriceps muscles – they function nearly perfectly. The most amazing change is in Maggie's nervous system. In this mare, what is of the most vital importance is that her nervous system is soothed; ten minutes into the session, she has shut her eyes and let her head drop. It is hard to know what causes any of us to be high strung; I think part of it is our makeup, the other portion is our experience(s). Whatever the reason for Maggie having such a sensitive nervous system, this work speaks to her and it soothes her. It is very moving to see a beautiful animal move from fear to trust, and it makes my day every time I get to work on Maggie. I am one of her biggest fans!

Rehabilitation

Que Sera/Kacy

Que Sera/Kacy
Owner/Rider: Meghan Newton – Sleepy Hollow
Trainers: Mark Mead, J.J. Atkinson

Kacy got kicked by another mare and fractured her tibia and was taken to Colorado State University's veterinary equine clinic. This was in April 2014. She was first treated in the surgery unit, where she was tethered to a wire and could not lie down for many months. I had previously worked on Kacy quite a bit, both five-session series work and performance/shipping-related treatments. I had most recently treated her both in Gulfport, Mississippi and after she returned home with Meghan Newton, after they placed first out of forty-three in one of their jumper classes.

I included this profile because the energetic component of my work with Kacy provides an interesting topic for discussion. I must say I had to find my way in this; it involved committing at least three hours a week (often more!) to a beautiful mare and her family, Sheila and Meghan. Walking into a vet school to do Rolfing SI on an injured horse was a very humbling experience. Kacy was suffering from depression and exhaustion, and the trauma to her stifle region needed to be addressed. I worked on her loading pattern, right rear to left front (compensatory for left rear injury). She had also injured her neck in the hospital, when she twice managed to lie down despite the cable attached to her halter to keep her from doing so. I not only did Rolfing SI on her body, but groomed her, sat in her stall with her, and talked to her. I spent time working with her emotions through voice, touch, and presence. I stayed true to Rolf's work by being devoted, curious, and studious.

Anatomically her right stifle region, left shoulder, and the right side of neck became acute as well. She was eventually moved to the rehabilitation clinic, where I gained a lot of support and knowledge from the vet Dr. King, who was also concerned about her patterns of compensation. I would first speak to Dr. King, and then design what I thought would best help.

There are other factors not mentioned here, but Kacy is on the mend. She is back home at Sleepy Hollow, and her treatments are now scheduled bi-weekly. Once she becomes stronger, I will extend them out to once a month. After nine months of working on her weekly, I cannot express my gratitude for her finding her way back!

Lymphatic Drainage

Justice

Justice, Age 12
Breeding: Hanoverian
Owner: Jenna Thomas – Capricorn Farms
Trainer: Tracye Ferguson

I happened upon this way of working on horses, using lymphatic drainage, when a horse in Tracye's Ferguson's barn contracted cellulitis (during the last show season). After the infection had passed, she thought I should work on the horse's leg, and I was able to reduce the swelling. When Justice contracted lymphangitis, we thought this technique might help.

Justice got a small cut on his rear right leg, which blew up overnight and became a huge infection. His heart rate and body temperature were increased to dangerous levels, and his leg swelled to elephant-like proportions. He was treated at Littleton Large Animal Hospital for fifteen days in January 2015. Afterwards, we waited for about two and a half months, and then Katie Thomas, owner of Capricorn Farms, and I decided to give it a try.

I began working on Justice's affected leg by cupping my hands together above the hock, and moving my hands downward using the 'rose breath' to affect the energy. The initial swelling reduced dramatically, and we are continuing to work with Justice on the pockets of the scar tissue that remain. We are encouraging drainage from above by working further up the rear leg. This remains a work in progress. This gentle giant humbles me. He stands so kindly while I am positioned practically underneath him.

Conclusion

This work continues to develop for me. I am grateful for the people who have come into my life through this line of work, but I am especially grateful for the horses.

Endnotes

1. From *The Complete Training of Horse and Rider*, by Alois Podhajsky, a former director of the Spanish Riding School.

2. The 'rose breath' is a deep reoccurring breath (almost like the sound of the wind) borrowed from Gael (Ohlgren) Rosewood's teaching, influenced by her Continuum studies.

Equine Motor-Control Therapy Using Perceptual and Coordinative Techniques

By Robert Rex, Certified Rolfer™

strategies from humans to horses. Not only do rods and cones help us differentiate colors from black/white, they help us (and horses) differentiate focal forms from peripheral vision. This is how the visual perception strategies play an important part in our treatments.

Introduction

Structural work with horses and other animals has been well researched and documented, and is usually performed under the guidance of a licensed veterinarian. In addition to the massage, chiropractic, and acupuncture treatments that are well-established in the equestrian community, Rolfing® Structural Integration is now also becoming a more common practice, thanks in large part to our colleagues, Jim Pascucci and others. While the benefits of motor control and proprioceptive rehabilitation have been successfully demonstrated with horses for about twenty-five years, there has recently been a surge in awareness among trainers and veterinarians about the value of coordinative techniques enhanced by tools such as Kinesio® Tape, TheraBands®, and a variety of neuromuscular stretching protocols (see Figures 1 and 2).

Figure 1: Horse with a TheraBand. (Paulekas and Haussler 2009)

I have found that treatment strategies drawn from work with trauma to humans and their motor cortex are readily applicable to work with horses, whose focused training easily reveals their areas of instability and nervous tension. As a result, adapting coordinative and perceptual tools from Hubert Godard's theory of tonic function[1] to work with horses, as well as psychobiological tools taught by Lael Katherine Keen in her Rolfing SI and Trauma classes, are quite effective and can lead to immediate changes in horse behavior and functioning.

While the research on equine brain development and neurophysiology is scant, I was able to determine that equine brain development has similar characteristics to that of humans. While equine brains tend to myelinate more quickly than human brains postnatally, the areas of development are similar. The brain structures relevant for motor-control therapy include the motor cortex and the anterior cingulate cortex, which stores emotion, attention, and working memory. Equine vision also relies on rods and cones, like human vision. This allows us to adapt visual perception

Figure 2: Neck stretching exercise. (Paulekas and Haussler 2009)

Trauma Response in Horses

Trauma resides in the nervous system and connective tissues, not in the traumatic event. In other words, when we meet a challenge that is above our capability to accommodate, a 'freeze response' occurs. Somatic Experiencing® practitioners such as Peter Levine and Keen refer to this ability to accommodate as 'finding resource within'. The response to activation of the sympathetic nervous system can play out in one of several ways. Ideally, the parasympathetic nervous system should activate to help the entire system dampen itself down. If this doesn't happen, then a 'freeze response' occurs and the chaos of the traumatic event can result in dissociation. This can manifest as a person feeling cold, sleepy, or frightened; or being distant, and/or not being able to feel his body. It can be observed as a 'deer in the headlights' look (where one is stuck or 'frozen' in a sympathetic state), or a 'spacey' look (where one is stuck or frozen in a parasympathetic state). When trauma is present, the sympathetic nervous system can create gaps of awareness around the body. This can manifest as 'blind spots' in certain peripheral vectors around the body.

While horses almost always have a good healthy dose of resource in their systems, they too can be overwhelmed. When they don't have sufficient resource, they can end up being a predator's dinner. Alternatively, they can begin to exhibit familiar signs of trauma: a distant or overly engaged look in their eyes, shallow or held breath (which can manifest physically in their ribs and spine being held up or held too rigidly), and being spooked easily.

Tonic Function in Horses

Balanced tonic function requires four forces working together:

- **Structural forces** relate to one's cultural and personal beliefs.
- **Coordinative forces** are about timing – what muscles are working, what muscles are working with or against other muscles, and when do muscles work?
- **Perceptive forces** relate to the idea of movement, as well as to one's body map and body schema.
- **Symbolic forces** relate to deeper meanings in one's psyche – in a sense, the introjections (attitudes or ideas subconsciously incorporated into one's personality) held in one's core.

Horses have a unique postural mechanism called the 'stay apparatus' – the mechanism that allows horses to sleep standing up. However, having any of the four tonic-function forces out of balance can manifest in joint instability, difficulties protracting/retracting the legs in one or more gait speeds, and/or shortening through the spine during various gait speeds. Balanced tonic function – between Hubert Godard's two movement centers, G and G', as well as the fascial, neural, and muscular subsystems in the body – allows lengthening to happen: lengthening in the spine, lengthening through the head, and connection through the feet.

Trauma will usually affect all four of the above forces, creating compensations that impair efficient tonic functioning. Ways of improving tonic function in a system include engaging the system's orienting reflex through the hands, feet, and eyes. Adding tonic function tools to trauma-resolution strategies can allow an organism's own healing processes to integrate the frozen sympathetic/parasympathetic nervous system responses. The client's nervous system (human or horse) can settle down, slowly resolve the trauma, and finally realize new options for movement.

My Observations and Work with Horses

Godard says that G' (the upper pole) is our 'relationship center'. It's how we relate to others – in nature, at work, with our clients. I feel this works in reverse as well – it's how the plant, mineral, and animal worlds relate to us (if we know how to listen, feel, and observe). Thus, I incorporate elements of Bob Schrei's and Donna Thompson's SourcePoint® Therapy[2], Godard's tonic function tools, and Keen's psychobiological tools into my work with horses.

In one case, I worked with a gelding who was dragging his right rear foot, as well as not being able to fully protract his right hindquarter during the trot phase. My first clue was finding a lack of stability in the right hindquarter when I lifted up his left hind leg to test for fetlock flexibility (the fetlocks are the metacarpophalangeal and metatarsophalangeal joints in the forelimbs and hindlimbs, respectively). My second clue was seeing a rigid right rear fetlock during his trot. All his other fetlock joints had a nice springiness to them, but the right rear looked wooden.

I suspected this gelding had a core instability issue and probably a proprioceptive issue as well. I examined his trotting gait from the front (as opposed to a circular lunge line). This revealed a tendency for the gelding to cock his head to the right, thereby shortening his rib cage, spine, and gait on the right side. This confirmed that there was a proprioceptive gap in awareness on his right side.

Using a tonic function concept of orientating through the eyes, I created an 'expansive' blinder that would give him more of an opportunity to see further back, increasing his peripheral vision out of his right eye. Immediately, both on a lunge line and from front observation, three things happened simultaneously: 1) his right hindquarter was able to protract fully, 2) his right rear fetlock had the same springiness as the other fetlock joints, and 3) his ribs and spine lengthened through the right side. We also made a sort of proprioceptive anklet (or 'fet-let') for his right rear fetlock. This enabled the horse to begin to feel where his whole leg really was, and to slowly start correcting his foot dragging issue.

A blinder would best be applied while working/training the horse – on lunge first, then perhaps graduating to under-saddle work as well. I have not come across a situation where more constant use would be necessary.

In another case, a mare had been trained in the traditional manner of having her head pulled down to artificially flex her cervical vertebrae while the trainer dug his heels into the sides of her belly. As a result, it seemed as if the mare kept expecting pain every time she began to canter. This could be seen in the way she wanted to buck her way into a canter. This mare had clear proprioceptive gaps on her left side, coupled with an intense traumatic freeze response due to the inappropriate training methods. Creating an 'expansive' blinder, as with the gelding, for her left eye was not particularly effective during our first session together. It seemed the mare's nervous system needed to be settled and the traumas resolved and integrated before she could begin to accept new strategies of training.

Recalling Levine's theory on trauma, Stephen Porges' Polyvagal Theory[3], and Keen's 'coherence touch'[4] principles, I first utilized principles from SourcePoint Therapy to create a heart connection with

this mare. I was then able to apply coherence touch, or settling, on her croup and pelvic region (this was especially effective with the rider on). Slowly, she began to breathe more fully, lift her belly and spine, and relax her tail and hamstrings. Then when the rider asked for movement into a canter, there was nary a hint of a buck, with the mare moving smoothly into a canter gait.

While the results from these interventions were immediate, I suspect that these tools were also the basis of correcting these horses' 'worldviews'. As the riders and trainers continued to use these tools as 'homework', the traumas/patterns embedded deeply in the horses' nervous systems could be resolved so that new training protocols and behaviors could emerge. In general, I have found that horses (and dogs) integrate such changes into their systems more quickly than humans, and can enjoy freer, stronger movement as a result.

Since graduating from the Rolf Institute® in 2005, Robert Rex has studied neural mobilization, Rolf Movement®, pain science, and the affects of trauma. He is currently exploring the impact of unresolved primitive reflexes. He practices in Vermont.

Endnotes

1. For further reading about Hubert Godard's theory of tonic function, read any one of Kevin Frank's articles on tonic function found at Resources in Movement (www.resourcesinmovement.com).

2. Private conversation with Donna Thompson regarding application of Sourcepoint Therapy with horses and animals.

3. During her Rolfing SI and Trauma classes, Keen provided several articles from Stephen Porges on Polyvagal Theory.

4. Coherence touch denotes a quality of touch where the practitioner touches the client and tracks several different signs of autonomic nervous system regulation – heart rate variability, and oscillation of blood pressure and muscle tonus in sync with the rhythm of the breathing – in such a way as to invite the autonomic nervous system to regulate.

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Dispatch from the Amazon: Wild Dolphins Volunteer to Help Special Children

An Interview with Igor Simões Andrade

By Igor Simões Andrade, Certified Rolfer™, Rolf Movement® Practitioner and Heidi Massa, Certified Advanced Rolfer, Rolf Movement Practitioner

Heidi Massa: You've made an innovative collaboration with wild river dolphins in your work with disabled children. Where do you do this?

Igor Simões Andrade: In a rural area about forty kilometers from Manaus, a Brazilian city founded in the late 1600s in the heart of the Amazon rain forest.

HM: Manaus is a fascinating place, isn't it?

ISA: Absolutely! It's the capital city of the state of Amazonas, and sits at the confluence of Rio Negro and Rio Solimões, which join to form the Amazon River. It's about 900 miles inland of the Atlantic Ocean. Even with about 2 million residents, this most populous city in the Amazon rain forest is accessed mostly by boat or airplane. In the late 1800s, rubber made Manaus the richest city in South America and earned it the nickname, Paris of the Tropics. Many wealthy European families settled here, bringing with them European culture. For example, the 700-seat Amazonas Opera House, established in 1896, was built with bricks brought from Europe, glass from France, and marble from Italy. More recently, in 2014, Manaus was one of the host cities for the FIFA World Cup.

HM: And your work might make Manaus famous for another reason – *Bototerapia*. Tell us – do your clients come to you only for Rolfing® Structural Integration (SI), or do you have other certifications as well?

ISA: Besides being a Certified Rolfer since 2005 and Rolf Movement Practitioner, I'm a physiotherapist. The dolphins assist me in both practices.

HM: When most of us think of dolphins, we imagine large ocean mammals. But the ones you work with are different. Please tell us a bit about them.

ISA: I work with the wild river dolphins of the Amazon. In Portuguese, we call them *boto cor de rosa*, or pink dolphin; but their scientific name is *Innia Geofrensis*. *Botos* are smaller than ocean dolphins, growing to about two meters (6.5 feet) in length and 200 kilos (450 pounds).

HM: Wow – these wild animals just show up voluntarily to help you treat disabled kids?

ISA: Yes – exactly.

HM: What's their social structure in the wild?

ISA: Their lifestyle is solitary for the most part, although they sometimes form groups to hunt.

HM: YouTube has lots of videos showing you and the botos working with disabled children.[1] Do the botos assist you with other kinds of clients, as well?

ISA: Oh, yes. We work together with all types of clients, both children and adults, those with and without physical deficiencies.

HM: When did you begin working with disabled children?

ISA: About twenty years ago, I started treating children with Down's Syndrome through Capoeira Angola – a Brazilian martial art form.[2] Besides improving physical strength and dexterity, capoeira enhances rhythm, coordination, and spatial and social perception. These days, the botos and I work with Down's Syndrome, autism, cerebral palsy, and congenital malformations, among other things.

HM: Do disabled children constitute a large part of your practice today?

ISA: Unfortunately, no. I can make them only a small part because when they are in need, I treat them free of charge.

HM: How did you come to involve the botos into your treatment of these children?

ISA: Around 1998, before I changed my professional direction and became a Rolfer, I got about halfway through school for veterinary medicine, which is where I first learned about equine therapy and dolphin therapy. At that time, dolphin-assisted therapy was happening only in other countries with captive animals, so I decided to try it here with the wild river dolphins. The children get lots of fun and pleasure from the water work.

HM: When you put a child in the water with the botos, do you have an intention beyond inducing pleasurable sensations?

ISA: Several things. First of all, I get the child's attention to engage him in the treatment. Then, for example, I'm facilitating his finding a relationship with nature; experiencing undulation of the spine; heightening his senses of touch and proprioception; and reducing pressure in the joints. It's about sensation, relaxation, and play – all at the same time!

HM: How do you integrate the water work with the botos into a regular Rolfing session?

ISA: Over the past nine years of working in the water with botos, I've developed many highly effective techniques. For example, I have ways to manipulate the ribs so as to achieve the First-Hour goal of greater respiratory amplitude. Everything is adapted to the client's particular pathology – but when clients resonate the sounds of the botos' breathing and vocalizations, their own respiration deepens.

Figure 1: Igor treating a child on a mat, with mothers and other children gathered around.

HM: Do you use special tools for work in the water?

ISA: Yes. For example, there is a partially submerged platform with some stairs that a person can sit on. The client's mother can sit on the stairs with the client on her lap, front to the mother and back to me. With the client in this position (see Figure 2), I can work to align the spine and to address scoliotic curvatures. Treating children with scoliosis in an aquatic environment has allowed me to invent, develop, and investigate various maneuvers that render the scoliotic pattern more adaptable. Because the impact of gravity is reduced by the client's immersion in water, the buoyancy of which provides flexible support, intervertebral pressure is reduced. This, in turn, allows space between the vertebrae and micromovements among them. It facilitates three-axis spinal

Figure 2: Spinal work on the water platform.

movement and helps to restore function in the spine as a whole.

HM: Does working with the botos enhance the quality of your manual work with connective tissue?

ISA: It certainly does! It stimulates and challenges me, letting me be more creative and attentive, as well as more intuitive. I make a point of swimming with them and playing ball with them at the start of my day – in part so that I know which of them is present. As I connect with them, and through them with the natural environment, my own perceptions are heightened.

HM: In the YouTube videos, they seem really curious and friendly. Are they typically like that?

ISA: For the most part, yes. That's how they behave when humans are calm and respectful towards them.

HM: Do they work well with children in particular?

ISA: Though botos work well with all kinds of humans, they seem somehow to be especially present with children. For example, during our sessions, they are highly attuned to a child's crying or apprehension.

HM: Do you need to teach individual botos to interact with the children?

ISA: In the beginning, I worked with them extensively. Before exposing them to the first group of children back in 2006, I logged over 500 hours of diving and interacting with them. In the process, I came to recognize and really like many of them individually.

HM: These days, do you work with certain botos in particular?

ISA: I work with several of the wild ones who live near me in the Rio Negro. Each day brings a pleasant surprise – seeing who's showing up for duty.

HM: Have you given them names?

ISA: For sure: Menteco, Edna, Panqueca, Mucuim, Pretim . . .

HM: Do you compensate the botos for their services?

ISA: In a sense, yes. I support species conservation in many ways, and have put a great deal of effort into gathering information about them and documenting how they're affected by human activities. And of course, I reward them with fish after our sessions.

Figure 3: Igor feeding a fish to a boto.

HM: Are you doing any kind of formal research regarding your work with the botos?

ISA: Though I respond to inquiries as best I can, because I have no sponsors at the moment, I lack the resources to launch a formal research project – or even to include in this work everyone who asks to participate. I am seeking research partners and financial sponsors. Given the current political and economic challenges here in Brazil, our work is proceeding without the slightest backing from anyone – and surely the botos deserve better than that!

HM: Do you have any suggestions for readers who are interested in the possibilities of engaging aquatic mammals in Rolfing SI?

ISA: Next year I will offer a workshop here in the Amazon for Rolfers who would like to experience working with the botos in natural surroundings, and to explore the botos' therapeutic potential for their clients, whether disabled or not. I would be pleased to provide more information to anyone who is interested.

Endnotes

1. Among the many videos featuring Igor's work with the botos are:

- Pink River Dolphin Provides Therapy for Brazilian Boy (in English): www.youtube.com/watch?v=FjYFUe4uEic
- Bototerapia no tratamento de crianças especiais (Bototherapy in the treatment of special children): www.youtube.com/watch?v=YEw3V9ANeiE
- BOTOTERAPIA Igor Simões Andrade (collection of media coverage, with commentary on Rolfing SI): www.youtube.com/watch?v=FpDDL1snr40
- Boto: Da lenda à ciência, o encanto do príncipe das águas (documentary film concerning research on the river dolphins and featuring Igor's Rolfing SI): www.youtube.com/watch?v=h84vcArdNLw

2. See Igor playing Capoeira Angola at www.youtube.com/watch?v=qKZdCjc5CYo

To learn more about Bototerapia or to contact Igor Simões Andrade, visit www.bototerapia.com.

Sensory Awareness and Feline Play

By Heather L. Corwin, PhD, Certified Rolfer™

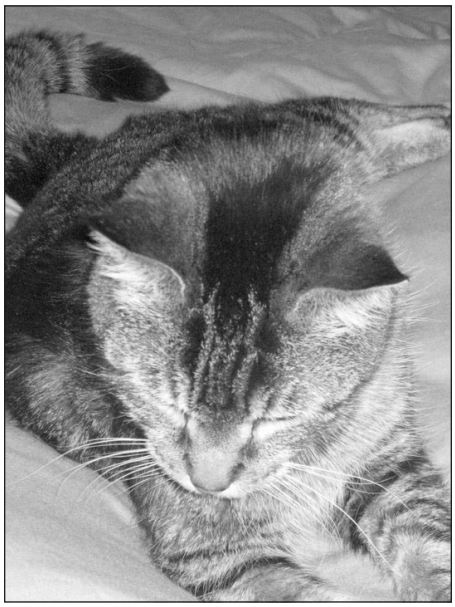
> A black cat crossing your path signifies that the animal is going somewhere.
>
> Groucho Marx

Stinky the Cat

As I was stretching on my hardwood floor, I felt whiskers tickle my face. They belonged to my cat, Stinky. I laughed and moved him over to get back to the work of opening up my pelvis through movement. More than simply stretching, I was trying to deepen my understanding of *Sensory Awareness* and to remain in the moment to investigate what helps me become more aware of what was actually happening in the now. It took me a moment, but I came to realize that the 'now' I was exploring included a furry being, so resisting the urge to accomplish or complete an agenda (stretching), I decided to see what this detour might bring to me.

I closed my eyes and lay supine with my palms up. Stinky returned, curling the top of his softball-sized head into my open palm that was supported by the floor. I followed my next impulse to put my face into his satin, warm-from-the-sun, earthy-smelling side. He trilled, acknowledging and encouraging my playfulness. He flopped onto his side in almost a somersault, batting at my hand with his front paws. I relished the feeling of his fur, the pads of his feet brushing my arm. His fur was as soft as down. The pads of his feet were ever so rough, like how elephant skin feels. I came up onto all fours feeling the hardness of the wood, slightly gritty from earth coming in on shoes. Stinky rubbed his body against my arms and legs, walking around and under me with his proprietary saunter. The weight of him leaning on me and his body heat combined with the inner vibration from his purr. Where he touched me, I could feel my skin tingle and warm with the contact. His tail followed last in its own swirling dance that slithered around my arm and then up my neck or down my body.

Although I was initially exposed to the practice of Sensory Awareness in graduate school and actor training, much of my deepening with it occurred through my



Stinky (Photo by Heather Corwin.)

experiences with Stinky. I love this memory of interacting with my cat and letting him take the lead in our communication. We would often have loving and playful collaborations that would heighten my sensory awareness, my realization of "the capacity to experience fresh for oneself" (Brooks 1986, viii).

Sensory Awareness

Sensory Awareness (SA) is a discipline or practice that cultivates the capacity to remain present, to have patience with what is occurring, and to invite all of oneself to take in and name a multitude of sensations. It was pioneered by Elsa Gendler, and later Charlotte Selver. Selver's protégé, Judyth O. Weaver, PhD, was my teacher at the Santa Barbara Graduate Institute, where I earned my PhD in Somatic Psychology.[1]

Defining SA can be confusing, as it is more a process or way of being than a result. We are not merely focusing on our senses to give us information in and of the moment; we are also seeking the quiet places of who we are inside, best found by determining how the outside impacts our inside. Weaver (2015) explains, "Sensory Awareness is the practice of coming more in touch with oneself." It "is a phenomenon of *experience*, not a characteristic of *perception*" (Hurlburt 2011). SA can be of great value to bodyworkers and movement specialists personally, and it also can give us vital tools to share with our clients.

So how does SA viscerally impact us? Let's use the activity of sitting in a chair as an example. The act of sitting would not be SA; rather, it is a skill that you have refined regarding your place in space (perception/proprioception) and an interaction with an object to complete a task. If, instead, you take the time to use the back of your leg to feel the pressure of the chair seat and notice the temperature of the seat with your leg, then allow gravity to deepen the pressure of your leg, noticing how your relationship to the chair changes as you do so, then you are working with SA. This process demands slowing life down to observe the layers of information and to witness the portions of every moment. For bodyworkers, this distinction can be incredibly helpful to refine and deepen experience, personally and with others. In addition, this type of work can allow a *pace* to be set by the client rather than by us, which may be more effective in producing a richer experience, integration, articulation within moments (including when experiencing shifts), and a myriad of other benefits.

Learning and Teaching SA

Animals are always in the moment, which is why humans tend to find them engaging. Humans operate within a socially mandated realm where manners and behaviors – taught as necessary tools to interact successfully in society – are not always in sync with personal impulses. Animals understand and operate within a hierarchy not dependent on social conditioning. As providers of food for our pets, humans are usually alpha or the leader within a household. If a human is meeting the needs of the cat, the cat will not retaliate. In the case of Stinky, we really enjoyed each other. This mutual affection inspired daily cuddles and play sessions complete with a chase! Since play was a normal part of our daily interaction, his engagement with me while I lay on the ground made perfect sense: that position invited him to play.

To let your cat deepen your SA, you might make a space that creates encouragement. If you're able, you might get a newspaper and open it in front of you. Any large piece of paper will do. Notice what the paper's texture feels like between your fingers.

Close your eyes and move your fingers and notice if you hear any motion of the paper. What does that evoke in you? This alone may be enough of a playground for your cat to join your exploration. Place the paper next to your face. What do you find? Does the paper have a temperature against your skin? Does your cat want to bat the paper from the other side? If you cat surprises you, how does your cat do that? What sensations are you taking in as your cat is close to you?

If your cat does not seem to operate with as much contact as Stinky preferred, or the newspaper idea does not work, you might find yourself in one of these interactions: your cat's whiskers brushing up against your face . . . your cat walking on your back and sitting on you . . . your cat sitting by your head purring just to be near you. See if your interactions make you more aware of your surroundings. Do you feel the temperature of the room? The temperature of the floor? Does your skin reach out to feel your cat? What does that translate to in sensation? You might also take the opportunity to observe your cat and move like s/he does. How does moving like that make you more aware of your body and how your body makes contact with the floor, chair, or carpet?

In a human didactic setting, SA can be taught in a variety of ways. Weaver employed many exercises to formulate, increase, and refine her students' abilities with SA, many of which were reminiscent of lessons introduced to me through actor training during my undergraduate and graduate studies. For instance, in an exercise of walking in trios, we were to act as one, keeping tempo and feet placement the same, without a leader. This may sound easy, but actually paying enough attention to continually align impulses with two other people is quite a challenge. Another exercise took the form of us walking around the room to find a person who seemed to be in sync with you, your tempo and rhythm. This allowed for a natural progression of discovery rather than forcing something to happen by choosing partners as an intellectual or social choice, as often happens. I found it interesting that Weaver started from more tangible outside work (walking with partners) and then reduced the focus to the more quiet and refined work of inner life, which is what we will look at next.

My favorite example of working with Weaver with my inner life took place on a day that was bright, but temperate outside (typical weather for Santa Barbara, California). That day, I could feel sensations tugging at me that signified the beginning of a migraine. My eyes were getting sensitive to light, my head felt pressed in, and the base of my skull felt tight. My impulse was to back off and leave for the day. Instead, because the class moved outside, I decided I would try one more exercise. We were surrounded with beauty, working in a vibrant green garden with a tinkling fountain and damp, cool ground. The garden was surrounded by a building with stone walkways, arches, and columns; sound bounced inwards in this setting, creating an atmosphere of safety and tranquility. The class was separated into two groups, and in my group we all were to be blindfolded. Our partners from the other group chose us and were to lead us to areas of the garden that might interest us. Ironically, because I didn't know who the person was leading me, I didn't have any trust issues. The purpose of the exploration was for the blindfolded partners to go at our own pace and explore what we wanted to explore, being taken care of by others who would keep us safe.

I discovered that I like to move at a glacial pace. So much was around me that I did not feel much need to move or explore, because I was being recruited by the world to feel and experience sensations. A fuzzy leaf became extraordinary – how it felt in my fingers, how it surprised me by its texture, how I liked simply holding it. I did not have any pressure from outside to move at any pace, so I remained mostly still or barely moving.

After about an hour of this type of work, being shielded and protected by seeing guardians, we came back together as a group. I discovered that I no longer suffered any signs of a migraine coming on – my first experience ever of heading off a migraine without medication. Suddenly I had a way to help myself avert the agony of these debilitating headaches – being in the moment, doing what I wanted to do. (Though, sadly, I won't always have the luxury of a protector.) I began to understand how Weaver (2015) framed this work: "[It] is not didactic; it is [a] practice."

I took this exercise to Northern Illinois University, where I currently teach movement for actor training to undergraduate and graduate students. A colleague invited me to teach the new freshmen some trust-building exercises during their first semester. Many were fresh from high school, with no experience in movement training. The students did not know each other and had no sense of camaraderie or feeling of "we're in this together." I led a short version of the exercise of leading someone whose eyes were closed to see what sort of trust they could build. The sighted leaders in the first group chose to run their partners into walls, chairs, doors, everything. Suggestions were offered to individuals in an attempt to protect the 'blind', but little changed. Teaching this exercise, I hadn't expected to encounter fear! The students with closed eyes were afraid to be led even before the exercise began. However, when they switched roles and the 'led' were the leaders, the room became peaceful and a place of caring. Specifically, the leaders used a methodical pace that was slow and easy to follow. Firm but supportive connections were made so that the followers felt secure in their leaders. The people who had been run into objects had learned from their experience to care for someone in their charge who could not see. Here was the trust exercise I had been expecting – the learning came in a different way, but was still based in SA.

It was evident how outer life impacted inner life: the fear of being run into a chair or walked into a stationary object can make students hold back. What's more, when a person is trusting another to be one's eyes, experiencing the quick and sharp surprise of a chair cutting into one's calf can either inspire the modeling of careful oversight when positions are traded, or malicious intent. Here, care-taking prevailed as a direct result of the follower noticing his or her experience and wanting to specifically create an experience for his or her partner that left room for safety within the space and exercise. Plus, the students slowed down enough to notice more in each moment. This evolution suggests the powerful need to allow a space for simply noticing what is happening and what is wanted in any given moment, which will foster SA.

Nature, Animals, and SA

My own experience of being blindfolded in nature during an SA exercise showed how compelling the natural world can be. Much of Selver's SA work is done outdoors, letting the landscape do the awareness work for the student. A fuzzy leaf can avert

a migraine . . . the sound of a fountain within an enclosed garden can capture one's complete attention. Nature has a way of demanding interaction. We don't have to work to get a response from nature, because stimuli are constant and through a variety of sources, e.g., wind, water, birds, sunlight, shade, insects, temperature. As Brooks (1986, 137), Selver's husband and partner, asserts of SA, "We are powerfully aided by the vivid presence of nature." SA builds consciousness and awareness. Consciousness is noticing and experiencing the world around us. Building upon that, "awareness is consciousness together with a realization of what is happening within it or of what is going on within ourselves while we are conscious" (Feldenkrais 1972, 50). So, I can look around a room and see all the things in it; this is being conscious. Awareness goes beyond consciousness by being specific about what is in the room and how those items affect me. An example of the 'add-on' that awareness brings could be that when I feel into the room again, I utilize awareness and specifically observe the cool air at the back of my hands, the warmth of the chair supporting my thighs, buttocks, and back, and hear the buzz of the computer and the mumble of voices in the next room. I note that these things make me feel at home, engaging my inner life.

We could postulate that animals are embedded in the realm of nature in a way most humans no longer are. They want what they want and live solely in the moment, with acute consciousness and awareness. Animals take in information (consciousness), have a reaction (awareness), and act upon their next impulse. Our human lives have this potential, but also involve many levels of abstraction that animals don't engage in (as humorously shown in the Groucho Marx quote that opens this article). Though finding meaning within activities is important to humans and society as a whole, having this as a constant focus can create anxiety, and that anxiety can become debilitating. SA has more to do with deepening a person's experience within moments than with assigning meaning to a task. Picking up a cell phone becomes an investigation of weight and texture rather than a commentary on cell phones and our relationship to technology.

In Rolfing® Structural Integration, or any variety of movement training, we help the client cultivate awareness. The focus is often on impulses and the initiation of movements, and awareness focused in our sessions has the potential to change behavior. SA remains at the foundation of most movement training in that the goal of the work occurs inside the person seeking the training – that is, the growth of his or her *inner life engagement*. When nurturing awareness, the senses must all be engaged: with behavior, interactions, and consequences of these interactions, and responses to architecture/structure including walls, objects, and space (Bogart & Landau 2005; Williamson 2002). Another way of thinking about growing awareness is that it involves a person examining habitual responses and ways of being in order to be free of them, allowing *choice* in how we interact in the world.

Weaver (2003) writes, "Through practical sensing experiences with our everyday activities, we relearn to accept ourselves and others, and begin to understand the importance of this kind of attention." We begin to settle more into what is. In SA we focus on noticing rather than judging. This type of work supports simply being without judgment, a necessary skill in our work with clients. Practicing SA releases our ideas around what *should* be and brings us into the depth of what *is*.

Our animal companions, closer to nature and to the moment, are extraordinary teachers within this realm of work. When I was playing with my cat, I was initially more preoccupied with my agenda (subconscious) than having fun with him (what I really wanted to do). So much is programmed into the subconscious that I was not aware of the choice until my cat made me aware by not giving up his desire to play. Then I recognized that he could help me to be in the moment and be with him. When I began to play with him, he expressed his delight through his behavior – pressing his head into my hand, chirping, hugging me around my arm or leg. I could then deepen my connection with him by pressing my face to his furry belly, one of my favorite things to do. All of these connections seemed to take much longer because I was focusing on SA at the time. The sense of duration was important, showing that my awareness weighted this interaction as deep and important – a lasting and impactful memory. The connection implied hours of play because each moment had several layers, even though the clock revealed that only thirty minutes had passed. We danced together in this impromptu SA exploration and ended up on the floor, sidelying, him at my belly.

> When we consciously inhibit, we create a space in which choice can operate.
>
> Glen Park

A New Teacher

SA can be a tool to deepen the bond between us and the animals we encounter in our lives. Stinky was an ideal partner for me when exploring SA because he loved to feel into the experience of touching, being touched, and physical connection. Our love of being near each other resonated in us when in each other's proximity. SA gave me a priceless gift: a rich way for my cat and I to connect as beings simply enjoying each other. About six months after our first SA encounter, Stinky died at the ripe old age of eighteen. The gifts of love he left me are immeasurable, and I still miss him. The depth that SA brought to our interactions was profound.

Learning how to interact with Loki. (Photo by Heather Corwin.)

We now have a new cat, who is almost a year old. Loki is named after the Norse god of mischief, and she lives up to her name. Now freshly out of her kitten stage, Loki is very specific about how she prefers to interact. Loki is *not* the lover of long strokes to her fur that her predecessor Stinky was, but she's a snuggler. My SA lessons with Loki take the form of her body resting on me with her purr fully engaged. If she is in the mood, I can scratch her chin and face. If she's not, I get a nip to remind me of her boundaries. What I am able to focus on with Loki includes the space between us and the ways we can make physical

contact. She enjoys running away, inspiring a chase, or wrestling with my arm safely in a thick sweatshirt. In some ways our 'work' together balances between perception and awareness. I have found that if I only concentrate on SA with Loki by reveling in how soft she is and my sheer enjoyment of touching her, I have a rude awakening from pleasure to surprise with the sharpness of her teeth, because she is not enjoying the interaction like I am. Loki demands that I remain aware and conscious of her desire for space when physically interacting.

Stinky and I lived together and grew up together for eighteen long and delightful years. We *knew* each other. I am still getting to know Loki, so we do not have our own understandings and language yet, which Stinky and I built over a lifetime. As this richness develops with Loki, it too will expand me as a person. With SA, I know Loki and I will find our version of fuzzy love through time, listening, and patience. After all, a practice takes a lifetime.

Endnotes

1. Santa Barbara Graduate Institute was purchased by The Chicago School of Professional Psychology during the middle of my studies.

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Beamer: The Chihuahua That Somehow Knew

By Liz Gaggini, MA, Certified Advanced Rolfer™, Rolf Movement® Practitioner

I don't work with animals very often. They just don't seem to come my way. There was one time, however, that I did work with a small pretty dog, Beamer. This has remained an experience of some wonder for me. About eight years ago, I was staying at the comfortable and artistically nurturing home of my friend TJ Sebastian in Fort Worth, Texas. I first met TJ on that visit. I was teaching a class and TJ offered her guest *casita* to me for the ten days that the class met. She and her husband had several dogs they had taken in; she told me that ever since their kids had left home, her husband had been bringing home stray dogs.

All of the dogs[1], each in their own ways, initiated contact, allowing or demanding some degree of touching, patting, scratching, and ruffling; the exception was the smallest, Beamer, a long-haired Chihuahua. I could see why. Beamer was so pretty and so small that I was sure she had been overwhelmed by the affection of strangers many – too many – times. I have a strategy with such creatures: give them their space and allow for the possibility that they will come my way on their own. And so, while getting chummy with the other dogs at the house, I just ignored Beamer, and Beamer stayed far away from me.

On my last day at TJ's, I was sitting at one end of their long dining table across from TJ. We were drinking coffee, and sharing how glad we were to have met one another and how sad it was to say goodbye. Beamer was safe in TJ's lap while we talked, only occasionally making guarded glances my way. I tried not to look at her at all. I didn't want to alarm Beamer, as I thought it rather exceptional that she would share such close proximity with me for such a long period of time. I had my hands resting on the table, probably tapping and moving my hands around a little, as I have a habit of doing. The three of us – TJ, Beamer, and I – had been sitting at the table for about fifteen minutes when Beamer, without warning, stood up in TJ's lap and slowly pulled herself up onto the table. TJ turned to her while giving a questioning look, so I knew that getting up on the dining table was not a usual thing for even the littlest and prettiest dog in her house. Once on the table, Beamer walked over to me. TJ and I both shared even larger questioning looks. My left hand was turned up at the time and Beamer headed for that. She turned to face me, and then she backed up and managed to lay her belly right onto the palm of my hand. I didn't move, and TJ and I said nothing; we continued to share various looks of surprise, expressing in our faces a little mirth and a little awe.

I noticed right away that Beamer's tummy was hot – too hot. I started seeing if I could find any mid or long tide.[2] I felt some strong and fast mid-tide motions and pauses around the borders of her abdomen that I assumed corresponded with the region of her colon. As I was sensing, Beamer relaxed further down onto my hand, all the while looking me in the eye. I got the idea that she might be constipated. When working with the digestive track, I always like to start at the expelling end, to free restrictions from lower to upper. And so, as her expelling end, so to speak, was near to my fingertips, I began to palpate her colon from there. Beamer's response to this was to rest even further onto my hand and fingertips and to keep looking me in the eye. Just a short distance up through her colon, I found a

firm impaction. I manipulated this, trying gently to break it apart and send the pieces toward that expelling end. After less than two minutes, I felt a peristaltic wave start through her colon and the area of heat started to move and to cool.

I let my hand come to a rest to see if there would be something else to do, but very soon Beamer started to get up. She broke eye contact with me and tentatively stood in the spot over my hand for a few seconds; she then took a few steps, turned around, and began to walk carefully down the long table. TJ and I resumed looking at each other, but neither of us said a thing. As Beamer walked this runway, she did a few small stretches, picking up her pace and circling about a little. She then walked straight back toward me, stopped across from my face, leaned forward, and began to lick my face all over. I, of course, responded by putting a big smile on my face. I think TJ started crying, and I cooed back some loving things to Beamer.

After she had thoroughly covered my face with kisses, Beamer went back over to my left hand, which was still where she had left it. She made a couple of circles, and with her back turned to me, she laid her left hip

Beamer

right onto the palm of my hand. Needless to say, I found a few things to work with in the hip. The work even involved me wrapping my right hand around her and eventually holding her up to get the left leg straightened. During this entire process, she responded with full surrender and trust. When that work was done, Beamer, via TJ's lap, got down from the table and first walked, then ran, around the table a few times before she quickly came back to me, asking to get up on my lap where more kisses, pats, and cooing ensued. I think I could have continued to work with Beamer, but I had a plane to catch.

I have not had the good fortune to stay at TJ's since then, but I hear from TJ that Beamer is still on the planet. TJ sent this recent picture of her to me, saying that when I met Beamer she weighed four pounds, but now only weighs three. I want to express my thanks to TJ and Beamer for an experience that continues to teach me many important questions and answers about the true nature of life, perception, and healing.

Endnotes

1. I say "all of the dogs," but I do remember that one of the dogs they had brought in preferred to stay outside on the perimeter of the property, allowing himself to be seen and fed, but he was unapproachable to all.

2. Mid and long tides are used in Sutherland-style cranial work and biodynamic visceral work. See my article "Specific Indirect Techniques" on the library page of my website www.connectivetissue.com for more information on using the long and mid tides for assessment and for treatment.

The Human Animal

By Matt Walker, Certified Rolfer™

"Karma no!"

Carli's exclamation overlaps the immediate din of cat-dog conflict by the food room's door. "Bad girl!" Swiftly admonishing the dog and swooping up the cat, Carli seizes control of the situation. She parents and socializes our pets as naturally and spontaneously as any mother would her rather geriatric children. It had to be done. Karma snapped at Finn. She's getting older, lazier, and crankier. Finn, also old, cranky, and not known for manners, still didn't deserve the aggressive act. He's part of the pack, but these altercations had been happening more often, especially where food was concerned. Regardless, Carli defended the apparent innocent while punishing the guilty – but wait, these are just animals right? And so are we: the human animal. I will use this article to take a look at this creature, and what it is that makes us similar to or different from the other animal earthlings.

I specialize in humans, but as an opportunistic animal lover and amateur animal bodyworker, I have learned scads from working with the other animals who, like us, are earthlings. I love it. There's just something about working with the other, with the not-quite-self, that brings us into a space of receptivity for revelation about ourselves. Working with animals informs my perspective about working with, and being, a human animal.

While studying physical and cultural anthropology at the University of Texas, I was struck by the degree to which humans share animals' dilemmas. Our thriving has a lot to do with being social and manipulating the environment. Our brains make us special and uniquely human, but ultimately we're still animals. We all deal with survival threats and mating opportunities, have strategies for making families, have partners and competitors. Even if it doesn't look the same, we have the same needs. Of course we also deal with many of the same forces of nature. As earthlings, humans and animals alike share constant gravity, twenty-four-hour cycles of light and dark, temperature fluctuations, and phenomena of motion, pressure, and tension. As physical beings, we all exhibit structure and function, which by design have reciprocal consequences on each other. In this way all earthlings navigate and respond to physical reality. This reality is both constant and constantly changing.

From a structural perspective, studying comparative anatomy provides insight similar to that gained from studying a foreign language to better understand one's own native tongue. The slings and arrows of semantics and culture all demand certain strategies of expression, from lowly grammar to high art. Similarly the animal body is an expression of the earthling body that must accommodate all this physicality. Enter fascia, layers, tensional and pressure

regimes, and the mechanism of mechanical input to produce change.

Like a binocular vision, the twin lenses of human and animal anatomical study let us see more clearly the role of fascia, and our physical reality. Animal connective tissue seems to exhibit similar physical properties and behaviors, and performs similarly to human connective tissue. It wraps, envelopes, shapes, divides, and connects every muscle, organ, and bone, down to their individual cells, just as it does our own. Similarly, animal fascial structures, structures like a horse's ligamentum nuchae or the latissimus on a house cat, describe that animal's motion, even while standing still.

Sharing all the same names, but none of the same proportions, we're invited to evaluate our own morphology objectively. What do we do better than anyone? The answer to this question marches forth from the fossil record quite literally in the form of the broad pelves and femurs angling midline to the knees that belonged to our first walking ancestors. These details describe the management of the center of gravity of a bipedal being (Wayman 2012). We were probably walking upright before we were smart: the shape and arrangement of our bones show a propensity for gait though human brainboxes remained small at first. How did this happen? Some mechanism, be it genetic mutation, tissue yielding from the new function of a new structure, or some sheer stubbornness, gave rise to apes that stood up and walked. That's one option for dealing with gravity.

Speaking of brains, nature builds upon a theme. One of the first brains was the reptilian brain, and we still carry that little guy just under our mammalian brain, which in turn supports our neocortex. We still use all of the faculties of the reptile brain; flight, fight, and other fearless and fearful endeavors find function here. We first learned social behavior, to cuddle and mean it, as mammals [though there is evidence that reptiles do experience emotion as measured by heartbeat and body temperature (Cabanac 1999)]. Our tribe instinct seems to originate from this mammalian brain, as does our fear of rejection. However, the ability to put a story on these feelings – which may further twist our fear into anxiety, or turn it into love – is probably exclusive to people.

Observations made from watching our animals interact with one another show that they share many of our human qualities, including guile, concern, impatience, affection, aggression, and whimsy. Watch your pets. They get up for no reason and go to the other room just to lay down somewhere else. They tear off running to chase some unseen animal. Haven't you seen this before in humans as well? Okay, well maybe we don't randomly chase squirrels, but a yellow traffic light might as well be the same thing. This automatic behavior will certainly indicate the pathways whereby function becomes structure, and whereby structure may represent something deeper, like feeling or belief. When we're working with our fellow human animals, maybe it is appropriate to ask ourselves, "What squirrel has this person been chasing?"

Today my pets teach me about Rolfing® Structural Integration, just as they taught me about massage, just as they teach me about being human. For example, when I work with my pets I can ask myself questions about my efficacy as a Rolfer. Did I come on too strong? What intervention do these guys need? Was the intervention I used useful to them? How do they behave after touch? Feedback seems more immediate with animals, and more reliable. They have no formal means of speech, no psychologizing of their experience. They may want to please me, sure, but they're not going to tell me what I want to hear. I also don't have to battle their assumptions concerning whether what we're doing is going to help or not. Finally, I am able to see patterns for which I wasn't trained, but that I see nonetheless. It's easier, in a way, to see animals move and know something isn't quite right.

I remember one day I reached for my cranky, shuffling dog's psoas. Something looked strange on the surface of her lumbars. They were too far inferior, sagging, and the motion was weird. I began to reach in. As her eyes grew, I found it somewhat reassuring to see she was human – I mean earthling – enough to show trepidation over the whole thing. Walleyed as she was, I could tell I was probably on her psoas. In the end she took it like a champ. I worked on softening my touch, and I could feel her psoas soften in kind. Her gaze became less concerned, and turned more thankful and sleepy. Slowly withdrawing my hands, Karma's tail began to beat the cushion on which she'd been luxuriating. Funny thing, after that she stopped snapping at Finn. I guess the pain had made her a little ornery.

Of course it's not just the raw data of our lives here on spaceship Earth that's interesting. It's not just our emotional and behavioral commonalties that render an interesting study of our fellow earthlings either. For me it's our incarnated thrust toward heart and spiritual evolution that keeps the plot so interesting. I find my relationship with my animals epitomizes this value within me. I see a progression. I don't suppose we'll be the last, or highest, expression of life on this planet. There's more yet to come, a constant invitation for Life to fulfill its potential.

As I see it, our relationship with animals deepens and enriches our lives, but more importantly it can expose us to a world of inquiry based on what it means to be a life form on Earth. We can't ignore either physics or primal drives, nor should we forget our spirituality. Isn't this incarnate situation so mysterious? We are examples of the life force itself moving through some strangely specific forms! As a Rolfer and a human being humbly hoping for some awareness of self, I hold this presentation in life as worthy for contemplation.

Matt Walker lives and practices in Austin, Texas. More information can be found at his website, www.walkerrolfing.com.

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The Three-Dimensional Animal

Changing Views of Bipedalism and Its Limitations

By Michael Boblett, MA, MDiv, DMin, Certified Advanced Rolfer™

A human being should be able to change a diaper, plan an invasion, butcher a hog, conn a ship, design a building, write a sonnet, balance accounts, build a wall, set a bone, comfort the dying, take orders, give orders, cooperate, act alone, solve equations, analyze a new problem, pitch manure, program a computer, cook a tasty meal, fight efficiently, die gallantly. Specialization is for insects.

Robert A. Heinlein

Introduction

This article is ultimately about feet. In this respect, I continue the focus of my other articles for this journal (Boblett 2014, 2015). However, you will rarely encounter direct references to feet in what follows. In this more general survey, I try to put the three-dimensional foot into the context of a three-dimensional body. The human foot only moves in three dimensions when it expresses a body moving in all three dimensions. The foot expresses – or suppresses – what we express or suppress in the rest of the body.

However, instead of going bone-by-bone and muscle-by-muscle into various possible distortions of the body superior to the malleoli, I will take a phylogenetic approach. For readers accustomed to my usual anatomy-geek writing, what follows may appear diffuse and sometimes simplistic, but the material seems to require it. I propose to go through a brief survey of the development of bipedalism, emphasizing old assumptions that are contradicted by newer research in physical anthropology. Much of this will repeat what you learned in school, but what you learned in school may have been updated – in surprising ways.

How does this help my work – and perhaps yours? Simply put, when a human body loses ranges of motion, I must look for the demands no longer placed on it. To identify these lost movements, I must ask what this human body was originally designed to do. However, that word 'originally' is tricky. Like the human brain with its various layers, our body is a collection of ad hoc add-ons, put there somewhat randomly in response to changing requirements. Nature is parsimonious. If it ain't broke, nature won't fix it. We know that animals evolve. We pay less attention to the fact that animals don't change old structures unless they must. They just stick stuff on.

So my focus here is on biomechanics, old and new. My emphasis is on shifting ecological strategies: how a long lineage of ancestral species adapted to new environments and opportunities. My theme is avoidance of overspecialization, since physical generalism continues to be one of the strongest advantages of our present species.

In the case of the human body, we're looking at a Swiss Army knife. It has multiple applications reflecting multiple demands. We are generalists, not specialists. This is because many of the assumptions made in physical anthropology a generation ago turn out to be wrong, both with respect to the ecological demands placed on our ancestors and with respect to our changing responses to these demands. This in turn has implications for our present biomechanical options.

I repeat: much of this material will seem old-hat to you. Just be prepared for a few surprises.

The Path to Uprightness – Tiny Quadrupeds

Once upon a time, our path was a branch. Please don't roll your eyes. Yes, I'm going back to the Mesozoic Era, but I won't stay there for long, I promise.

As primates and indeed as mammals, we begin with a design that differed little from that of most terrestrial quadrupeds: relatively short limbs supported a horizontal spine, usually. The difference was size. Moving out of horizontality by climbing or leaping could occur only if the overall body remained very small. In the three-dimensional world of the jungle canopy, the ancestors of tigers, whales, mammoths, and monkeys all had a rat-like form, severely restricted by the weight-bearing abilities of tree branches. We could scurry along branches on four legs, moving like any other quadruped along our little tree-trails. Like our close cousins, the rodents, we had long tails to supply some extra balance. We also had good jumping abilities; but weighing more than a few ounces was impossible.

Then came the revolution. In his wonderful book *The Ancestor's Tale*, Richard Dawkins (2004) points out that the biomechanics of 'higher' primates like lemurs and eventually monkeys represent a solution to the problem of size. After the mass extinctions that ushered in the Cenozoic Era, most mammals rushed down into newly vacant ecological niches. Primates stayed behind to maximize their greater monopoly over the tree canopy. They did this with a simple expedient: rotation, rotation, rotation. Forelimbs and hind limbs elongated. Scapulae and ilia differentiated. Heads lifted. Eyes rotated forward. Depth perception improved. Hands and feet could grasp, pull, and manipulate. Limbs and spines could rotate in nearly limitless combinations of ways. The common denominator in all this was independent rotation of cylinders throughout the body. The result: monkeys could be much bigger than tree-shrews, rarely leaving the three-dimensional world of the tree canopy.

Simply put, our 'higher' primate ancestors rounded out the shape of what Hubert Godard calls the *kinesphere*, the area into which we can reach and from which we can pull. Our kinesphere became more . . . spherical.

But wait a minute! What has this to do with bipedalism? We no longer live in the trees, do we? What did we lose when we left the trees? What compromises did we have to make?

Short answer: we are more like monkeys than we may suppose. Most of our monkey-like rotational ability is still available to us. And it is central to our present multiplicity of possible movement.

Long answer: there is the revolution in physical anthropology that is changing what many of us learned in high school. The transition to bipedalism was longer and more complicated than we once thought. Ecologically and biomechanically, we lost less than we once supposed. This includes the articulation – and articulateness – of our feet.

The Path to Uprightness – Climbing and Shuffling

The old story is pretty straightforward. Until about seven million years ago, we lived in trees. Eastern and southern Africa were covered with thick forest. Then things

dried up. Things cooled down. Trees died. Grasslands spread. Our ancestors came down from the trees and never looked back. We became bipeds. Arms shortened. Legs lengthened. Flexible arches became rigid. Opposable big toes became merely abducted, then lined up with the other toes. Calcanei no longer supported extreme dorsiflexion of the ankle. Hands and feet specialized for very different tasks.

New version: the old jungle canopy fragmented. A mosaic of little ecosystems emerged. Moving between these ecosystems, our ancestors specialized in *not* specializing. They applied their arboreal three-dimensionality to the new opportunities of their world. We became the 'obstacle-course animal', designed to run, jump, swim, climb, crawl, throw things, dodge things, and otherwise do whatever it took to survive in many adjacent little ecological niches.

The result is an animal more like a jackal than a lion. Physically, we are opportunistic omnivores, not top predators (and top predators are particularly prone to extinction). We are designed to be agile, flexible, adaptable, multitalented, and multidirectional, what Homer calls *polytropos* or 'many-turning'. We do many things very well rather than one thing exceedingly well. Dolphins can't climb trees. Lions don't have thumbs.

Okay, but how did this happen? I begin with the fact that bipedalism evolved in at least two stages, the first of which I address in this section.

First-stage bipedalism seemed designed to justify the worst fears of those who wonder what we lost when we left the trees. Whether the early biped *Ardipithecus ramidus* some seven million years ago or the entire genus *Australopithecus* up to the emergence of the genus *Homo* roughly 2.5 million years ago, we see an ape-like shortening of legs, necks, and torsos relative to monkeys and the 'lower' apes like gibbons. It's not just that the legs were short and stumpy; the whole body was short and stumpy. The face was round, dominated by strong jaws and thick neck muscles. Shoulders rose till they approached ears. The torso was long in relation to the legs, but it was round and relatively immobile. Waistlines expanded, with conical ribcages and pelvises joining their wide ends to enclose massive guts. On two legs, these animals probably did not so much run as shuffle, with a minimum of contralateral movement.

There's no point saying that these animals were 'transitional species'. In nature, nobody turns to a predator and says, "Slow down, man! I'm a transitional species!" In fact, these various creatures were still tree-climbers, improving their ability to avoid capture. The explanation is partly ecological. *Ardipithecus* still lived in a forested environment. The best explanation for its occasional bipedalism is an improved ability to carry foodstuffs. In other words, the new adaptation probably had more to do with sexual favors than locomotion. Hence, the smaller canine teeth found in *Ardipithecus* males, who apparently preferred bribery to battle. In addition, *Ardipithecus* had a fully opposable big toe, indicating great comfort in the trees.

In contrast, the different species of the genus *Australopithecus* more strongly suggest adaptations to fragmentation of the tree canopy. However, they were still not entirely the savannah chimps of popular science. Starting some 3.75 million years ago, their diet certainly expanded to include grassland nutrition, but they continued to draw on woodlands for some of their diet. This mixture shows clearly in fossil bones in the mixture of carbon isotope data reflecting consumption of plants following C3 and C4 photosynthetic pathways. C3 plants include trees, shrubs, and cool season grasses, while C4 plants include warm season grasses and succulents. It would be interesting to study different ratios in different australopithicene species, but I have not found this data.

More tellingly, there has been a paradigm shift regarding the biomechanics of *Australopithecus*. Anthropologists compared australopithicene calcanei to that of apes and humans respectively. Since the *Australopithecus* calcanei more closely resembled those of *Homo*, they reasoned, they could not allow enough dorsiflexion for good climbing. Then videos of African and Indonesian tree-climbers demonstrated that the modern human Achilles tendon is capable of far greater lengthening than most anatomists previously thought possible. In Africa, Indonesia, and other parts of the world, humans climb trees by embracing the trunk and using strong toes and flexible Achilles tendons to literally walk up a tree.

Still, the limitations of australopithicene design are obvious. I go back to my description of both *Ardipithecus* and *Australopithecus*: short, stubby, high-shouldered, big-bellied creatures who probably shuffled when they walked upright. Compared to monkeys or gibbons, even the most gracile *Australopithecus* does not look very agile. Bipedalism doesn't look like a good bet. Then something new shows up.

The Path to Uprightness – *Homo*

With the genus *Homo*, it's as if the skeleton of *Australopithecus* was grabbed at both ends and pulled like taffy. Everything elongates. The cranium has a higher dome. Jaws are narrower. The neck elongates. Down below, legs begin to lengthen relative to arms, but the real shift is in the middle – a waist develops! The rib cage is narrower, as is the pelvis, but they also separate. A longer space develops between the bottom of the rib cage and the top of the pelvis. More important, this space moves: it rotates, it sidebends, it bends forward and backward. This leads to a dramatic increase in the dynamism of the overall pattern. All without a single extra vertebra.

In other words, much of the rotational ability of monkeys and gibbons came back. Contralateral movement is more efficient. Bipedalism changes radically. This animal is a runner! Notice that I use the present tense now. I am describing . . . you.

Even more striking, this change happens very quickly. With the exception of the skull, the skeleton of the genus *Homo* has changed very little through various species over roughly 2.5 million years. In Africa, bone-hunters who find anything *Homo* pray fiercely for a skull, since otherwise the species could be anything. It's as if Mother Nature said, "Don't change the body. Just unscrew the head and put a new one on. Repeat the process after a few thousand generations." The brain of a *Homo habilis* ranges from 500 to 700 cc, compared to 1,200 to 1,500 cc for *Homo sapiens*. Otherwise, apart from a smallish size and arm-to-leg ratios well within the range of *Homo sapiens* variation (I'm close on both counts), this creature is . . . you.

The result is a super-generalist, a jack-of-all-trades. This is an animal who can invade and thrive in different ecosystems. From this you get the animal that leaves Africa altogether, infiltrating widely different ecosystems across the planet, hot and cold, wet and dry. As Ian Tattersall (1993) points out in his book *The Human Odyssey*, our success is not a product of superior intelligence alone. The human *body* had this

ability long before anything like the *Homo sapiens* brain evolved.

So, until recently, the emergence of *Homo* seemed sudden and seamless. But with the discovery of a possible new species in *Homo naledi*, we may be seeing the change in the midst of happening. Of course, I am aware that these south African fossils and their interpretations are new and controversial. Is *Homo naledi* really a separate species from, say, *Homo habilis*? Is it an ancestor to *Homo sapiens*? Or is it a dead end, a kind of spinster great-aunt? When did it live? Before *H. habilis*? Or was *naledi*, like *Homo floriensis*, a survival into recent times of a radically different lineage within *Homo*, our eccentric great-aunt or uncle rather than our ancestor?

Whatever *H. naledi* was, even if we reject the name *naledi* itself as denoting a separate species within *Homo*, the consensus seems to be that here is an example of intense experimentation with physical form and movement. Again, the surviving result of this experimentation is . . . you. This is enough for me. After all, we are experiments as well, are we not?

Homo naledi is of particular interest to me because it involves a surprisingly modern foot attached to archaic features. Specifically, the *H. naledi* skeletons show a modern hand with a robust thumb and power grip, but long, ape-like fingers still curved to enable tree-climbing. The foot, as far as I have read, shows no variations whatever from the modern foot. The surprise comes between these modern hands and feet: the closer we get to the pelvis, the more archaic the body becomes.

So our feet have changed less than the rest of our bodies, even our hands? William Harcourt-Smith of the American Museum of Natural History's Paleontology Department puts it this way: "Quite obviously, having a very human-like foot was very advantageous to this creature because it was the foot that lost its primitive, or ape-like, features first" (American Museum of Natural History 2015). The idea intrigues me. I take this as further proof that the modern foot can support and express many different kinds of movement, not just what we are accustomed to doing in the modern world.

How Do We Apply All This?

Did you enjoy this little journey? Maybe yes, maybe no. So what has this to do with bunions, migraines, tight hips, sore backs, or constricted lungs? More profoundly, what has this to do with the emotional, cognitive, and spiritual disconnects of a wild animal trying to be a domesticated one? How do we open this cage? How do we rehabilitate this animal and release it?

Anybody who knows me will say, "OK, I get it. *Homo sapiens* never entirely came down from the trees." And I grant you, that's a large part of my agenda. Children, acrobats, hunter-gatherers, and many yogis understand implicitly that gravity can pull us from above as well as from below. Sailors who work with rigging understand this as well. So we can mediate gravity through our shoulder girdles as well as through our hips . . . and we sometimes must. For both girdles to work freely, scapulae must sometimes mediate weight, allowing ilia and core muscles to help in other ways. In turn, this will expand and enrich our lower-girdle movements in bipedalism. Try swinging from monkey bars and then walking. Different gait, yes? This is what I mean by three-dimensionally.

Adding this movement option back into the lives of 'ordinary' people can produce profound changes. So yes, I like parkour, hanging yoga, monkey bars, jungle gyms, climbing ropes, Swedish ladders – and actual trees. I'm a bit less fond of wall-climbing because it resembles tree-climbing rather less than the things I just listed.

But there's a bit more specificity to this. As I always do, I will avoid attempting a comprehensive list in favor of dropping a few hints. Here they are.

If *Homo sapiens* is still partly arboreal, how might that apply to freeing the shoulder girdle, the elbows, the wrists, the spine, or the hips? The trick is getting the client to the point of being able to hang in the first place without irritating the subacromial bursa or the bicipital groove, if either of these is the problem area.

To most of my clients I recommend a pull-up bar hung in a doorframe. Instead of chin-ups, I simply suggest strengthening the hand muscles by pulling up the knees and hanging with arms at full length. A clock or stopwatch within easy view can help the client time the period of hanging. Gradually, it may be possible to lengthen the hanging time to several minutes. Based on this, the client may then be able to do some amazing stretches with arms and shoulders directed upward. Even the momentary experience of taking the spine out of gravity can work wonders.

A pull-up bar has several advantages over an inversion table (though I use one of the latter periodically): the bar is cheaper, it takes up less space, it can be installed or removed quickly, you can get into or out of position quickly – and nobody's hands get stuck on a pull-up bar. By the way, Rolfers and other bodyworkers can increase hand-strength by hanging, a lesson I learned from Victor Geberin years ago. I have narrow little thumbs, but they are far from wearing out.

I have suggested that hanging can help free not only a messed-up shoulder, but also other joints. What about swinging? While humans do not precisely brachiate, I notice that work on monkey bars followed by gait work can open up amazing dimensions in the latter. Scapulae send interesting messages to ilia once the scapulae experience the sensation of mediating gravity from above.

More general questions involve the movement strategies of 'Internals' versus 'Externals' (from Jan Sultan's Internal-External typology). Sultan has pointed out that neither type has priority in our evolution, physical or cultural. Hunter-gatherers, for example, do not tend to cluster in one group or the other. Photos of Native American gatherings clearly show both types within the same tribe (I sometimes wonder about the extremely lordotic !Kung of the Kalahari Desert, but that's another story entirely).

For convenience, I think of the Internal type as more monkey-like and the External type as more ape-like. I like to think that these movement strategies reflect a deep ambiguity in our evolution between the flexibility of a monkey and the stability required in the larger body of an ape, since we apparently never walked on our knuckles. Certainly the acrobatic potential of the Internal body can be great, and Internals are somewhat more likely to have a high arm-to-leg ratio, though exceptions exist. What innate gifts do Externals bring to the three-dimensional world? I sense that just flexibility versus stability is not the full story here.

For either type, the prehensile foot is a useful tool; but toe function is not confined to picking things up *or* grasping things between the big toe and its neighbors. What role does the arch play when the Achilles

lengthens enough for a human being to 'walk' up a tree or its equivalent? How might reclaiming that ability, if only in part, change horizontal gait?

These are a few hints. I'm sure you have more. This brings me to my conclusion.

The Ball's in Your Court

Many of you have studied anthropology. Some of you have studied primatology. A few of you have peered even further back into our ancient phylogeny. I do not pretend to have mastered the previous work of writers like Sultan, whose work I mention here, or Kevin Frank, whose work I do not. (I owe much to Frank's movement work for making me conscious of very primal movement patterns.)

So once again my partial view is an invitation to conversation. What have I written that's already a cliché? What am I missing? Where am I flat-out wrong? Where am I just one-sided? Are there alternative explanations for what I describe? Are there additional strategies that could come from these explanations? In sum, can our views reflect even more of the multiplicity of our biomechanics? Clearly, one paradigm is not enough.

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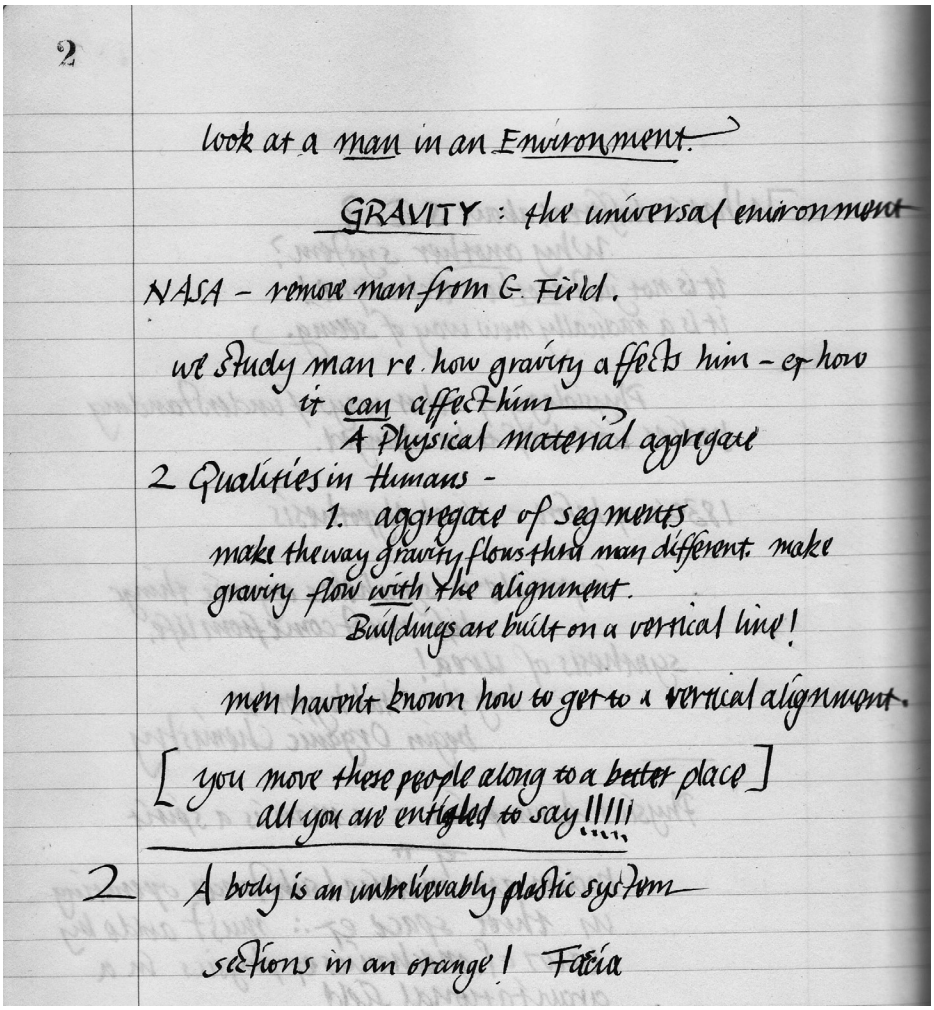
Michael Boblett works in San Diego, California. He has been a Certified Rolfer since 2003 and a Certified Advanced Rolfer since 2008. Michael is a retired Unitarian minister. His advanced degrees (MA, MDiv, and DMin) are from Pacific School of Religion in Berkeley, California. At seminary, he focused on the anthropology of religion, with experiential training under Michael Harner, author of The Way of the Shaman. *Michael runs marathons and hikes up mountains wearing Vibram Five Fingers. His website is www.rolfer.biz.*

Refining Dr. Rolf's Lateral Line

A Brief Exercise in Theoretical Morphology

By Richard F. Wheeler, Certified Advanced Rolfer™, Rolf Movement® Practitioner

During Dr. Rolf's class in 1972 I took careful notes. Having recently learned calligraphy, I wrote my notes in a freshly minted italic hand (see Figure 1).


2

look at a man in an Environment.

GRAVITY : the universal environment

NASA - remove man from G. Field.

we study man re. how gravity affects him - or how it can affect him

A Physical material aggregate

2 Qualities in Humans -

1. aggregate of segments

make the way gravity flows thru man different. make gravity flow with the alignment.

Buildings are built on a vertical line!

men haven't known how to get to a vertical alignment.

[you move these people along to a better place]

all you are entitled to say !!!!!

2 A body is an unbelievably plastic system

sections in an orange ! Fascia

Figure 1: Page 2 from my calligraphed 1972 class notebook. Dr. Rolf was introducing her ideas about plasticity, gravity, and alignment.

Rolf's lectures began with a discussion of her hypothesis about plasticity: that the basic material substances that compose most of anatomical structure are collagenous proteins. Observing the physical chemistry of these proteins, Rolf asserted that they could undergo a state change, from hard to soft, when simple pressure was applied to regions of hardened tissues.

Rolf went on to demonstrate how body structure could be changed by direct manipulation. She showed us how to make changes that were dramatic and immediately positive in nature, resulting in measurable improvements to a person's breathing, posture, balance, and general body functioning. As a biochemist, she based her investigations on physical principles of living systems and she argued that, due to the existence of plasticity, it is possible to create higher degrees of order and physiological functioning in the human structural pattern.

Then she proceeded to discuss how gravity, as a very significant force field in our environment, deeply influences human structural balance and movement (see Figures 2 and 3).

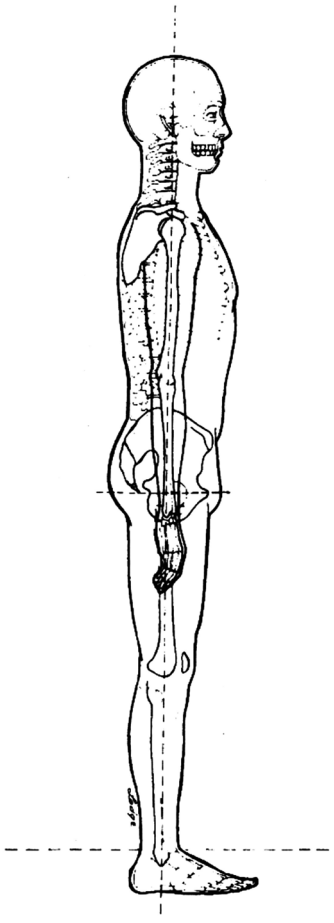


Figure 2: In this view, Rolf's lateral line intersects the tip of the fibula. This alignment places the majority of the body's weight behind the tops of the arches of the feet. (From *Rolfing* by Ida P. Rolf, PhD. Published by Healing Arts Press, a division of Inner Traditions International, 1989. All rights reserved. www.innertraditions.com. Reprinted with permission of publisher.)

Gravity is not the only force in our environment. There are others – including thermal radiation, nutrition, light, sound, and evolution. Rolf did not address these. In this paper I am looking at evolution as a force with strong thermodynamic and biochemical origins that affects our physical structure through the mechanism of inheritance over deep time.

The human form first evolved its amazing complexity in water. Then we took a circuitous evolutionary route through time spent by our primate ancestors in the trees, until we finally adapted to living on land. It was a long and arduous journey, and along the way our ancient ancestors survived all that nature's long-term process of natural selection could throw at them.

From the perspective of deep time, therefore, as structural integration (SI) practitioners, when we touch the human body, we are putting our hands directly on the results of about 4.3 billion years of evolution. In addition to this, we have the far shorter, but still powerful, single lifetime perspective of each person's individual growth, development, and personal history.

The question I am going to explore in this article is, therefore, in the context of both deep time and personal history: what does it mean to say we are going to non-surgically 'improve' a person's form? The idea of modeling or morphing the body towards some improved or more ideal form, state, and function requires having a clear idea of what the end result might look like.

Imagining the ideal morphological change for any given body might look quite different for any given person. Rolf taught her students a 'Recipe' for applying her ideas; however, it was never her idea that the discipline of SI be defined by the application of any specific technique, formula, recipe, or algorithm. There are many different ways of creating changes that enable the body to re-integrate and function differently. What does optimized functional and structural integration look like? Rolf invoked gravity as a framework for evaluating the results of her manipulative strategies, and she was very successful in objectively demonstrating an amazing range of results, both to clients and to her students.

In my SI practice, I use a method for introducing very positive change in form and function that works in an experimental way. Briefly, I deliberately introduce 'disorder' (by pressing on tissue in an area

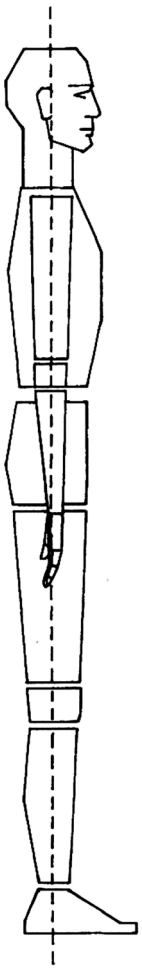


Figure 3: This geometrically more explicit view of Rolf's lateral line again places the majority of body weight behind the tops of the arches in the feet. (From *Rolfing* by Ida P. Rolf, PhD. Published by Healing Arts Press. Reprinted with permission of publisher.)

that is in trouble or disordered) and then watch as a greater level of order emerges naturally in the area I've just worked and, often, right around that area. As I observe what new forms and functions emerge from this intuitive process, I can take things to their next level, and the next, and the next.... Order is disorganized chaos, and as chaos resolves – a consequence of putting energy into an open thermodynamic system – higher levels of order appear. I'm trusting the body's 'innate intelligence' to reorganize itself, rather than attempting to impose my idea of what it should look like. I figure I'm not nearly as smart as my client's own body!

La Brea Lessons

After completing my advanced training at the Rolf Institute® in 1980, I knew I was ready for more anatomical study. But where? What

did I most want and need to learn that would improve the quality of my work?

I initially thought that I wanted to learn more about human osteology and needed to work with human bones. Then, at a party in Los Angeles, I met an expert in non-human bones, paleontologist Dr. William 'Bill' Akersten, from the Page Museum (aka the 'La Brea' Tar Pits). We had a fascinating conversation at the end of which Bill invited me to come to the museum's lab for a look around.

When I went to the lab for a visit, I discovered that I'd stumbled into a major, world-class fossil repository of more than three million ice-age bones that had been trapped and perfectly preserved in thick and sticky liquid asphalt. The size of this immense collection more than doubled in 2006, with the addition of twenty-three large container-sized boxes of fossils, still embedded in asphalt, extracted from a local construction site that filled an entire square city block near downtown Los Angeles.

The specimens in the Page Museum collection represent a cross-section of southern California's ecosystem during the Pleistocene era (10,000-60,000 years ago) and include extinct big cats, mammoths, horses, wolves, bison, giant sloths, rodents, birds, turtles, and more.

Wow!

Like many boys, I had been deeply into dinosaurs as a kid. I now had an epiphany: I could be greatly enriched by comparing what I knew of humans with other equally successful forms of life. After all, the forms and functions of other vertebrate species are, by definition, equally successful at living in gravity as humans are.

This '*aha!* moment' led to my spending the next eighteen years working part-time at the Page Museum, first as a research volunteer, then as part-time paid staff, where I was encouraged to pursue and publish original research on 1,000+ sabertoothed-cat skulls. (It's astonishing to appreciate the relevance of fondling sabertoothed-cat skulls to practicing Rolfing® SI on clients.) During this time, I also learned classical scientific illustration, was hired as a senior staff excavator, and ran the summer dig at the tar pits for two years. I had a wonderful adventure learning about wildly different non-human anatomy and evolution, all of which has deeply affected my work today as an SI practitioner.

One museum lesson that greatly impressed me came from observing the museum staff's ability to quickly and accurately identify any bone, or almost any bone fragment. The staff had developed and refined this ability while looking at, handling, and working in the three-million-bones collection. It made sense to me that this sort of knowledge and broadened kinesiological expertise would lead to discovering new manipulation options. And sure enough, the lessons did translate. The longer I worked in the museum lab and ossuary, the more my hands were intuitively finding new and interesting solutions to my Rolfing clients' issues.

Unlike SI practitioners, paleontologists work on non-living subjects. This means they must erect a conceptual frame of reference for the particular subject they're studying, including finding the creature's closest living relatives but also giving due consideration to existing research in the fields of functional and theoretical morphology. Recent advances in all of these fields have helped paleontologists and artists understand how to more accurately model the way ancient creatures with different structures stood, balanced, and moved. These advances have helped transform the venerable T-Rex from a tail-dragging giant swamp lizard into a splendid Jurassic Park jeep-chaser.

At the Page Museum I had a lot of questions. What kinds of morphological changes need to happen to transform any given quadruped into a biped? How are we and the quadrupeds alike and how are we dissimilar? What imaginary animal lies 50% of the way between our species' patterns?

Consider what might be learned by putting one's hands on the many vertebrate bones in a museum ossuary. And it's not just that bones speak to us: the staff also had more than a few very interesting and relevant observations. One great example of this is the following story about the Page Museum's director, Dr. George Jefferson, a highly respected paleontologist who later became the first Associate State Archeologist in Southern California's Anza Borrego Desert State Park.

After a few months of working in the museum lab, I showed Rolf's book to Jefferson. He looked at the illustrations and his immediate observation was, "Human bones aren't shaped like that." Startled, I realized that he was absolutely right. Rolf's illustrator, artist and Rolfing practitioner John Lodge, had 'morphed' the images so as to emphasize the linear nature of the vertical lateral line. With her characteristic scientific integrity, Rolf had labeled each of these illustrations a 'schema' (i.e., a schematic), in order to emphasize that the images were not to be taken literally.

Jefferson's keen observation raised a huge question in my mind that, for me, demanded an answer. If the shapes of the bones weren't 'right', then what would happen to the placement of the lateral line if the shapes of the bones were 'corrected'? All of the 'Before' and 'After' images from our many Rolfing classes clearly show that we SI practitioners are really good at making big visible differences in side views and I, for one, had taken Rolf's placement of the lateral line pretty much for granted as a literal frame of reference. Jefferson's comment made me realize that I needed a much better grounding in bone morphology. And so I began a quest to understand more about how the human form fits within the predominant vertebrate pattern – and over a far longer period of time.

Observations

Where to start? With something large and obvious! While comparing the various side views of a mammoth, bison, wolf, horse, and other whole, mounted skeletons, I noticed that one of the biggest, most immediately observable, visual differences between human bipeds and quadrupedal animals are the 'Z' shapes of the animals' legs (see Figure 4). The Z is much more explicit in quadrupeds and more implicit in human bipeds, where it is greatly attenuated but still definitely there as a visible design feature and structural pattern, as in all vertebrates.

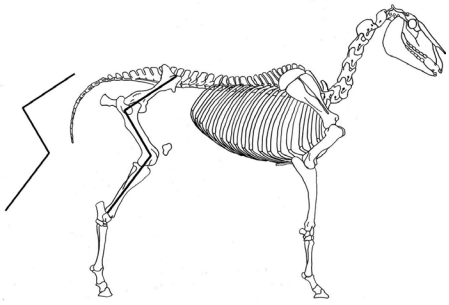


Figure 4: The North American horse has a Z-shaped set of back legs.

The Z is a vertebrate animal's adaptation that enables forward motion by functioning as a loaded spring. All the legs I found in the museum, regardless of species, from

mammoth to mouse, had this Z-shape in their structural pattern. They also exhibit curved, or three-dimensional lengthwise complicated twists in their structure (see Figure 5). Both the Z, and the twists, may be seen as gifts from our evolutionary history. The structural pattern of our limbs has been inherited and retained as the cumulative record of successful combinations of forces that got us here.

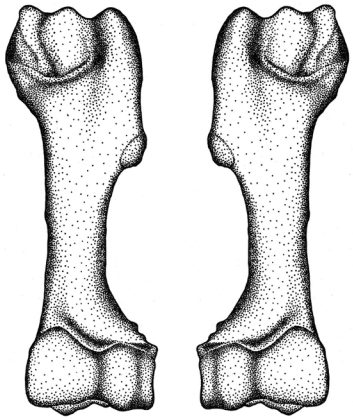


Figure 5: A symmetrically 'exact' pair of North American horse humeri. No Euclidean forms anywhere. (This mirror-image pair was computer generated from a traditional pen-and-ink stippled original illustration by Richard Wheeler.)

Also, I noticed that the center of gravity in quadrupedal animals is over their shoulder girdle, which is located in front of their whole pelvic girdle. The bones of the quadruped shoulder girdle are thickened and massive, a significant structural adaptation for carrying weight. In contrast, standing human bipeds balance the weight of their torso, shoulders, neck, and head over their pelvic girdle and legs.

The physical appearance of this unique arrangement looks strikingly different from the side view of a quadruped. It is very tempting for an artist, looking at a standing person's side view, to draw a pendulum-straight line through the length of both the femur and tibia. However, the bones are not straight, have no straight lines, flat planes, right angles, cubes, or perfect spheres: Euclidian forms are conspicuously absent in the ossuary's millions of bones, regardless of species (Figure 6).

Origins of Form

During the evolutionary transition from fish to man, the fishes' fins went through a large number of transitions. In deep time, the fins flexed, curved, and rotated, becoming limbs that adapted to contact the ground and carry body weight as limbs. When our proto-human ancestors made the transition from quadruped to biped, their legs did straighten, somewhat. A paleontologist would say that humans became more 'graviportal', i.e., adapted for weight bearing. Graviportal adaptations tend to straighten, shorten, and thicken the limbs. The term that is the opposite of graviportal is 'cursorial', more adapted for running. Cursorial adaptations tend to curve, extend, and lighten the limbs. All vertebrate animals are a mix of both characteristics. Mammoths are the biggest, most straightened-out, graviportally adapted animals in the museum, but they still retained a curved, structural twist and Z-shaped form in their legs. And so do humans.

Rolf did not address these subject areas in her class. These two observations, the presence of the Z and of lengthwise twists in all vertebrate leg bones, have led me to reformulate and refine Rolf's model.

The human balances over a region of support in the arches of the feet. The keystones of these arches, the navicular and cuboid bones, are located well forward of the talus. The tops of the arches are very efficient places to load weight. Evolution has given humans a structural design that is congruent with this idea. However, the lateral line illustrations in Rolf's book depict something different.

Figure 7 shows the illustration drawn by Rolf's illustrator, John Lodge. This image has a perpendicular, straight line drawn down through a bony midline in the tibia to connect with the top of the talus, which is located behind the top of the arches where the navicular-cuboid bones perform their keystone function.

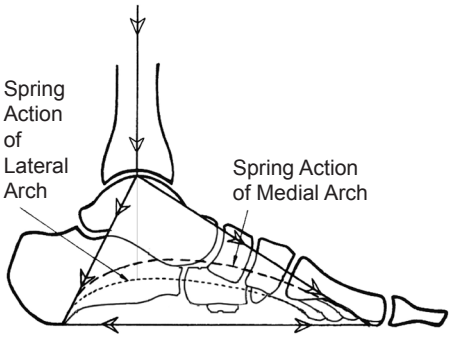


Figure 7: Note that the lower portion of the tibia is oriented vertically. This placement transmits body weight from the midline of the tibia to the talus. (From *Rolfing* by Ida P. Rolf, PhD. Published by Healing Arts Press. Reprinted with permission of publisher.)

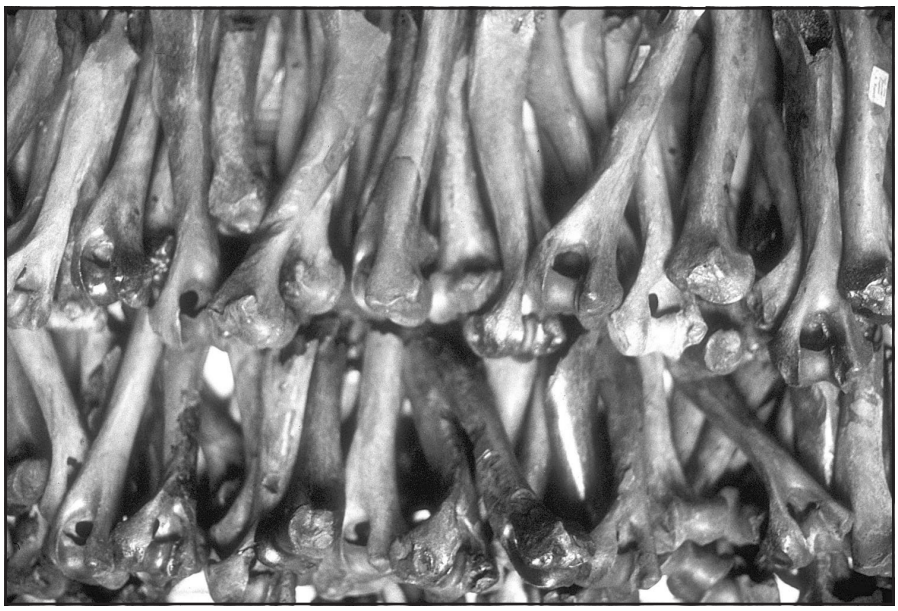


Figure 6: These sabertoothed-cat humeri all have twists and curves in their contours. Photo by Richard Wheeler.

This schematic arrangement in Figure 8 emphasizes bony compression in the system as a whole and, functionally speaking, 'bottoms out' the 'springs'. When a spring is bottomed out, it is fully compressed with the coils jammed against each other so that there is no bounce, resilience, give, or springy function left. Imagine, for example, standing with your knees straight and then having someone drop you from just one inch above the ground. There would be

no bounce, no resilience. This shows how important our Z-structure is, despite the fact that this structural pattern is very much less obvious than that of our four-legged relatives. The same bottoming out would happen if human bones were actually lined up the way Rolf's schemata portray them.

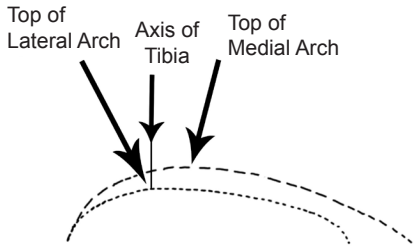


Figure 8: The dotted lines, copied from Rolf's schema in Figure 7, trace the weight-bearing paths of the lateral and medial arches. Note that a vertical tibia will preferentially feed weight to the back portion of the lateral arch.

Seen from evolution's structural context, the Rolf 'Line' would re-model the body's whole front-to-back curve set and straighten it to the degree that it arguably becomes too straight. There is such a thing as being too upright, too stable in gravity, and it has consequences. Consider the amount of push required to initiate movement in a big structure that is very columnar. In a world of Pleistocene creatures that possess virtually immediate response times, a design with response-time lag built in seems to be challenged in terms of survivability. Put another way, if you have to get off balance before you can really start to move, then you are more likely to become lunch.

So I suggest that a reformulation of Rolf's frame of reference is in order, one that takes evolution's contribution to our body's structural pattern more fully into account (Figures 9 and 10). To do this we need to place the Rolf model's body weight forward, about 1.25" (about 3 cm.) over the top of the arches in the feet. A consequence of this is that the joints of the ankle and knee are slightly flexed and the vertical line now passes through the psoas at the top of the leg. This placement supports weight and loads the myofascial springs and enables immediate forward motion, dynamic action, and responsive movement, all while being gravitationally stable and balanced. Flexed knees and floating bones are a part of our inherited structural norm.

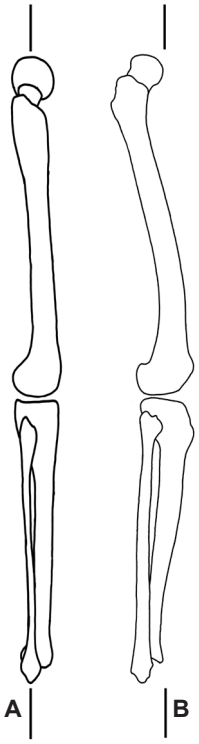


Figure 9: In image A, we see leg bones aligned and subtly re-shaped with reference to a vertical straight line, traced from Rolf's Schema 9-1. (From *Rolfing* by Ida P. Rolf, PhD. Published by Healing Arts Press. Reprinted with permission of publisher.) In image B, we see restored, unmodified bone contours; the bones float in a normal Z-shape within the myofascial web, just slightly behind the central gravity line. This is the integrated alignment suggested by structural design principles found in all vertebrate anatomy, optimizing balance in gravity.

Consider the following chain of functional logic. The center of gravity in vertebrate animals is in front of their hind legs. Humans have inherited the same basic structural pattern as vertebrate animals. Therefore, humans should have a significant portion of their body weight balanced in front of their leg bones.

Normal standing is a dynamic activity with body weight swaying, drifting around, distributing and re-distributing over and through the tops of the arches. You can observe this simply by slowly swaying in any direction as you stand. You will find that you can be relaxed while standing up and sway comfortably over a range of about 1.25" (about 3 centimeters), or more, from front to back. You can sway to distribute your relaxed weight over a large number of places in your knees and feet. Support for

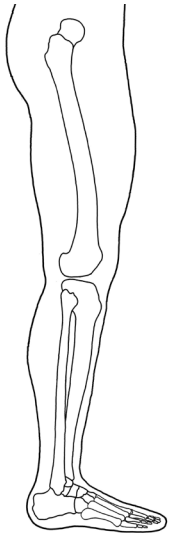


Figure 10: The tibia has been inclined slightly forward (by about four degrees) and the femur is tipped back accordingly to create a flexed knee. This bony arrangement presents a normal set of osseous contours for attachment and relationship to the myofascial web.

standing balance comes from inside an area, not from any single point or line. Figure 11 shows this area inside the intersection of the two big circles.

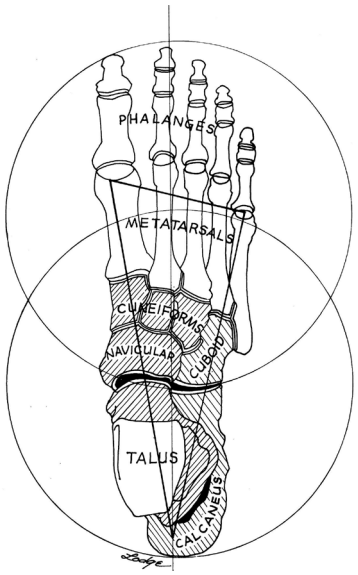


Figure 11: Note that the navicular, cuboid, and cuneiform bones function as keystones of their respective arches. The intersection of the two large circles, the central third of the foot, is the area where body weight is best supported. (From *Rolfing* by Ida P. Rolf, PhD. Published by Healing Arts Press. Reprinted with permission of publisher.)

This re-visioning of the body's lateral line emphasizes inclusion of the mammalian vertebrate model and offers us a view of anatomical structure that is focused towards understanding curvilinear construction. There is linear order in the body and it is curved.

This is a different norm, or frame-of-reference, for understanding the optimal orientation of parts and/or the best relationship of functions when seeking to evaluate and improve a person's level of SI. We can take the evolution of other species' biomechanics into creative and pragmatic consideration when designing and using manipulative protocols in our practice of SI. I invite our SI community to consider exploring what happens if we use our manipulative skill sets to morph body form and function in the service of revealing and clarifying the structural pattern that relates most closely to our evolutionary roots in gravity.

Richard F. Wheeler is a Certified Advanced Rolfer and Rolf Movement Practitioner who has been practicing since 1972. He had the privilege of studying with Dr. Rolf and, over the years, has evolved tools and ideas to support the Rolf work, making it more comfortable, efficient, and effective for clients and practitioners alike. This article is an edited excerpt from Richard's forthcoming book about his career and his life. For more about Richard's activities, please see www.tarpitboss.com and www.gardenofparadise.net.

Author's note: I would like to thank Norie Huddle, Anne Hoff, and Max Leyf Treinen for their exemplary editing skills, feedback, and support in helping me with this article.

Polyvagal Theory for Rolfers™

The Human Animal Has Dynamic State Regulation

By Lina Hack, BSc, BA, Certified Rolfer, Somatic Experiencing® Practitioner

It is hard to know what Dr. Rolf would have said about polyvagal theory. I think she would say that Rolfers need to know about this wiring that governs the state regulation of the human animal. As Rolfers, our hands are making contact with the autonomic nervous system (ANS) and our interventions are impacting the parasympathetic tone of the vagus nerve. Dr. Stephen Porges has made a great contribution to our understanding of the human animal. His polyvagal theory has important insights into how we forge therapeutic relationships, how we listen to client stories, and how to discern the variations within our clients' state regulation when they are receiving fascial manipulation.

The vagus is the tenth cranial nerve. It is a body-brain connection and it participates in the organism's evaluation of safety. The vagus nerve is the pathway of the parasympathetic nervous system; when the vagus is 'on', the person has a lower heart rate, a lower breath rate, and a biological focus on nutrient absorption – 'rest and digest'. Textbooks will typically speak of the parasympathetic state as the opposite of the sympathetic nervous system – the 'fight or flight' response. Porges brings our understanding of the vagus nerve into the twenty-first century. It is out of date to define these two channels of the ANS as a teeter-totter where if one is 'on' then the other is 'off'. The better description is that each has gradations on a continuum and, yes, the sympathetic nervous system and the parasympathetic nervous system can both be 'on' at the same time. Let's discuss further why Porges says the human vagus nerve is not unitary, it is *polyvagal*.

Here is the paradox that he encountered when investigating the function of the vagus nerve as a neurophysiologist:

- Healthy full-term infants have higher vagal tone (meaning more neural signal traveling along the nerve) than preterm infants who have been stressed by medical interventions.
- When babies are being born, those who have high vagal tone during birth are at risk of dying because their heart rates are slowing down too much to provide oxygen to the brain (neurogenic bradycardia).

Both these things are true about the vagus nerve. In one context the vagus neural signal is protective, an indicator of health, and in the other context the vagal neural signal is potentially lethal: this is the vagal paradox. The vagus nerve is doing much more than 'rest and digest'.

How can high tone in the vagus nerve be an indicator of both health and a fatal pathway? The answer to the vagal paradox lies entirely in the comparison of the human animal with other vertebrates and primitive fish. Primitive fish had primitive heart muscles to circulate oxygen to all the cells of the organism. When faced with a survival challenge, these ancient fish had adrenaline-producing cells that would release this arousal hormone to increase their heart rate. Getting oxygen to the muscles is the hallmark of the sympathetic arousal state, the physiological preparation for fight and/or flight. Yet all animals find this arousal state very expensive; it uses up energy reserves and it compromises restoration processes. The only way primitive fish can lower their heart rate is by waiting for their cells to break down the adrenaline molecule, a slow metabolic process.

The human vagus nerve and the reptilian vagus nerve have solved this problem. The vagus nerve will override the sympathetic arousal by quickly slowing down the cardiovascular system and increasing digestive processes to replenish what was spent by the stress state. Reptiles rely on their vagus nerve to slow their heart down after fight-or-flight experiences. Reptiles also apply high vagal tone in response to a threat; they exhibit freeze behaviors and depend on their camouflage, accompanied by a lower heart rate. Fish exercise their vagus nerve during threat by diving deeper to avoid predators. Fish and reptiles can afford to slow down their metabolism because their oxygen demands are low.

Humans, on the other hand, need to keep their core at a constant warm temperature,

and humans also have the demanding task of pumping 30% of their oxygen uphill to their metabolically expensive brains. The human animal has a reptilian vagus: this is the dangerous one that can be lethal during birth. It originates in the dorsal aspect of the brainstem. This dorsal vagus leads to an immobility state in humans in response to a threat, immobility with fear. Humans also have a second vagus nerve, the mammalian vagus. This branch of the vagus nerve originates in the ventral aspect of the brainstem. It is the ventral vagus *only* that is the parasympathetic pathway responsible for the growth and restoration state. The ventral vagus also leads to immobility of the human animal, but it is immobility without fear, immobility with a sense of safety.

Rolfers need to be able to differentiate the three autonomic states – the sympathetic and the two parasympathetic states – to really understand the client experience. Sympathetic arousal is easy to spot: the muscles of the person are contracted, the breathing rate is rapid, and defensive behaviors like facial grimaces are visible. We may see sympathetic arousal in our clients for brief moments, perhaps as they tell their story, or, they may live in sympathetic arousal as a part of the symptomology they bring to the session. Ventral-vagal parasympathetic state is also easy to see in our clients. In the brainstem, the ventral-vagal complex is adjacent to the neural origins of nerves that govern facial gestures, sound sensitivity, and prosody (tone of voice). When the human animal is dominated by ventral-vagal neural tone, the face is animated, especially the muscles around the eyes. This rest-and-digest state is synonymous with more melody in tone of voice, easy discernment of human voices by the ear, and the person will exhibit a wide range of social-engagement behaviours to express himself.

It is knowing about the lesser-known parasympathetic state, the dorsal-vagal state described by polyvagal theory, that will benefit every Rolfer. The neurology of the dorsal vagus becomes the dominant state of the human animal when all other autonomic states have failed: social bonds did not resolve a threat and fight or flight did not resolve a threat. The old reptilian pathway is the last resort and is applied when the individual perceives life threat of the highest order. The person will experience an unconscious behavioral freeze state: immobility of the limbs, low heart rate, low breath rate, and often a sudden drop in blood pressure. This is the neurology that leads some people to faint. Other people will simply be very still. A defining feature is that the person will not exhibit facial gestures, no social engagement will be possible, and the tone of voice will be monotone – a constellation otherwise known as flat affect. Rolfers may encounter clients who dip into and out of the dorsal-vagal freeze state throughout a session, say while telling a story about trauma, or they may be stuck in a dorsal freeze state as part of their symptomology.

It is the safe therapeutic presence of the Rolfer that is the best response for all three autonomic states. The dorsal-vagal freeze is delicate: this is an unconscious human animal reaction that may be associated with a lot of fear and shame. It is important to normalize this response as a natural biological state that is temporary. If the client exhibits immobility with fear as part of his trauma story, we can let him know that his human animal was doing the best it could under the circumstances, and that freezing is often a good choice for survival. If the client exhibits an immobility response as a reaction to a fascial intervention we have made, then we know he will not be able to communicate clearly about his personal boundaries. Ideally in Rolfing® Structural Integration sessions, clients will oscillate between ventral-vagal and sympathetic arousal as part of the biological mechanism integrating the fascial manipulation. A dorsal-vagal state should be considered a stop sign to the practitioner, a teachable moment, and a sacred stillness to be honored like a newborn child.

During every Rolfing session there are at least two nervous systems in the room, and it is the nervous-system state of the practitioner that can lead to the best intervention for the state of the client. We want our ventral vagus to shine for our clients: our faces to be animated with emotion and care, our voices to communicate trust and security, and our heart rhythms to be restful and dynamic. When we make compassionate eye contact with our clients, we are impacting their autonomic nervous system, hopefully inspiring an unconscious state regulation towards rest and digest. When we touch the fascial system, we are also feeling the intricacies of the polyvagal system.

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Lina Hack is a Certified Rolfer in Saskatoon, Saskatchewan, Canada. She started out as a biochemistry researcher before completing her Rolf Institute® training in 2004. Afterwards she was inspired to complete Dr. Peter Levine's Somatic Experiencing training and rounded that out with a full psychology degree from the University of Saskatchewan. Along with her Rolfing practice, she lectures about neuropsychology topics.

In Memoriam

Structural Integration: The Journal of the Rolf Institute® notes the passing of the following member of our community:

George J. Smyth,
Certified Advanced Rolfer™

The Reptile and the Mammal Within

Imagery for Mindful Breathing

By Barbara Drummond, Certified Rolfer™

Three and a half billion years ago, life began in the oceans. A pond scum called cyanobacteria started to capture energy from the sun and spit out oxygen. Then, 1.85 billion years ago, oxygen levels were high enough to cause an increase of several magnitudes of complexity in living organisms. Eventually the 'Cambrian explosion' occurred, where oxygen became so plentiful it led to the development of fish, reptiles, birds, amphibians, mammals, and eventually humans.

Mammals developed structures to take advantage of the increased oxygen, and we can help our clients take advantage of those structures. Some researchers believe that our emotions are a byproduct of all the equipment we needed on our journey from reptiles to mammals. Our mammalian hypothalamus makes a good case for that argument. In mammals, it has seven functions: emotions, autonomic control, thirst, food, endocrine function, sleep, and temperature regulation. Reptiles do have a hypothalamus, but it is primarily concerned with mating and territoriality.

Let's talk about snakes. Snakes don't smile. They lay eggs and leave them. They don't hunt in packs. They don't play. They are either binging or starving – one rat and they are good for several weeks. They sleep much of the time. They have no legs (but some species do have rudimentary ilia that present as appendages that male snakes use to grab females during mating). They have only one functional lung and no diaphragm. Snakes are cold-blooded; this means they are primarily parasympathetic in nature, slow to move and digest. They have to disable their parasympathetic nervous systems and ramp up their sympathetic systems to hunt and mate. They don't have as much 'equipment' to maintain because temperature control is 'outsourced' to the environment. Mammals have 'insourced' temperature control, so they must have insulation and eat regularly, and are capable of massive amounts of metabolic output.

Despite the fact that the evolutionary gulf between reptiles and mammals is huge, *humans include both respiratory systems*. Snakes breathe (and at times digest) with their intercostal muscles – which, like ours, are enervated by the individual nerve from that spinal level. In humans, the diaphragm is our primary muscle of respiration. It has two enervations: motor function is supplied by the *phrenic nerve*, originating at C4, and sensory enervation comes from cranial nerve 10, our friend the *vagus*. The vagus nerve has more than one origin, the *dorsal motor nucleus* (the reptile one) and the *nucleus ambiguous* (the mammalian one).

What does this mean? If someone breathes primarily with his intercostals and accessory muscles, he breathes like a snake. Breathing like a snake, you won't have much energy, and you can't supply your body with the oxygen needed to move or feel, so emotions will be blunted Some either binge or forget to eat. Breathing like a snake, you will have trouble regulating your temperature. Doesn't this sound like *depression*? And since the mechanism of respiration is one evolutionary difference between reptiles and mammals, shouldn't breathing well – in a mammalian way – potentially have a beneficial impact on mood?

Towards that end, my First-Hour sessions of the Ten Series always include *mindfulness* regarding breath. Recently, I have added a piece about our 'container', and it goes something like this:

> *Your diaphragm is your primary breathing muscle. It attaches at the back of your body around L1 [I put my hand there for reference] and also attaches to the lower ribs. When you breathe, the diaphragm drops, and the rib cage expands three-dimensionally [with the client supine: head to toe, ceiling to floor, and wall to wall]. And the sensation of air in your body goes all the way from your nose to your pelvic floor [once again, I use touch to draw attention towards those places in the client's body]. Can you, with your eyes closed, feel the distance from your nose to your pelvic floor? [I give some time to explore this.] You don't have to tell me in inches, but let me know if you feel too long, too short, or just right.*

Many people will be able to talk about their perceived felt sense of their trunks, but some people will need more explanation. Most people overthink this part and look for some kind of problem. It's wonderful if they say with surprise, "My legs feel really far away," or "Wow – there is nothing between my nipples and my hips" (these are actual client comments).

I tell them something like:

> *People frequently have these types of sensations, but have never noticed them because nobody has ever asked them. Now that you know about these sensations, they are easy to feel and to change. The only way a body knows how to move is from the sensory feedback it receives from its muscles, tendons, ligaments, and joints. This type of unusual sensory information will influence how the body moves, and this is very likely one cause of your problem at your [insert body part].*
>
> *Before we go about adjusting these sensations, let's look at your depth and width. Are you too shallow, too deep, or just right? Are you too wide, too narrow, or just right?*

This exploration gets clients really engaged and curious about perception, and, for most, it's a completely new way to pay attention. I teach pelvic rolls if the client feels he is too long – that gets proprioception through his hip joints and helps him feel his 'push'. If he feels too short, I use SARA (sacral ambulatory and respiratory axes; see Drummond 2014). If he feels too narrow or too wide, I continue on with my old faithful tool from Mary Bond's book, *Balancing Your Body*, some variation on the Structural Breathing Awareness script (Bond 1993, 34-36). For someone who feels too wide, I will also stand at the head of the supine client, place one hand on each serratus anterior, and compress during 'inhale' and 'exhale'.

After applying various tools, we go back and see what the client's perception of his body is like now, and frequently this has changed.

To quote Ida Rolf (1989, 27), "We seek to create a whole that is greater than the sum of its parts. We are searching for a method to foster the emergence of a man who can enjoy a human use of his human being."

One of the ways Rolfers can support this process is to understand the biomechanics, evolution, enervation, and significance of diaphragmatic breathing, and tools for its transformation.

Barbara Drummond is a physical therapist and a Certified Advanced Rolfer working and living in Oak Park, Illinois. She also incorporates her Hakomi training and an interest in developmental neurology into her work.

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The Long Body

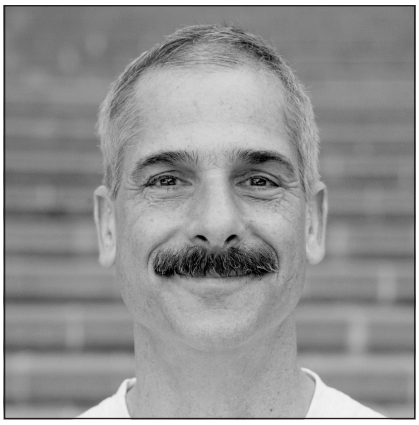
An Interview with Frank Forencich

By Frank Forencich and Brooke Thomas, Certified Rolfer™

Editor's Note: This interview with Frank Forencich was originally done for one of Brooke Thomas's Liberated Body (www.liberatedbody.com) podcasts and is shared here with their kind permission. If you would prefer to listen to this interview, a recording is available at www.liberatedbody.com/frank-forencich-lbp-041/.

Brooke Thomas: Today I am having a conversation with Frank Forencich about the 'long body'. I'm quoting Frank here: "Our perception of the human body as a singular, isolated unit, strong as it may be, is actually an illusion and a dangerous one at that. In actual fact, we are massively interconnected with the biological and social world around us, and it's not altogether clear where the human body begins and ends. Thinking of ourselves as individuals is a pivotal blunder, a profound biological and psychosocial misconception" (Forencich 2015).

Since this podcast is dedicated to the human body and, in particular, [looking] through a lens of a whole and unified human body, I was so grateful to talk with Frank about expanding this sense of holism to understanding how we are interconnected not just within our individual bodies, but also with our world and with our environment. Thank you so much Frank for talking with all of us today.



Frank Forencich

Brooke Thomas

Frank Forencich: It's great to be here.

BT: You shared with me recently about the 'long body' (Forencich 2015). Can you describe what that means and where it comes from?

FF: Right. This is kind of a rarely talked about Native American term, and my understanding of the term is that it refers to the individual human body plus the life support systems around us. It's a much bigger conception of the human body than we normally have in Western culture, and this seems to be not just a Native American idea – it seems to come up again and again in native or indigenous cultures. They don't make such a distinction between the body and the larger environment. They see the body as being continuous with the larger environment. It's an old way to look at the body and it's also kind of a new way to look at the body.

BT: Yeah, and you mentioned that our perception of the human body as these isolated units can be a dangerous illusion. Why dangerous?

FF: It's dangerous because it ignores our history and it doesn't take into account the subtleties and the complexities of an organism that's living in context, in an environment. The science now is starting to really show us the extent of that continuity. To give you the full picture, I want to go back a little bit in evolution and the idea that the body has a history and that we co-evolve with these habitats over the course of many millions of years. The body would be adapted and highly tuned to these environments that we live in. One question that I always pose to audiences, when we're talking about these types of themes, is "Why do you have a nervous system? What does your nervous system do?" The short answer that always comes up, is the reason you have a nervous system is so that you can regulate your own body. That's true and that sounds right. It's fantastically effective at doing that, but the nervous system has other functions as well. They have to do with learning, and for human beings in particular, the purpose of the nervous system is to learn habitat and to learn our social environment as well.

We have this incredible sensitivity to the land, to habitat, to plants, to animals, to weather, to natural sensation, and we have also this incredible sensitivity to one another. In other words, the nervous system is all about helping us learn our life-support systems: the ecological ones, and the tribal ones. This is why we have a nervous system. If we ignore the life-support systems of habitat and tribe, then we look at the body in isolation and we miss so much of what the body is actually doing in the world. That's why I think it's a dangerous thing.

The other way to approach this is that the body really is not as singular and unitary as it would appear. If you look at evolution and the vast scope of evolution, you start to see that evolution adds on component parts to organisms. It adds on elements over time, and it starts with simple forms and then creates hybrids of new elements and keeps adding on pieces, which gives it more complex functions. Now you get these complex organisms that people now are starting to call 'kludges'. This is a really interesting word. It comes from the world of technology and engineering and it refers to devices or structures or inventions that have components that are added on to [them] to give new functions. It turns out the body works that way as well and what we've done over the course of millions – tens, hundreds of millions – of years is add on these different components. The body, in fact, is a kludge. Our goal in health is to integrate all those component parts, and part of that is to bring in our relationship with the natural world and with the tribe.

BT: You wrote (Forencich 2015),"We literally integrate habitat and people into our brains, and we use terms all the time like 'toxic people' or 'toxic work environment' or things like that. These situations or people can create certain kinds of sickness in us too."

FF: Right. It really helps to appreciate how alien the modern environment is to us now. It depends what reference points you want to use, but a lot of people say the human body, in its current form, is roughly six million years old. That was the last major branching point in evolution where one branch went to the chimpanzees and the bonobos and the other branch went to the hominids and humans. If our body is six million years old, 99.9% of that time has been spent in wild outdoor ancestral conditions. That was our ancestral environment, and it makes sense to know that our bodies are tuned to those conditions. It's only in the last few hundred years that we've drastically, radically changed the nature of our environment, and it's true to say that we now live in an alien environment. Some of us manage to adapt pretty well to that alien environment but a lot of us don't, and this is something that we have to come to grips with now – because our body is not adapted to this alien environment by and large, and what we see with all these lifestyle diseases now is a reaction to that predicament of living in the modern age.

BB: I was listening to a radio show on Love + Radio (2014) about the first group of people who are going to go to colonize Mars, and in the show they were talking with this woman who is in the running with five hundred other people to train as an astronaut and go. It's a one-way trip. You go, you don't come back. I was preparing for the interview and thinking about your work as I was listening to it. I thought, it's funny, because they were talking about what they're going to be facing in a habitat that is really completely alien for our species (gravity forces are completely different and all that kind of thing), and what you were talking about is that here on Earth, we experience plenty of that too – this radically alien environment in the last hundred or so years compared to what our species has been up to most of the time it's been kicking around.

FF: Right. The magnitude of that change – I think a lot of people don't realize just how drastically we've changed our living conditions over, say, the last hundred years. I read a piece recently in *New Scientist* magazine where they tabulated the amount of time people now spend indoors, and they figured the average human lifespan now runs something like seventy-eight years or thereabouts and of that seventy-eight years, we supposedly spend some seventy years indoors.

BT: Wow.

FF: That's an astonishing number from my point of view, because that in itself is a radical divergence from our evolution. Even just knowing that, you would assume that the nervous system now is reaching out for sensation that it is tuned for – outdoors, natural sensitization. A lot of us appreciate this distinction between indoor and outdoor living, and a lot of people, especially Richard Louv (2012), have pointed out that we have 'nature deficit disorder' now; we just aren't having enough outdoor time in nature.

The other part of this picture is the fact that we've radically reworked our social environment as well. Here you've got to go back in history to appreciate ancestral conditions when people lived in tribes and bands and clans, and this was our ancestral social environment and this is the norm. This is the status quo for human beings to live in these small bands or tribes of people. Our bodies are tuned for this, our social behavior comes from and through the body. Our social behavior is profoundly physical and the subtlety here is astonishing.

I want to walk you through it a little bit. When we have a face-to-face conversation with somebody, we don't just hear the content of their words, we're continuously scanning their bodies and their facial expressions for emotional content. This is very subtle and very sophisticated, so when I look at your body and I look at your facial expressions, I've a set of mirror neurons in my brain that are starting to register your intent and your movements and your posture. These mirror neurons have kind of a dual function, because they also respond to other people's movements and intention. The mirror-neuron system allows me to perform a simulation in my own mind and my own body of what you are experiencing in yours. It's not just in the cortex of my brain, because the mirror-neuron system feeds down into my limbic system, into the center of my brain, the emotional centers of my brain, and it also goes down into my abdomen via the vagus nerve – down into my guts. Now I can have a felt sensation of what you are experiencing in your body. This is what Dr. Daniel Siegel (Rose 2010-2011) calls the 'resonance circuit'. It's beautiful because it means that when we have a conversation, your movements and your emotional state give a lot more meaning to the content of our conversation. This is all the nonverbal stuff that I pick up, and it's vital for having a complete understanding of another person.

Now, what we've done with our electronic technology is we basically eliminated the body from the process; and now, especially with something like texting, all we see are the fragments of information. These things are disembodied, and we eliminate the resonant circuit, we eliminate the mirror-neuron system, we eliminate our guts. All our physicality now is gone, and we use just a tiny fragment of our capability to understand the other person. This is why these devices are so dangerous. This is why we have so many misunderstandings with each other now, and it doesn't look good. The trajectory of this is not good – because it's safe to assume, as most athletes know, that the body is basically a 'use it or lose it' [system]. We are very plastic organisms, and it's safe to assume that the resonance circuit is also a plastic, or a use-it-or-lose-it, system. When we use these electronic devices compulsively and continuously throughout the day, the resonance circuit begins to atrophy.

Now, it becomes harder and harder to have meaningful interactions with other people,

and this creates an alien social environment. These two conditions now are really catastrophic for human health, because we eliminate nature by living indoors and then we eliminate authentic face-to-face interactions with other people. So now we are literally out of touch with our two main life-support systems. This creates all sorts of potential health problems beginning with the mind and the spirit, because we start to feel this anxiety and this sense of isolation – this sense of disconnect with our environment. It's no wonder that we feel so much stress. It's no wonder that we feel so much unhappiness. It's time to take a good hard look at what we're doing in creating this alien environment and, in many ways, making it worse with every passing day and each new technology that we add to the mix which further distances us from nature and from each other. A lot of people are using this phrase 'rewilding' – it's time really to take a step back and to really examine what we're doing and the role of the body and the consequences for human health. Because what we're doing is basically designing our bodies into a sense of isolation.

BT: When you speak about consequences, I know you talked about all of these dislocating things – that we're dislocated from nature and our habitat, dislocated from tribe and normal social interactions – you describe it as a spiritual and health catastrophe. Can you talk more about what you see are some of the downstream effects or consequences of that?

FF: The most obvious thing is stress. This has changed radically since paleo times. If you think about life in an ancestral environment, our ancestors did experience stress and they had a very ancient stress system in their bodies to help them deal with this. Of course, the types of stresses that they encountered most typically, most classically, would be encounters with wild animals. Specifically predators would attack them from time to time, and their stresses would have been acute but not chronic. You're attacked by a wild animal for minutes or maybe hours, but then if you survive that encounter, you wait it out, you go back to camp, and now your stress response returns to normal. In a paleo environment, your stress response would have been acute but not chronic. What we have in the modern world now is the inverse of this, because now most of us are facing chronic stress that never really seems to go away and we're firing our stress response in a way that's not adaptive, it's not normal, and it's not something that the body does very well with. The thing you hear all the time is, "I'm pumping cortisol, I'm pumping adrenaline, and I'm doing it all the time." We've taken this acute thing and turned it into something chronic – and that, of course, most people now know that that's damaging for tissue throughout the body, not just cardiovascular tissue but also [the] nervous system and, in turn, it changes our cognition and our relationships with the world around us.

BT: Yeah, I remember in college I read that book *Nisa* (Shostak 1981) that was about the !Kung warrior tribe, one of the last hunter-gatherer tribes out in the Kalahari Desert. I don't know if you've ever read it, but I remember when I picked up the book, I was like, oh, this is going to be kind of depressing. Like I thought it would be a depressing story about having to hunt and gather for your food and a not particularly hospitable environment in the Kalahari. And I finished the book and I was, like, that is a good gig, because it was without chronic stress. So there would be times of hunger and having to dig for roots to get any kind of water and that kind of thing, but it was a lot of making instruments from gourds and lots of having sex in the afternoon and napping. I was, like, I'm into that, that sounds great.

FF: It's easy to romanticize the paleo, and I don't want to go too far with that, but a lot of anthropologists have described that time. They said these primal people were the original affluent society because these people didn't have much in the way of possessions or what we would think of as wealth, but they had a lot of free time. In fact, the very notion of time itself has changed. In a paleo environment, time was always seen as something circular or something flowing, something connected to the seasons and the environment. But now we see time as a resource, a commodity. We take a linear view of time, and that in itself is a tremendous stressor. Time is always getting away from us and, if nothing else, that would be a good place to focus our attention right now.

BT: Yeah, for sure. You've touched on a lot of these things, but since you're talking about this concept of the long body, you write that we live in a 'short' culture and culture is one of those things – it's really hard to see our own cultural biases. Can you describe some of the other features of our culture that make it a short culture versus a long culture?

FF: I'm sure a lot of this came into being with the scientific revolution and starting to look at pieces and fragments of different phenomena. We found that we could gain power and control if we looked at one thing at a time, studied one object at a time. There's a lot to be said for looking at things in isolation. You can wield power and control, but not everybody does it in this way, and most obviously Eastern cultures tend to look at things in a more integrated way. There's a really great example of this coming from a book called *Crazy Like Us* by Ethan Watters (2010). What he does is look at the prevalence of mental illness around the world. One story he tells is about the tsunami that happened in Indonesia, 2004 I believe. Of course many people were killed, a lot of people were displaced; it was just this tremendous tragedy. And a lot of Western-trained psychologists and psychotherapists went to Indonesia in the aftermath to help out, to help treat some of these people. This was a tremendous culture clash because they went in with this expectation that people would have PTSD, that they would have a certain set of symptoms, and that they would respond to this methodology that focused exclusively on individuals. It turned out it didn't really work, because people had an unexpected reaction. Instead of talking about themselves as individuals with particular symptoms, they talked primarily about webs of social relationships that were disrupted. This was a tremendous culture clash. The Western therapy approach to treating a person with PTSD didn't really work. That's an example where our culture really makes a difference, and what works in one place may not work somewhere else. I think, as Westerners, we would do well to keep that in mind and keep a bigger picture; focus on the individual isn't the only way to do it.

BT: What are some ways that we can maybe practice 'long' health and 'long' fitness and take a different view in our lives?

FF: The standard advice here, and we hear it more and more coming from a lot of different directions, and it's the simplest thing, is to go outside. But more than that, to slow down in our habitat. We see a lot of fitness people now doing outdoor adventurer things and using nature as if it were a tool for them. That's all fine and good, but I think we can do better than that. We could take more of a John Muir-type of experience in the wild, where we

actually learn our habitats and put our bodies in direct communication with them. But you've got to slow down to make that happen. The other part of it is paying more attention to face-to-face contact with other people. That's the gold standard for human relationships. So put down the phone, turn off the phone, turn off the electronics. Those are the two most important things that I can say right off.

BT: Yeah, that's beautiful. Really good advice. Thank you very much. I'm really grateful for your time and for all the work that you're doing

Frank Forencich is an internationally recognized expert on health and human performance. As an engaging speaker and movement teacher, he brings a unique perspective to the human predicament and offers practical solutions for some of the most pressing problems of our age. He earned his BA at Stanford University in human biology and neuroscience and has over thirty years teaching experience in health education and performance training. Frank has traveled to Africa on several occasions to study human origins and the ancestral environment. He is a regular contributor to Paleo Magazine*, and in 2012 was named by* Experience Life *magazine as one of "five visionaries leading the charge to better health, and a healthier world." He is the author of several books including* Change Your Body, Change the World*;* Stresscraft*; and* Beautiful Practice*. His website is www.exuberantanimal.com.*

Brooke Thomas is a Certified Rolfer in practice in New Haven, Conneticut. She is also the creator of the Liberated Body Podcast, a show that interviews somatic thought leaders in interdisciplinary conversations about the wondrous human body.

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Turning Our Lens Inward

Acknowledging the Animal Under Our Suit

By Norman Holler, Certified Advanced Rolfer™

> The unexamined life is not worth living.
>
> Socrates

Introduction

Well, here we are folks, in this crazy little thing called Humanity. It could have been different. The current über species could have (with a different twist of fate) been more reptilian. Yes, 65 million years of dinosaur evolution could have altered the life-scape so much that our particular primate species might never have had an opportunity to develop a prehensile anything. Those 65 million years leave lots of room for innumerable possibilities. We just happen to be the one that is, as opposed to one that isn't.

In the 'spirit' (we'll come back to that term later) of self-examination, espoused by Socrates, it might be wise to engage in a practice where we look at ourselves from a big-picture perspective and work our way towards the minutiae. Even though the minutiae may appear trivial, they're not.

I encourage this assessment because we, as Rolfers, are in a unique position to literally reshape the physical human forms of those who see us for work. This hopefully, translates into the way they perceive themselves and consciously or unconsciously take that self-image / sense of self into the larger arena of Humanity. Perhaps you hadn't thought of that. But if you accept the axiom that everything is connected to everything, then what we do in our work is worthy of looking at with respect to our potential impact on how Humanity shows up in the world.

Speaking of perspectives, it is worth considering that if you change your perspective, you have the opportunity to change your perception.

What follows are perceptions that might be held as valid by some and considered novel by others.

Overview

Each of us shows up in the world with two aspects. Our physical presence, the primate species *Homo sapiens*, which we will call our Human Animal, and our non-physical presence in the world that expresses itself through the medium of the Animal that it emerges from. We will, for this argument, call that our Human aspect. In this consideration, our Human aspect and our Human Animal have a common middle ground of the brain/mind. Neuroscientists might argue that there is no such thing as a mind, and that consciousness is derived solely from the chemical soup of the brain, and that the mind is a creation of fiction. Some philosophers will argue that the mind is a non-physical phenomenon of reason drawn from the interconnectivity of recognitions, pattern associations, and remembrances of the brain. For this conversation, we will use the brain/mind as our model.

If we step back from the individual Human, with its Human Animal as its 'carrier creature', we have come to term the collective of all Humans as Humanity. Humanity's physical presence could rightly be referred to as Humanity Animal. Everything that has been physically made or changed outside of each individual Human form (through intention, negligence, or accident), plus the ideas, beliefs and customs that we generate, creates the cultural milieu/map that forms our social worldview. However, while there are obviously not seven billion distinct and autonomous cultural worldviews, there are many features common to almost all of us. Cultural rituals around death, mating, money, nation states, or even language, etc., did not come as part of the Human package when *Homo sapiens* broke away from the common primate tree. They were essentially invented, for better or worse, to provide for perceived needs or as strategic social wedges that offered perceived advantages to some over others. While we, as Rolfers, may not be the catalyst for constitutional changes

in Humanity's way of being that beliefs around theism or atheism have had, there exists a possibility that we can inspire an early pulse wave of awareness around the possibility of a much more cohesive version of Humanity based upon a broader spectrum of understanding of ourselves. A feature awareness that we can encourage is that we are always in a flux between our 'inner' and 'outer' world perception of experiences.

The Human Animal

When thinking of our Human Animal, some of us might at first have some resistance to the description, but tentatively surrender into saying, "Well, we all walk around in one." That might feel agreeable, but in the concepts presented here, 'we' refers to the person that we are, the Human aspect, that has no physical presence, but emerges from the brain/mind matrix of our Human Animal. Yes, this pluralistic model of the Human Being runs counter to the monistic body-mind-spirit-as-one model that is currently in vogue, but pluralism is nonetheless valuable for the purposes of self-examination.

There is a long, long story of our genetic evolution that is worthy of study and being knowledgeable about. However, getting a good grasp of at least the short story of what our Human Animal and Human aspects are, with their potentials and limitations, is, I hope that you will agree, a fundamental obligation for all Humans to pursue.

Knowing and understanding the physiological and biomechanical needs of our Human Animal should, without a doubt, be integrated into the fabric of public educational systems and child-rearing practices at a global level. For our part, we can add important dimensions to our client's understanding of being more than a person attached to a body. Actually, the term 'body' limits our perception of what we are. The term body would be better utilized if it were more confined as a map of our Animal systems and components. Body is a static term. Animal implies a dynamic relationship. We have two-way relationships with many domesticated animals, like cats, dogs, horses, even birds. We perceive/interpret many of their personalities and characteristics, and if there is enough familiarity, we can develop a level of communication. If we turn our attention inward, pay attention, be patient, it is conceivable that a nuanced level of communication between our reasoning Human mind and our Human Animal's mode of communication through its brain/mind matrix and hormonal influence can be initiated and enhanced. Turning our awareness inwards towards our physiological and animal-trait characteristics, supported by public and social education, could translate into a positive paradigm shift in the way we relate to and care for ourselves, others, and the ecosystems that we are part of.

Consider this: at our roots, our Animal's objectives are to reproduce and stay alive. Because we are a social species, we require some level of community with its sharing and territorial implications. Reproduction, basic life maintenance, and minimal social structure can keep the species going, but that leaves us with just existing without promise of flourishing. When the trappings of modern Humans are in jeopardy, be it personal threat, catastrophic climate warming, or the crumbling of civilization and the technological infrastructures that support it, our Human Animal will tend to revert towards its default settings and jettison parts or all of our ideas of who we are as a person with a name and a story.

Our Human Aspect

Much can be said about what it means to be human, by much more learned minds than this scribbler can offer, but I hope my humble offering affords some measure of reasonable perspective.

We come into the world at birth, and almost from moment one our Human Animal takes in sights and sounds, smells and touch, and tries to make sense of what is going on and how it fits into this new environment. We have a genetic framework for part of our personality, but we are soon given a name which becomes the overlaid foundation for us to assume and create our social identity. From moment one, we tend to always look out into the world of people, see ourselves as another of the people, and rarely, if ever, look inward.

Our Human Animal continually senses physical and social information, with the emphasis being on the social, whether it be family or beyond, because there is no survival without social connections immediately post-birth and into early childhood. Meanwhile, in this model, the mind (as nebulous as it is) forms its capacity to reason and understand derived from the neural capacity of our Animal's brain/mind matrix to recognize patterns and make associations. Because we evolved to be physically configured as we are, being bipedal, having our large brain, our skull and face shaped as they are, our species could develop audible forms of communication with others. Perhaps 100,000 years ago, we developed a nascent form of spoken language. It was a necessary requirement for *Homo sapiens* and our close genetic cousins to move into new areas of the planet. The (Human) race began in earnest with that adaptation.

We talk, talk, talk. We tell stories. We tell informational stories that help us to survive and understand, and fictional stories that range from creation myths to fairy tales to rules around global economic systems. Because we talk and (hopefully) listen, we invest a lot of our energy resources into making sense of the abstractions of words. Word concepts like, "You are this kind of person [male, female, LBGTQ, of a certain race, economic status, educational background, family of origin, politics . . .]" tend to become foreground in our worldview. At least until our personal safety or economic wherewithal is threatened.

The above perspectives of our Human Animal and our Human (non-physical) aspect hopefully give some measure of philosophical credence to the concept of the dichotomy of our being. Yes we are one and yes we are multidimensional.

Human Spirit, a Contingent Phenomenon

I see the term 'spirit', and I find myself responding with discomfort. Spirit, like 'love', is an abstract term. We can't put spirit on a table or hold it in our hands, we can only perceive its product. With love, the product is care and recognition. With Humanity, the product is everything that has changed the way the world is as a result of our ingenuity, our negligence, our apathy, and our greed. We have impacted the physical world to such an extent that we are now considered by some to be a theoretical force of nature that is causing negative chemical changes to the air, land, and oceans that support us. If you haven't heard the term before, get ready to become familiar with the 'Anthropocene' era.

The term spirit is often hijacked by those who want to associate it with something metaphysical. Perhaps there is, or perhaps there isn't, a supernatural force that has an influence on our way of being. The probability of a metaphysical deity being an invention of thought, more than a

comprehensible reality, is more in line with our present cognitive abilities.

The words we speak, the work that we do, our values, our morals, the way we mate (or don't, and with whom), and everything else about our expression (spirit) is contingent on a vast array of circumstances. While our expression of self may not differ radically from one day to the next (for most of us), it can appear differently to some degree due to chemical fluctuations related to nourishments or intoxicants, interpersonal situations, beliefs that are either supported or challenged, age, past experiences, and more factors than can be listed.

If we were to support a common unifying feature in our way of being, could we agree that we would consciously strive to nourish our Animal, work with it to be strong and versatile, biochemically well-balanced, cared for, recognized, and understood? From such a healthy and relatively secure psycho-bio-physical environment, the nature of our Humanness would have a greater opportunity to follow its innate desire to understand the nature of all things, both physical and conceptual. From a foundation of understanding, wisdom has an opportunity to take root and flourish.

The Big Picture

Change one aspect of a dynamic system, consistently, and all the other aspects will have to change. Everything that exists in our universe is a possibility that happened as a consequence of preceding circumstances and conditions. This includes universal physical reality and, more pertinently, the technology and social structures that affect our lives. Every possibility that happens, or does not happen, becomes a circumstance for all other possibilities. Everything from the Big Bang, the Big Wheeze, the Big Deal, onward, is related to everything else in physical presence. It is not so much that a distant star imploding or exploding will affect our life. Or that another person experiencing joy or terror, somewhere in the world, will impact our life with any significance. It is more that the circumstances and conditions that brought those possibilities to occurrence are intertwined with each of our beings . . . and everything else.

Validating and Caring for the Human Animal

Two-way relationship flourishes when beings are seen. Being seen is to our spirit as breath is to our body. Most of us, it appears, are not seen with deserving depth – not seen as a whole being with a past, stories, beliefs, or the circumstances of our physical being. One level of this is 'projection', which is an invalid experience of another, whether it's objectifying a woman as a sex object, dehumanizing a workforce to a commodity, or looking at another and stopping at the name, face, and cultural costume – the Person – giving little thought to how this whole being impacts the physical world, for better or worse.

Our Person's very ability and willingness to create and consider concepts is dependent on the level of awareness, integration, and capacity of the mind-matrix from where we initially form – this is the realm of our Animal, which is the apparatus of our expression and experience. A truly authentic self will have an intimate relationship with its Human Animal. Our Human aspect expresses everything – from its politics, philosophy, attitudes, and values – through the actions of its Animal. When our Human Animal dies, our Human aspect will cease to be. (Actually, our Human aspect might cease to be before death, in that, through disease or trauma, our animal brain/mind matrix will no longer be able to support our Human personality. It's a good practice to look at that reality, often.)

Communicating with our Human Animal

How can we communicate to our Human Animal that it is being seen, recognized, and respected? How do we start? The process can start with conscious care. It could be said that love cannot travel without care. While love may be an abstraction, care can be perceived, understood, and applied.

We could start including our Animal into our greater sense of self by addressing it in language, calling our Animal by name. We could start by waking up in the morning and saying, "Good morning, Animal, let's go into our day together." Or we might say, "My Animal and I are going for a walk," just as you might say, "My dog and I are going for a walk." Most animals have some identifiable characteristics and traits that we (generally) acknowledge and hopefully respect. Turning our awareness inward can reveal our own uniqueness and needs as well as those in others.

Does talking to your Animal, or referring to your physical presence as an animal, make you uncomfortable? We may find ourselves resisting saying, or even thinking, those few words. Bringing our Animal into our foreground thoughts, consistently, is unfamiliar cultural territory at this time – even for those of us who interact with bodies, with Animals, all day in our Rolfing® Structural Integration practices. When you work, do you take time to acknowledge that there's an Animal under your hands? Do you recognize yourself as an Animal? Besides speaking to your Animal, speak to the Animal of the Person you work with, help your clients to acknowledge that they too emerge from a dynamic Animal instead of an anatomical body.

Another way to start is, through focused awareness, to step into your feet and walk around in your Animal every day. Try it as a personal practice. Go for a walk. Take your thoughts for a walk. Take your Animal for a walk. Going for a walk on trails, in nature, on uneven ground, is extra good. Just step into your feet, find all the sensations that you can find, then walk around, preferably outside, and preferably with hills. Talk to your Animal, even if it feels like play. Ten or so minutes is a good start. Just stay in your feet, your Animal, breathe, walk with purpose – or just walk, but do walk in your Animal every day, in your animal feet. Extend that awareness into the whole of your legs. Feel them swing, extend, reach. Engaging in physical awareness through our senses is common to many personal-growth practices, but is usually framed in the context of getting in touch with our body. The suggestion being offered here is to reframe the practice to one that supports getting in touch with our Animal. In doing so, a channel of nuanced communication has an opportunity to flourish. With that said, I can see how Rolf Movement® Integration is an ideal medium to introduce the concept of acknowledging our Animal.

The Client's Animal

Most humans are woefully unaware of how the Animal functions and its systems, so our clients will need help here too. Our Animal is tied to a relationship with our physical environments, and our genetic makeup will have its implications, limiting or expanding our possibilities accordingly. Many times you will witness the client's Human aspect overriding his or her Animal's reality and needs. When one lacks deep understanding and awareness, it undermines or limits the physical viability of his or her Animal and thus translates into a limitation of his or her Human aspect to have as viable a platform

as possible from which to understand and express.

As a Rolfer, you can see and validate the Animal in your client. When your out-of-shape and out-of-alignment client proclaims she is going to train aggressively to run her first-ever marathon in a ridiculously short time frame, you can ask her, "How does your Animal feel about that?" Can we help her bring her Human aspect, with its ideals and goals, into communication and alignment with her Animal physicality and its limitations?

Help your clients to relate to their Animal and you help Humanity relate to accepting and caring for its Humanity Animal.

Clearday – A Practice of Optimization

If we can embed into the spirit of Humanity the understanding that our Human aspect emerges from our Human Animal, we will be better equipped to work cooperatively through the major upheavals ahead for our society and planet. One of the possibilities is peace. Another possibility is chaos with violence. Unfortunately, there are more pieces in place to support the latter condition. Moving in the direction of peace will require intelligent dismantling of our current way of being. How do we raise the momentum towards that possibility? A consistent practice of self-care, self-respect, and a hunger to understand through knowledge and experience will help. A practice of self-care can allow for a deeper-rooted relationship between our Human aspect and our Human Animal. This, I'm confident, can only be good.

There are many so-called spiritual practices that encourage caring for our bodies. Most, perhaps all, are based on an alignment of self to a metaphysical force and/or to the reality of nature. Yet, I must state once again, the term 'body' implies a static form, where 'animal' speaks of dynamic, ever-changing qualities. Both terms are labels. The former is a descriptive term, a map. The latter, to utilize Alfred Korzybski's statement, is the territory.

Humans, it has often been said, are creatures of habit. Some are nourishing, others are mal-nourishing. It can also be said that we tend to get good at, or at least better at, what we practice. We, as Rolfers, engage in a conscious practice when working with our clients so that we may move the process towards the goals of structural integration. I am suggesting here that we broaden our practice to one that could be described as 'somato-psycho-spiritual integration'. Spiritual, in this sense, is the expression of our Human aspect, and Humanity as a whole, as culture, that includes values and morals, or lack thereof. Our species has evolved over millions of years through natural selection bound by our genetic disposition. Our cultural evolution accelerates (or decelerates) at a level relative to our ability to directly communicate interpersonally or through so-called social learning.

While I do not claim to have found the pathway to bringing Humanity to a state of peace, I do have a practice that brings me to my Animal roots and to my awareness that I am a co-creator of how Humanity appears and behaves in the world.

A Clearday Practice

The essence of what I call my Clearday Practice has a simple foundation that includes self-care and nourishment of my Animal, my thoughts, and my relationship to others and the world that I live in. I have chosen Wednesdays as my Clearday, primarily because it is just a regular life day, generally without religious or cultural significance.

My practice involves acknowledging my Animal and bringing my awareness more acutely to its need for nutrient energy and its need to move in ways that challenge and strengthen its structural and physiological systems and allow it to enhance its capacity to take in information through its senses. The practice calls for me to be consciously aware of what might add chemical confusion to my Animal's ability to sync with my Human aspect. Food, of course will be a major feature, but physically challenging my Animal has to be part of the program. The Clearday Practice also involves, as I said at the beginning of this essay, taking stock of where and who I am in the world, and peering into my perceptions of the state of Humanity.

In other words, Clearday is my practice of 'checking in'. As with many mere mortals, I have a range between actual practice and contemplating my practice. At least with my contemplative version, I tend to make more conscious choices than I might otherwise have. As well, I create opportunities for me to experience joy, be they in food, being on uneven ground, coming to a new understanding, or experiencing joy by being grateful. (It is impossible to be happy without being grateful.)

I have shared the concept of my practice with others over the years, with some reporting that they have included it, to some level, in their lives. While I see value in having a daily practice of clarity, I recognize that I am not 'there' yet. However, the weekly practice, regardless of whether it is actual or contemplative, serves as a spiritual pulse that nourishes my whole being because of its rhythm. If I miss a weekly check-in, the opportunity comes back to me seven days later. It can only be good.

Conclusion

While the body of the above essay took in a rather broad span of concepts and perceptions, my hope is that the takeaway message is one that inspires you to open yourself to the possibility of communicating with, and working with, the Animal that is under your hands *as well as* the person who brought him or her to your studio.

The essay does not presume to be heretical in the way that Galileo's assertion that Planet Earth orbited the sun was; however, there is a semblance of a corollary that is worth considering. Galileo was the first significant thinker to bring his observational understanding of Earth's orbit into the (primarily Occidental) public domain. There was strong resistance to his claim from the Roman Catholic Church and many of his contemporaries. It could be imagined that the majority of the (mostly illiterate) population followed suit in their worldview. The Earth-centric model effectively imposed a barrier to understanding the universe, galaxies, and solar systems, and to understanding its implications around time, space, and gravity.

As Galileo's understanding started to breech the bounds of conventional misunderstanding, the Renaissance movement became even more invigorated, leading to significant social, political, and philosophical changes that affect global cultures today. Again: *Change one aspect in a dynamic system, consistently, and all other aspects will change*.

When your client walks into your studio, consider the two aspects in front of you. First, the person, with his or her story and perceived needs, and your response to the person based on your perceptions, biases, and how you will communicate your intentions. But to get 'stuck' at the person level does, I believe, limit the potential for a deeper level of positive outcome of the work that you can offer. If you can take a moment to sense your Animal, be grounded in your Animal, and look past the person into the common-to-all nature of the Animal in front

of you, you will, I believe, serve both that Human and his or her Human Animal well.

While our Human aspect tries to follow an agenda derived from its 'church of thought', it should be appreciated that our Human Animal has a longer-term agenda that needs to be acknowledged. The two will often be in conflict, leading to social or physical distress and disease, from wars to cancer and a myriad in between. Enhancing our own, and our client's, intra-being channel of communication can only do good.

Ancillary Thoughts

We can never know what is on either side of life. Is it the Big Black of Nothingness, or another way of being? If there is some other form of existence before conception or after death, then it probably doesn't matter what we do in our lives, as it will be the same for all of us.

Our Human Animal has the capacity to remember.

Our Human Person has the capacity to dream. Our Animal remembers our dreams.

Our body does not breathe, Our Animal breathes.

Our body does not learn to explore and be curious, Our Animal learns from its genetic roots to explore and be curious.

Our body does not live and die, Our Animal lives and dies.

Our Spirit cannot die, it can only cease to be.

Is it possible that with one little word shift we can open a subtle door to the possibility of recognizing and deepening a relationship between our two beings – our Animal Being and our Human Being?

Change your perspective and you can change your perception.

What might the cultural/spiritual shift be if we were to consider all doctors of medicine to be veterinarians?

Our Person will cease to be.

Our impact on the world

and in the minds of others

will be our spirit's remains.

Carpe diem, memento mori

An Overview of the Fourth International Fascia Research Congress

Reportage from Washington D.C.

By Szaja Gottlieb, Certified Advanced Rolfer™

I begin with a disclaimer and an apology. Since I did not attend the three previous congresses, this overview of the Fourth International Fascia Research Congress, which I attended on a scholarship from the Ida P. Rolf Research Foundation and the Rolf Institute® Research Committee, lacks historical perspective. One of the principal organizers of the Fascia Research Congress (FRC), Certified Advanced Rolfer Dr. Tom Findley, advised me to get the CDs from the previous congresses and run them at 70% of their speed to really absorb the themes and trajectory of information since the first congress in 2007. Having time constraints to complete this article, I apologize to Dr. Findley in advance for the inadequacies of my submission. I thus write about this congress as a visitor who has dropped in midstream. But even for a newcomer such as myself, one could not help but feel the energy and commitment that has driven the approximately 3,000 researchers, clinicians, and therapists from all over the world who have attended and contributed to these congresses the past eight years.

All this over fascia, once a poor and distant relation in the anatomical family. The story of fascia is like a myth or fairy tale similar to Cinderella or the Ugly Duckling or even Superman. Once shunned by the scientific and medical establishment as incidental and useless, hardly noticed in anatomy books, in dissections at medical schools, and on operating tables, fascia has now, largely due to the efforts of the FRC organizers, taken on an increasingly important status among scientists, especially those whose research papers now are investigating fascia's far reaches. Whereas submissions concerning fascia once numbered only in the hundreds on a yearly basis, they now number in the thousands. Listening to some of the presentations during the three-day congress, fascia took on an almost superhuman heroic quality: for example, in embryology, when in the third week of a fetus's life, fascia shapes the body's future internal space for the remainder of its lifetime – this according to anatomist Jaap van der Wal MD PhD). The Dutch anatomist, who described himself as a Holistic Organicist, expounded this point of view on the second day of the Congress. The title of his workshop entirely captures fascia's transcendent, almost otherworldly quality, "Fasciasophy: Philosophical Aspects of an Organ of Innerness." (Please refer to Naomi Wynter-Vincent's article on page 49 of this issue for a discussion of this workshop.)

As a general overview of the FRC, this article serves as a snapshot of the many presentations offered. Even if one tried, the FRC could not be experienced in its entirety because most of the afternoon presentations and workshops took place concurrently, thereby forcing an attendee to pick and choose. And one must remember that even the papers presented were only a smattering of the total number submitted. Well over 100 articles and poster presentations were accepted for this FRC in many diverse areas relating to fascia, such as Fascia and Cancer, Fascia and Manual Therapy, Veterinary and Animal Models of Fascia, Tool Assisted Therapy, Fascia in Surgery and Scars, Fluid Dynamics and Fascia, Fascia in Low Back Pain and Innervation, and more. For those interested, there is a list of accepted submissions at www.fasciacongress.org/abstracts_2015.php. Truly, the fascial universe, to paraphrase an aphorism from chess, is large enough for a gnat to drink and an elephant to bathe.

Day 1

In one of the FRC panel discussions, an audience member, a manual therapist, rose, approached the microphone, and began talking about her experience of "dancing with fascia." The ensuing silence was palpable before one of the panelists politely explained that from a scientific point of

view he could appreciate that she thought or felt she was dancing with fascia, but that her experience could not be scientifically validated. Entering the scientific arena, the mythos of fascia takes on the Cartesian demand of quantifiable experience: in other words, definition and measurement. At the very outset of the conference, Friday morning, the definition of fascia in scientific terms was taken up by Dr. Carla Stecco, Professor of Anatomy and Movement Sciences at the University of Padua. This problem of nomenclature was initiated in July 2014 in an editorial by Stecco in the *Journal of Bodywork & Movement Therapies,* which received many editorial responses. The problem, as Stecco explained, is that many terms can indicate the same structure, and there is a need to find agreement between different terminologies.

A meeting had been held among a number of the FRC presenters, and the following definition had been arrived at: *Fascia, a sheath, a sheet of any number of other dissectable aggregations of connective tissue that forms beneath the skin to attach, enclose, separate muscles and other internal organs*. There were some murmurings at this announcement, and she then calmly explained that a second definition would also be forthcoming which would include fascia as not only tissue but as a whole interactive system within the body.

The overwhelming emphasis during the many presentations during the congress was not on definition, however, but function, beginning with the subject of innervation within fascial tissue. Is cold or heat more beneficial for back pain? This question was presented by Dr. Siegried Mense from Heidelberg University in his talk "Innervation of Fascia." He, along with several others, including Andreas Schilder, also from Heidelberg University, emphasized the role of the thoracolumbar fascia (TLF) in relation to back pain. While Mense concluded that there was no obvious conclusion in terms of recommending either heat in the form of capsaicin or cold in the form of menthol, the researchers pointed to the source of lower back pain as the thoracolumbar fascia area rather than muscle. Furthermore, experiments indicated that while only a local area of the TLF may be affected, the influence of the fascia is enormous, spreading pain into a much larger area through a few localized neurons.

Dr. Robert Schleip from the University of Ulm, and a Certified Advanced Rolfer, then followed, amplifying on the subject of sensory aspects of fascia, dividing its innervation into three types: sympathetic, nociceptive, and proprioceptive. Reminding the audience that the vast amount of nerves end in the fascial system, he announced that, at least in his view, the argument between Ida Rolf and Moshe Feldenkrais was seemingly resolved since fascia is extraordinarily rich in sensory stimulation. Simply put, adhesions in the fascial tissue affect proprioception while healthy fascia translates into kinetic elegance.

Dr. Peter Huijing from Vrije University in Amsterdam followed up this talk with a discussion of inflammation of fascia and pain, reinforcing the findings of the critical relationship of back pain to the innervation within the TLF, but casting some uncertainty as to exactly how pain was processed through its various layers.

The afternoon began with a panel discussion with the morning speakers that included questions from the audience, then various workshops, each with several speakers, were held simultaneously.

The workshop I attended covered several different subjects. The first speaker, a physical therapist from Israel, Natalie Brettler, presented her paper on Achilles tendon issues, usually referred to as tendinopathy. The key ingredient, she explained, was not the tendon proper, but the *paratenon*, the fascial compartment surrounding the tendon. Using ultrasound measurement, the researchers found a direct correlation between thickening of the paratenon and Achilles tendon issues, thereby suggesting using ultrasound measurement of the paratenon as a method of anticipating and diagnosing Achilles tendon problems.

Treating scarring and adhesions using myofascial techniques to eliminate pain was the subject of the next group of presenters. One of those was Certified Advanced Rolfer Sharon Wheeler, who discussed her paper "Integrating Scar Tissue into the Fascial Web." Her study, using ultrasound measurement, indicated that scars could be reduced in size and be reintegrated as normal tissue by using manual therapy techniques.

The last speaker, on the subject of exercise therapy, Jan Wilke from the Department of Sports Medicine at Goethe University in Frankfurt, discussed how strain transfer experiments in his lab had demonstrated the validity of several of the fascial meridian lines espoused by Tom Myers in *Anatomy Trains*, in particular the Superficial Back Line. In their experiments with live subjects they observed that lower extremity stretching induced improvements in cervical range of motion. Their findings were confirmed when tracing fascial force transmission lines in cadaver studies.

The first day of the Congress ended in the evening with beautiful images of living fascia in a lecture by Dr. Jean-Claude Guimberteau entitled "In Search of Our Interior Architecture." The presentation was a result of the surgeon's twenty years of exploration of living fascia using an endoscope. Guimberteuau's view represents a revolutionary shift in how fascia is considered from 'connective' to what he calls 'constitutive' tissue. For Guimberteau, this fascial interconnectivity extends even to vital organs, indicating not only fascia's structural role, but its importance as it ensures mobility and elasticity. His endoscopic images of fascia reveal a world that defies the traditional verbal description of fascia being stratified and layered and replaces it with a fibrous, fractal, chaotic world. Much of the material presented is in his newly published book, *The Architecture of Human Living Fascia* by Handspring Press. I am planning on doing an extensive review of this book in a forthcoming issue. Please visit www.cerap.org/fasciath%C3%A9rapie-mdb/search-our-interior-architectures-introdutive-workshop-given-pr-guimberteau, if you would like a greater exposition of his lecture.

Day 2

There was a great deal of emphasis in this congress on the role played by the TLF in back pain, and the second day was no exception – but the emphasis shifted from pain to how force was transmitted through the fascial layers of the TLF. Dr. Andry Vleeming from New England University and Medical University in Ghent described how pelvic stabilization is required in order to allow movement through arms and legs. The focus of the lecture was to demonstrate that the effective stability of the spine depends on the interplay between the paraspinals and deep abdominal muscles through its interrelated myofascial components, which he referred to as a sling. His lecture explored the various layers of the TLF and their interaction. Significantly, Vleeming emphasized the importance of the lateral raphe, a complex of dense connective tissue parallel to the

quadratus lumborum, in load transfer and by implication its importance in treatment of lower back dysfunction.

Guimberteau expanded upon the concept of load transfer with a talk about the adaptive quality of fascial fibers. This load-transfer system is dependent on what Gumberteau has named the Multimicrovacuolar Collagenic Absorption System (MCAS), which allows simultaneous sliding and force diffusion without damage to fibers. While the collagen fibers and fibrils provide the frame within the tissue, gel composed of glycosaminoglycans that attract water fill the volume of the microvacuoles. Please refer to this video at www.facebook.com/247330191983662/videos/496035783779767/ for Guimberteau's explanation of the importance of the microvacuole.

The next speaker, Dr. Raghavan Preeti from the New York School of Medicine, who is also Director of the Motor Recovery Research Laboratory, continued the discussion concerning the slide and glide capacity of fascia, particularly her interest in the extracellular matrix (ECM) of the fascia and the potential of hyaluronan to remedy spasticity after stroke. Hyaloraunic acid is a glucosaminoglycans and is vital in fascial mobility. In laboratory experiments, Pretti used human recombinant hyaluronidase to reduce muscular stiffness, resulting in dramatic improvement of hand and finger movement of post-stroke subjects. This journal will publish more on Pretti's work in one of our next issues.

The next two speakers took up the subject of what happens within fascia when trauma, specifically wound healing, occurs. Dr. Boris Hinz of the University of Toronto emphasized the importance of TGF-B1 (transforming grown factor beta 1), a protein that is stored in the ECM and that controls many cellular functions, and how it increases after an injury when fibroblasts are transformed into myofibroblasts.

Dr. Michael Kjaer, a Danish clinician, revisited the subject of Achilles tendinopathy, one of the most common sports injuries, recommending slow resistance training rather than high-intensity exercise in treating tendon issues.

The morning presentation ended with a lecture by Dr. Mark Scheunke, an anatomist from New England University, on the relationship of fascia with embryological development. While the development of mesoderm to mesenchyme is common knowledge, Scheunke remarked on the importance of fascia in that it forms an embryological skeleton that directs organogenesis.

In the afternoon, after a panel discussion of the morning's speakers with the audience, there were concurrent workshops, including the previously mentioned Fasciasophy by van der Wal, and several others including Veterinary Aspects, Surgery and Faciatherapy, and Research/Animal Studies.

Besides oral presentations, the FRC included poster presentations. Again, please refer to www.fasciacongress.org/abstracts_2015.php for a list of both oral and poster submissions that were accepted at the congress. Several of the poster booth presentations were recognized at the awards dinner Saturday night. The three winning posters were: "Influence of Manual Myofascial Techniques on Normalization of the Voice Organ in Patients with Professional Dysphonia," "Considerations for Recommended Treatment Intervals Following Osteopathic Manipulative Treatment," and "Self-help Treatment with a Myofascial Manipulation Tool: A Randomized, Double Controlled, Standardized, Clinical Study." At the awards ceremony Saturday night, several individuals, among them Findley, were also given achievement awards.

Day 3

The last day of the FRC began with a number of speakers discussing fascial dysfunction. The first, Julie Day, a physical therapist from Australia, extolled the virtues of the Stecco fascial manual method, developed by Luigi Stecco forty years ago, in treating musculoskeletal issues. In 2011, Certified Advanced Rolfer Russell Stolzoff wrote a review of Stecco's work from a structural integration viewpoint that I highly recommend; it can be found online at the Ida P. Rolf Library of Structural Integration (http://pedroprado.com.br/). Day was followed by Dr. Caesar Fernandez from Rey Juan Carlos University in Madrid. He reiterated fascia's contribution to back pain and talked about assessment techniques such as palpation (adhesive quality) and techniques (cross-hand mobilization) to improve movement. An important footnote in both of these presentations was the use of ultrasound in imaging and assessment. Indeed, a noticeable theme within this congress was the increasing use of imaging techniques, particularly ultrasound.

Whereas Day and Fernandez took a micro approach to fascial dysfunction, Dr. Serge Gracovetsky, a physicist from Montreal, took a macro one and was skeptical of the varieties and different approaches to treatment. Referring to the Cochrane collaboration, a global independent network of 37,000 researchers, professionals, and patients from 130 countries who work together to find credible medical methodologies, he asked, "Do we need a plethora of treatments and is there a common feature?" Gracovetsky, however, did emphasize the importance of fascia in its critical role in protecting the musculoskeletal system, distributing the stress that gravity incurs. Gracovetsky, as one of the closing speakers in the afternoon, later amplified this idea using the second law of thermodynamics as backdrop. All matter, including life forms, moves towards entropy, and fascia acts and functions as a significant bulwark by minimizing overall energy usage.

The next speaker, Dr. Geoffrey Bove from the University of New England, returned the conversation to localized pain, presenting detailed laboratory results. He boldly announced, "It's not the fascia, it's the interfaces." Bove, whose expertise is the causes and effects of nerve inflammation, pointed to the 'interfaces' forming a boundary between adjacent areas and regions such as muscle to skin, organ to abdominal wall. The problem is lack of glide rather than the fascia tissue itself. His work relates well with the peripheral nerve work that many Rolfers are now practicing and exploring.

Bove was followed by Leon Chaitow, the English osteopath closely associated with Muscle Energy Technique (MET). Chaitow covered a variety of topics including MET, trigger points and their vascular environment, use of ultrasound, and KT taping. In reference to fascial loading, Chaitow commented that studies showed that 3%-6% loading for manual therapists was optimum for results. His recommendations were to meet tissue tension, "but as soon as you feel the tension you are probably past it."

After the lunch break, Findley gave a comprehensive assessment of the various avenues fascia research was taking, of which many had been discussed at this congress. He took this opportunity to

present the subject matter of an upcoming (November 2015) Fascia Congress taking place in Boston: fascia and cancer (www.fasciacongress.org/2015/conference/joint-conference-fascia-cancer/). Findley noted the relationship between fascia and cancer in that a stiffer mechanical environment lends itself to metastatic growth. In that sense, commented Findley, cancer can be considered a disease of the collagen. Stating that resistance training reduces cancer risk, Findley introduced the 'progressive exercise system' that Dr. Thomas DeLorme developed in the mid-1940s when he was treating American servicemen. It is a method of softening fascia by loading muscles, specifically in a shortened position. For more on this, search for Findley's profile at http://find.rolf.org.

Gracovetsky ended the Congress. Saying that tradition slows down progress until future generations, he called for "out of the box" thinking. Humorously, in line with the French tradition of his ancestry, he suggested revolution: "When you hit a brick wall – use the guillotine!"

Epilogue

On Monday, the day after the FRC ended, there were many post-conference half-day and full-day workshops. I chose the more plebian ankle-sprain workshop, since I am on the basketball court just about every day and see plenty of ankle sprains that I treat, often immediately. Entitled "The Treatment of Acute Ankle Sprains According to the Fascial Distortion Model™ (FDM)", the workshop was taught by Stefan Anker, an osteopath from Vienna. FDM was created by an American osteopath, Dr. Stephen Typaldos, in the early 1990s. I found the system interesting in two way. First, fascial 'distortions' are broken down into six different categories: Triggerbands™, Continuum Distortions™, Cylinder Distortions™, Herniated Distortions™, Folding Distortions™,and Tectonic Fixations™. Triggerbands, for example, are twisted bands of fiber that run along a linear pathway. The second interesting aspect of this work is that the practitioner asks the client to show and describe his injury and pain. All depending on the client's gesture, the practitioner makes an assessment as to probable cause. So, for example, if a client has a Triggerband injury at the ankle, he or she might show a *pathway* of pain as opposed to a Folding Distortion, where the client might point to a particular *place* like the anterior talofibular ligament. Both localized points of impact and pain pathways are common in ankle sprains.

Unquestionably, this work falls into what Rolfers would call 'fix-it' work. It is especially attractive for sports injuries where a trainer would need to treat a trauma on an immediate basis. Klaus Eder, a German physiotherapist who is a trainer for the German national soccer team that won the World Cup last year, has adopted FDM in his work. Schleip bemoaned this publicly and with humor, as Eder previously had been for many years a devotee of Rolfing® Structural Integration (SI).

For a Rolfer the shortcomings of such a system were obvious. Local work without global thinking is simply neither holistic nor effective in the long term, which was brought up in the workshop and acknowledged to some extent by Anker, who was a delightful and very encouraging teacher. Next to me, an Israeli structural integrator named Dror Raz whispered, "You see, we [structural integrators] do the best work in the world." I nodded slightly in agreement. But that was not the thought on my mind. I was thinking of how, in my fourteen years of practicing Rolfing SI, I had never really thought about the specific distortions of the fascia as FDM presented them. Suddenly, new images of fascia appeared – tangled coils of fascia; twisted fibers of fascia; stiff fascia; bulging fascia; fascia mashed, folded, or pulled apart.

An anecdote comes to mind for my closing. On the second day of the FRC I met Graham Scarr, the author of *Biotensegrity: The Structural Basis of Life*, a book I had reviewed for the July 2015 issue of this journal. I could not help myself, and made the admission that I had found the book terribly difficult and understood perhaps only half of it. Scarr's reply: "That's okay. When I wrote it, I only understood half of it too. I was just trying to push the limits." Simply put, maybe that's what these FRCs are all about: just pushing limits.

Integrating the Fourth International FRC

Reflections on Embryology, Relationship, and Rolfing® SI

By Naomi Wynter-Vincent, Certified Rolfer™

Earlier this year I had the good fortune to be awarded a scholarship from the Ida P. Rolf Research Foundation and the Rolf Institute® Research Committee to attend the Fourth International Fascia Research Congress (FRC) in Washington, D.C. I would like to start by expressing my gratitude to both organizations for their support.

My report will offer some general thoughts about my experience as well as a more detailed focus on the two presentations given by Dr. Jaap van der Wal. The second and longer of these was a whole-day workshop that provided a whistle-stop tour of some highlights from a longer (four-day) course he offers on embryology, Erich Blechschmidt, and a phenomenological approach to understanding movement and form. In the meantime, I am aware that Tom Myers has also written about van der Wal's presentation (his post, "A Day with Jaap van der Wal," is available at www.anatomytrains.com/news/2015/09/30/a-day-with-jaap-van-der-wal/), so in what follows I will aim to give the briefest flavor of van der Wal's ideas whilst also seeking to place them in a more critical context. I will also briefly introduce the work of Wilfred Bion, whose elaboration of the idea of the 'caesura' can add a note to Rolfing Structural Integration's 'embryological turn' and provide an additional pointer for clinical practice.

This question of clinical implication – how does this affect me, as a Rolfer? – was my constant companion (along with my jetlag) throughout my stay in Washington. The FRC is a curious affair, both nourishing and alien, that brings together lab scientists and somatic practitioners in one place (I like to think that it was the Rolfers who were slowly migrating to sitting on the floor as

the conference progressed). Many of the research presentations (focusing on specific chemical interventions, or discussing the clinical outcomes of, say, applying thirty seconds of osteopathic manipulation to a lab rat . . .) seemed tangential to my clinical practice, to say the least. I am nevertheless pleased that this work is being done, and the nature of the more quantitative end of sports science requires that scientists proceed slowly and methodically with their experiments.

What was markedly lacking, though, in much of what I saw, was an awareness of the role of *relationship* (be that the therapeutic relationship of client to practitioner, or the relationship of parts of the body to each other) in bringing about positive clinical outcomes. Serge Gracovetsky, who effectively argued for 'one therapeutic modality to rule them all', seemed to provide the most egregious example of this relational and hermeneutic blind spot, questioning the value in there existing a plethora of differing schools of thought to address, as he saw it, fixed and impersonal physical pathologies. There is, of course, enormous potential in joining the dots that lie between different therapeutic schools, and in aiming for both greater efficacy and efficiency in our interventions. Part of the strength of the Rolfing community has lain in its marked ability and willingness to absorb the insights of new research (in such areas as neuroscience) and to extend our interest to neighboring modalities such as craniosacral therapy and osteopathy. But to suggest that modalities as diverse as yoga, Rolfing SI, The Feldenkrais® Method, or functional fascial taping might be mined for a common ore along purely physiological lines is to return the body to a simplistic and dualistic conception in which mind (the worlds of meaning, thinking, and relationship) is somehow quite separate from the world of the body. Rolfers and other practitioners offer ways of thinking about the body that in themselves do some of the work, and yes, there is 'hard science' to back this up (see, for instance, Haines and Standing 2015): our beliefs about pain, resilience, and the architecture of the body play a statistically significant role in our experience of illness, recovery, and health.

'Fasciasophy: philosophical aspects of an organ of innerness', van der Wal's presentation, provided a much-needed counter to the reductionist approach that was in evidence elsewhere. Van der Wal is one of a growing number who have recently drawn our attention to the way in which the traditional anatomical practice of the dissection of cadavers has contributed to the neglect of fascia (or *fasciae*) as a pervasive and continuous tissue system within the body (see, for example, van der Wal 2009). Introducing himself comprehensively as a medical doctor, anatomist, philosopher, embryologist, organicist, biologist, morphologist, and phenomenologist, he held the floor for ninety minutes to a packed audience willing to be moved by his unarguably romantic account of our human embryological development, in which morphology can be seen plainly to precede anatomy (we were treated to wonderful time-lapse videos of the embryo and fetus in formation). There is, he argues, a 'pre-physiological exercise' of movements and gesture within the womb that drives the creation of our anatomical parts, and *not the other way around*. We reach, gather, and bend quite prior to having the specific muscles, bones, and joints that the anatomists would hold responsible for those movements post-natally.

According to this view, form comes out of motion, and we are not best understood simply as 'machines' assembled from parts in order to fulfil this or that function. Contradicting the poet Sylvia Plath, love does not "set [us] going like a fat gold watch," but rather, for van der Wal, we are whole humans – wholly human and individual – almost from the word go. I say 'almost' because for van der Wal it is in the third week post-conception that we begin to grow fascia's embryological precursor: the mesenchyme, mesoderm, or, simply, *meso*. He is keen to stress that meso is no *-derm* (implying a skin or environmental boundary), but the very fabric of our capacity for *innerness* (he also uses the word 'soul') as distinct from ectoderm and endoderm. Meso is literally a connective tissue creating links and spaces between the boundary structures of our outer and inner (digestive, assimilative) 'skins'.

Van der Wal's reading of the meso lends fascia an existential, even spiritual quality derived from a non-religious perspective, even while his emphasis on the mesenchymic 'ensoulment' at three weeks recalls the older, religious idea of a 'quickening' of the babe within the womb. As such, his ideas continue the work of Rudolf Steiner and others who have sought to found a scientific or philosophical spirituality (Steiner's school of thought is known as anthroposophy), in combination with the embryological ideas of Blechschmidt and the poetry of Goethe.

Van der Wal is a deeply engaging public speaker whose rigour, commitment, and depth of expertise are certainly beyond question, and I was happy to join the rest of his audience in contributing to a standing ovation at the end of his presentation. Nevertheless, I wondered at the phenomenon of both my own and the audience's enthusiastic captivation by van der Wal's ideas: an atmosphere of mild rebellion against the prevailing scientific framework of the FRC was discernible, in spite of (and perhaps bolstered by) van der Wal's impeccable scientific credentials.

The relational aspect (here, of the embryo to its mother) was again notable by its absence, despite his rich articulation of the potential relational interfaces of the ecto- and endo-derms. I was reminded of Donald Winnicott's (1965, 39) contention that "There is no such thing as an infant. There is only the infant and its mother." In this he draws attention to the absolute and non-incidental relational dependence of the infant to its mother: the embryo is not the 'dancing homunculus' sitting up smartly in the womb as appears in sixteenth- and seventeenth-century representations. Moreover, some further reading about the historical foundations of anthroposophy drew my attention to less palatable aspects of the worldview that accompanied its development. I simply do not know enough about this aspect to comment on it here; I mention it simply to draw our attention collectively to our responsibility to retain a constructively critical attitude to that which inspires and fascinates us.

Notwithstanding this note of caution, van der Wal's presentation made a compelling case for the idea that we remain 'embryological' throughout the lifespan, with capacities for the creative development of our body-mind-selves. We can change, and we can grow. In this connection I was reminded of a well-known quotation from another historically controversial figure, Sigmund Freud. In *Inhibitions, Symptoms and Anxiety* he wrote, 'There is much more continuity between intra-uterine life and the earliest infancy than the impressive caesura of the act of birth allows us to believe' (Freud 1959, 138). While Freud is not focusing on the development of the

embryo, he is alerting us to the existence of pre-natal experiences – properly human experiences – that have a role in shaping our nervous system and our cues for safety and parasympathetic activation.

Rephrasing Freud to draw attention to our lifelong physical experiences, the British analyst Bion (1989) writes that 'there is much more continuity between autonomically appropriate quanta and the waves of conscious thought and feeling than the impressive caesura [...] would have us believe'. Like van der Wal, Bion also points to the existence of intelligence in the body that pre-dates the official beginnings of our official intelligence and functional systems. He places emphasis on that little-used word, *caesura*, as a place where we can productively focus our attention as therapists: that is to say, on the gaps, hesitations, interruptions, and changes in physical state that we perceive in our clients, and in the moments where new physical experiences (a fuller breath, the sense of groundedness and connection through a limb) give way to new ways of talking, thinking, and moving (talking and thinking are also ways of moving).

Bion likens the moment of caesura to layers of onionskin in which something becomes newly available to consciousness. By paying attention to the moments where something changes or something new becomes possible, we become *integrators* rather than *fixers*, helping to establish a new reality for the client (whether that is improved range of motion at a specific joint, pain reduction, or a sense of the body's resilience) that was previously only there *in embryo*. Integration requires relationship; fixing (though it has its uses) does not. This is a whole-body notion of therapy that does not reduce us to physical machines only in need of a sufficiently standardized, technical repair kit.

Naomi Wynter-Vincent is the founder of London Rolfing (londonrolfing.com). She trained at the British Academy of Rolfing Structural Integration in London, and is currently completing a PhD thesis on Wilfred Bion at the University of Sussex.

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Biotensegrity Summit Report

By Brooke Thomas, Certified Rolfer™

On Thursday September 17, 2015 the First Biotensegrity Summit gathered in Reston, Virginia. I had the great pleasure to attend this and the preceding Biotensegrity Interest Group, or BIG, which was celebrating its seventh meeting, and out of which the Biotensegrity Summit was born.

Run jointly by John Sharkey (famed clinical anatomist, exercise physiologist, and neuromuscular therapist) and Joanne Avison (structural integrator and author of the fantastic resource *Yoga, Fascia, Anatomy, and Movement*), the event gathered to pay homage to the Stephen Levin Biotensegrity Archives and showcased wisdom from clinicians and researchers across a wide spectrum of backgrounds.

The day began with a keynote talk from Dr. Levin himself, which gave a wonderful overview of his work in the field for more than forty years. For those unacquainted, Levin was an orthopedic surgeon for many years, and so really got to look into the living human body and see how we are truly constructed – not like machines, but as living biotensegrity organisms. He points out that biological systems are non-linear, global, continuous, omnidirectional, communicative (i.e., they don't need to rely totally on the central nervous system), and independent. He talks about structure as self-organizing, stable with flexible joints, and held together with snot (or extracellular matrix, depending on your preference of term).

I really appreciated his emphasis that we are *all* soft matter. As in, this idea of hard matter (bones) being somehow different from the fascia, tendons, ligaments, blood, etc. is nonsense. Pulling a quote from one of the many soft-matter labs springing up these days at all of the most esteemed academic institutions, "Biology is soft matter come alive."[1]

Levin has always described the icosahedron as the building block of our tensegrity structures and points out its omnidirectional shape – which allows us to be pre-stressed and supported from the inside out. In the earlier BIG event, Jean-Claude Guimberteau questioned this when he presented some of his gorgeous video from *Strolling Under the Skin* (captured using an endoscopic camera). Guimberteau's videos showed the highly dynamic, *constantly* shifting structures that provide our biotensegrity support, and pointed out that he always saw irregular polyhedron shapes, and had never seen an icosahedron. It would be interesting to see Guimberteau and Levin have a conversation about the issue.

Following Levin's talk, there were two panel discussions. The first was moderated by John Sharkey and the panel was made up of Debora Chasse, Carol Davis, Niall Galloway, Paul Sercu, Ed Stiles, and Mike Turvey. All had presented their work more extensively during the BIG in the days preceding, and to give you a flavor of how diverse a group biotensegrity is drawing these days, I'll give you a brief peek into their work:

Debora Chasse is a Doctor of Physical Therapy who spoke about her tensegrity manual therapy approach to treating a rare pain condition that originates in the adipose tissue.

Carol Davis is a Doctor of Physical Therapy who spoke about the J.F. Barnes Myofascial Release Approach® and also works with Polestar Pilates Rehabilitation.

Niall Galloway is the Chief of Female Urology at Emory University, and

he demonstrated the use of applying tensegrity principles to better understand pelvic support anatomy and vaginal and pelvic organ prolapse. His university's multidisciplinary team is working to provide minimally invasive pelvic surgeries that reestablish pelvic support by using a biotensegrity approach.

Paul Sercu, a physiotherapist, discussed perceptive psychopedagogy and research into non-specific back complaints and stress-related pain.

Ed Stiles is the Director of Neuromusculoskeletal Medicine at Pikeville Medical Center and teaches osteopaths about taking a tensegrity approach.

Mike Turvey, Professor Emeritus of Ecological Psychology, discussed haptic perception, which spoke more directly to how soft matter communicates with itself and the body's perceptual systems.

The second panel was specific to functional movement and was moderated by Joanne Avison. The panel was made up of Shari Berkowitz, Leonid Blyum, Sergio Fonseca, Wilbour Kelsick, and Bill Morgan, again a diverse group:

Shari Berkowitz is a biomechanist and Pilates teacher of teachers who runs the website The Vertical Workshop and advocates for us to apply our theories of biotensegrity to movement.

Leonid Blyum is the creator of Advanced Biomechanical Rehabilitation, or ABR, which has demonstrated significant help to children with cerebral palsy.

Sergio Fonseca is a professor in the department of Physical Therapy of the Universidade Federal de Minas Gerais in Brazil and is the co-author, with Mike Turvey, of "The Medium of Haptic Perception: A Tensegrity Hypothesis," which was published in the *Journal of Motor Behavior*.

Wilbour Kelsick is a sport chiropractor who works with the Canadian National and Olympic teams.

Bill Morgan is also a chiropractor and acts as a consultant to the White House, the Veterans Administration, the U.S. Army, and the U.S. Navy. His interest is in understanding the 'four-bar mechanism' of the knee (a biotensegrity view) as opposed to the traditional lever model.

At the end of the day there were a number of expo tables filled with a variety of soft matter (substitutes for human biology like Silly Putty, cornstarch in water, and other 'goos' that kids play with these days), and a variety of tensegrity sculptures that people could play with to get an idea of their function in a more hands-on way.

Of course, directly following this daylong First Biotensegrity Summit was the Fourth International Fascia Research Congress (FRC). I found it fascinating to go from a biotensegrity event into the fascia research event. The prior was entirely dedicated to understanding how we function as a whole organism, while at the FRC some (but clearly not all) researchers are still approaching it in the 'old' parts-based way where they are taking some part of fascia – i.e., not in a living person – and putting it into a highly artificial environment in order to determine some insight into how it functions.

The beauty of the Biotensegrity Summit is that there is no way around wholeness, since that's the whole point, and so the research and clinical work there was always highly relevant. One could argue that that should be the whole point of the FRC as well, but I digress . . .

If I have a wish for the future of the Biotensegrity Summit, it would be that it is approached more like the preceding BIG – which was two days where people were given ample time to present their work, rather than just snippets of insight on a panel without an opportunity for a deeper view.

Considering the exceptional people presenting at the BIG and the wide-ranging applications for biotensegrity, I have no doubt that the summit will grow and flourish.

Endnotes

1. www.softbio.ox.ac.uk (retrieved 10/26/2015).

Snowflakes Falling

A Personal and Professional Relationship with Gravity

By Caryn McHose, Certified Rolfer™ and Rolf Movement® Practitioner

Snowflakes Falling
Each One Landing
No Place Special[1]

Snowflakes are light. They float unpredictably in the air. They have a bit of mass, so they do eventually land, somewhere. They offer us a chance to imagine the freedom of a body in motion and the event of falling and landing.

What Is Gravity?

People often think of gravity as just a force that pulls them down. If you ask a physicist about gravity, you might hear a lot about space/time and relativity but probably not much about personal experience or a personal body experience. What if gravity is a relationship with the whole in which each body particle connects with support and spaciousness, a quality that feels like grace?

Gravity is invisible. It bends space/time. It is everywhere. It can be observed only indirectly, via actions it makes happen. A huge piece of the gravity in our universe represents stuff – so-called 'dark matter' and 'dark energy' – that is itself invisible. What, then, can we know and what do we sense directly, in our bodies, with the question "What is gravity?"

We know that when our connection with gravity feels lost, someone who has learned gravity's song can help us find it again. We can restore intimacy with wholeness in life, an intimacy continually perceived as receptivity to this force we call gravity. How might we describe this intimacy in a way that will capture people's imagination? What feeling, what vision, motivated Ida P. Rolf to say that "gravity is the therapist"? What makes gravity compelling to you? For many people, gravity remains elusive, vague, and seemingly not knowable.

Relationship with Gravity – Our Development

This article is one person's experience of gravity – personally as a mover and professionally as a movement teacher, Rolfer, and Rolf Movement practitioner.

For me, gravity is a meditation that began as a child each summer dancing on an outdoor studio deck in the mountains of central Pennsylvania. We were told to do things like "explore making two dimensional shapes with [our] bodies," "explore curvilinear flow represented in Eastern dance forms," "explore the up and down feeling of tree," or "learn from the solidity of rock." After this body research, the work of choreography followed. With childlike curiosity and the backdrop of the natural world, these initial explorations always astonished me. I felt myself change as my feet and legs joined the ground or as I gestured and reached up to the sky, the distance thrilling. I was transformed as I lay on my belly, looking through the cracks in the deck, seeing the damp, mossy earth and feeling my body get heavy and sink.

It was simple stuff, explorations that I liked a lot. At the time, I had no words for the experience except 'well-being'. The way I would describe those early experiences today is 'connection' and a feeling of ease and body intelligence awakened. I now understand this was an exploration of gravity. This was a feeling of lengthening easily in all directions and of stability and strength without effort.

Babies Are Held, Rocked, and Carried

Instinctually, we support, rock, and hold babies. From the world of developmental movement and infant physiology we understand the importance of vestibular/proprioceptive stimulation as well as kind human contact.

At a certain developmental stage, children love to fall. They delight in being tossed in the air or suspended between two people. They will take off, fly, and land over and over again. They enjoy rolling down a hill. They imprint to the body sense of 'here' through simple movements in gravity. It arouses surprise and delight at any age.

Falling and landing tells us, "I am here." You feel the bits of yourself in a body form, and the form keeps falling or yielding and landing in a new form.[2] Can you imagine falling and feeling that as joyful ease?

Crawling begins with practice in pushing. We connect with support to push, and then we reach to something 'out there', swimming our limbs in different motor patterns. When we crawl, we learn about different kinds of support and then gain enough adaptability so we can reach beyond our support point. This triggers the opposite knee to flex forward. It catches us from the tiny bit of falling that occurs by reaching out so far.

As we begin to reach out, we do so with our hands and our chests, but equally importantly we reach out with our minds. Reaching out is an evocation of distance, a reaching out with imagination toward something that entices us. We fall in our mind; we land in our mind. The body knows falling, and the falling feeling can be experienced in any direction. We find spaciousness through a sense of location or 'here-ing' that is always changing and moving. In other words, there is No Place Special – or, each time we fall and land, our 'here' changes yet again.

Then the form called 'walk' emerges. We totter and then walk. We feel the thrill of being a tottering biped.

SI Qualities

Clients bring us their troubles – interruptions to the flow of support, interruptions to push and reach and to the rhythms of walking. These troubles take many forms. How do we offer our clients a chance to revive their willingness to fall and land? We start in the imagination with tiny places of flow, places that allow fall and land to be a restoration.

Support

I effectively began my practice of SI long before I became a Rolfing® Structural Integration (SI) practitioner, in a dance studio in the winter and a dance camp in the summer. I had an unusual teacher, Betty Jane Dittmar, who practiced the belief that all children are born with inherent creativity and created a context for us to discover it. She also believed that the experience of wholeness is possible in every moment. I was five when Dittmar became my mentor, ostensibly to teach me to dance.

We spent equal time learning technique and learning to compose. Our choreography was sourced in art styles, other cultures' movement forms, and world folk traditions. I saw how different cultures have a set of traditional dances, and each evokes movement based on the work patterns of that culture. At first these movements are a means of survival. Then work patterns become dances of the community members' relationship to each other and to nature. Folks dancing together ignite the synchrony of gravity's body.

Years of Dittmar's training led me to believe in this inherent creativity and healing capacity of everyone. When I was sixteen, Dittmar directed me to start teaching movement. I saw that, through no power of my own, people come alive to the joy of their bodies moving freely and feeling integrated and whole.

Small Fallings

A dance injury at the age of twenty-one led me to lie down on the floor for long periods of time – to dance lying down in ever more internal and tiny ways. It was during this time that I was introduced to *The Thinking Body* by Mabel Todd and to the power of perception through ideokinesis, ideas put in motion.

I learned to feel each one of the bones in my body individually and to separate them from each other. Some bones were held together strongly! I was surprised at what I called 'small fallings' – the natural separation of bony parts that, in turn, led to flow and recalibration of the felt sense. I was surprised at the amount of effort I had been using to hold myself together. I was surprised at the amount of effort I was using to make the smallest movement! So I started to allow falling and landing and to meet the touch of the ground. Each bone began to land, no place special, abiding in the flow of gravity.

Holism

Any one bone that the body senses as distinct and individual is often sufficient to remind the entire body of elongation. Why is that? Why does the reawakening of one bone to its separateness, its falling and landing, mobilize a reawakening of the whole body? This is the nature of holism. One small part speaks to the whole thing.

Free Float

When a bone feels its falling and landing and the separateness that feeds and is fed by the whole, it offers us the experience of 'free float'. In physics, free float is the condition of a body falling in a frame of space/time. In a body, each bone is floating within the body's frame of space/time.

A practitioner offers to unlock a client's bone from the captivity of a fixed place. She offers this because she feels the falling and landing inside herself. And her ability to perceive free float in her own body

allows her to offer awareness and touch to another's bone, so it too might wake up to feel free float.

After lying on the floor and noticing that the bones of my body could be perceived in free float, I started teaching others to feel this, talking them into it, essentially. I was speaking from body experience. And then, inevitably, I put my hands on them in an eagerness to communicate in another channel, more directly and more clearly. That led to my being curious about touching others and to see/feel what was willing to meet me in conversations with bodies in gravity. I got used to asking myself things like: What can land? What is able to allow free float? What is flowing? My touch explored these questions in ways that enlivened the person's experience of free float.

No Place Special

What does No Place Special mean? First, consider what 'someplace special' means. It means that there's not enough support! In moments of overwhelm, our nervous system 'tunes' itself. The body reacts to an interruption of flow. Prolonged or extreme reactivity patterns the motor system to hold a particular position, a 'special' position, long past the moment of its usefulness. 'Someplace special' becomes a fixation.

Rolfers learn to unbind the fixed-action patterns that make one place – one choice – special. How do we unbind the special? We start by finding available flow in the system. We find a place that cannot feel its potential to fall and land, and we support it in the discovery necessary to fall again, to land again, as one learned to do as an infant, over and over.

Directionality

We build a sense of direction as we build the sense of 'there'. Here and there are physiological events in the body. I know 'here' because I know the sense of weight and landing. I know 'there' because I know the feeling of distance into which I have fallen. One can feel a fall up, down, sideways, any direction at all. Falling is a learned feeling that connects us to distance and spatial volume as much as it does to the 'fall down' feeling.

We know the experience of acceleration. It is part of the way any body behaves in gravity (on this planet at least). Physics reminds us that we fall 32 feet per second, per second (32 ft/sec squared). This rate of acceleration we know, physiologically, from proprioception – from our vestibular system, our mechanoreceptors, and our peripheral gaze. We know it as reaching out into the world on our hands and knees or being swung in someone's arms. When we reach out, we accelerate the feeling of distance in the proprioceptors of our joints, muscles, and connective tissue.

Directionality is the sense of falling in a direction, even if it's up. Directionality can proliferate into omni-directionality, like a sea urchin's spines aimed everywhere. The relevance to SI is the experience of expansion. For instance, the cranium can feel like it separates and becomes bigger. Bones separate. The body and space interweave. Expansion is a form of falling, since we allow it to happen without work and we are supported by the embrace of gravity. To the observer, it looks like we have expanded or grown taller, like our movements are not compressed but are soft and flowing into the space around.

Rolfing SI and Rolf Movement Practice

Eventually, I was drawn to the fascial work. The Ten Series 'Recipe' was also intriguing. It reminded me of other sequences of development I had encountered. I found that working with the fascia helps bones notice their landing and falling, just as touching the bones reminds them of their capacity to do so. Mobilizing the fascial matrix excites the body to wake up. It awakens to free float, directionality, and falling and landing surprisingly quickly. And the Recipe has logic to it. It is about unlocking the obstacles to wholeness. It offers a set of priorities for leading the body back to the place that is not special, that can respond more fully to whatever presents itself.

The question remains: How do we encourage people to be more awake to their ever-present relationship to gravity? How do we assist people in catching a moment of spacious creativity? How do we point to what is invisible?

Catching the Imagination of Another – The Mystery of Gravity

Ida Rolf declared that "gravity is the therapist." But what does that mean to the average person? Not much. As we speak to a prospective client, or just casually to a friend, what can we say or demonstrate, very briefly, that might plant a seed of curiosity? What part of "Snowflakes Falling / Each One Landing / No Place Special" in our experience can be conveyed to another?

What experience of gravity speaks to *you* in this moment? What part of you is able to allow some tiny bit of falling and landing and enjoying No Place Special right now? Perhaps you feel the spreading of your tarsal bones, the weight of your elbows, or the deep relief after a full exhale. Maybe you feel some elongation and articulation of segments of the spine.

How do you invite another's attention to this simple experience in a way that is not special, in a manner mostly conveyed in the way your voice and posture express falling and landing and free float right now? How are you 'here-ing' now? It's an inquiry. There is no single correct answer, only the enduring value of rediscovery. The answer that has some aliveness is the answer that occurs out of your experience. You watch in this moment for the availability of the listener, some place in him or her that you can imagine falling, landing, or feeling free float, as you observe and as you empathically feel the places where his or her system is already in wholeness. When you imagine such a place, you may have a chance to invite that person to notice it too.

Endotes

1. Unattributed verse, based probably on the recorded words of a Chinese lay Buddhist named Layman P'ang (740–808), whose words about snowflakes are the subject of Case #42 in *The Blue Cliff Record* of Zen *koans* (Cleary 1977).

2. 'Yield' and 'yielding' are terms that Bonnie Cohen (1993) introduced in the 1970s as part of her work with developmental delays. Cohen's work, called Body-Mind Centering, teaches practitioner embodiment of foundational developmental and physiological processes for the purpose of helping children and adult clients to rebuild missing functions. Carol Agneessens and Hiroyoshi Tahata have written on their use of yield and yielding, and Tahata's development of his Art of Yield, as a basis for Rolf Movement Integration. Their work links to the importance that yielding plays as babies encounter gravity (Agneessens and Tahata 2012). [Editor's note: see also the interview with Tahata in this issue's Rolf Movement Faculty Perspectives column on page 3.]

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The Three-Dimensional Foot, Part 2

Evoking Pattern-Consistent Competency

By Michael Boblett, MA, MDiv, DMin, Certified Advanced Rolfer™

This is a follow-up to my article "The Three Dimensional Foot: The Role of the Toes and Metatarsals in a Typology of Transverse-Arch Rotations" (Boblett 2014). I presume readers will enter this with a knowledge of the previous article's contents. Very briefly, I presented five types of foot patterns: two presenting in Internal clients, three presenting in External clients. [My definitions of Internal and External (IE) are those of Jan Sultan, as far as I have understood him correctly.] I then presented a few strategies for increasing function in each of the five types of feet.

In this article, I respond to a single question. Several colleagues contacted me to ask: "In your typology, can a client's two feet present two different patterns?" Answer: "I never saw that, but the difference between two feet often points to a difference in their respective levels of *competence* in their shared pattern." This in turn leads to intervention strategies that seem to contradict what I wrote in my previous article.

Visually, palpably, and in motion, a foot can present as consistent and even classical for its type, yet require treatment that seems more appropriate to a different and even opposite type. In fact, I suspect that this is particularly likely when a foot presents with either of the most common two patterns: Long-arch Internals or Short-arch Externals.

How Does This Happen? And What Can We Do?

Let's study a single example. Looking at Figure 1, this right foot (shown in stasis) belongs to a strongly Internal client: pointy occiput, high-amplitude spinal curves, anterior sacrum, internally rotated femurs, strong agility, weak stability. Not surprisingly, this foot in isolation follows the most common Internal pattern: long arch, long Achilles, tight retinaculum, stuck-up cuboid, strong abductor digiti minimi (ADM), and good separation of metatarsals one and two. In the figure itself, we see healthy separation of the toes.

Figure 1: Left and right feet, stasis.

But this foot has several symptoms associated with it: pain at the distal Achilles, stress pronation, and combined valgus knee collapse and medial rotation of the right femur. Ouch! This client is a marathon runner and has stressed his tibial collateral ligament and medial meniscus. Sacral tilt differential switches sides periodically due to frequent chiropractic adjustments.

So what's wrong? Well, let's just compare this foot with its left-side partner. In fact, let's do this in stasis and then in various motions. Compare the left and right feet in Figure 1. In stasis, the left foot's metatarsals one and two are more separate. The other metatarsals show a smaller but detectable difference: more spread on the left foot. In palpation, the juncture at the proximal end of metatarsals one and two is more elevated in the right foot. (One cannot see this visually.) In other words, the right foot is still a textbook Long-arch Internal foot, but less so than the left foot.

Will this show in motion as well? We'll pursue three areas of contrast between the feet.

First, understandably, the right foot has a strongly enervated ADM. With the right hallux pressed down, the client is able to abduct the remaining four toes (Figure 2). He does this in a way very difficult to teach to anyone without a sophisticated Long-arch Internal foot. But contrast this with the left foot, where the ADM is stronger, with more intra-metatarsal space, especially between the crucial metatarsals one and two. Can we begin to see why the right foot is more apt to pronate under stress, acting a bit more like a brittle arch on a Short-arch External?

Next we test not only ADM strength but also its degree of independence. Again, the client presses down the right hallux, but now he tries to abduct the little toe with little abduction of the middle three toes (Figure 3). He does this remarkably well for a European-American. But observe the left foot: its little toe abducts further, with less pulling-along of the middle three toes. In other words, this second motion test shows an even more dramatic contrast between the two feet. This has implications for the ability of this left foot to avoid valgus collapse at the knee, which happens under stress on the right.

Finally, the client presses down the right little toe and abducts the hallux using the little-used abductor hallucis (Figure 4).

Figure 2: Left and right feet, ADM active.

Figure 3: Left and right feet, ADM isolated.

He can do this, but his foot cramps in the process. Why? Because the little toe must press down strongly to allow the hallux the independence to go its separate way. Hallux abducts further in left foot; and, while the photo cannot show it, there is no cramping. Again, the left foot fits its inherent pattern better.

Conclusion: the left foot is more 'competent' at its inherent tasks as a Long-arch Internal foot. The right foot is classical for the same type, but less so.

So What Do I Do?

Controversially, I maintain that there is no hard-and-fast rule governing whether to begin with the symptomatic versus asymptomatic side of an imbalance. Commonly the symptomatic side is the more functional one. It is angry because it is doing the work. So I test for motion. Often the symptomatic side is the mobile side, with the real problem residing in the immobile side. Work on the asymptomatic side often produces the necessary shift. But in this case, I go back to the question of competence. In the model, the left foot knows its job. The right foot is less certain.

Another distraction may be the desire to influence the client in the direction of neutrality with respect to IE differences overall. Certainly this is a better goal than chasing symptoms, yes? But here symptoms may point us to a better strategy: help the client access the strengths of the IE pattern inherent in the structure (a Long-arch Internal foot in this case) before introducing its opposite. Indeed, I generally go back and forth between the two processes: accessing the dominant IE pattern, then accessing its opposite, etc. Competence in each set of tasks increases as competence builds in the opposite tasks.

So over the whole body, I often find it useful to discern which side of a bilateral structure fits the IE pattern and which side contradicts it. Obviously, it is rarely the case that one side remains consistent in this respect all the way up the body. However, the patterning often remains the same along long segments with trouble arising where that consistency ends.

Before I turn this right Long-arch Internal foot into something different, I find it useful to teach it how to be a *competent* Long-arch Internal foot. So I do my manual and movement work primarily on the right foot, to bring it to competency more equal to that of the left foot, with relatively little intervention in the left foot. Manually, my intervention looks more like what I presented for a Short-arch External foot in my earlier article: separate metatarsals one and two, widen toe box, treat navicular as stuck up, treat cuboid as stuck down, and lengthen the Achilles. In movement, I treat this foot with respect for its Long-arch Internal abilities: I seek to bring them in line with those of the more-competent left foot. To accomplish this, I ask the client to do the three exercises outlined above, teaching him to compare and contrast his lagging right foot with his more competent left one. More generally, I teach the client to use both digiti minimi and hallux abduction to offset the temptation to pronate. In time, this weakens the temptation of the right knee to go valgus under stress, reducing stress on the tibial collateral ligament and medial meniscus.

Figure 4: Left and right feet, abductor hallucis active.

In sum, successful strategies for foot typologies depend on asking not just what type a client presents, but which side is more competent in expressing that type. This will lead to a review of strategies, sometimes requiring out-of-pattern strategies for relatively out-of-pattern feet.

As with my previous article, I welcome your feedback.

Michael Boblett works in San Diego, California. He has been a Certified Rolfer since 2003 and a Certified Advanced Rolfer since 2008. His graduate degrees (MA, MDiv, and DMin) are from Pacific School of Religion in Berkeley, California. At seminary, his focus was on the anthropology of religion with experiential training under Michael Harner, author of The Way of the Shaman. *He does competitive trail running and leads hikes in the San Bernardino Mountains, wearing Vibram Five Fingers for both sports.*

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CONTACTS

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THE ROLF INSTITUTE®

5055 Chaparral Ct., Ste. 103
Boulder, CO 80301
(303) 449-5903
(303) 449-5978 fax
www.rolf.org
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AUSTRALIAN GROUP

The Rolf Institute
5055 Chaparral Ct., Ste. 103
Boulder, CO 80301
USA
(303) 449-5903
(303) 449-5978 fax
www.rolfing.org.au
info@rolfing.org.au
membership@rolf.org

BRAZILIAN ROLFING® ASSOCIATION

Dayane Paschoal, Administrator
R. Cel. Arthur de Godoy, 83
Vila Mariana
04018-050-São Paulo-SP
Brazil
+55-11-5574-5827
+55-11-5539-8075 fax
www.rolfing.com.br
rolfing@rolfing.com.br

EUROPEAN ROLFING ASSOCIATION E.V.

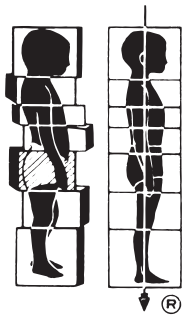
Lore Junginger, Administrative Director
Saarstrasse 5
80797 Munchen
Germany
+49-89 54 37 09 40
+49-89 54 37 09 42 fax
www.rolfing.org
lore.junginger@rolfing.org

JAPANESE ROLFING ASSOCIATION

Akiko Shiina, Foreign Liaison
Omotesando Plaza 5th Floor
5-17-2 Minami Aoyama
Minato-ku Tokyo, 107-0062
Japan
www.rolfing.or.jp
jra@rolfing.or.jp

CANADIAN ROLFING ASSOCIATION

Beatrice Hollinshead
PO Box 1261 Station Main
Edmonton, AB T5J 2M8
Canada
(416) 804-5973
(905) 648-3743 fax
www.rolfingcanada.org
info@rolfingcanada.org



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5055 Chaparral Court, Suite 103, Boulder, CO 80301
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