STRUCTURAL INTEGRATION

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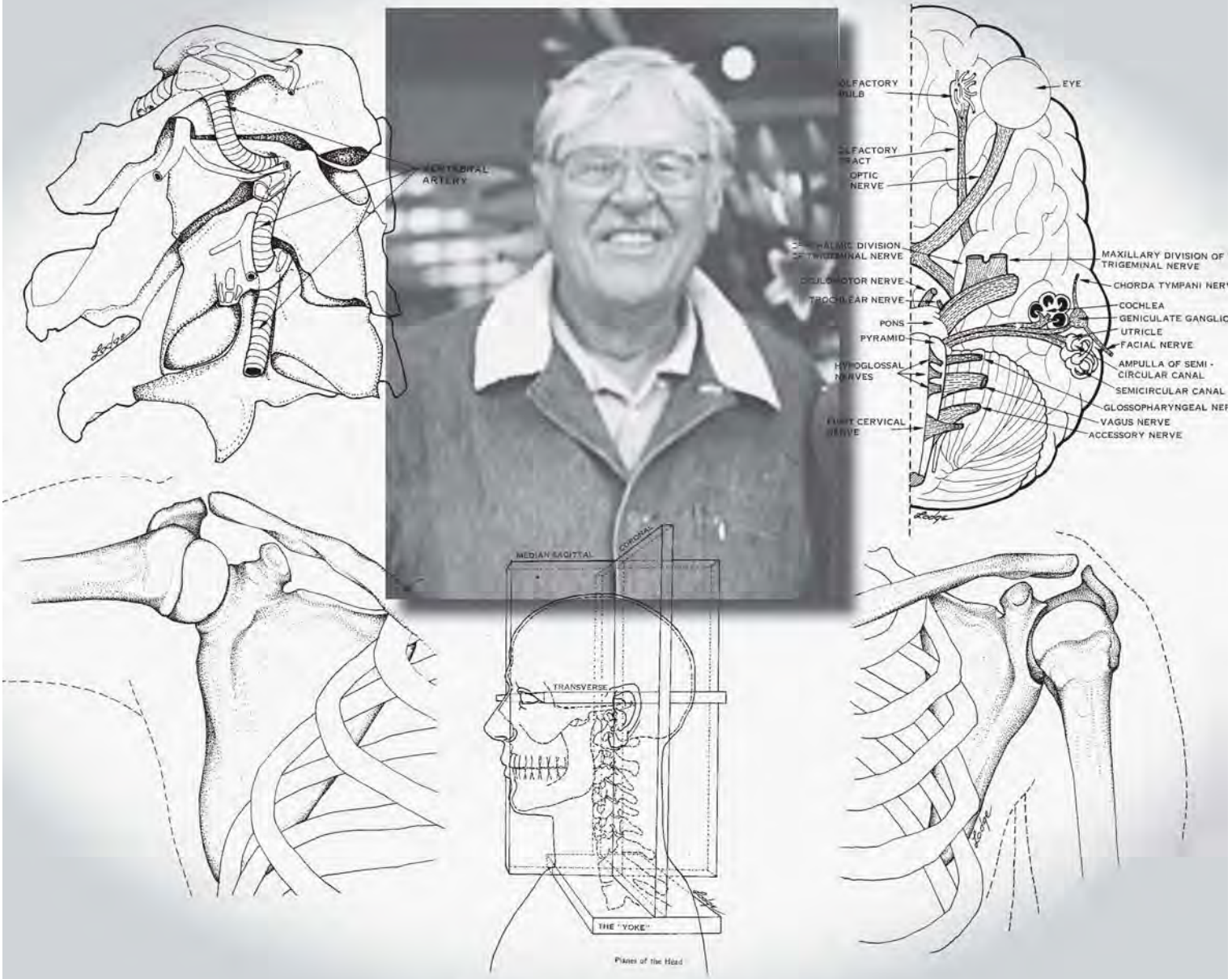

John Garbutt Lodge

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Cover: Photo of John Lodge and some of his illustrations.

Ask the Movement Faculty

Integration of Structure and Function in the Training of Certified Rolfers

By Rebecca Carli-Mills, Certified Advanced Rolfer™, Rolf Movement Faculty

What are some ideas in Rolf Movement Integration that make it essential to the study of Rolfing®?

To begin, this question should be set in the context of the evolution of basic Rolfing training, which now integrates structural and functional work. In the training, the understanding of movement work and its connection to the Ten Series is foundational. Students exchange movement sessions during Unit Two and teach movement sessions to clients in Unit Three. They also learn to address the functional aspects of each Rolfing session. Because of this focus, it is essential that a student enters the training with a basic grasp of the interwoven nature of the structural and functional aspects of our work.

To answer this question, I will draw from ideas and concepts articulated by various movement faculty members, in order to offer an answer that is comprehensive and reflects the current evolution of Rolf Movement work. I will give only a broad overview, as the details are better conveyed through training and mentorship avenues.

The first exposure that many students have to Rolf Movement is during their five-session movement series that is required for entry into the training. Through experiencing this series, the Rolf Movement faculty would like a prospective student to gain a basic understanding of the following three fundamental concepts:

1. The movement work frees fixations in patterns of movement while the structural work frees fixations in the tissues.[1]

Rolf Movement work and structural Rolfing have a reciprocal effect on each other. The tissues need to become free to have the necessary adaptability for new coordination in movement. New coordination may reveal that what appears to be in the tissue actually derives from habits of conflicted motor control. Core stabilization illustrates this concept. Many spinal fixations are chronic because of faulty patterns in coordination. Core stability is an expression of coordinative integrity. When stability fails, as in chronic low back pain, Rolfing offers a way to recover it through movement. It is not enough to free fixations in the tissues because if we do not also free the fixations in movement patterns, the tissue releases will either be ineffective or the patterns will re-create themselves over time.

2. While structural Rolfing provides the necessary conditions for the Line to emerge, the movement work gives life to the Line.[2]

The Rolfing "Line" is an aliveness to context expressed through the attitude of posture. Awakening this aliveness is the enduring goal of Rolfing and Rolf Movement. Aliveness to context is rekindled over and over when we understand and develop a kinesthetic sense of gravity and support from the ground, along with a felt sense of the support that we get from adequate connection to space. Contact with the world opens as we become aware of the unique ways we use our senses, which in turn organizes our movements even before we move. Through awareness of how we connect to our environment, objects and "the other," the Line becomes something fluid and adaptable, a presence that is relevant to our daily lives.

3. To work with Rolf Movement techniques does not mean to fix, to correct, to change the client, but rather to create possibilities for the client to be in the world with greater stability, flexibility, fluidity, vitality and unity.[3]

Life is relational in that we must adapt to the constant flow of demands from the environment and situations we encounter along the way. Some of our responses are hard-wired and our survival depends on them. But when survival isn't at stake, we can respond more adaptively instead of reacting in fixed patterns, and better absorb the richness of our individual life experience and have a positive impact on our world.

"Integration" has frequently been a word ascribed to the goals of Rolf Movement. Several movement theory ideas foster the client's ability to organically assimilate information and experiences pertaining to structural work. Skills for working with coordination and perception are taught throughout the entire training, but are most refined during the Rolf Movement Certification. These skills provide a Certified Rolfer™ with techniques that enhance the integrative aspects of a Rolfing® series. In what follows, I will describe three types of movement interventions along with some theoretical background relevant to movement work in the training of Rolfers.

PRE-MOVEMENT

First there is the art of making an intervention at the level of "pre-movement." Pre-movement is how our body orients in preparation for movement. It happens beneath our conscious awareness and precedes the actual action. Adaptable pre-movements orient us skillfully in gravity and are harmonious with the demands of the movement. For example, a good batter grounds for appropriate stability while at the same time orients skillfully in space for a powerful swing. The degree to which all of this happens occurs in a split second based on the batter's assessment of the direction,

timing and velocity of the pitcher's pitched ball.

Our pre-movements become entrenched, just like tissue fixations, and are constantly repeated in many circumstances. Once the pre-movement is set up, the actions that follow will be organized around that set of conditions. For example, a walk across the room may be preceded by contraction in part of the diaphragm. In order to find an organic option for a shift in gait, the practitioner must first address the pre-movement, the tiny clutch in the breathing muscle. Any movement cues that do not first address this primary issue will lay on top of it, causing the gait changes to seem awkward or artificial. Unless the habitual pre-movement is addressed, a true responsive contralateral gait will not emerge.

In order to address this issue, the Rolfer can contribute an image, a sensory experience, or an exercise that more fully connects the client to the ground and space. As the client finds appropriate stability through better gravity orientation, the body chooses a different support strategy in its pre-movement. Diaphragmatic tension, an inefficient form of preparation for weight shift, is replaced by better support in preparation to walk. The client's restriction may just be a habit, may be part of a belief system, or may originate from an old injury. Whatever the cause, the practitioner needs to work with the client to discover a different option for initiating movement, because the current one influences the person's relationship with gravity by impeding ease in flow. Intervening at the level of the pre-movement can remove a major inhibition to contralateral gait.

It is essential to find the image, experience or information that precisely addresses the individual client's pre-movement pattern. To this end, the practitioner must find avenues of communication that connect well to each individual. For lasting and effective change, the client must understand, embrace and desire the new movement option. This type of intervention doesn't follow a formula. Rather it is more of an art that takes its cue from listening to how the client describes his or her experience, how he or she builds the world. Our pre-movements are organized at a pre-conscious level: our relationship with gravity percolates through multiple aspects of our being. Moshe Feldenkrais indicated that our relationship with gravity precedes and is more fundamental than our relationship with mother. Deep aspects of our psychic, physical, and experiential memory are based upon our perceived relationship with gravity, so we are not working in superficial waters when we intervene at the level of the pre-movement.

COMPARISON

A second key point in Rolf Movement theory is the technique of comparison. It is not enough for the Rolfer to simply say "...now you are walking differently." For a client to fully own the change, he/she needs to arrive at the conclusion himself/herself. This is fundamental in order for the client to integrate the new coordinative option into daily life: the shift in perception must include ownership. One way to foster this awareness is through comparison of the "old pattern" with the new one. Frequently when we ask clients to go back into the old pattern of moving, they don't want to do it. We may not want them to do it, either. We both may be afraid that the new option will get lost, but exactly the opposite is true. When we revisit the old pattern we have the opportunity to gain the tools to find and maintain the new option. We improve the chances for the new option to survive. When we ask a client to "notice what is the very first thing that happens in your body when you *just think* about going back to the old pattern?," he/she gains awareness of his/her pre-movement. In this moment the option for change can emerge through the client's own awareness.

As practitioners, we assist the client in anchoring the new movement pattern by offering various options for images, information, and awareness that have the best potential to inspire change. As we have mentioned, the pivotal opportunity to do so is at the time of pre-movement. Interventions that affect a client's relationship with gravity help to foster change that not only transforms the actual movement, but also facilitates different conditions for movement. If I sense the floor easily coming up to meet me, instead of having to "do" something in order to meet the floor, my worldview also changes. I have allowed the world to touch me, and that is a different place in which to live. Perhaps I might need to increase my tonus by accelerating the force of my reaching, not only to the ground, but through the ground. My world now has expanded through the surfaces under and around me. The point is that each person is different and as practitioners we adapt and respond, so that we may offer the widest range and depth in experience. What works for one person may or may not have any relevance to another. As Jim Asher says, "you just have to have lots of tools in your toolbox."

BRIDGE-BUILDING

Once we have assisted the client in finding an effective cue or awareness, he/she needs to anchor it for himself/herself. Practicing the sensations of a new movement pattern in "real time" situations will enable the client to find support in the midst of daily life. Some changes happen magically. Others take time to integrate. For the latter situations, we encourage the client in taking responsibility for the process between sessions. This is a vital aspect of bridge-building.

It is important to remember that we don't wish to "fix" or take away any of the client's options for movement, no matter how ineffective they may seem to us. We are self-regulating systems with an affinity for health, so when we facilitate an experience that allows a client to become acquainted with the potential for increased ease and vitality, along with the freedom and tools to find it for himself/herself, we provide a session that is as rich in education as it is in therapeutics.

The inclusion of coordination and perception is essential to the study of structural Rolfing® because it increases the effectiveness of the work. Structural Integration is "structural" to the degree to which the underlying structure of our movement in relation to gravity is meaningfully addressed. Rolf Movement Integration is a complex and multi-dimensional process, which helps foster a broader vision of the far-reaching potential of our work.

END NOTES

1. Caspari, Monica, "The Functional Rationale of the Recipe," *Structural Integration*, March, 2005, pp. 4-24.

2. Ibid.

3. Ibid.

Note: The author appreciates the collaboration of the movement faculty and consultation with and edits by Mary Bond and Kevin Frank.

In My Practice

Editor's Note: In this issue we feature two Rolfers in Canada, on opposite sides of the country, each the pioneering Rolfer in his region.

Rolfing in Halifax

By John Panter, Certified Rolfer™

I first applied for the training at the Rolf Institute of Structural Integration® in 1996, at the age of fifty-two. For twenty-five years prior to that, I had been involved in the Taoist Tai Chi Society®, an organization dedicated to practicing and promoting the teachings of the Taoist monk Master Moy Lin Shin, who had come to Toronto in 1970. I started with him in January 1971, which makes me the most senior member of what is now a worldwide charitable organization. For nine years I worked to establish Taoist Tai Chi® in several cities around Southern Ontario, then in 1980, at Master Moy's request, I moved to Halifax, and for fifteen years founded clubs in the four provinces of Atlantic Canada. During this time I supported myself by running a small bookstore, Far East Books, dealing in Eastern and alternative health and spiritual disciplines.

From a history study trip to Europe in 2006, at the Festival of the Five-Petaled Rose in Krumlov in the Czech Republic. I am costumed as a magistrate from the 15th century.

By 1995, Taoist Tai Chi was well-enough established in the Atlantic region that it could keep going without me turning the crank everyday and I started to look around for a source of income. Figuring that I was too old to go back into the job market, I thought that a portable health practice would be the way to go. Rolfing® came to mind through two sources. One was that a friend of mine from the early Tai Chi days in Toronto had received Rolfing and the differences in his structure and movement were apparent. The other was that I had carried some Rolfing books in the store, and was intrigued that some of the ideas were close to ones I had been groping towards as I tried to find solutions to teaching problems in Tai Chi.

In preparation for the training in Boulder, I spent two academic terms (Halifax has six universities) taking courses in anatomy and biochemistry, and astounded myself by getting a final grade of 91% on the anatomy, the highest mark I had ever scored in anything academic. Two days after that I was on the plane to Boulder, and five days later I was doing exactly the same material every morning on Pearl Street.

Not to review the training experiences, which everyone reading this will have in common, but one feature of the work that impressed me was that it does get results right away. This is a strong selling point when I am interviewing first-time clients, or even just answering inquiries. Many of the people who inquire about Rolfing have been through the mill of orthodox and "alternate" practitioners, and, to extend the metaphor, are feeling somewhat ground down. I usually tell them that it going to take the complete Ten Series or more to get them where they want to go, but that they will know, within one or two sessions, that something real and valuable is happening. They like it when I tell them that there is very little to take on faith: they have taken too much on faith already.

After getting my certification in May 1998, I put my sign out in Halifax, expecting to set the local bodywork scene on fire. The only Rolfer east of Montreal! It didn't happen that way. When came to Halifax in 1980, there was one chiropractor and two massage therapists, then gradually a few more massage therapists, then a plentitude after two massage therapy schools opened between 1996 and 2002 and started churning out graduates. People around here have heard of massage. They haven't heard of Rolfing.

On top of that, work-based health plans will pay for massage (the biggest of them, Blue Cross, classes Rolfing as massage), but only accept receipts from members of one of the local associations. These associations require training adhering to the Canadian standard of 2,200 hours (recently raised to 2,500). So growth of my business has been slow. People try all of the other services first, and either get what they think they need or give up. Many balk at the first mention of money, having grown up with the idea of free basic health care.

I'm not the only one who has had this problem. There have been other Rolfers and Guild practitioners here. Some are still here but are not practicing. The ones who have stayed around are doing other modalities because their Rolfing® income was not adequate. I have been spending a lot on publicity, with inadequate results. I wish there were more Rolfers around here to help get the concept of Rolfing out to the very deeply cautious people in the Maritimes.

Some geography is probably needed here. There are four provinces in what is known as Atlantic Canada. Three of these; Nova Scotia, New Brunswick and Prince Edward Island, constitute what are known as the Maritime Provinces. They were original members at Confederation in 1867. Newfoundland, now officially "Newfoundland and Labrador" was a separate British colony until 1949. At the time of Confederation, Halifax, the capital of Nova Scotia, and Saint John, the largest city in New Brunswick, were the largest and most prosperous cities in what was then called British North America. Ever since then, they have been in decline relative to

"the West" (i.e., the rest of Canada). There are about a million people in Nova Scotia and approximately another million in the other three, all spread over one and a half time zones and a north-south extent from below the forty-fifth parallel to above the Arctic circle.

Halifax has about 250,000 people since amalgamation a few years ago. Until then the main centers, Halifax, Dartmouth and Bedford-Sackville, contained about 120,000. The difference is partly accounted for by growth, partly by incorporating previously rural areas into the city. The city has an artistic and academic layer overlaying older fishing, farming, shipping and military strata.

Having more time on my hands than I really wanted, and having gotten the idea that it was possible for me to do well in academic pursuits, I kept on taking courses, at first in directly related material like physiology and biochemistry, and then in psychology and history. In 2005, at the age of sixty, I completed a B.Sc. in Psychology at Dalhousie, the biggest of the universities here, and as I type (April 20) I have just finished my last final for a B.A. in History. I have been accepted for M.A. work in history next year. I regret that I have never been able to get ahead of expenses enough to take the Advanced Rolfing® training. It is not the cost of the courses so much as the transportation and accommodation expenses. I have been able to afford university courses by dint of provincial and federal student loans. They will fund you to two bachelor's degrees, one trade school certificate (guess which one), and one master's, coming up. I think I am going to die owing a pile of money.

As far as my Rolfing work is concerned, I find it very gratifying that I can help people, some of whom had given up hope. As I mentioned above, I try to work through the Ten Series. Many people come to me with very serious deficits that the strict series does not adequately address. Many have been seriously injured, either in single incidents or cumulatively. I often find that a single session is inadequate to gain the results needed in a particular "hour." Especially, in the "third hour," many clients have so much stuff built up along the IT band and abductors that it will not clear out in one go. Then I double the session, that is work up to the iliac crests on both sides in the first session, then repeat that and finish the sidelines in the second. In a few extreme cases, the third hour has needed more.

One client I had was a horse-farmer whose horse kept beating her up. Her right leg was so bad that I took four times on her fourth hour. One time she could hardly walk and I had to carry her up the clinic stairs. After we were done, she thanked me for giving her life back to her. In a way it's too bad I'm not a horsey type; there would be lots of call for the Rolfing of equines in Nova Scotia.

Another client was recommended to me by her doctor, a personal friend of mine who practices near Saint John. She was out of work because she was incapable of standing for very long. She would drive in once a month or so, when her old car could make it through the winter weather – it takes about five hours to drive in good weather. We did ten sessions, but not a straight series. I doubled #3 and #6, and twice when she was in such great pain that she would not have been able to stand Rolfing, at least the way I do it, we just did some craniosacral. My craniosacral is pretty poor, I just took one class of the Upledger program, but it seemed to help. She stopped coming, and I later heard from the doctor friend that she had gotten back to work. That's alright with me.

A big issue, that often gets raised, is the question of pain. Even people who are unclear about what Rolfing is have heard that "it hurts." The line I use is that there are painless Rolfers. I have had clients who had previous work from some of them (no names!) and I couldn't tell they had received Rolfing. I tell them I can work painlessly, but it will take four times as long to get results, and cost them four times as much. Then I invoke an old Canadian joke and say, "Pain if necessary, but not necessarily pain." Most understand this and are cool with it.

Although my health is excellent, I've had a few challenges over the years that have forced me to work with my own body, sometimes thrown to my own resourcefulness to find solutions. The first issue was my legs, which had done literally millions of repetitions of exercises from Taoist Tai Chi (which as a discipline emphasizes leg-strength) over twenty-five years before I began Rolfing training. I remember clearly the shock when, walking home after receiving my third hour of Rolfing, I realized that my leg strength had doubled. Disassociating the hamstrings from the quads had taken out a major power-wasting conflict between large muscle groups.

This triumph, however, was short-lived. Before the training was over, whether from receiving Rolfing sessions or the in-class work or something else, my legs degraded to a degree that I could hardly do any Tai Chi at all. I could not bear weight on a bent leg. I had difficulty walking down stairs – instead of just stepping down, I had to hop down. Going up stairs was almost as difficult. My emotional reactions changed. I became cautious and picky in my movements. No one – whether at the Institute, or my Rolfer for advanced sessions – was able to help, or even understand the problem. Finally I fumbled my way into a few techniques that allowed me to solve most of the problem. I think now that there were two things happening at the same time: the retinaculae at the knees (particularly the lateral ones) were trapping the vastus tendons, and nerves were trapped along the line of the IT band. (I thank Rolfer Michael Vilain for the clue on this second issue. His forum postings have been illuminating.) These things have mostly resolved now, but they were damnably inconvenient and frustrating for several years.

The second issue is that I developed Dupuytren's contractures, with nodules in the palms appearing about six years ago. Not liking the option of surgery that could take six weeks to heal, I started working my hands myself, mostly through stretching, done slowly with the idea of stimulating lengthwise growth in the structures involved. I think this has worked out to my advantage. I still have complete extension of my fingers, for one thing. For another, Dupuytren's is actually a genetic leftover from our anthropoid ancestors. In the great and lesser apes, the Palmaris longus muscles, which originate above the elbow, insert in the palmar fascia and are too short to allow both elbow and wrist to be extended simultaneously, providing a set of swinging hooks.

For Dupuytren's subjects who, like myself, also have the Palmaris longus, there is the potential for very strong hands, a great advantage to a Rolfer. Many people have remarked not only on the strength but the heat of my hands. When you have surplus strength to work with, you can relax more, and your touch becomes less strenuous and more effective. Taoist Tai Chi also helps a lot with this. The sophisticated body mechanics allow you to develop remarkable amounts of force with little intended effort.

The third body issue was that I developed

cataracts a few years ago. Here I opted for surgery, which was smooth and quick, with plastic lenses that go in folded up through a tiny incision that heals fast. I now have 40/20 vision.

These three episodes – particularly the leg and eye issues – have allowed me to experience firsthand the emotional and cognitive changes that arise from very basic physical deficits. This reinforces my otherwise theoretical knowledge that body and mind form a mutually dependent couple. What affects one affects the other. I have to say that the effect of this on my practice has been to increase the level of empathy I can project. It is one thing to be sympathetic, but when clients comes in limping and I say I know how they feel, they can tell that it really is true. This helps build the kind of bonding that make a successful therapeutic relationship. (See, I remember that piece of jargon.)

Taken all in all, it has been a good ten years as a Rolfer. Being used to living frugally, the lack of enormous income does not bother me. Intellectually and occupationally it has all been very gratifying. I am glad and proud to be able to identify myself as a Rolfer.

A "North of 60" Rolfer

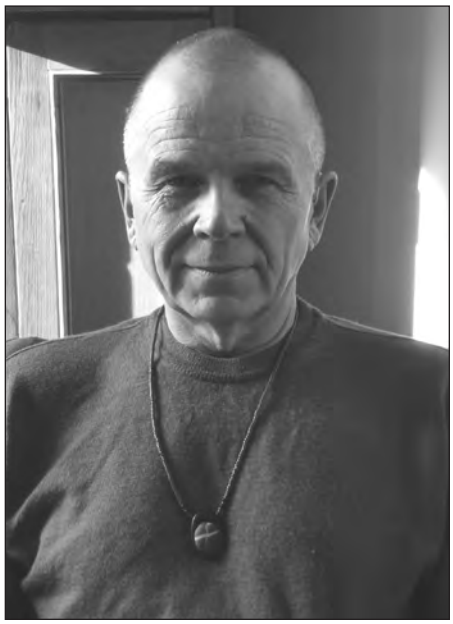
By Norman Holler, Certified Advanced Rolfer™

Wherever you go there you are.
Kermit the Frog, uttered somewhere on Sesame Street circa 1971

Well, in 2008, here I are, a Rolfer in Whitehorse, Yukon, Canada. After thirty-four years of, for the most part, experiencing myself and collecting my mail here, I am still slightly surprised, amused, grateful, and most definitely pleased about my circumstances.

We all have to start somewhere in order to get to where we are. Sometimes we spin our tires along the way, or bump ourselves into walls (often of our own making), and seem to be going nowhere. But I accept that those bumps and spins are often integral to our process. Sometimes we find a channel, or Tao, that carries us along, almost in spite of ourselves. And sometimes we just need to get out of our own way in order to move along our path. I'll need a few more years to sense whether I am sinking, floating, or being swept along for a ride. It seems pretty good though. But illusion and delusion play strong suits, and the mind is so gullible. Whatever the story, my working background had something to do with my getting here. Optician, smelter worker, Chrysler assembly-line worker, stevedore, road builder, bridge builder, industrial first aid, ambulance service EMT, whole foods store operator, masseur, thespian, Rolfer. All woven into a life with loves, two children, drama, chaos, bliss, angst, and many magic moments.

Some time out at Esalen served me well. Three, then nine months of washing dishes, and doing "personal work" while there, were big in my life. A particular month-long



workshop entitled "Emotional Sobriety for Children of Alcoholic and Dysfunctional Parents" (I guess that includes all of us), with Dr. Alan Hunt, was a major factor in helping me find a way of honestly meeting myself so that I could honestly meet others. I will be forever grateful to the spirit of Esalen, and Dr. Hunt.

I also took a leave form The Yukon to live and practice Rolfing® in Rome, Italy for a year and a half. I had done my Advanced Rolfing training there in 1996, and felt confident at the time that I could "make myself happen" in the "Eternal City," if I were to return. Lyn, my mate of twenty years, and I went back in 1998. I set up my practice there, albeit skating on an "edge" of being legal, and drew from the common well of resourcefulness and adaptability that *all* humans possess. I went to check my "edge," and because I believe we *all* need to step out of the comfort of familiarity, take risks, integrate our successes, and embrace our failures, lest we turn into, or forever remain, spiritual pudding, *Vini, vidi, vici* – I did.

I feel blessed to find myself doing the work that I do, and living here. Really, the best aspect of this work is that many really fine and beautiful beings come to see me. I teach them. They teach me. We teach what we need to learn. I make a comfortable enough living working three to four days a week. I brought cross country skiing into my life about fourteen years ago, and it has been one of the most significant life-changing features in my life. Skiing has allowed me to experience joy in ways that I could not have imagined. Skiing, then road and trail cycling in the summer, has brought me into a relationship with the seasons, the stars, the skies, the weather, and myself, in ways that I might have easily missed. Those times out of doors in all sorts of weather have served me well with many good thoughts, a seemingly more enlivened spirit, and a body that has more vitality than it might otherwise have found. That is good.

Whitehorse is the capital city of Yukon, or *The* Yukon, as many of us still like to say. The population is now around 24,500, with the total Yukon population being around 33,000, with a territorial landmass 50,000 square miles larger than California's. This last season we had 1,056 paid members in the Whitehorse Cross Country Ski Club. The club has over sixty kilometers of groomed trails, and the system is considered to be in the top five across Canada. I'll sometimes go

for a ski at 2:00 in the morning if I happen to wake up, the temperature is about – 5 C, and I know that the trail groomers have been out (I've been a groomer for six years). It's such joy to be out at that time on perfectly groomed trails. I feel blessed. I go to many good thoughts on those trails.

The word Yukon means Great River in the *Gwich'in* language. Whitehorse is near the headwaters of the Yukon River, which is 3,700 kilometers (2,300 miles) long, emptying into the Bering Sea. Salmon swim those long miles, basically without eating, to come here, spawn, then die.

Whitehorse is a very good place to live. Yukon is a spectacular place to live. The three northern territories, Yukon, Northwest Territories, and Nunavut, have their southern boundaries at the 60th parallel. So "up here" we often say that we live "North of 60." And while it doesn't happen as much as it did when I moved here, occasionally you might hear someone say "I've been 'Outside,'" meaning that they had been out of the territory.

On the third Saturday in June there is a 270-kilometer international bicycle relay race from Haines Junction, Yukon (located just outside Kluane National Park) to Haines, Alaska, on the coast. The course goes through glacier-scraped mountain passes, vast stretches above treeline, and river valleys. Last year there were 1,237 riders. I've done the event (I try not to call it a "race" lest my inner race-demon take over my soul) ten or eleven times in the four-person category. It's such a blast, in spite of sometimes having to fight through snow and winds on the summit, and the occasional grizzly bear sighting. Most often though, the weather is brilliant, and the bears keep their distance. Last year our team name was Live Now Die Happy. This year it will be Live Now Die Later. Two years ago I named it, *Carpe Diem Memento Mori*. Do you see a theme?

Lyn and I bought our first house together six years ago, and I created a space for my studio in it a short while later. It's a very good downtown house. It works really well for both of us. My studio is great. Our kitchen is great. Our yard is a treat. I could die happy here. But I'm in no hurry. I have jokingly quipped to some of my clients, "I wonder how many people are going to come and see me as a ninety-three-year old Rolfer™, so that I can pay the mortgage." Heart-touchingly, some of my clients have said "I will." May I serve them well.

"Strong Man" art piece, by Isaac Iqouluq, an Eastern Arctic artist (photographed by John Davis), at Norman's session room entrance.

I'm grateful to all of my "life teachers" who have helped me to find my way to this place in my life. One of them was Bill Smythe, who was the instructor in my auditing phase in Boulder. Two things that he said have stuck with me, and I revisit them often. One of the stories, (or myths), was about how Mr. Takahashi, the man behind modern Aikido, would be attacked by five or six of his students in his *dojo*, and he would dispatch them all to the floor in a few seconds. His students would say "Sensei Takahashi, how is that you never lose your center?" To which he would reply, "Oh no, I lose my center very often, but I come back very quickly." That "landed" somewhere in that deep place that wants to put me on track. And the other gem was his comment about acupuncture: "It is not so much about where you put the needle, but more about *where* you are when you put the needle in".

Another "life teacher" was my friend and colleague, Tara Detwiler, who emphasized the importance of meeting clients without a fixed agenda. In other words, meeting them where they're at. That jived with my psyche. I check into that place often. Yet sometimes I miss that meeting place when I get lazy, or clumsy. Hopefully less than I used to.

Life teachers, experience, bumps, spins, pragmatism, "free rides", lots of work, and a willingness to step out of my comfort zone, have brought me to a place where I'm pretty okay about most things in my life. Do I have regrets? Of course. Have I made mistakes? Often. Do I carry optimism? Always! And through it all I feel that I offer a good service to my community through the work that I do, and add something positive to the collective spirit. It's the least I can do for a place that has served me well. Life is good. Here I are. I am pleased.

The Disclosive Power of Feeling

By Jeffrey Maitland, Ph.D., Certified Advanced Rolfer™

Philosophy and science begin with the enigma we are to ourselves. One mystery that continues to fascinate us is our own perceptual prowess. Its relevance to the practice of holistic somatic therapy cannot be overestimated. Indeed, it is not much of an exaggeration to say that perception is everything. As any experienced practitioner will attest, the better your perceptual skills become the better practitioner you become. Unfortunately, the kind of perceptual vitality and acumen required to master a holistic practice such as Rolfing®, biodynamic craniosacral therapy, or energy healing is a highly refined art that is neither easy to articulate nor teach.

The practice of holistic somatic therapy requires holistic eyes. It is not enough to be able to determine and list somatic dysfunctions. In order to facilitate appropriate global change, you also must be able to perceive how individual somatic dysfunctions relate to the whole and are expressions of the morphological imperative of the whole person. There is a profoundly important difference between the perceptual skills required to determine that a muscle is short or that a femur is externally rotated and the perceptual skills required to perceive wholeness or a client's morphological imperative. It is easy enough to see that one shoulder is lower than another, but how do you see its significance in relationship to the whole person? How do you perceive thwarts to wholeness? How do you perceive integration? In the midst of the many problems, structural and otherwise, that a client can manifest, how do you perceive the morphological imperative that is living to express itself? Central to the practice of holistic somatic therapy is the ability to perceive such qualities as integration, wholeness, and thwarts to wholeness. But perceiving these qualities is of a different order than perceiving the redness of an apple or the chirping of a bird. Although it is not usually recognized for what it is, this different order of perception is part of our everyday experience. To pick an extreme example: have you ever experienced a sense of dread before the occurrence of an unpredictable but impending disaster? We don't know how we perceived it, but we perceived it nonetheless. The best we seem to be able to say is that we felt it. The ability to perceive such occurrences seems to rely on some mysterious faculty of sensing other than our five senses. The same mysterious faculty of sensing seems to be at work when we perceive qualities such as integration, wholeness, thwarts to wholeness, organic unity, and the body's morphological imperative. But if we don't perceive these qualities with our senses alone, how do we perceive them? What is the nature of this kind of perception?

A SHORT PHENOMENOLOGY OF PERCEPTION

The first step toward answering these important questions requires an elucidation of the nature of perception in general. To this end, we will draw on the insights of phenomenology and its discovery of intentionality to illuminate the dimensions of perception that are relevant to our discussion.

One of the more amazing feats of our consciousness is found in the remarkable way we perceive the world. We humans do not perceive with our senses alone. In a very real way, our mind is also an organ of perception. We perceive by means of an integration of mind and senses. As a result, our perception of the objects of our world is cognitive and interpretive. Because of our great conceptual abilities, we are capable of what has come to be called *aspect-seeing*. We not only see objects in the context of a foreground and background, we also see these objects *as something*. We see this thing as a chair, or that thing as a tree, and that as a mountain, etc.

Perhaps you remember reading the comic section of the newspaper as a child and enjoying the various word and visual puzzles. Often there were drawings that, on first inspection, looked like a random bunch of squiggles and lines. But the caption directed you to find a figure, perhaps a cat, in the drawing. As you looked more carefully, suddenly the apparently meaningless squiggles congealed into the figure of a cat. Finding the cat in the squiggles is coming to see something as something – something that was not purely available to the senses alone.

When you saw the cat, you didn't add the cat to the drawing or see something that was hidden behind the drawing. No new lines were added to the drawing. By means of an integration of the sensory and cognitive, you suddenly saw what was there all along. Your intentionality shifted and you saw the cat by means of the concept cat. You didn't see and then formulate the concept. Having the concept is what rendered the cat visible. It brought forth your perception. In a sense, you had to focus not only your eyes but also your understanding to perceive the cat. At the same time, it is important to understand that when you first saw the drawing as a bunch of squiggles you were also seeing it as something – as a bunch of squiggles.

This simple example of seeing the cat in the drawing contains an important insight: every act of perception, whether looking, listening, smelling, tasting, or touching, is also already an act of understanding. Just as light illuminates the darkness by showing us aspects of what is already there, our very act of looking or hearing or smelling makes the world appear. By actively seeking meaning, as if it were a searchlight extending out beyond itself, our perceptual-understanding highlights aspects of reality, thereby making it possible for these aspects to be perceived *as something*. By bringing forth particular aspects of our autochthonous reality, this interpretive activity of perceptual-highlighting renders the human world perceivable.

There is more to seeing than meets the eye, as a clever philosopher once said. But, aspect-seeing is not limited to the eyes alone. All of our senses are dominated by it. We hear that sound as a train whistle,

feel that sensation as the edge of a knife, taste that morsel as a steamed carrot, smell that odor as gasoline fumes, and so forth. Furthermore, aspect-seeing should not be considered as some sort of an illusion contributed by our mind and arbitrarily imposed on reality. Aspect-seeing reveals aspects of reality that would go unperceived were we dependent on our senses alone. At the same time, we should not lose sight of the fact that our perception of aspects are largely conventional. What aspects we perceive depend on what our senses permit us to actually see, the contexts in which they appear, our needs, our linguistic habits, and what we and our culture deem important and significant at the time, as well as the nascent forms, figures, and regularities that arise from the autochthonous reality of which we are a part and in which we participate.

As the explication of aspect-seeing clearly demonstrates, we are much less passive receivers of incoming data and much more active interrogators reaching out, and groping for variegated contours of meaning or sense. True, we first have to receive the object of perception. But also embedded in every act of perception is an unspoken question, "What is that?" If an object is familiar, you typically do not notice your interrogating orientation. But if it is an unfamiliar object, you easily recognize your attempt to figure out what you are looking at. Recall the above example of finding the cat. Once you understood there was a cat to be found, you were able to shift your intention/understanding to see it.

This never-ending activity of looking for meaning and sense, of perceiving aspects, of being solicited by a world and directing ourselves toward a world, is known in the practice of phenomenology as *intentionality*. As a way to characterize the meaning-bearing intentional capacity of consciousness, phenomenologists say that consciousness is always the consciousness of something. Intentionality is an essential structure of every form of consciousness. Intention, therefore, is just one example of intentionality. Daydreaming, anger, fear, sadness, lust, problem-solving, hope, faith, charity, forgiveness, feelings, negotiation, abstract thinking (indeed, all forms of thinking), gardening, perception, and so on are all forms of intentionality.

Ordinarily, we take no notice of the intentional capacity of consciousness. When you see a flower you are aware of the flower, but not of your attending to it. Nor do we often attended to the fact that we are attending to something. But, intentionality can be easily discovered in experience. Our example of finding the cat in the drawing demonstrates the workings of intentionality. All that was required to see the cat was the simple act of intending to see a cat.

PERCEIVING WITH FEELING

With this discussion of intentionality and aspect-seeing behind us, let's begin our investigation into feeling-perception with an example. Have you ever experienced entering a room full of people and suddenly knowing something is not quite right? You clearly know something is amiss, but how you know is something of a puzzle. You don't know it because you deduced it from any behavioral cues. You don't know it because you saw it, heard it, smelled it, tasted it, or touched it. Somehow you just know. When most people are asked how they know such things, they usually don't what to say. They don't know how they know. Perceiving the things of the world by means of our senses seems straightforward and commonplace. But perceiving that something is amiss, while commonplace, is hardly straightforward. Part of the reason we have trouble understanding this kind of perception is because it doesn't seem to involve any of our five senses in the way ordinary perception does. Keeping in mind that perception is the integration of the cognitive and sensory, we can say that we perceive a flower with our eyes, hear a sound with our ears, smell an odor with our nose, relish a strawberry with our sense of taste, and feel a rough cloth with our sense of touch. But with what sense or senses do we perceive that something is amiss? It is tempting to say that we know such things by means of intuition. But while this answer is not entirely off the mark, it is not very illuminating because we don't really understand what intuition is. As a result, the answer ends up explaining one baffling phenomenon in terms of another. A related, more satisfying answer is that we just feel it. Although it does not sound like much of an advance over the appeal to intuition, when we look more closely at our feeling nature, it turns out that it is actually a form of perception just as capable of disclosing aspects of reality as any of our five senses. Loosely speaking, just as our eyes reveal to us the redness of an apple or our ears reveal the piercing sound of a bell, so too our feeling-perception reveals certain qualities of our situation that would not otherwise be available to us. Our feeling nature perceives actual qualities inherent to our situation. The threatening or dangerous quality is there in the room and we perceive it by means of our feeling. Unlike the fear that this quality might arouse in us, it is not a subjective state that we project onto the situation. It is an objective quality of the situation that we perceive by means of feeling.

If the claim that we can perceive objective qualities of a situation by means of feeling seems somewhat bizarre, it is probably due to embracing the unexamined assumption that feelings by their very nature are subjective and nothing as subjective as feelings can make any claim to objectivity. In order to see through the limitations of this assumption, we need to look at some examples of feelings that are truly subjective to see how they differ from feelings that reveal objective qualities of a situation.

Let's begin by noticing that we use the word *feeling* to cover a wide variety of experiences. Of our emotions we say we feel sad or angry. We feel bodily sensations such as pains, tickles, and itches. When we are moody, we say we feel bored or blasé. When we have a premonition or intuition, we say we feel certain the time is right or feel that the solution to a problem is to be found in a particular this direction. We feel justified in making a demand. We feel tired or out of sorts. We feel hungry or full. We feel danger in a situation or have a good feeling about what is happening. All of these examples are part of our feeling nature and examples of what we mean by subjective states.

Our feelings are merely subjective when they express something about us and do not make any claim to be true for others. The merely subjective cannot be universalized. If I am feeling tired and upset while listening to a piece of music you are finding thrilling, you would rightly dismiss my dislike of the music as subjective. Suppose someone close to you died while you were listening to the fourth movement of Beethoven's Ninth symphony, *The Ode to Joy*. You probably would not be able to listen to it again without feeling sad. In such a case, the sadness belongs to you not to the music and your response is entirely subjective. The fact that the music makes you sad does not mean the music is actually sad. It means the music seems sad to you because you are projecting your personal

feelings onto it. Or imagine a situation in which you like chocolate ice cream and I like vanilla. There can be no real dispute as to which flavor is the best, because we are only expressing our subjective preferences. These examples of the merely subjective are quite different from perceiving that something is amiss by means of feeling. When your feelings are merely subjective, they say something about you. When you perceive with your feelings, they say something about your surroundings, what is not you. Since we experience the disclosive power of feeling differently from how we experience the disclosive power of sight, this point is not always easy to grasp at first. When you see a flower in the garden, most of the time you see it as other than yourself and "over there." When you perceive that something is amiss, you feel it "over here" and in yourself. There is no distance between you and it. You feel it as if it were your own feeling. One of the critical differences between perceiving with feeling and, say, perceiving with your eyes is that feeling-perception is always non-dualistic and participatory. As a result, since we experience the quality of the room in ourselves, we often misconstrue it as nothing more than our own subjective response and dismiss it as having no objective validity.

It takes a little practice to learn how to distinguish between feelings that are merely subjective and feelings that reveal a quality of your surroundings. Perhaps you have experienced having a pleasant conversation when suddenly you feel as though something went terribly wrong. You don't see any indications in the other person's face;, you just feel something is off. But since the way you know it is by feeling it in yourself, you may miss the fact that you are actually feeling the other person's upset and misapprehend what you are feeling as belonging to you alone. If you do not attend to your experience appropriately, you may even think that you are the problem. But instead, if you bring the feeling into reflective awareness and ask yourself, "Is this me or am I perceiving something that is not me?", you would quickly realize that you are neither in the grips of the merely subjective nor projecting your subjective state onto the situation. With further reflection, you would come to see that you are actually perceiving an objective quality with your feelings.

Also, it is worth pointing out that making this critical distinction becomes easier the freer you become of your own conflicts and fixations. If you were already in a tizzy before beginning the conversation, it will be more difficult to sort out which feelings are disclosive and which are merely subjective. But with practice, the distinction eventually becomes much clearer in your experience and you easily recognize whether you are projecting your subjective state onto the situation or perceiving objective qualities with your feeling nature.

Consider some other examples of how we perceive with our feeling nature. Can you recall some particularly memorable experiences with nature? Perhaps you went on a hike with friends on a beautiful spring day. Against a spacious blue sky, do you remember how the world was bursting with light and color and how you felt as you and your friends gave yourselves completely to the surroundings? Everyone perceived this day in the same way. All agreed that it was wondrous. This agreement as to what everyone's feeling nature revealed is no different, in principle, than the agreement that the car you were driving was a black SUV.

Try another feeling experiment. Recall some memorable moments from your past and notice how each memory is often saturated with different subtle feelings, which you are now feeling. Although these feelings are almost impossible to put into words, they are good examples of how we perceive with feeling. Look carefully and you will see that they are not examples of merely subjective feelings. They do not just happen to accompany your memories, and you are not projecting them onto these times. Rather, they are the objective qualities of those times in your life which you perceived with your feeling nature and are now recalling-feeling. Just as you can remember the blue sweater you were wearing at the time, thanks to your feeling nature, you also can remember-feel these poignant qualities that characterized your situation.

The appreciation of art is a wonderful activity in which to catch feeling-perception at work. Art is many things. Among all the arts perhaps music is best suited for displaying the subtle ineffable ebb and flow of human feeling. But at the deepest level great art is the exploration and manifestation of human freedom. A great work of art is about the freedom and creativity that brought the work of art into being. It bears upon its face in its creative origin. True, we need our senses to perceive art. But unless we are moved by what we perceive, we are not truly appreciating it. When we are moved by a piece of music, we do not project our feelings onto the music; we feel-perceive actual qualities in the music. Without our ability to feel-perceive these qualities, we could never fully appreciate music. The ears alone are not capable of revealing these qualities. And the mind alone is not capable of perceiving these qualities. It is only when our mind, senses, and feeling nature work together that we truly appreciate art. As we shall see, the ability to perceive wholeness and integration is very similar to aesthetic appreciation in that both require the integration of our cognitive, sensory, and feeling nature. Since poetry can exemplify that of which it speaks, it is often the best way to capture what it is like to feel-perceive the actual quality of our surroundings. For example, feel the simple beauty captured in the following line from a sonnet by L. Hunt (1832): "Catching your heart up with the feel of June."[1] Or contemplate Winter's cold bouquet of absence in Wallace Stevens' famous poem, "The Snow Man."[2]

> One must have a mind of winter
> To regard the frost and the boughs
> Of the pine trees crusted with snow;
>
> And have been cold a long time
> To behold the junipers shagged with ice,
> The spruces rough in the distant glitter
>
> Of the January sun; and not to think
> Of any misery in the sound of the wind,
> In the sound of a few leaves,
>
> Which is the sound of the land
> Full of the same wind
> That is blowing in the same bare place
>
> For the listener, who listens in the snow,
> And, nothing himself, beholds
> Nothing that is not there and the nothing that is.

If you know the mind of winter, the feelings you are now recalling did not just belong to you. They were not just your subjective state. If you gave yourself away completely, then you know that the feelings you felt at these times were the qualities of your surroundings. What these examples demonstrate is that by means of your feeling nature you perceive the properties of the situation or context in

which you find yourself. You perceive how the surroundings actually feel.

ONCE MORE WITH FEELING

In order to explore more deeply how we perceive with our feeling nature, let's engage in another feeling experiment. Imagine that you are working with a client with back pain. As a Rolfer, you more than likely begin your session with a visual inspection of your client in order to evaluate how well she appropriates gravity. Your training and years of experience in structural, functional, and other relevant forms of aspect-seeing have given you the perceptual skills necessary to make this kind of assessment. Since you studied Jan Sultan's discovery of the Internal/External Typology, one of the first structural aspects you notice is that her morphology generally tends towards being an external type. As you continue your assessment, you notice that she doesn't have clear centerline, that her pelvis is right rotated, her sacrum is posteriorly torsioned, there is strain in the left, abdominal region. As you assess her psychobiological orientation, you sense that she is grounded, and that she comports herself with confidence and ease. At the same time, you feel a sense of withdrawal and sadness in her chest. Then you notice that she is tired at the same time you feel that her cranium is in trouble.

In order to bring the information gleaned from your assessment to a more full-bodied perception of her living form, you begin the next phase of your session by letting your client's body show you its problems. As she lies supine on your table, you gently place your hands on her head using your favorite vault hold and just wait. Your job, at this point, is not to have a job. You wait and do nothing. You are no longer actively trying to assess your client's structure, function, energy, or psychobiological intentionality. You don't even think about trying to change her for the better. Instead, you shift your orientation from trying to accomplish results and evaluating structure to an orientation of allowing what is to show itself. You simply get out of the way by dropping your self. In the vernacular of Zen, you return to zero and become one with your client. By returning to zero, you simultaneously expand your perceptual field and open a loving space.

The clarity and safety of this clearing makes it possible for the being of your client to wordlessly reveal her troubles to you. As you continue to create this loving space, you often close your eyes as a way to see more clearly and to encourage more and more aspects of your client's problems to show themselves to you. In order to further expand and deepen your perception, you take your hands off your client's head and feel-perceive her whole body and energy field with your whole body and energy field. After a time, a perspective begins to come into focus and you finally get your first glimpse of a unified pattern of distortion and its relation to the whole: you perceive a cranial shutdown, the lack of a clear center line, a bulging out of the energy field around the lower left region of the abdomen coupled with feelings of sadness and anger saturating an intensely held strain in the peritoneal sac around the descending colon that torsions the sacrum, rotates the entire pelvis right, pulls the sigmoid colon is too anterior, and also causes strain in the medial collateral ligaments of the right knee. As often happens, when your eyes are closed, your mind starts to drift as if you were in the first stages of sleep. Suddenly, a compelling image of your client being traumatized appears and with the image comes the conviction that she was ten years old when the incident occurred. Notice how all the information you gleaned finally congealed into a unified perception of her structural, functional, energetic, and psychobiological way of being. Although this process of shifting your intentionality was more complicated than finding a cat in the drawing; it is, nevertheless, the same process. In the first phase, you were actively engaged in the process of evaluation. Much of the information you gathered about your client was the direct result of actively engaging in aspect-seeing, which involved the integration of the cognitive and sensory. Recall how you saw that your client was a external type, for example. Before you learned the Internal/External Typology, you probably would have noticed how the pelvis was too posterior, how the lumbar and thoracic spines were too flat, how the legs were valgus, and so on. But you wouldn't have grasped the significance of what you saw for the whole structure. You probably would have seen these aspects as individual structural curiosities. You wouldn't have understood that what you were seeing was an expression of the morphological type known as the external type. But now when you look at your client, you clearly see that she is an external type. As a result, you understand the complicated array of strain patterns with which she struggles in relation to her morphological imperative.

Toward the end of this first phase, you also began to perceive aspects of her psychobiological intentionality by means of feeling. You felt and saw the confidence in her comportment, while at the same time, sensing her withdrawal, sadness, anger, tiredness, as well as the effect of these aspects on her cranium. This kind of aspect-seeing (or more precisely, *aspect-feeling* or *feeling as*) in which you perceive the emotional meaning of a person's bearing and structure requires not just the integration of the sensory and the cognitive, but also, the integration of your feeling nature. When you can feel aspects as well as see them, your ability to read your client's emotional and psychobiological orientation is much more accurate than when you deduce them from visual patterns displayed by your client's body.

In the second phase of your evaluation, you began to rely less on your senses and more on your feeling nature to perceive what was going on with your client. Much of the same information appeared, but more of it came to you through your feelings. There is no question, much of what you perceive as a holistic practitioner comes from your senses, or to be more precise, from the integration of the sensory and the cognitive. But not all. Notice that you can see without your eyes and feel without your hands. You often closed your eyes in order to perceive more clearly, for example. Since you felt what is happening in the lower abdomen and pelvis while your hands were on your client's cranium, you were not feeling with your hands alone. Add to these considerations that you can feel more by not touching your client, and it is clear that you are not perceiving with your senses only – you are also perceiving with your feeling nature. When you perceive your client's structural problems and her comportment as sad and angry, you are see-feeling by means of the integration of your cognitive, sensory, and feeling nature. Aspect-seeing and aspect-feeling both involve the cognitive.

Let's look more closely at what we actually experience when we perceive with our feeling nature. Whether you touch your client or remove your hands from her body, when you allow what is to show itself, you often feel in your own body where the problems are in your client's body. Where

your client has a problem in her body, typically, you feel a kind of pressure or fullness in the same place in your body. As you continue to attend to what is showing itself to you, the vague sense of pressure begins to come into focus and you begin to feel-see it as an emotional, energetic, and structural distortion in the descending colon that affects the pelvis and right knee. If you close your eyes, you may also notice that you also see in your mind's eye the same pattern of distortion.

The more you know, the more aspects you perceive. Aspect-seeing and aspect-feeling are enriched by knowledge and an open heart. The better you know anatomy and the freer you are of emotional fixations and conflicts, the better you are able to perceive the details of what is being shown to you. In this example, if you didn't know the anatomy of the organs, the vague sense of pressure would remain vague sense of pressure indicating a problem somewhere in the left lower region of the abdomen. But since you do know the anatomy of this region of the body, you see-feel more detail.

As strange as it may sound, your energy field is part of your feeling nature. You not only feel with your whole body, you also feel with your energy field. You feel in your own energy field the place where your client's energy is distorted. The more familiar you become with the energy patterns that are part of your clients' problems, the more clearly you feel them.

Even though both involve a cognitive dimension, you may recall that we noted an important difference between perceiving with your eyes and perceiving with your feeling nature. When you perceived your client as an external morphological type, you perceived her as other than yourself and "over there." When you felt your client's structural, energetic, and emotional difficulties, you felt all of these aspects as "over here" and in yourself. There was no distance between you and these aspects of your client. You felt them as if they were your own, because your way of knowing them is by feeling them in yourself and because feeling-perception is non-dualistic, participatory, and not based on reflective thinking.

But this description raises an apparent problem. It seems to contradict the analysis of intentionality in which it is claimed that consciousness is always the consciousness of something. Central to the analysis of intentionality is the implied difference between the consciousness of an object and the object of consciousness. But since there is no distance between you and what you feel-perceive, it seems as though the difference between the object of your feeling-perception (your client's structural, energetic, and emotional aspects) and your feeling-perception of the object has disappeared. To say it differently, since we perceive these aspects in ourselves, there is no distance between these aspects and our perception of them. If there is no distance, then it seems as though the difference between the consciousness of something and the something of which we are conscious simply collapses. But if you bring the whole complex of what you are feeling into reflective awareness, you rather quickly realize that the lack of distance is not the same as the loss of difference, and that there is a clear difference between you and the object of your feeling-perception.

If you continue to allow what is to show itself, the whole pattern of distortion and its relationship to the whole comes into clearer focus and you see-visualize-feel it as a unified gestalt. Since your client has emotional issues, you feel her anger or sadness in yourself and it will saturate your perception of and be a part of the unified gestalt. The unified gestalt that constitutes your perception of your client is the result of integrating the cognitive with your sensory and feeling nature. At one and the same time, you are one with her condition because you feel it and separate from her condition because you see it. Simultaneously, you feel your client's distortions in yourself and see them in her body. Your perception of your client's condition is not a matter of having two different perceptions, one in yourself and one of her "over there". Rather, your perception is one integrated unified gestalt in which you are both one with your client and separate from your client.

IN SEARCH OF THE HUMAN SENSORIUM

Although we have elucidated the nature of feeling-perception, we still don't know what part of our anatomy or mind is responsible for this kind of perception. We perceive a rose with our eyes, hear a sound with our ears, smell an odor with our nose, relish an apple with our sense of taste, and feel a rough edge with our sense of touch. But with what sense or senses do we perceive a client's energy and emotional patterns, thwarts to wholeness, or that something is amiss? Whatever this perceptual system is, it consists of the integration of our sensory, cognitive, feeling nature, and energetic field. While it is clear that it must involve the brain and nervous system (the senses) as well as what we call mind, it is also clear that it surpasses these systems. Unlike our eyes and ears, it has no specific location. We are driven to the conclusion that this perceptual system is none other than our body-mind and the field around it. For want of a better term, we can call it the *somatic field*.

If asked where the seat of perception is or which system is responsible for perception, without much hesitation, most people would probably answer that the sensorium is the brain and nervous system. For humans and other vertebrates, this answer seems like reasonable one. But our excursion into feeling led us to the startling conclusion that our perceptual abilities are greater and more expansive than we suspected. They encompass not only our feeling nature and whole body, including the brain and nervous system, but extend into the field around our bodies. If this observation is correct, we must also conclude that the human sensorium is the somatic field.

CONCLUSION

Our phenomenological excursion into the nature of perception has revealed that the human sensorium is our body-mind-energy complex. It has also given us a way to understand how we perceive that something is amiss upon entering a room and how we perceive a client's energy and emotional patterns, and wholeness and thwarts to wholeness. It turns out that the answer to our question of how we perceive these seemingly extrasensory qualities is the simple one we suggested at the very beginning of our investigation. We perceive these qualities by feeling them. As we have seen, there is more to perception than what is given to the senses. Seeing something as this or that particular kind of thing is the contribution our mind makes to perception. As the elucidation of intentionality demonstrated, human perception involves the integration of the sensory and the cognitive. But, it also demonstrated some important aspects of perception that are often missed and seldom properly appreciated. Not only does

perception involve the integration of our feeling nature, but also our feeling nature is capable of perceiving aspects of reality that would otherwise not be available to us.

In addition, our feeling nature is not only deeply intertwined with and embedded in all our states of awareness, it is also what we share with all living creatures. It is how other forms of life, especially those without a brain or nervous system, perceive their world. Furthermore, what we recognize in ourselves as consciousness is a highly evolved elaboration of the same feeling nature that all life shares.

Our feeling nature is a non-dualistic, participatory way of knowing that is not founded in thinking. It permeates every dimension of our being and every level of awareness and is fully integrated with our sensory and cognitive nature. Even though we regularly take no notice of it because our consciousness is dominated by our reflective "I-am-self," it is always there bringing us into unity with our surroundings and revealing the greater ocean of sentience of which we are a part. On a beautiful autumn day, if you give yourself completely to your surroundings, you become one with everything and see-feel its wondrous quality. If you give yourself away completely, then you know that the feelings you are feeling not only reveal the qualities of the surroundings, but are also how the surroundings feel to themselves.

NOTES

1 Hunt, James Henry Leigh, "To the Grasshopper and the Cricket," *The Compact Oxford English Dictionary*, second edition. Oxford: Oxford University Press, 1991, p. 577.

2 Stevens, Wallace, *Poems by Wallace Stevens*. New York: Vintage Books, 1959, p. 23.

Body as a Movement System

A Premise for Structural Integration

By Kevin Frank, Certified Advanced Rolfer™

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***Abstract**: Ida P. Rolf formulated structural integration (SI) based on premises regarding the biochemical and biomechanical properties of fascia, and regarding the relationship of the Earth's gravity field and the capacity of human beings to find normal posture. Neuro-scientific research and clinical observations of SI practitioners suggest that the logical explanations for why and how SI works will benefit from a shift in conceptual emphasis: SI is a system-oriented approach for reviving natural coordination, and for working with the now broadly adopted concepts of body image and body schema. The author explores how this shift of thinking changes both the way SI is taught to students and clients, and the way Rolf's message is presented to the world.*

We are not stuff that abides, but patterns that perpetuate themselves.
Norbert Wiener[1]

PREMISES AND CONCLUSIONS

In an archival film, Ida Rolf says that if you wish to reach different conclusions you must start with a different premise. How do premises affect what we do as SI practitioners?

The manner in which one conceptualizes a field of inquiry shapes the manner in which one operates, the questions one asks, the models one constructs, and the identity of the profession. For example, the idea that germs cause disease builds a medical system that looks different from one built on the idea that evil spirits inhabit bodies and cause illness. Each premise reaches different conclusions. Ida Rolf started with several premises that were new at the time: that the body is plastic and fascia can be reshaped, and that posture can be provoked so that the body regains a healthy relationship with gravity and functions harmoniously. Her thinking derived from her practice of yoga, the study of biochemistry, and treatments and training from pioneer osteopaths. Rolf's premises birthed the SI field and a concept of what SI is.

How we conceptualize SI has practical consequences. This article looks at an information-based model of SI, meaning a mode of SI in which it is posited that the body responds well when it gets appropriate information. This way of thinking provides opportunity for the field of SI to further develop its potential.

How do we conceive our work?

AN INFORMATION-BASED MODEL: THE MOVEMENT BRAIN

The author finds it helpful, in teaching groups and working with clients, to propose a specific premise for SI work. The concept itself is simple: SI addresses communication to and with a system, something that can be called "movement brain." The movement brain idea is a different starting point for considering posture and structural bodywork than the premise that the body is something plastic to be reshaped. If one starts with this system idea – the movement brain – the SI story unfolds in a particular direction. Rolf's legacy is still served, but the SI model has broader congruence.

System vs. Mechanics

The movement brain idea emphasizes system phenomena in contrast to mechanical "parts" such as muscles, fascia, nerves, restrictions, mechanism of injury, and failures of "structure." The movement brain point of view steers our attention to something that is not a thing, something we must imagine. We don't know what the movement brain is. In that sense it fulfills the role of a black box that, unseen, must be learned about through direct experience, by building a sense of what it is. We learn how to speak to/hear from the movement brain and thereby get to know its personality. We learn how to see movement as choreographed by the movement brain.

Holding Maps Lightly

The movement brain model embraces but doesn't fully explain the complexities of human motor control. The movement brain point of view benefits from a broad outline that traces control pathways in neurological terms. We know that movement control involves the cerebellum and sensory and motor cortex, plus the system of reflexes that operate using the stretch reflex. To describe movement control in this way, however, one makes no less a fiction than by describing it as movement brain. Such a story is incomplete and quickly out of date. The purposely vague image of a movement brain confronts our impulse to control it, or to use the anatomy terms in false ways. We need a map. To focus on the map is to lose touch with the intelligence with which we wish to work. (To appreciate the complexity of the movement brain, the reader is directed to Blakeslee and Blakeslee's book *The Body Has a Mind of its Own*.[2])

The movement brain isn't a central computer. It's the way in which the body acts as a system in relation to context. System activity involves interrelated complex networks, and often there is no anatomical structure on which we can pin the complexity. As a system event, coordination cannot be locally defined. Continual refinements emerge in the science that explains motor control. We benefit as research validates and refines the model of our work, but the term "movement brain" doesn't require frequent updates.

Body therapists and educators need anatomical knowledge to understand and see how the body is constructed. When we habitually think anatomically or biomechanically, though, it can interfere with movement. Some forms of anatomical awareness facilitate flow and ease in function, and we will cover these later in the article.

The movement brain concept reduces focus on the fascia as something to reshape. Fascia

becomes, among other things, a portal of communication.[3]

State change in fascia as an explanation for what is occurring in SI, while having provided fifty years of marketing for Rolf's work, may need reconsideration. At present, a change in emphasis revitalizes thinking about research, education, and marketing – it changes how we think as we work.

Scientific research supports an information-based system approach to modeling SI, and assists in the evolution of Rolf's work. And, the movement brain model dovetails well with examples of successful research within the SI community that are mentioned later in this article.

BODY SCHEMA, POSTURAL SCHEMA, AND BODY IMAGE

In neurological language, "movement brain" aligns with the term "body schema." Body schema was first proposed in 1911 by two British neurologists, Head and Holmes. Their model states that the body has two levels of coordinative control, one that is largely automatic and beyond our conscious awareness, body schema, and the other, an overlay that can influence but also interrupt the functioning of the former, body image.[4] Postural schema, a subcategory of body schema, refers to that part of automatic coordination that governs gravity orientation.

Over the past hundred years, this model has been used by neurophysiologists to untangle the various issues that cause motor and perceptual dysfunctions in patients. Gallagher and Cole also write about the body schema and body image concept.[5] They describe a patient who lacks afferent proprioception. He must do with conscious control what a normal person does through automatic reflexes and coordinative patterns. The patient is an extreme example of the human dilemma, in which we substitute voluntary control (body image) for the schema that in Gallagher's patient is no longer available, but the rest of us take for granted.

What does this have to do with SI?

Coordinative Intelligence

In SI, we seek long term improvements in posture, movement, and integration of coordinative change with the psychological sense of living in a body: not modest goals. To what, in terms of body schema (including postural schema) and body image, do the SI goals translate?

When clients make lasting shifts in postural coordination, the schema (automatic pattern of coordinative control) has shifted; in some instances we could also say that the schema has received permission to express itself. Why permission? Because the schema part of body attempts optimum efficiency and stability in response to the demands made upon it. The body is challenged and schema responds. (It is important to note that a demand must be made on the system in order for it to perform. More will be said about demand later.) This occurs so long as body image does not interrupt the process.

Slip on the ice, or catch sight of something in the street as we drive, and the deepest parts of our "movement brain" react, at speeds faster than our cognitive brain makes choice. It is after our instant reaction that thinking evaluates what it was that happened or what object we avoided. Schema reacts, then the "what" part of the brain catches up with the event.

What and Where Distinction in Function of Vision

A "what and where" model of vision helps us understand more about body schema and body image. This model is described in terms of how our vision has separate pathways, linked to schema and image function.

Paillard, a body schema/body image neurologist, summarizes and diagrams the "what" and "where" functions as two sets of pathways that are connected with vision.[6] The "what and where" vision-model provides distinction between movement brain and object recognition brain. Livingstone, a Harvard neuroscientist, notes the difference in evolutionary age for the "where" and "what" connections in the brain.[7] The "where "part of vision belongs to earlier function in the development of the brain, ones more concerned with survival. The "what" part of vision belongs to the more cortical and more recent brain development and is a large part of modern life.

"Where"-oriented vision is also called peripheral vision.[8] It notices outline, contrast, movement, directionality, and sees in black and white. "What"-oriented vision is also called focused or fauvial. It notices color, texture, detail and, as noted above, matches what is seen with that stored in memory.

Body Schema and Body Image Function

In a social context (and with no imminent danger), we have the dubious luxury of choice about how we move (or express posture). Our mind may then be more concerned with "what" (or "who") questions. In these contexts, we often express less coordinative intelligence than in the earlier examples. Instead, body image intervenes and biases or interrupts body schema's function. For example, when a client is observed walking in front of his or her SI practitioner, he or she may try to "look good" and amplify the improvements that the practitioner apparently likes to see. How do we meet this challenge?

As SI practitioners we have tools to help individuals meet the social context, and other practical contexts, with a more adaptive body schema. We also offer tools for using body image to revive schema function when we notice that it is missing.

Body Schema is not Personal

Body schema means the coordinative intelligence that underlies optimum movement. The schema part of body isn't personal. In fact, schema doesn't differentiate body from the peri-personal space around body.[9,10] Schema looks for movement potential based on knowledge of body and space around it.

Our genetic body plan and our human ancestry endow us with the ability to react automatically and skillfully. If a body part is damaged or lost, or if there is disease or a neurological failure, the schema will adapt as best it can. The "hardware" part of us belongs to the schema and is part of any movement equation the body composes. But a damaged body part is also registered in our body image, and it may or may not allow the body schema to function.[11]

Tools, body prostheses or extensions, if not rejected by body image, are quickly added to body schema. A tall hat worn in a room with low beams will become, effectively, the top of head after a little time. A rake or an automobile will become a temporary extension of body schema if body image is willing.

Body Image

In contrast to schema, body image is personal. It is patterned by our development and circumstance. Body image is a potential filter through which coordination often has to pass – much coordination happens without interference but in SI we are particularly concerned with those places where interference has occurred.

Body image represents aspects of posture and movement control that are within the reach of conscious awareness. However, although we can be conscious of body image, certain parts of it can be out of awareness or may be repressed.

Body image is acquired through personal history.[12] We build a representation of ourselves, including a body map (which is an overlay to the implicit body map at the level of body schema).

Imitation and Mirror Neuron Theory

For example, we imitate the posture of our family. We empathize with the movements and posture of those we see. This is another documented aspect of brain function, of movement brain. Our brain triggers a motor control pattern when we observe another in movement, as if we are doing the movement or posture ourselves. This phenomenon is part of what is called the "mirror neuron" theory. Research by Umilta, Rizolatti, and others document that we have this capacity to learn movement by seeing it and empathizing with the motor activity of another.[13,14] In essence one's brain activity imitates that of another, as though the observed motor activity is one's own.

Self-Image

We imitate. As we develop we also attempt to relate the sensations of our inner experience into something we are told is our "self." We acquire a sense that what is inside "me" is seen from outside as someone with a name, a shape, and what will become a collection of stored memories about how I am seen. We build our movements from the others in our environment. And we build a representation of our movements and of our body shape and size from others as well. Our learned movement patterns are partly schema adapted to circumstance, and partly image as we copy images of others and as we build a social self.

Our vocabulary of movements is separable, artificially but usefully, into body schema and body image. Schema, again, refers to the aspect of movement that responds as necessary to changing circumstance that call for movement. Image refers to the overlay –the sense of our self and the way in which our movement responses may be filtered. Image reflects our history: how we are held, touched, instructed, encouraged, punished, and inspired, and so on. Our body image also reflects the culture we grow up in, including the structure of language and mythology. We could refer to the body image as the social input and schema as the movement brain component.

What are examples of how SI works implicitly with the body image and body schema?

Postural Schema

Postural schema is central. Rolf spoke about gravity constantly. Godard's tonic function model describes gravity orientation as the fundamental piece of the movement brain with which we, as practitioners, wish to communicate.[15] Before we move, before we build a perception, the background to all our actions is gravity orientation. Gravity orientation, the way in which we locate ourselves in space and on the Earth, is necessary to organize the movement of the senses and the movement of our body. Rolf referred to gravity as, "the most potent physical influence in any human life."[16] When SI assists a body to recover postural schema integrity, and to integrate a person's life with his or her postural orientation settings, change occurs at a deep level of movement intelligence.

MOVEMENT INTELLIGENCE – SCHEMA REVEALED

The postural schema is part of what is here being called body schema. What are other examples of body schema expression?

We have alluded already to the function that keeps us upright when we slip on the ice or the brake pedal response before we know what's ahead. There are other dramatic examples: a mother who lifts an enormous object, such as a car when she sees her trapped child; a wheelchair-bound person who runs out of his home suddenly on fire – these examples involve schema but also a high level of arousal.

Other examples, less dramatic, are nonetheless compelling. Notice your own personal list. What are some ways the body's movement system miraculously responds to demands put upon it – what the author calls "happy accidents?" You might reflect on work, sports and art performance moments in which your body recalls noticeable grace, strength, or miraculous timing and accuracy of a movement.

One counterintuitive example of body schema is the exercise called, "Sitting Up with a Stick," illustrated in *How Life Moves, Explorations in Meaning and Body Awareness*.[17] In this exercise we have the movement brain story displayed. The mover lies supine and holds a substantial stick in both hands. He or she attends to orientation, to space and to weight, and to the sensory impression of the stick in the hands, and to the imagined power of the stick to lift the head and torso to sitting. To do this requires simultaneous and sustained perception of space, weight, the stick, and abstention from effort. The result is that the movement brain functions to allow antagonist muscles – the back muscles – to substantially release so a smaller quantity of agonists do the work to sit up.

Contrast this with conventional sit-ups that aim to exercise the rectus abdominus and external oblique muscles. Watching Sitting Up with a Stick, it looks as though the stick lifts the head and torso. We know physics dictates otherwise, so we are surprised. A conventional sit-up showcases the belly wall doing work. The contrast of Sitting Up with a Stick and a conventional sit-up is a contrast between body schema and body image.

This example illustrates how body schema functions liberated from body image. The body schema doesn't "think" about muscles. The movement brain only "knows" the body as a complex palette of motor units that it draws upon in nuanced combinations. It "knows" that release of antagonists is preferable to use of agonists. It "knows" that the agonists for the motion already express a baseline level of contraction and abstains from adding to it until the

moment it is necessary. This level of refined orchestration is beyond conscious control. From such an example, when experienced, we get a sense of the movement brain.

The movement brain isn't beguiled by anatomical descriptions of muscles, or instructor urgings to try harder, or the fashion-magazine invitations to acquire particular muscular shape. The movement brain uses the optimum (economical) coordination to, in this exercise, lift the torso.

Inhibiting the Inhibition

As mover, one must give the movement brain a chance to function. To do so, often requires one to inhibit the inhibition of the body image; to quiet down held images of body, conscious or unconscious, to quiet impulses to perform and act in some idealized way.

Our predisposition to effort comes, for most of us, effortlessly. It is a habit that overlays a more instinctual responsiveness that we call body schema. To undo body image inhibition what tools do we have?

As mentioned, we wish to give the movement brain information that helps it to function. Why do we need to give it help if it's supposed to be automatic? Because, we have "taught" it to be overruled by our body image, our effort, our attempts to "master" the movement, and we typically try to learn through effort. When we consciously attend to orientation and to sense perception and to felt potencies of mass and directions into space, we displace the impediments of body image and effort. We consciously choose image input that supports schema. This is the primary work of SI. How do the tools of this work feed the movement brain? What do structural integrators do? What are our tools?

STRUCTURAL INTEGRATORS' TOOLS

1. Embodied Presence, Kinesthetic Empathy and Body Reading

The primary tool of the structural integrator is embodied presence. Embodied presence allows us to demonstrate new coordinative possibilities. Embodied presence offers a safe container for the work and speaks directly to the movement brain of the client. Also, a practitioner's differentiated and articulated sensory awareness, and oriented presence, is the basis for the capacity to "see" the movement (or postural set) of another. Seeing allows SI work to have depth.

How does "seeing" work? Seeing is linked to mirror neuron theory, mentioned earlier. We watch a movement and our body has the capacity to know that movement from the inside, through the subtle but substantive motor activity that occurs in our body as it watches another person's movement. This is called kinesthetic empathy or empathic kinesthesia. What then allows us to discover our empathic kinesthesia with another? Which kind of brain do we wish to arouse and how?

The movement brain concept serves the discussion about what we do and learn in body reading. Although some students come to SI with strongly developed skills in kinesthetic empathy, many do not and this begs the question, "what helps one learn it?"

Body Reading and Sense Perception Linked to Orientation

To learn any movement, the challenge is usually unlearning that which prevents it. To revive, or begin to better notice, the body schema's capacity to body read, we want to attend to the simplest (least abstracted) order of consciousness. This deepest or lowest order of body image is at the level of sensation; sustained sense perception is already an interruption to that which blocks seeing.

To begin with, we can notice those expressions of the movement brain that work easily. Where is there flow in one's own system already? Can we notice something in our sensory experience that attracts our interest? What does that feel like?

We track sensation, which means staying present to it. We build an articulated internal sense of primary body image, a sense of weight and density, a sense of spaciousness, and the myriad movements that we can sense. For almost every person sensation is present. What may be new is the capacity to notice it and put it into words.

Then we build on this. We link felt sense/internal experience to the reception of sensory impression from the environment. This contradicts the body image belief that outer and inner senses are separate. We wish to connect our visual sense with the internal felt sense. By so doing, we are using the "where" or subcortical visual system referred to earlier.

We notice that the eyes can shift from a central, focused, and mostly cortical "what" function, to a peripheral subcortical "where function." As stated earlier, vision functions through two pathways, one that attempts to match objects with remembered identifiers, and another which helps us locate ourselves in space and builds a sense of the space we occupy. The movement brain draws from gaze that is peripheral.

Inter-Sensoriality

As we practice using peripheral vision we notice that this kind of vision is inter-sensorial (having a quality of synthesesia), and elicits an inter-sensorial experience of our world. When we observe movement with peripheral vision, we see it and we feel it. We may also hear it or possibly even smell it or taste it. The movement brain doesn't separate the senses.

Structural integrators cultivate this type of seeing, seeing that is inter-sensorial and kinesthetically empathic. This seeing allows us to know the movement of another from our own body's sensory experience, and to make interventions informed by internal information.

Pre-Movement

This form of seeing is quick enough to enable us to notice movement preparation in another – to see the manner in which a body organizes itself before it moves. Contained within pre-movement is information about the postural schema and information about the perceptual orientation of the other.

Body reading is one important part of embodied presence. What else does a structural integrator draw on?

2. Rolf's Recipe

Rolf proposed that SI requires a series of ten sessions, a sequence of interventions that built on each other. This is a strategy for doing SI work as well as teaching it.

Caspari describes the functional rationale for this recipe in the *2005 IASI Yearbook*.[18] The notion that each session builds on the one before can be interpreted mechanically, like a machine assembled in a certain order, or from an information or coordinative point of view, like a piece of music or a computer program. Restoration of function requires seeing that the body has

a developmental and coordinative logic. Without, for example, an improvement in upper gravity center mobility in session one, there is less profit from more adaptive support and the potency of the foot to propel the spine forward in session two.

In SI, multi-session, sequenced protocols imply that body image can shift and schema can improve in steps, first easy and then more advanced; some steps becoming more possible with the accomplishment of earlier ones. One can interpret this sequence idea as an organization of parts or a progression of coordinative challenges. Which best fits the SI series model?

To answer this question one can ask another: At any point in the "recipe" is it possible for one detail of the work to reveal a systemic change in coordination that reflects the point of the entire series? Can we see integration emerge in any session? The author asserts that it is possible, and we all see it happen. Therefore, unlike assembly of a car or a clock, the "assembly" process is in fact not about mechanics but more about reawakening a system, a system that is never really "apart." This brings us to the question, "What tells us the movement system has awakened?"

3. Rolf's Templates of Normal Structure

A part of the SI approach is Rolf's notion that there is such a thing as normal posture and coordination. Rolf's insistence on normal posture sets her work apart. Manual therapies that offer to palliate bodily complaints, or psychological therapies that assist changes in behavior or emotional well-being, while serving a useful function, do not fulfill the unusual role of SI.

"For most people in the real world, the pattern body has been lost or is no longer visible. Therefore, in our culture, there is little or no recognition of what this ideal pattern looks like."[19] Rolf's words are bold, and sound dogmatic. She asserts that for each individual there is an ideal pattern. Might Rolf's ideal be more palatable expressed as body schema?

SI presumes to say that postural analysis speaks to something more important than body complaints and body neurosis. Rather than focus on palliating distress, SI posits happy accidents of body schema, meaning happy accidents where we observe hallmarks of integrative function in gravity. (A shift in coordination may lead to physical and emotional benefits, but as side-effects to the expression of natural function.)

What do hallmarks look like? Two examples follow.

Contralateral Gait

One hallmark is contralateral gait.[20] When we observe an emergence of enhanced contralateral gait, we know we are seeing schema manifest. We see the movement brain express healthy function. Image fails if it attempts to produce contralateral gait.

Rolf's Sky Hook

A second hallmark of integration helps remind us of the movement system point of view. It is Rolf's picture of the sky hook holding up the head.[21] What is that holds up the head? We may have felt it but have we wondered what it implies about our movement brain? What allows pleasant buoyancy of the head following successful intervention? Examples of perceptual interventions include lessons that clarify the location of the occipital condyles[22] or that arouse in the imagination an extension of the sense of head into the space above one such as the cone head exercise.[23] These belong to the realm of something called ideokinesis. We mention it because it is not something new. In fact, one of Rolf's inspirations, Mabel Todd, was a movement brain pioneer.

Idiokinesis

Ideokinetic tools release the body image's hold on face (mask) and head posture, through perception, so the natural buoyancy of the head (body schema) expresses itself. Imagination, the perceptive activity of ideokinesis, releases inhibition by speaking to the movement brain. The vestibular system, part of body schema, is stimulated and freed to orient the head.

Ideokinetic imagery, as passed down from Todd[24], Sweigard[25] and, more recently Franklin,[26] is a potent tool for liberating movement brain to function more normally in the manner Rolf indicated. Ideokinesis is the use of imagination to stimulate the movement brain. Ideokinesis, is an example of perceptual intervention – one that can give us a feeling of Rolf's hook. It reminds us that evolution required all mammals' heads to move freely. Rolf was pointing out that head buoyancy is our birthright, not a modern improvement, but one that most people have lost.

Rolf's functional templates, both explicit and implicit, are documented in her book on integrating structure.[27] Within these templates we infer an aesthetic, a set of values about what constitutes normal. SI practitioners learn to feel what normal is like in the course of receiving the work, and in training.

Emphasis on normal makes Rolf's assertions bold and at the same time begs for further substantiation – what concept can take normal out of the realm of good and bad? How do we explain normal as something we can't make happen, that isn't just more mischief from body image? The movement brain idea fills this gap and the body schema/body image concept links it to contemporary neurophysiologic motor control research.

4. Imagery, Attention to Orientation, Sensory Skill, Tracking Skills, Experiential Anatomy

Imagery, orientation, sensory skills, and tracking skills, as noted above, are tools used within the perceptual realm of SI. The tonic function model proposes tools and logic for how we negotiate perceptive habits so that clients achieve shifts in coordination. How does anatomy work into this logic? How is development of anatomical awareness useful in this model?

Anatomical Awareness (through Body Image) Can Inform Body Schema

SI practitioners have the opportunity to use anatomy to assist movement. When we show people the body plan, through models or diagrams, and have a person find the body parts of the body plan inside themselves. When we palpate skeletal geometry, the movement brain is informed. Sensing the mass of the bones, sensing the articulations between bones (spaces) is helpful information and coordination shifts accordingly. And, we will also speak about muscles and explain their locations. Generally it's not helpful to ask people to consciously think about muscles when they move, however. Body image is least helpful for direct control of muscles. For example, we wish people to know about the transverses abdominus. At the same time, it is counterproductive to ask someone to voluntarily contract it. Body image is good for perception and rather clumsy at coordinative control.

We also speak about, and touch, the fascia. The fascia reflects the manner in which body

image has exerted effort, but it belongs to body schema. We educate clients about its function in support and its responsiveness to life's challenges. Fascia is part of the movement brain. We can talk to it and through it, but we can't "do" it.

Our touch, through the fascia, can shift how the fascia feels under our hands. What is going on? What about that aspect of SI most linked to its public image: deep pressure in fascia?

5. The Role of Fascial "Manipulation" in Speaking to the Movement Brain

What is it that structural integrators are known for doing, classically, in the service of postural health? A percentage of the SI work, at times the majority, involves touch on the body surface with the intention of moving or releasing fascia. Why? Traditional explanations advance the notion that SI is a form of deep massage, or a version of myofascial release, or a soft-tissue version of osteopathy. Here the reader is invited to consider the different premises and the conclusions.

Do we know what effect deep slow touch has on the biochemistry of the fascia? We have speculation. We have fifty years in which the posited state change within the connective-tissue matrix has been a central explanation for why SI works. The author is agnostic on this point. There may be an effect similar to the one modeled by Rolf in which muscles get unglued from each other, or there may not. Fascial researchers find the hypothesized "gel to sol" action elusive in work with cadavers but cadavers are different from live clients. At best, we are on shaky ground to claim this as the foundation for Rolf's most imitated technique.

If we change the question to, "Do we know what effect touch in the fascia has on the movement brain?", we can answer definitively. We observe immediate shifts in coordination from brief moments of touch in the fascia. We don't need sophisticated research to demonstrate this point. Gentle moving pressure on the chest in a first session of SI reveals an immediate shift in the movement of inspiration. A stroke of touch to the intermuscular septa in the calf on a standing client, while he or she executes slight knee bend, shifts coordination of walking instantly. Pressure on the talus bone during knee flexion also shifts coordination of walking instantly.

Imagine fascial work as a way to speak to the movement brain: to "say" to the body for example, "Update your knowledge – notice these layers of dry, fused and confused fascia in the location I am pressing on. These motor units I am outlining as separate are, in fact, separate motor units"; or to say, "This bone is, in fact, a separate bone from this other bone"; and "This bone, (the radius) has a greater articulation with the carpal bones than its neighbor (the ulna) – feel that!" Here words stand in for the nonverbal language of touch that speaks to proprioception.

Or what if we thought about pressure in the fascia as a specific demand on the movement system for coordinative change? If the demand is not overwhelming and we have started gradually, the client finds that he or she gains skill in allowing demand to precipitate organization – coordinative organization in motor control and body mapping. If we think about fascial work this way, how does it shift the meaning of SI? It shifts the focus for the client. He or she doesn't "receive" softening of connective tissue ground substance. He or she attends to new information in the service of coordination. His or her movement brain is empowered to regain primacy.

For the practitioner, does this change the way we think about and apply touch? We might not only think differently but the way we touch might feel quite different, to the client and to the practitioner. Does it change how we monitor the effect of our touch? We might define a successful moment of contact quite differently if we look for coordinative change.

This shift in meaning generates a coherent framework for the various tools we use in SI. Movement brain logic is an umbrella term for the different things we do. We embody, we speak, we show, we imagine, we direct attention, we stay present, and we touch, all in the service of empowering body schema through better information.

It is attractive to picture fascial ground substance literally melting under our hands, because it feels like it does. We may discover this is a true picture. It may also be that the neural control of fascial tissue is responsive to energy applied in the form of strong pressure and that when we feel softening we are feeling how quickly the movement brain can respond to new information.

THEORETICAL AND PRACTICAL EXAMPLES OF MOVEMENT BRAIN THINKING

The following examples show how this conceptual shift to movement brain thinking supports Rolf's vision of integration: the concept of core, and the concept of the vertical axis in gravity.

Body Schema and Core

One of Rolf's templates is the sense of strength and power in standing and walking that is often described as demonstrating "core". SI authors, as well as other professionals, debate the question, "What is core?" Answers include but are not limited to: muscles that lie close to the front of the spine; intrinsic muscles; the viscera; the spine itself; the transverses abdominus and multifidi muscles, the "Line"; and on and on.

What happens if we speak about core as a function of body schema? What if we reframe our image of the core from body parts or location, to system event – a system event that denotes optimum coordinative response to a demand?

What does core look like? Push on someone who is standing and "core" responds by finding ground and space orientation and the application of selected and properly sequenced motor units throughout the system. The pushed body adapts and remains stable, without effort. A person walks and we see articulation and differentiation, a sense of strength, a sense of global breath, a bidirectional sense of spine – what Maitland terms palintonus.[28] Any exercise or task involves a form; core is an expression of flow in execution of the form.

How do we evoke core? We provide perceptual information and then we put a demand on the system (at first, preferably, a small demand). Without demand the core is not called forth. Demand means any coordinative challenge and covers a spectrum of possibilities. Demand means a slight posterior reach with the tip of one's coccyx bone. Demand means raising the straight leg from supine without disturbing the pelvis and spine. Demand means the system has a challenge and core means the system is free to respond in a way Rolf might have termed "normal."

Demand includes things that leave no time for slow, careful execution: Someone is

asked to run and jump over a bench. If she or he focuses on the bench, the movement fails to show core – the subject hesitates as he or she approaches the bench. If the perception is directed peripherally to another person adjacent to the bench or to a target in the distance, the schema organizes the jump successfully – no hesitation and flow from run to jump. A trial of each version reveals that the schema can respond to the demand better when body image is directed to orientation and perceptual information.

Inhibition versus Lesion[29]

We show, we touch, we invite sensory awareness. These elements come together in many combinations in the work, as we envision speaking to the movement brain, as we think about inhibiting body image so body schema is free to function.

A central part of the SI template is the sense of two directions in the spine. Orientation of our axis to ground and space, the sense of bi-directionality of the spine speaks especially loudly to the movement brain. Tonic function theory suggests every successful movement begins with a lengthening in the spine, with particular attention to the front of the spine.

Body Image as Potential Inhibitor to the Lengthening of the Spine

Does the front of the spine present bi-directionality in the initiation of breath and other movement? If you watch someone during inhalation you see one or more parts of the spine that do not participate in lengthening. On closer observation, palpation reveals that at one or more segments of the spine, the spinous process pushes back against touch as inhalation starts. Testing this observation, one finds that when the person pushes against resistance (with the hand) the same posterior movement of the spine occurs, at the same segment.

Godard has referred to this aspect of body image as "character knot," meaning a place that, in our attempt to master situations, we (habitually) attempt to add stability by contraction in the front line.[30] Godard asserts that all of us demonstrate this tendency and it's a matter of where we express it rather than if. Some people show character knots more strongly and others more subtly. It is a symptom of the body looking for a hedge against failure, and it adds to each person's kinetic "fingerprint." To be human is to experience failure and to want to avoid its repetition. And, clearly a character knot does nothing to improve the ease of our movement.

One can work with a client around issues of character knot standing or supine, inviting the client to imagine the vertebral segment shifting slightly anterior in the moment before inhalation. Sometimes this takes negotiation, and involves exaggerating the pattern or finding greater support for change.

In the course of SI work, a character knot-like issue may manifest as noticeable reductions in range of motion in backward bending in segments of the spine. If reduced range of motion is caused by body image, this is spinal inhibition in contrast to spinal lesion (or subluxation), which is an articular fixation in body schema.

SI examines the possibility of inhibition before attempting to solve lesion because the movement brain is our province, our more unique attribute. How might this be done?

Bench Work for Spinal Inhibition

The figures below illustrate one setup to work with inhibition in the spine. The client sits on a bench that allows the hips to be slightly higher than knees, with feet on the floor and hands on the soft edge of a bodywork table that is fixed so it cannot move. The practitioner shows the client a model of the skeleton and explains what it means to allow length to occur on the front of the spine. Also, the practitioner invites the client to bring attention to the sensory experience in the hands and feet so the skin of both extremities has good contact with each surface. The client is asked to stay aware of surface contact with the skin of the hands and feet. Also, the client is invited to notice an imagined vector from the top of the head toward the ceiling and from the tail toward the floor and slightly posterior. Additionally, the client is invited to feel weight in the tissue anterior to the ischial tuberosities. The client is invited to find a peripheral gaze that brings a spatial awareness to the body. The total situation is about parameters that demand that the movement system stabilize the trunk (including spine) from hands, feet, and

orientation.

After setup, the practitioner presses on the spinous process of a vertebra that he or she feels needs information. The pressure can be strong in some instances in order to help the client register the new possibility of movement, and the sense of the segment having articulation from its neighbors. Because of stability brought through orientation and sensory channels, and because the client has been informed about potential release of the vertebral segment to slide slightly more anterior, the segment is likely to move at least a little through its inhibitory barrier. The client is then requested to push the segment back against the practitioner's hand, using the hands and feet, staying present to his context with eyes and a sense of bi-directionality in the spine. The sequence of anterior and posterior movement of the segment may be repeated, and with each instance some further release of inhibition may occur. This is segmental stabilization. This part of a session may address several segments.

The client is then observed walking. If we see a change in gait, an increase in the contralateral action of the spine, we see the body-schema response to better information, or, put another way, the displacing of body-image inhibition with information that speaks to the movement brain.

The movement brain or system concept makes it possible to understand how sagittal movement or, similarly, the sagittal aspect in the Flight of the Eagle exercise[31] leads to a change in coordination as an improvement in contralateral gait. How does a sagittal exercise lead to improved torsion in movement? The particular form, or figure, of the exercise is trivial compared to the activation of the system. Only by positing that the movement brain already knows how to do contralateral gait, and in fact prefers this movement, does the cause and effect make sense. The movement brain expresses optimum coordination when unhelpful aspects of body image are displaced with better information.

In both of these examples, symptoms that have little directly to do with the form of the movement challenge may abate because the movement brain, the system, the schema, is operating more robustly in the absence of messages (from body image) that previously had been causing difficulty. For example, a knee issue or a shoulder issue may suddenly organize and improve function following a release of inhibition in trunk stability.

Renegotiations with Body Image

Practitioners who assist clients with shifts in coordination may notice that small shifts of coordination can precipitate emotional or psychological shifts that feel large to the client. All admonitions to take care and titrate apply here. Additionally, what about the body image? It has been interrupted. The body is suddenly moving in a manner that body image normally blocks. In the context of the session this may be all right, but what about after? And, even within the session the body image may suddenly resume, effectively saying "no." Then what?

While each practitioner discovers his or her own approach, some fundamental guidelines include: have the client shift from the new coordination back to the old and find the benefit to that inhibition and acknowledge it. Work with sensation to find the felt sense behind the meaning in the former movement. Bring body-image awareness to sensation, to the vocabulary of primary security. See if it is possible to find the felt sense of security in the new coordination. See if it is possible to imagine the new coordination in a context outside the container of the session, something the client notices and explores with curiosity.

PORTALS TO THE MOVEMENT BRAIN, SUMMARY OF TOOLS

There is no formula for evoking coordinative change. Though it is risky to imply any kind of formula, is it possible to summarize some of the major opportunities for speaking to the movement brain? What works, so that we speak to schema and inhibit image? Here is a partial list of qualities that speak to the movement brain:

1. The sense of weight and the sense of space.
2. Imagined directions into space, imagined vectors.
3. Sensing distance or proximity between objects or between one's self and objects in space.
4. Sensory impression from hands and feet.
5. Imagined bi-directionality along the long axis of bones and in adjacent paired bones; bi-directionality in the long axis of the spine and in the anterior/posterior axis of the spine.
6. Sensing the mass of, and articulation between, bones.
7. Sensing skin and movement of skin.
8. Touch that draws the attention of the fascia, to sense differentiation and articulation, sometimes very deep touch in fascia.
9. Peripheral gaze, a gaze that links to inter-sensoriality
10. Inter-sensory use of any senses
11. Change of gravity orientation of senses. Weight and space orientation to sight,

hearing, smelling, kinesthesia.[32]

12. Micromovement of joints.
13. Slow motion.
14. Use of imagination that interrupts customary body image and provides proprioceptive information to schema.
15. Imagination that shifts the meaning of the context.
16. A new demand, or a slightly dangerous demand.
17. A demand for acceleration in movement
18. Triangulation – adding the perception of an additional oblique or lateral object while responding to a situation.

Imagination and Sense Perception – Not Separate

From a phenomenological point of view and from a neurological point of view, imagination and perception are not two separate things. What we perceive through our senses and what we perceive by imagining our senses both create identical activity in the sensory cortex. If you look at the list of opportunities for conveying information to the movement brain, much of the work is about imagination and perception. The capacity to select what we imagine or perceive, and the capacity to sustain several perceptions at one time, turn out to be the skills most useful in releasing body schema from body image.

RESEARCH AND SI PAST AND PRESENT

Two notable research achievements for our field involve using perception to change coordination.

Three members of the SI community have investigated how perceptual and coordinative interventions lead to measurable changes. Godard uses conventional EMG equipment and he participates in experiments that use motion-capture technology. Motion capture uses pressure sensitive plates under the feet and joint angle receptors to pinpoint shifts in coordination and delivers "real time" biofeedback to client and practitioner. To make these changes Godard uses perceptual intervention.[33]

Cottingham and Maitland show how shifting pre-movement in neck posture facilitates lasting change in coordination in a patient for which SI manipulative techniques had failed after a number of sessions to change the subject's symptoms. This shift in coordination has repercussions at the autonomic level as demonstrated by changes in the measurements of vagal tone.[34]

WHAT CONCLUSION DOES THIS PREMISE LEAD TO?

If we think of the body as a movement system, we conclude that SI involves a spectrum of practitioner skills for restoring body schema by speaking to the movement system of the human body, and we find that current research validates these methods and this conceptual model.

Fascia is probably the most enduring legacy of Rolf's work. Talk about fascia, dysfunctions of fascia, and release of fascia is now ubiquitous. But some considerations of fascia rise to a different level of thinking. James Oschman is one author who researches and writes about fascia; he was specifically requested to do so by Rolf and he faithfully performs this task. Readers of his work come away with at least one profound impression: Fascia is an organ of communication.[35] Signals travel through the body's fascia at the speed of light, and the fascia acts as a biological semiconductor. When we think of fascia this way, we amplify the sense that SI work in the fascia may be more about communication and information than about mechanical/biochemical shifts.

Llinas, in *I of the Vortex, From Neurons to Self*, paints a picture of brain evolution as the means by which life made prediction of movement possible. The brain is life's answer to the question, "How can I predict what movement will occur?"[36]

What movement will occur in this moment? We don't have to ask. Our movement brain has already done so.

The author acknowledges, and expresses appreciation for, collaboration with Hubert Godard on this and other projects.

NOTES

1 Quoted in Rolf, I.P., *Rolfing®, The Integration of Human Structures*. New York: Harper and Row, 1977, p. 15.

2 Blakeslee, S., and Blakeslee, M., *The Body Has a Mind of Its Own*. New York: Random House, 2007.

3 Proceedings of the October 2007 First International Fascial Research Congress in Boston, available in book or DVD format, are a source for many perspectives on fascia as an organ of response and information.

4 Head H, Holmes HG. "Sensory Disturbances from Cerebral Lesions." *Brain*, 1911–1912;34:102–254.

5 Gallagher, S., & Cole, J. (1995) "Body Image and Body Schema in a Deafferented Subject." *J. Mind and Behav*, 16,369-389.

6 Paillard, J., "Sensorimotor versus Representational Framing of Body Space, A Neural Basis for Distinction between Body Schema and Body Image." *Body Image and Body Schema: Interdisciplinary Perspectives*, Amsterdam: John Benjamin, 2004.

7 Livingstone, M., *Vision and Art: The Biology of Seeing*. New York: Harry N. Abrams, Inc., 2002.

8 Peripheral vision is not exclusively responsive to phenomena to the sides or out of the corners of one's eyes. Peripheral vision, although not focused, can receive information in the entire visual field. Also, peripheral and focused vision can work together, back and forth. For body therapists, it is, however, typically more challenging to learn to voluntarily shift to a stronger sense of peripheral or "where" vision.

9 Blakeslee, S., and Blakeslee, M., *op. cit.*

10 Holmes N. P., and Spence C., "The Body Schema and the Multisensory Representation(s) of Peripersonal Space," *Cogn Process*, 2004 June; 5(2): 94–105.

11 Godard has reported unpublished case studies in which a person receiving a prosthetic limb rejects the prosthesis at a body image level and when the body image issue is renegotiated the body schema is completely able to adapt quickly to the prosthesis.

12 Godard posits a model partially derived from French psychoanalyst Lacan, that we have in fact three distinct body images. The primary body image is made up of sensations of density and mass and of spaciousness. It is built through the sensation opportunities including how we are touched and held in early childhood. The second body image, what Lacan calls the "mirror self", is the body image at the level of how we see ourselves and are seen by others. The third body image is symbolic body image, at the level of language and

culture mythology. It is useful to remember that change at the image or schema level is facilitated through resource building at the sensation – primary body image – level.

13 Rizzolatti, G., et al, "Neurophysiological Mechanisms Underlying the Understanding and Imitation of Action." *Nature Reviews/ Neuroscience*, Vol. 2, 2001, 661-671.

14 Umilta, M.A., et al, "I Know What You Are Doing: A Neurophysiological Study." *Neuron*, Vol 31, July 19, 2001, pp. 155-165.

15 Frank, K. "Tonic Function - A Gravity Response Model for Rolfing® Structural and Movement Integration." *Rolf Lines*. Boulder, CO: Rolf Institute, March 1995.

16 Rolf, I.P., *op. cit*., p. 30.

17 McHose, C., and Frank, K., *How Life Moves, Explorations in Meaning and Body Awareness*. Berkeley: North Atlantic Books, 2006, p. 121-122.

18 Caspari , M., "The Functional Rationale of the Recipe." *2005 IASI Yearbook*. Missoula, MT: IASI, 2005, pp. 51-78.

19 Rolf, I.P., *op. cit*., p. 16.

20 Frank, K. "The Relationship of Contralateral Gait and the Tonic Function Model of Structural Integration." *Structural Integration: The Journal of the Rolf Institute*. Boulder, CO: Rolf Institute of Structural Integration®, Dec. 2003.

21 Rolf, I.P., *op. cit*., p. 33.

22 Sweigard, L., *Human Movement Potential, Its Ideokinetic Facilitation*. Dodd, Mead and Company, Inc., 1974.

23 McHose, C. & Frank, K., *op. cit*., p. 54.

24 Todd, M.E. *The Thinking Body; A Study of the Balancing Forces of Dynamic Man*. New York: Dance Horizons, 1937.

25 Sweigard, L., *op. cit*.

26 Franklin, E. *Dynamic Alignment Through Imagery*. Champaign, Il: Human Kinetics, 1996.

27 Rolf, I.P., *op. cit*.

28 Maitland, J., "The Palintonic Lines of Rolfing." *Rolf Lines*, Boulder: Rolf Institute of Structural Integration®, January / February, 1991, pp. 43-49.

29 Caspari, M., "The Functional Rationale of the Recipe." *2005 IASI Yearbook*. Missoula, MT: IASI, 2005, p. 51.

30 Lecture notes of the author.

31 McHose, C., and Frank, K., *op.cit*., pp. 107-111. Also, Frank, K. "Flight of the Eagle – Self Care for Structural Integration Clients." *2005 IASI Yearbook*. Missoula, MT: IASI, 2005.

32 Frank, K. "Posture and Perception in the Context of the Tonic Function Model of Structural Integration." *2007 IASI Yearbook*. Missoula, MT: IASI, pp. 27-35.

33 Godard used EMG while performing the "unbendable arm experiment", in which a straight arm resists bending with greater strength and lower effort if the subject projects a sense of direction, a reach, from the end of his or her hand, compared with the intention to not let the arm bend. In this experiment the reach elicits a pure action of the triceps while the resistance to bending elicits triceps and biceps activation simultaneously. Using motion-capture technology, a subject can be monitored for, among other variables, the balance of weight pressing from different parts of each foot. The subject is given visual and auditory cues about the relative pressure in each part of both feet and as he or she modifies the pressure receives feedback on the change. After some use of the feedback, the subject can reproduce the change without the feedback.

34 Cottingham, J., & Maitland, J., "A Three-Paradigm Treatment Model Using Soft Tissue Mobilization and Guided Movement-Awareness Techniques for a Patient with Chronic Low Back Pain: A Case Study. *JOSPT*, Vol. 26, No. 5, Sept. 1997, pp. 155-167.

35 Oschman, J., *Energy Medicine in Therapeutics and Human Performance*. Edinburgh: Butterworth, Heinemann, 2003.

36 Llinas, R. R., *I of the Vortex, From Neuron to Self*, Cambridge: MIT Press, 2001.

The Evocation of Unique States of Consciousness as a Consequence of Somatic Practices

By Michael Salveson, Certified Advanced Rolfer™

Editor's note: This talk was presented at the Institute of Noetic Sciences in1994 and originally published in the March 1995 issue of Rolf Lines.

I have been a practitioner of Rolfing® for more than twenty-five years and it has been even longer since I received my first sessions from Dr. Rolf. From the beginning, I have experienced in myself and my clients changes in states of consciousness that accompany this work. In fact, the appeal of this work has often been precisely the combination of the increased physical ease and the change in awareness that is produced by the gain in structural integration that characterizes Rolfing.

As a practitioner with a large clinical practice and an Instructor for the Rolf Institute of Structural Integration®, my time at my desk is usually devoted to the affairs of a busy practice, preparing for classes and the mastery of new, clinical, manipulative skills. It has been an interesting exercise to take time and think through some of the issues related to our common interest in "The evocation of unique states of consciousness as a consequence of somatic practices." I am grateful for the opportunity to participate in this discussion and hopeful that the increased understanding we may gain will result in our greater ability to nourish the biological topsoil in which our being has its roots.

As I think most of you are aware, Rolfing is a manipulative technique, a form of manual therapy, which aims to improve the organization of human, physical structure, what Dr. Rolf, the founder, called Structural Integration. The question "what are the characteristics of human structural integration'?" is still being answered. We have come a long way from Dr. Rolf's first formulations but only by building on her fundamental ideas.

Primarily, as physical bodies, we are sentenced to an abiding relationship with gravity and our physical ease is to a great extent determined by our ability to deal with this force successfully. The trauma and random injuries of life reduce our physical plasticity, and this in turn opens the door to the disintegrative effects of a maladaptation to gravity. Rolfing seeks to reverse this process by restoring the plasticity of the connective tissue and guiding people to a more economical, easy structural organization in the gravity field.

I am describing a process that is concerned with the material properties of human bodies. Ignoring the implications of modern theoretical physics and the way in which our understanding of material substance has been thereby changed, we are dealing here with forces expressed by the laws of mechanics. Freeing human bodies to function more economically in gravity should result in greater ease of motion and a reduction in the compressive forces that ultimately lead to degenerative changes and immobility. However, aside from the obvious gain in the physiological wellbeing of the tissues involved and the resultant sense of comfort or wellbeing that this entails, we are inquiring today into the way in which such a process as "structural integration" and other somatic practices affect states of consciousness. To do this we must necessarily look beyond the traditional kinesiological models of human biomechanics and inquire into other properties of physical organization.

I would like to approach this question in two ways. First, I would like to describe an experience that seems to have frequently accompanied the appearance of gains in physical order or "integration," independently of any conscious reorientation of awareness or intention; that is, a sort of consequence of this gain in physical organization. Second, I would like to discuss the nature of the process of releasing restrictions in the body whereby changes in shape are made possible and the shift in consciousness that this entails. I will also suggest possible neurological indicators of this state shift.

Rolfing grew up in the human potential movement of the late 1960s and 1970s and was and is used as a tool for self-development, aside from its utility in relieving physical pain and dysfunction as a result of injury or degeneration. The "self development" promulgated by the human potential movement involved the exploration of "altered" or "heightened" states of consciousness which, aside from their entertainment potential, promised access to an inner technology of transformation, closely allied with traditional notions of healing. It was Dr. Rolf's belief and experience that access to these "states" could be promoted by a careful alignment of the body. She drew upon her experience with yoga, which acknowledges that physical position and characteristics influence "transformational" states and upon her training in Gurdjieff's epistemological system, which cultivated these "states" with physical practices. What was unique about Dr. Rolf's application of her training was the extent to which she identified access to these "transformational" states with an optimal shape, governed by the principles of mechanics and the action of gravity. It has been my experience, and I think the experience of many others who have received Rolfing®, that "moving" into alignment with gravity is often accompanied by heightened "energetic," perceptual and intentional or volitional awareness and control. It does not seem to be the case that pushing or stretching tissues alone produces this "heightened," "clarified" state. "Deep-tissue massage" or massage in general produces obvious changes in consciousness related to relaxation and improved "flow," but I am suggesting that there are unique attributes to the "state" produced when human shape changes in the direction of greater order or organization of the constituent parts. Alignment with the gravitational field is one criterion for establishing a particular pattern of order and is at the heart of Dr. Rolf's teaching.

This is a somewhat radical notion and deserves a closer look. What I believe is most relevant for our discussions is the notion, explicit in Dr. Rolf's work, that patterns of order in the body may be constitutive of "states of consciousness." My emphasis here is on the notion of "patterns of order." The innovative aspect of Dr. Rolf's work was her emphasis on "order" or "pattern" as the fundamental notion. It is the way in which the parts are related that produces the desired effects. Different patterns of relationship produce different effects. This is a profoundly structuralist view and may provide one useful attribute of physical systems that can be identified as constitutive of associated states of consciousness.

Proper relationship among the parts of the body entails a notion of wholeness. The experiences I mentioned earlier, arising out of the Rolfing experience, seem to be an emergent property of the presence of pattern adequate to imply a sense of the whole. It is my sense that the energetic, perceptual and intentional aspects of consciousness affected by the Rolfing experience emerge when there is adequate pattern present.

Thus, I am suggesting that two aspects of this experience may be useful in our discussions. First, that the pattern of order present in bodies may be a constituent of the associated states of consciousness. Second, that the aspects of consciousness affected by bodily states or present in bodily states emerge when adequate pattern is present to imply some sense of the whole. That is, that there must be sufficient relatedness, according to the principles of the model. I categorize these as structural considerations or the influence of "shape" on consciousness.

The early enthusiasm for the Rolfing "shape" led to excesses of effort that did not seem to yield the desired result. Some students identified with the "shape" and attempted to mimic or copy it onto their own bodies. The result, which is predictable, was rigidity and compulsion, which seem to be inimical to states of heightened awareness. Although physical shape seems an objective aspect of human life (which it is and from which its value for somatic practices derives), it matters very much how one gets there; which, in fact, influences the qualities characterizing that shape.

"It is not what you do but how you do it" has been, for me, one of Dr. Rolf's most provocative remarks and it raises the second issue I would like to discuss; namely, the way in which somatic practices accomplish their ends. It seems that almost every somatic system involves some notion of release from limitation or restriction or education of some dysfunctional aspect, and that one of the great benefits of somatic practices is the increased ability one gains to do these things for oneself. It is my sense that these "changes" induced in people by somatic practices involve access to states of consciousness that are often quite out of the range of ordinary experience for most people, and that the learning that goes on in somatic practices often occurs in an altered state. At least, that these changes involve states of consciousness that are not commonly reinforced by contemporary culture. I believe that these states are immensely beneficial, that they are part of learning how to heal oneself, that they are related to ancient, primitive healing states that are our neglected birthright, and that they offer a vast unused medical resource.

Our failure as early Rolfers was to think that our new shape could be put on like a new suit of clothes and that we could be sculpted into it by our Rolfer. In fact, we discovered that we were much more intimately involved in the process and that only by attending to our inner sensory experience could we learn to "be" in a new way. Understanding something about an optimal relationship with gravity was not enough. The practitioner could release restricted tissues but we had to allow it. We had to grow into our new shape, and that involved paying attention to our inner sensory experience. All self-healing systems involve the development of an inner focused awareness. What seems to be unique to somatic practices is their emphasis on the sensory aspects of inner experience, as opposed to the visual, symbolic or linguistic. And it is this inward-focused development of sensory discrimination that I think makes possible access to unique states of consciousness in which self-healing is possible.

Once consciousness is directed inward and focused on sensation, several things become apparent. First, that the experience of space in the body is not homogeneous and that attending with consciousness to the sensations of different aspects of the body creates distinct experiences. It is more than sensing the differences between one's foot and one's face, although this is usually the starting place. What is most interesting here are the consequences for consciousness of being located in different places in the body. The act of locating consciousness in sensory experience and then noticing the consequences of spatial differences involves a radical change in most people's normal conscious state. Once consciousness attends to inner sensation it becomes spatialized, because inner sensations have by nature locations. It is the way we know ourselves in space. The inclusion of spatial attributes in descriptions of consciousness, although innate, involves a significant shift in the way most people normally know themselves. This knowledge has historically been a part of esoteric and meditative practices, which cultivate access to transformational states through attention to specific sites in inner sensation. For our discussions, an inward focus on sensation and the derivative spatial implications may be useful aspects of the bodily rooting of states of consciousness.

Another aspect of inner sensory experience that I believe is relevant to a discussion of the bodily roots of states of consciousness is the apparent "flow" of sensations that one encounters. Careful attention to this world of inner sensations will reveal that the body is in motion and that this motion seems to be autonomous and independent of conscious volition. When asked what he knew for certain, Einstein replied, "Something is moving," and this seems to be an accurate description of our inner sensory world. The small, autonomous motions and flows, the streaming and pulsation that characterize much of our inner sensation, I term "motility" to distinguish these "inner" motions from the more well-known, voluntary motions of the musculoskeletal system, which I term "mobility." What is so important about this inner movement is that it is autonomous, and the encounter with inner, autonomous movement is almost always transformative. Much of what I believe I accomplish with my clients ultimately comes from the introductions I make to this inner movement.

The experience of inner motility can promote a dramatic reordering of one's psychic world.

Once one is aware of the presence of inner, autonomous motion, a relationship between the center of control in consciousness (for discussion purposes, the ego) and the autonomous motion is inevitable. This

creates the possibility of cooperation, and it is the experience of opening to inner, autonomous motion and the resultant cooperation that occurs that, I believe, makes accessible the most significant shifts in states of consciousness that arise from somatic practices.

As Freud pointed out, the neurotic is over-controlled. Lack of authenticity is a lack of contact with the autonomous forces in our lives. The experience of inner motility can promote a dramatic reordering of one's psychic world. Relinquishing control, without relinquishing awareness, opening to this inner motility, is accomplished by a change of state. It is a different state of consciousness, a different point of view. It seems to be the essence of opening or releasing and characterizes the way in which we move into new patterns of order. It is a skill that is essential to self-healing and it can be learned by paying attention to inner sensation.

If what we as somatic practitioners term "dysfunctional movement patterns" are characterized by over-control and there exists the possibility of releasing this over-control and allowing new, less controlled patterns to emerge, then, I suspect, this change of mind, from extreme voluntary control to the emergence of a more "involuntary" driven movement pattern may be characterizable by changes in observable brain states, by a reduction in cortical override or inhibition and an increase in brain-stem or instinctive patterns of organization. A sort of reclamation of instinctual wisdom. At least, there may be neurological indications of the change in state associated with what we know as release or letting go; the process of opening that allows for the uninhibited action of motility.

The Rolfing® community has looked at one aspect of this process in a very limited way. Dr. Stephen Porges, a psychophysiologist, and John Cottingham, a Rolfer, physical therapist and graduate student in physiology, have demonstrated that certain structural shifts in body organization and the release that accompanies them are associated with changes in activity of the vagus nerve, the principle outflow of the parasympathetic aspect of the autonomic nervous system. Preliminary studies indicate that this change correlates increased vagal tone with this release and subsequent gain in structural organization. In other words, that release and gains in organization are accompanied by a shift in balance in the autonomic nervous system away from sympathetic dominance, by a shift toward more vegetative functions and away from the fight-or-flight mechanisms. While these are very preliminary studies, I think they suggest that it may be possible to correlate the changes in state that occur in somatic practices with changes occurring in neural organization.

I believe that the presence of autonomous motion or motility in the body (whether it is the pulsation of the craniosacral system, the flow of chi, or the well-known motility of peristalsis) indicates the action of an adaptive and organizing intelligence that is often out of reach when movement becomes over-controlled or dominated by attitudes that inhibit motility, and that access to this inner, sensory-based intelligence results in states of consciousness sharing attributes with the states of awareness in primitive, shamanic healing systems. It is as if we have forgotten what we once knew and must now consciously and deliberately retrace our steps in order to reclaim what threatens to become lost. I do not advocate a romantic regression to some nonexistent shamanic world, but I do suggest that somatic practices make available states of consciousness from which other ways of knowing ourselves and our world emerge, and that these states are useful critiques of the culturally dominant states and that they are much needed for the adaptive demands of the present and future world.

I am reminded of one rendering of the hero's task. Traditionally, the heroic task has been to establish some outpost of civilization and order amidst the rampant, vegetative power of nature. The hero's task was to rise each morning and with his or her machete, beat back the incursion of the jungle that threatens to overgrow the village. Now, we know this has changed. The hero's task is very different. It is now necessary to rise each morning and with watering can in hand, water and nourish the jungle because it is endangered. This change has occurred very recently, within our lifetimes, and involves a radical reorientation of our attitude to nature and our value systems. I believe the emergence of a vigorous community of somatic practitioners is but another way of watering the jungle.

The Core as a Coordination

By John Smith, Certified Advanced Rolfer™

This is what Rolfers are doing: we are lifting a body up. We're getting the uppermost pole of the body lifted up. Sometimes you wonder what the relation is, the connection that makes one man a rigid stalk and another man flexible and lifted.

Dr. Ida P. Rolf (Feitis 1978)

Part of Ida Rolf's genius was that she intuited many fundamental truths about human function long before there was any rigorous science to support them. This can be seen, for instance, in her belief in the central importance of the role of water metabolism in the plasticity of the connective tissue network (Rolf 1978), and now we have the work of Klingler et al (2004), Oschman (2003) and Ho (1998) supporting her intuition. We also see this deep insight at work in how she formulated some of the most central premises of Rolfing®:

- That as a body is reorganized in gravity, it will achieve "lift"
- That there is a two-level hierarchy in our neuromuscular organization (involving what she called "the intrinsic and extrinsic" musculature).

Both of these premises are now finding scientific support.

Historically, these fundamental premises of Rolfing have been inextricably connected with other key concepts she introduced – "core", "sleeve" and "the Line" – and this cluster of linked concepts has been central to the rich tradition of enquiry, debate, and conceptual clarification that has taken place within the Rolfing community ever since. Long before "core" became a fashionable word around modern gymnasiums, Ida Rolf used it to refer to deeper structures in the body, and "sleeve" to the more superficial. In this simple sense, the core/sleeve distinction even enters into the design of the 10-session protocol; sessions 1-3 are often referred to as the "sleeve" sessions, and 4-7 as the "core" sessions. She also at times linked "core" with the intrinsic musculature and "sleeve" with the extrinsic. Some Rolfers have since equated "core" with "Line"; others have equated it with the "gut body" or the endodermic system of organs. Others have developed a way of categorizing their clients using this terminology – hence "tight sleeve, loose core", or "loose sleeve, loose core" etc. "Core" has also been widely used in psychological contexts – sometimes associated with deep, organic or instinctual drives within us, but also as "our innermost sense of identity" (Maitland 1995).

Because "core" has been used in such a wide variety of contexts, its various meanings have become confusingly conflated; its very ambiguity has limited its usefulness; it means too many things to too many people. There have been some useful attempts at clarifying the concept. *Structural Integration* has devoted two issues to this discussion (December 2002 and February 2003). In one of these articles, Stephen Paré provided an excellent summary of the debate so far and outlined the different meanings attributed to "core" within the Rolfing community (Paré 2003); those wishing clarify their thinking around "core" from a Rolfing perspective should read it. [*Editor's note: The article is reprinted in this issue*] His article reveals at once both the confused thinking that has surrounded the concept, and its extraordinary siren seductiveness – it is clear that we love the idea of "core," that it has a deep resonance within the Rolfing somatic perspective, and that we will not let it go so easily. We must refine the concept rather than dismiss it.

This paper will not revisit the territory so clearly summarized by Paré; instead, it will briefly examine some important Australian biomechanical research around "core stabilization", and will also look at a new functional understanding to the concept of "core" as articulated by Rolfing Movement teacher Hubert Godard (2005, 2006).

Within the last ten years, "core" has emerged as an important concept in physical therapy and exercise science and has been seized eagerly by the fitness industry; now all personal trainers and coaches seem to offer some form of "core stabilization" training. This recent interest was inspired in part by the groundbreaking biomechanical discoveries of a group of Australian physiotherapists and researchers (Richardson et al. 1999). Godard, in his workshops, has referred to this Australian research and amplified its somatic relevance by bringing to it a rich synthesis of thought in which perceptual and coordinative processes are central to the organization of efficient posture and movement. Godard sees "core" as a coordination.

Rolfing practitioners tend to look first to structural rather than functional explanations for the shifts we see in our clients. After all, as structural integrators we integrate structure, don't we? Many of us agree with Dr. Rolf, that "lift" appears in our clients as an emergent phenomenon as our work unfolds. But is it a structural change we are witnessing? So much of our thinking about "core" has been to view it in terms of bodily structures; it is very tempting to "explain" the lift-via-core phenomenon in terms of structural building blocks such as a lengthened gut-body, a re-alignment of body segments, or through the activity of a special group of dedicated "core muscles". Perhaps if we look more closely we may find that phenomena such as "lift" are more to do with refined coordination. And, according to Godard, this coordination is largely fed and organized by perceptual and imaginative processes – by how we receive the world.

THE AUSTRALIAN RESEARCH ON CORE STABILIZATION

A group of Australian researchers at the University of Queensland has provided new insights into our understanding of the neuromuscular control of the posture during movement (Richardson et al. 1999). Their research has centred on that neuromuscular coordination now widely known as "core stabilization," while their broader aim has been to assist in the rehabilitation of patients with low back pain or low back injury. An excellent technical exposition of their work has already been presented to the Rolfing® community (Newton 2003).

These authors view "core stability" as the ability of the spine and trunk to respond to all forms of kinetic perturbation and to bring the system back to equilibrium. These perturbations arise either from the bending, buckling or torsional forces that flow from the environment (a push, a pull, a hug, a lean, the acceleration and braking of the bus I travel in, a strong wind, the momentum of the ball I catch, the weight of my backpack), or from forces generated from my own movement (the momenta of all my body segments during walking, the turning moment of my arm in reaching, all eccentric and concentric movements around joints, the shifts in my center of gravity as my body morphs). The spine has to respond to all these forces, both the expected and the unexpected, and still maintain its physical integrity.

They note that some of this stability is provided by the passive structural properties of the vertebrae, discs and spinal ligaments; however it is the dynamic response of all the muscular elements of the spine and trunk that they regard as crucial to creating and maintaining core stability. They propose a two-level hierarchy of neuromuscular control during normal movement:

- a local system, which is the coordinated activity of a group of muscles they call the "inner unit," whose main task is to maintain the balance and integrity of the lumbo-pelvic–hip complex during movement, and
- a global system (utilizing the "outer unit" of torque-producing musculature) whose main task is to initiate and control a more gross level of trunk movement.

In a well-functioning organism, these two control systems work in a coordinated way – the local system working non-stop, below the level of our ordinary awareness and volition, harmonizing itself with the "intentions" of the global system, maintaining balance and constantly guarding against spinal stress.

THE LOCAL SYSTEM

The local system is the coordinated functioning of the inner unit musculature: the transversus abdominis (TA), the lumbar multifidi, the breathing diaphragm and muscles of the pelvic floor. It also includes other deep one- or two-segment muscles such as interspinales, intertransversarii and rotatores, which provide individual stabilizing effect on adjacent vertebrae, acting at times almost like ligaments. The muscles of the local system tend to be deeper in the body and less bulky than their global counterparts. They work in a coordinated fashion, providing differentiated tension through the thoracolumbar fascia while at the same time controlling intra-abdominal pressure in order to enhance lumbar stability. Contralateral fascicles of the TA work in conjunction with the multifidi at their respective lumbar segments to produce "rings" of control around the abdomen such that, used in a coordinated fashion, they can control the movement of individual spinal segments, or by gently squeezing the semi-liquid gut-body can lift the chest from below. This is beginning to sound a little like what Rolf called "lift" or "finding the Line."

THE GLOBAL SYSTEM

The global system consists of the larger, torque-producing muscles such as the erector spinae, rectus, the obliques and the latissimus. These muscles tend to be more superficial and have longer leverage; their main task is controlling gross trunk movements. They can flex, extend, side-flex and side-extend the spine; they can also differentially rotate the thorax against the pelvic segment around a longitudinal axis; however they are unable to provide a specific and controlling influence at the level of individual spinal segments.

THE STABILIZING ROLE OF CO-CONTRACTION

When looking at the role of the deepest spinal muscles in maintaining spinal stability it appears that much of their activity consists of the isometric co-contraction of antagonists. At first glance this appears to be at odds with Rolf's well-known dictum around reciprocal inhibition, that "When flexors flex, extensors should extend [i.e. lengthen]." But not all co-contraction is dysfunctional. We see many examples in our clients when co-contraction is obviously deeply problematic – when agonist/antagonist tonus is so exaggerated that it becomes biomechanically inefficient – compressing joints and dampening an organic flow of movement. But such dysfunctional co-contraction is probably more usefully called "armoring" or simply a "holding pattern." Efficient synergistic co-contraction around a joint is actually a vital aspect of its stability, helping it to resist buckling under stress (it is unfortunate however that these researchers use the somatically unhelpful term, "stiffness" to describe this).

IT IS ALL ABOUT TIMING

These researchers used quite novel methods in studying this group of deep, often fine or narrow muscles, which have long been hard to study using standard electromyography. Instead they used real-time ultrasound imaging to measure their activity. They also used ultrasound imaging as a biofeedback device, giving clients visual feedback in their efforts to re-engage these deep muscles.

Their research has clearly demonstrated that for the effective coordination of the local and global systems timing is crucial. For people with back injury or low back pain, the coordination between the local and global systems goes awry. In a well-functioning body the TA and related multifidi should fire milliseconds before any gross movement of the trunk or extremities, but for those with low back pain the response of these muscles comes too late – after the gross movement has already commenced, thereby incidentally increasing the likelihood of re-injury. The TA and multifidi consequently become neurologically inhibited and rapidly atrophy. Other muscles, such as the rectus and erector spinae, will try to take over their function but ultimately they are not suited for the job. For uncompromised individuals however, the multifidi and TA have been found to be fully responsive during all movements of the lumbar spine and extremities. The research has also shown that when the local/global timing was "out," there is an increased incidence of injury both to the spine and to joints in the extremities – it seems that without efficient core stabilization, the stress of external perturbations can be transferred to any "weak link" in the body.

FEED FORWARD – THE ANTICIPATORY RECRUITMENT OF THE LOCAL GROUP

The local group seems to have a different form of neurological control from the global muscles – being automatic and working below the level of normal conscious awareness and volition. The local group has an anticipatory role, pre-stabilizing body segments prior to any overt movement.

These researchers called this role "feed forward."

Hence the commonly quoted observation that when someone in a relaxed standing position simply abducts their arm, *even before the deltoid* contracts there is first some stabilizing activity in the soleus of the contralateral leg and then activity in the TA. It is as if some level of our moving intelligence has already anticipated that displacing an arm from the trunk will shift the center of gravity of the organism as a whole thereby unbalancing it, and so prepares in advance to maintain balance in gravity. If you were to reproduce the same arm-abduction, say, on a finely balanced shop dummy, it would most certainly topple over due to the shift in its center of gravity from its midline. So, in a well-functioning body, this shift in the center of gravity is prepared for milliseconds in advance of any overt movement.

In his teaching, Godard describes this intelligent anticipation as an example of "pre-movement" – a pre-movement being any form of anticipatory postural activity. However he goes much further than the Australian researchers in suggesting such pre-movement is preceded by a "pre-pre-movement" – an active perceptual reach into the kinesphere, and that the quality of this reach will have profound implications on the quality of the succeeding movement.

> *Pre pre movement will be the perceptive activity happening in the project of moving*
>
> *Pre-movement will be the postural activity setting the coordination of the movement (before we really move)*
>
> *Movement will be the displacement of any part of my body*. (Godard 2006)

EXERCISE METHODS AROUND THE CORE

Richardson et al (1999) have developed a comprehensive exercise method aimed at showing patients how to regain control of the segmental stabilization of the spine. Their initial focus is on retraining the co-contraction of the TA and lumbar multifidi; this may have a considerable cognitive component and involve the use of biofeedback devices. After the patients have developed voluntary control of the "drawing-in manoeuvre," exercises may then move to working on unstable surfaces to stimulate the reflex activity of the tonic system. The training industry has now spawned a huge array of products designed to provide such unstable platforms: the gym ball (see Chek), the Duradisc, the BOSU, wobble-boards and the Bodyblade. However all these exercises clearly come from a physical therapy/personal training perspective – they rely on the deliberate isolation of functions, and though proven to be quite effective in reanimating these weak and inhibited muscles, they do not necessarily help patients take this regained functionality into whole-body movement. Such exercises could obviously be deeply enhanced by somatic work such as Feldenkrais, good Pilates or yoga instruction, Rolfing® Movement work, and particularly the kind perceptual "awakening" work advocated by Godard.

According to Godard, the factor that is usually entirely absent in these exercise systems is attention to the "pre-pre-movement," the perceptual act of orienting to the environment; so much of his work involves the awakening and opening of the "portals of perception" to set up the initial conditions that will allow a natural flowering of core coordination. Some of this work involves guiding the client to finding a different perceptual relationship with the immediate environment; it may also involve using "imaginative" processes like previewing a movement, visualizing a vector into space, or using image or metaphor to find a quality of movement. It is clear that such work is entirely consistent with the tracking and perception work that has long been central to the Rolfing technical repertoire.

CORE STABILIZATION GYM-STYLE

Looking at the distribution of fiber orientations in the musculature of the abdominal wall, we see that the fibers of the rectus and obliques are essentially oriented more towards the longitudinal axis of the body; they will therefore tend to flex the trunk with varying degrees of rotation depending on their cross-lateral synergy. Only the TA has fibers that run laterally, such that when they work they diminish the circumference of the abdomen, squeezing the gut body and elevating the costal arch and diaphragm. Thus north/south abdominal muscles will actively shorten the front line while the east/west muscles will indirectly lengthen it. Yet in many training systems this kind of differentiated function is not encouraged or even recognized. Usually a total tightening of the entire abdominal package is encouraged through holding static positions on unstable platforms such as the gym-ball. The general tightening of the belly will actually produce a deep muscular conflict – a simultaneous impulse to shorten and lengthen the superficial front line. This is an extremely common dysfunction in the West where the "cut abs" aesthetic prevails. But this general tightening of the belly seriously interferes with chest breathing and dampens the flow of all movements through the center. Some practices such as yoga and the more enlightened Pilates do recognise this vital differentiation in belly wall function and work with it. Caspari (2005) has distilled a great deal of Godard's thinking in her impressive formulation of the "functional recipe." She notes Godard's point that if we look at the functional goals of the traditional fifth hour then in this session we are attempting to evoke this precise differentiation in belly-wall function.

GODARD'S THEORY OF TONIC FUNCTION

The work of Godard is now well known to the Rolfing® and wider structural integration community (Frank 1995, 2003, 2004, 2007; Newton 1992, 1995); however it might be useful now to examine some of the central ideas of his work. Godard "focuses on the gravity response in the human body as a unifying principle for what has been called intrinsic movement" (Frank 1995). Intrinsic movement comes from the harmonious orchestration of the tonic musculature, which is activated through our perception. There are many "portals of perception" but he particularly emphasizes two main ways of relating to the world – a ground orientation and a space orientation. Everyone has both of these as a resource but we can have a preference to one or the other; we can be predominantly ground- or space oriented, and this will have very definite effects on how our posture is organized, how we initiate movement, and in the longer term, how our structure crystallizes.

His work explores many exteroceptive and proprioceptive channels that feed into core stabilization: the palpatory activity of the feet and hands; the pressure proprioception in the skin of the feet; the orienting information of the inner ear (and

its close cooperation with the oculomotor musculature of the eye); focal and peripheral vision and the proprioception of the suboccipital muscles. Much of his practical work consists in guiding the client's attention to different ways of perceiving the immediate environment or by creating imaginative constructs that profoundly affect tonic function.

Departing from the exercise science paradigm, Godard has declared that *there are no "core" muscles*. There are, however, certain muscles, like the TA, that contribute more to a lengthening through our midline, though they may have multiple other functions as well. "Core" is thus a coordination – all the muscular (and perceptual) coordination that brings "lift" to a structure, which can be observed in others or sensed in oneself as a subtle lengthening through the midline and greater sureness and subtlety in movement.

Godard has drawn on a huge variety of disciplines in creating this perceptual work – yoga, Pilates, the ideokinetic tradition of dance, the spatial awareness of the Alexander technique, the grounding orientation of much of Feldenkrais' work and the martial arts. Even some of the standard physical therapy repertoire finds its place, the use of Theraband for instance to assist clients in finding the core during movement against light resistance. However, in all this, the main work is in setting up the pre-conditions for the core coordination to occur.

THE INTRINSIC/EXTRINSIC MUSCULATURE

Let us look once more to Rolf's distinction of intrinsic and extrinsic musculature. From her usage, this distinction appears quite close to our present understanding of tonic and phasic musculature. We now have extensive knowledge of the different kinds and proportions of muscle fiber: many kinds of both fast and slow switch fibers, with their different biochemistries and different forms of innervation (and interestingly, Rolf had speculated that the intrinsics and extrinsics had different forms of innervation (Feitis 1978)). This intrinsic/extrinsic distinction is also clearly related to the local/global dynamic of postural control as proposed by Richardson et al. Rolf saw the inappropriate substitution of the extrinsics for the intrinsics as a sign of either somatic immaturity or dysfunction.

> *The business of living in extrinsics is characteristic of the very young; it is a characteristic of the immature.* (Feitis 1978)

And in many of her subsequent talks, she speaks of how we initially learn to move through the volitional use of the extrinsics, and that as we mature these skills can be gradually subsumed by the intrinsics, or not. Whether people end up "living in their extrinsics" through poor somatic socialization, or through injury and trauma, the way out is through any work that evokes intrinsic movement – including most forms of somatically oriented movement work.

Rolf's observations led her to believe that postural and motor efficiency would be enhanced if the deep, smaller muscles were allowed to work freely without being overpowered by their larger, more superficial cousins. For instance, she said:

> *When the head functions incompetently, movement of the head is initiated and largely executed by the superficial muscles that attach to the shoulder girdle. Thus in the random individual, the head or neck turns with little or no participation of the deep-lying intrinsics* (Rolf 1978).

Research is now confirming Rolf's assertion and revealing that the dysfunctional substitution of phasic for tonic activity is extremely common; for instance, the work of Richardson, et al. shows that the substitution of the rectus for the TA is strongly correlated with chronic back pain.

Godard reminds his students that our musculature has a great deal of overlapping or duplicated functionality. This does explain to a certain extent the ease with which extrinsic can substitute for intrinsic activity – in both a functional and dysfunctional ways. But we are asked to avoid a simplistic dualistic understanding of even the tonic/phasic distinction, and that there can at times be a legitimate overlap in their function. Taking the "inner and outer unit" musculature as just one example, the muscles of these groups could have widely different roles according to immediate situational and environmental demands. In various combinations the inner unit may be used for transient core stabilization, for supporting chest breathing during exertion, for the stabilization of the sacroiliac joint during trunk flexion or even for more extreme and forceful coordinations such as the valsalva manouver. For the latter the pelvic and respiratory diaphragms are also strongly recruited, and this may, at times, be entirely appropriate (if you are lifting a Volkswagen, for example).

ROLF AND PERCEPTUAL ORIENTATION

It is apparent that Rolf had more than an inkling of the importance of spatial orientation in organizing posture. When looking at the photograph of a client she once remarked:

> *Oh, this is just another guy who doesn't know where "up" is* (Feitis 1978).

This is yet another of her insights that were to be confirmed later in the work of others. In fact many of the traditional Rolfing® tracking techniques implicitly use directional cues and ideokinetic evocations to assist clients find different ways of organizing their body or "finding the Line" – find the earth, find the sky. The search for the ground orientation can be seen in the careful placement of the feet before long back-work for example. And it is clear now that these practices are actually directing clients' attention so they can open new portals of perception into the environment, and this can produce a real shift within the tonic system. This perceptual strand of Rolfing practice later became more explicitly stated in the palintonic principle of Maitland (1991), and Godard has refined this work in an extremely practical way. So in the well-known images of a "sky-hook" lifting the body, what is the significance of the skyward pointing arrow? Could it be the "knowing where 'up' is"? Could it be the vector of a skyward reach into the kinesphere?

THE LOCAL SYSTEM AND THE ANTI-GRAVITY SYSTEM

The local system can be seen as just one aspect of a much wider system of somatic control, which in the past has been called the *anti-gravity system*. The anti-gravity system is essentially a "catch all" label for the full spectrum of proprioceptive, reflex and learned activity that is constantly working to maintains us in gravity. Feldenkrais is alleged to have said that for someone to do nothing other than to stand erect, 70% of his neural traffic is connected with maintaining this orientation in gravity. How one would confirm this I do not know, but it does remind us of the staggeringly complex web of unconscious processing

that is occurring at all times in our nervous systems – the myriad minute adjustments taking place constantly throughout all the tonic musculature. Core stabilization is just one example of the tonic system in action, and the "inner unit" as studied by Richardson et al. is just a small part of the overall picture of core stabilization.

SOME "UPPER LEFT QUADRANT" SPECULATIONS

Being a dedicated fan of Ken Wilber (1996), I will offer some thoughts that may contextualize the Australian research mentioned in this paper. Being scientists, Richardson et al. deal with objective observables ("upper right quadrant"), and do not readily speculate about the somatic implications of their work ("upper left quadrant"); however we, being adventurers in the experiential or somatic realm, are free to draw such parallels. Phasic activity seems to be strongly correlated with movement "intentions," while tonic activity is more primitive and, like the workings of the autonomic nervous system, seems to work beneath the level of everyday awareness and volition. Like heartbeat and digestion, tonic activity seems to work perfectly well without conscious awareness. Godard however has suggested that the tonic system may be influenced by unconscious psychological impulses, and has provided some poignant examples of the muscular conflict between the consciously controlled phasics and the unconscious tonics – I want to kiss the girl (→) but social constraints hold me back (←), hence the unbearable vacillation (↔)!

SOME PERSONAL IMPRESSIONS

I have attended a number of Hubert Godard's workshops in New Zealand and Brazil and also one of Kevin Frank/Caryn McHose fascinating workshops related to Godard's work. The teacher of my Rolfing Movement training was Monica Caspari, whose teaching is deeply inspired by Godard's work. Needless to say, this perceptual/movement work now forms the central platform of my Rolfing® practice, which has been rejuvenated by the process. I have taken some of Godard's exercises with resistive tubing and developed some playful dance-like moves that I give to many of my clients to assist them in finding the core in movement. I also give many gym-ball balance exercises as well, as a means of stimulating their balance reflexes. At some stage in their process I usually introduce Godard's "flight of the eagle" (Frank 2005), which is an ideal movement sequence for revealing key elements of this approach – finding core stability through perceptual reach, activating the palpatory sensitivity of the hands and feet – but it also provides many supplementary benefits such as mobilizing the spine in flexion and extension. What is most significant for me, however, is that clients are genuinely interested in this approach and invariably carry out the suggested exercises most faithfully; and surely this is the real test in the value of any approach.

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On Core (and Sleeve)

By Stephen Paré, Certified Rolfer™

An earlier version of this article appeared in the February 2003 issue of Structural Integration.

■■■ In which a review of existing theories leads to yet another theory; that, too, is rejected in favor of the priority of tradition; and the essay proceeds to an appeal for a return to Ida Rolf's original formulation. But this is discovered to be ambiguous; and the essay concludes, inconclusively, with speculation as to what to do for the best.

The question of the definition of the core of the body is a much-vexed one in Rolfing® circles. Indeed, it is difficult to find complete agreement between any two writers on the subject, much less among a majority. One thing lacking within the diversity is a survey article that summarizes, assesses and reconciles, to the extent possible, the various ideas. This essay will attempt to fill the void by reviewing a number of existing writings on the subject. Of particular interest is the "core as visceral space" since it is presently the dominant conception of the core in our curriculum.

What is the validity of conceiving the core as visceral space? What relationship does Rolf's original formulation have to "the core as visceral space"? These two questions are very closely related; since if we are not talking about the original formulation, it is difficult to know what we are talking about. This is Sultan's position:

> I don't think we really have to look any farther than Ida Rolf's original formulation to see what it is we are referring to when we're talking about core.[1]

Indeed, if we can determine what she meant, it would seem absolutely necessary to do as he suggests, an obligation less to tradition or to the founder's memory than to intellectual probity. She, apparently, was the originator of the concept.

This essay will evaluate the range of conceptions of the core (its complement, usually called the sleeve – following Rolf – is naturally also of interest, though some writers are more interested in thinking about it than others).

The essay will go further, by proposing a modification as well as a clarification of the "core as viseral space" theory, one that links to a more traditionally recognized binary division; namely, the ancestral chordate opposition of dorsal versus ventral. To support this, information will be adduced from vertebrate morphology, fetal and early childhood development, and neuroanatomy.

I.

Rosemary Feitis edited *Ida Rolf Talks About Rolfing and Physical Reality*, also providing a glossary. There is a glossary entry under "Core/Sleeve - Intrinsics/Extrinsics." This heading arouses the expectation that the entry will convey Rolf's own thinking on the subject. "Core" and "Sleeve," though they stand at the head of the entry, are not defined specifically; one must then assume that they are identical with "Intrinsics" and "Extrinsics." "Intrinsics" and "Extrinsics," however, are not precisely distinguished, as the definition specifies a continuum, viz.: "the rule of thumb [i.e., it is not a definition] is that tissue nearer the bone is intrinsic; tissue closer to the surface is extrinsic."[2]

"Nearer to the bone" does indeed seem at first to be a useful "rule of thumb" [sic!], if an imprecise one; but it is a phrase that itself conceals difficulties. Most muscles attach to bones on either end of their span. Does this mean that their bellies are more extrinsic than their tendons? Or that a skeletal muscle, attaching to bone, is more intrinsic than the stomach, which does not? In this scheme, is the skeleton the anatomical core? This does not seem to be the implication. By calling it a "rule of thumb" she seems to acknowledge the imprecise nature of her formulation; on the other hand, Feitis is clearly implying a relationship, if not an equivalence, between "core" and "intrinsics" – but what is it?

That "intrinsic" is *not* equivalent to "core" in Feitis' view is made clear by this intriguing speculation: "intrinsic movement as a whole is initiated from the core of the body, most probably by the older vegetative autonomic nervous system," since the core in this formulation is a discrete entity.[3] The entry concludes by claiming that "electromyographic research has shown that Rolfing achieves this kind of core-sleeve independence."[4] But the reference for this research is to an unpublished manuscript, and the core and sleeve have previously been neither defined nor distinguished. Therefore, such a statement can convey nothing precise. She says that "the girdles should be sufficiently free so that their actions do not distort the serenity of the core."[5] Does this mean that the pelvic and pectoral girdles are the sleeve? And what does that have to do with intrinsics and extrinsics?

Elsewhere in the same book[6] is an illustration with this caption: "Three views of the body core, the spine." This appears to be a different definition, apparently irreconcilable with the intrinsics/extrinsics definition: the core is the spine. But it is reconcilable with her assertion that "the girdles should be sufficiently free so that their actions do not distort the serenity of the core."

One of the persistent themes of inquiry into the core is whether or not it is to be equated with the "Line". For instance, Schultz, in 1988, does equate them. According to Schultz, Rolf does not appear to have expressed herself either in detail or very concretely on the concept of core and sleeve. This tends to be confirmed by Sultan:

> She was looking for a way to describe that something that happens to people when they get "Rolfed," that emergent quality....her description of the core was as an energetic event, and the sleeve referred to the flesh in general, that which was affected by gravity.[7]

Schultz' brief article from 1988, on the contrary, presents a quite simple and clear definition for the core, identifying it with the central axis:

> The core is a flexible line and the sleeve is (are) the obliques moving around it.[8]

In a later book, *The Endless Web* (1996), Feitis and her co-author Schultz present a different concept of core at greater length and with appropriate discretion:

> With some caution, we use the ambiguous word "core" for the body's central axis...there is no structural correlate for this core.[9]

But despite having "no structural correlate"…

> The concept of a core includes both [the] spine (with head, sacrum, and coccyx) and the viscera.[10]

It also is seen to perform a fundamental functional role, although it has, again, "no structural correlate":

> The balanced diagonals of the limbs function best in combination with the free spring action of the core.[11]

The definition offered here is ambivalent. On the one hand, the core is the central axis with no structural correlates; on the other hand, it is the spine (including the head) and the viscera. Note that Schultz' earlier idea of the sleeve consisting of mobile "obliques" is preserved in the later "balanced diagonals of the limbs"; and, in fact, the definition in *The Endless Web* is an amalgam of Schultz' definition from his previous article of 1988 and one of Feitis' previous definitions (the one that equated core with spine). Gone here is the (only implicit) equation of core and sleeve with intrinsic and extrinsic tissues. Schultz and Feitis have also added the viscera, included because they surround the vertical axis.[12]

Note that they do not mention, much less attempt to define, the sleeve by name; presumably, it is everything else. But the apparent connection noted with the previous article of Schultz' between "obliques" and "diagonals of the limbs" suggests that what we are really talking about here is the fundamental opposition between axial and appendicular skeletons.

Maitland's concept of core is similarly ambivalent, sharing several features in incomplete agreement with Feitis (i.e., in Rolf 1978), and with Schultz and Feitis. Maitland discusses what he refers to as objective, subjective, psychological, and phenomenological taxonomies of the core/surface distinction (apparently alone among commentators, he prefers "surface" to "sleeve"). We shall concern ourselves with the "objective" ones, although the others are naturally intriguing. It would be very exciting, in this connection, to be able to distinguish a physical or objective core that also can be distinguished in other dimensions of human existence. One might then theorize that the condition of the physical core also gives clues as to the condition of the psychological and ontological being of the human being, and perhaps vice versa. It might be possible to integrate work on the motility of the spleen, for instance, into a course in anger management![13]

Maitland identifies two "objective" conceptions in his glossary; the first, however, seems, as Feitis and Schultz and Feitis did, to amalgamate two separate and unreconciled conceptions of core. The problem is essentially the same as that in Feitis:

> According to Dr. Rolf, one way to draw the distinction is to understand the intrinsic myofascial structures as core structures and the extrinsic myofascial structures as surface structures... one of her favorite indicators of this economy of function was the appearance of the spine (core) moving in free independence from the pelvic and shoulder girdles (surface).[14]

The first difficulty is that "intrinsic" is not distinguished with respect to "extrinsic." Are some myofascial structures "intrinsic" and others "extrinsic"? That is, are discrete structures either one or the other? If so, this is not specified. Or does "intrinsic" signify "deeper," not indicating structures themselves but a relative, not absolute, location? It does for Feitis, although she says that "...*tissue* nearer the bone is intrinsic, *tissue* closer to the surface is extrinsic,"[15] while Maitland refers only to myofascial structures.

Most likely it is the second meaning that is intended, as Maitland attributes it, as Feitis does, to Rolf. But if the distinction is a relative one – like the anatomist's cranial/caudal, a bi-polar continuum – then how is it possible for the core to move "in free independence from the...(surface)"? At what point on the continuum is this independence to be leveraged? In Maitland's schema, a clear distinction is assumed; yet the possibility of one is negated. And, like Feitis, his definition has to do both with intrinsics/extrinsics and with the spine/girdles; the two aspects of the definition combine uncomfortably and appear to be incompatible. The problem, finally, appears to be unresolvable.

Maitland offers an additional "objective" definition of "core and surface," one that is quite incompatible with his first definition:

> Another way to objectify the core and surface is to understand it [he is actually only talking about the core here] as the space bounded by the pelvis, abdominal myofasciae, rib cage, and jaw. This internal space extends from the pelvic floor to the palate or nasopharynx. The bony and myofascial structures that surround the core space constitute the surface...[16]

The real problem here is the idea that it is possible to have two completely different and incompatible objective definitions of the core. Is it "the intrinsic myofascial structures," or is it the spine, or is it the visceral space? If it can be all three, how can we possibly be talking about the same thing? Perhaps it is reasonable to present three possibilities, but not to suggest that all can be true; otherwise, it is a matter of three different things, which should then have three different names. And the question then arises: three possibilities of what, exactly? For it is not clear what sense it makes to talk about a core and a surface. In Maitland's discussion of core and surface, the abstract concept core has been reified into something, or rather into various things; it doesn't need justification. But it is not at all obvious from his discussion that there even is such a thing; as we shall see, not everyone agrees that there is an anatomical core. Surely the argument ought to go from the observed and specific to the abstract and general, and not the other way around. The abstraction "core and surface" should be justified by observation. It is unreasonable for it to start off as a premise and then go looking for an observable correlate to it.

To add further to the ambiguity, Maitland adds a fourth definition in the body of his text, less anatomically precise but definitely locating the core in the physical body:

> You can visualize your core as extending through the center of your body from the crown of your head, down slightly in front of your spine, through the insides of your legs, and emerging just in front of your heels on the soles of your feet.[17]

And now "core" becomes "Line" again!

"You can visualize your core"; "Core...can be used objectively";[18] "The core can be objectified and described anatomically."[19] Yes, but why should it be objectified and described one way rather than another? It is not enough saying that it can be one thing or another; for what reason is it one or the other? If it is one thing, then the other things should be called something else.

Maitland's discussion is most useful when he refers to his clinical experience, such as the following suggestive observations:

> Manipulating certain key myofascial structures...often visibly opens up, lengthens, and actually increases internal spaces in the body. What Rolfers recognize and clients feel as core length and core function happen when these spaces visibly open up, lengthen, and increase in volume...[20]

He points out that it is important to have a concept of core for this reason;[21] but as the concept has not been adequately defined, or even isolated, the acuteness of his observation is blunted. This lack of precision is more unfortunate as he becomes more specific (and more interesting):

> Rolfing the myofasciae on the inside of the thighs (e.g., the adductors) and pelvic floor often will lengthen and increase the core space of the whole torso.[22]

Presumably, in this instance, he is referring to a "core as visceral space" definition – or is it "core as Line"? His observation about the adductors is especially interesting in light of yet another concept of core that he mentions (though without reference):

> Other models add [that is, to the "pelvic floor to nasopharynx" model] the space between the legs which extends from the pelvic floor down to and emerging just in front of the heels on the bottom of the feet. These models also insist that the core must also extend up past the roof of the mouth to the top of the head.[23]

This is perhaps at least partly justified by his observation about adductor manipulation[24] (partly – does the effect he describes extend downward as well as upward? He doesn't say). Wouldn't we expect the various regions of the core to be more sensitive to manipulation of another part of the core than to manipulation of the sleeve? This seems a reasonable hypothesis; researching this kind of question might be a very good way to respond to Flury's critique:

> I haven't found a question that could be answered by defining a concept of core...why should I build a theory when there is no question?[25]

If there are two divisions in the human body, it would be reasonable to expect manipulation to have more powerful intradivisional than interdivisional effects. If core and sleeve can be sufficiently defined that predictions can be made as to intradivisional, relative to interdivisional effects, then there would be a question, in Flury's sense, worth building a theory around. The "concept of core" could then have some predictive power. It would be a theory of core – not a model but something you could build models from.

Deckebach has proposed yet another anatomical definition of core and sleeve:

> Core – the pleural membrane of the thorax and its contents, and the peritoneal membrane of the abdomen, along with its contents.[26]

This is quite concrete. He further distinguishes an "abdominal core," which is defined namely as the second half of the above definition. This definition is different from one of Maitland's definitions – his "core as visceral space" definition – in not extending upward to the nasopharynx; and in not extending downward to the pelvic floor.

The sleeve is also included and defined in Deckebach's scheme:

> Sleeve – everything outside of the pleural and peritoneal membranes.[27]

This leaves us essentially with a definition for "sleeve" that means, "everything that is not core."

Deckebach points to an interesting phenomenon, presumably observed in his practice, which might be of some value in distinguishing an anatomical core from its sleeve:

> As the connective tissue in the sleeve tends to migrate to and contract around bony attachments, likewise, in the core, the connective tissue of the mesenteries migrates to and contracts around the organs it positions. This is what causes organs to feel harder in older bodies.[28]

Of exceptional interest is Deckebach's assertion of the precedence of core over sleeve:

> The unspoken premise we have been holding is that the sleeve determines the form of the structure...In my work I have changed this premise from the idea that the sleeve determines the shape of the core to the premise that the core contents are shaping the sleeve.[29]

It appears to be unusual, at least among published commentators, to assert that the core has precedence over the sleeve. Deckebach does not claim that most Rolfers give the sleeve precedence in their work, except, as he puts it, "unconsciously."[30] Perhaps Rolf's assertion that her method works from the "outside in" (using the metaphor of an onion, with its many layers) is responsible for this.

Schwind asserts the contrary: that "because of the tradition of our profession, we say that the inside is more important than the outside."[31] None of the other sources analyzed here makes a claim as to precedence, however. There does indeed appear to be less interest in discussing the sleeve (and consequently the relationship between core and sleeve); and that, perhaps, is indicative of a lower esteem for its importance.

Schwind has addressed the core/sleeve problem at the greatest length of any of the published discussions.[32] His discussion is further augmented by his oral presentation in a symposium on core and sleeve.[33] Both are valuable for their critical (and self-critical) attitude. However, they provide no unequivocal statement of what the core is in anatomical terms, certainly not what its parameters might be. On the contrary, he doubts that it is possible to formulate an anatomical definition of "core":

> The anatomical definition of the core has no chance of giving any explanation of why one anatomical unit of the body should belong to the core and why another should not belong to it. It is totally arbitrary.[34]

His critique of the possibility of an anatomical definition is based on an interesting analysis; he thinks that the core must be a collection of

> ...the different elements of the body which are most significant for the

> maintenance of the structure in time.[35]

This, clearly, is the position of Deckebach who (in addition to asserting the primacy of the core over the sleeve) has an answer for what elements those are. Presumably, he would prefer a term like "the structures" to Schwind's unintegrated-sounding "the different elements"). But Schwind denies the possibility:

> ...there is no reason to say, for example, "the spine is the core" or "the viscera are the core." Logically, there is absolutely no reason to do that.[36]

This reasoning, however, does not seem sufficient; surely the issue is not a logical but rather an empirical one. It appears that Schwind simply has a different presumption of what the core should be than other commentators. There might be a good reason to say that the spine is the core; for instance, that it is the structure around which the ancient chordate prototype is organized, while the pelvic and pectoral girdles are much less ancient and are thus graftings to a pre-existing trunk. If a Rolfer is able to observe that phenomenon that Sultan calls "...that something that happens...that emergent quality,"[37] what is observable must have a physical dimension. Deckebach, for example, claims from the experience of his practice to have found the primacy of the pleural and peritoneal membranes and their contents "for the maintenance of the structure in time." Nevertheless, Schwind appears to backtrack in his oral presentation of two years later:

> ...because of course, the space that the viscera take up seems to be one of the most significant components for a long term development of the shape of the whole of the human organism.[38]

If this is not a direct contradiction, Schwind does not explain why not; he even uses almost exactly the same expression he used previously in denying the possibility of isolating the

> ...different elements of the body which are most significant for the maintenance of the structure in time.[39]

But what is more fundamental is the unreconsidered assumption that the core must necessarily be more important than the sleeve. That one or the other may be more important is not the only set of alternatives. Why could the importance not lie in a balance between core and sleeve? In one respect, this seems, in fact, to resemble Schwind's own view:

> It's a symbol, it is a poetic definition of course, not very scientific, it's a symbol for the integrity of the human organism.[40]

According to Schwind, core is "an almost metaphysical term."[41] Indeed, in this conception, the "emergence" that Sultan speaks of is a function of structural integration, of balance not between core and sleeve, but among all the "elements" of the body. For Schwind, "core" is effectively equivalent to "integration." For him "core" should probably be called something else, because that word implies a spatial location; whereas, for him, the word means that a higher level of coherence has been achieved. This can be compared, of course, to Sultan's idea of core as "that emergent quality".

II.

Jon Zahourek has analyzed human anatomical organization in light of vertebrate morphological and neuroanatomical data with very interesting results. In evolutionary terms, our biological line of descent has only recently abandoned quadrupedal locomotion. Zahourek points out that our ancestral division between dorsal and ventral is actually, in evolutionary terms, a division between top and bottom:

> Divide both halves [i.e., left and right] into upper and lower zones: ventral, for the lower compartment occupied by the guts, and an upper, dorsal zone of musculoskeletal array – quite different ideas.[42]

This might seem at first glance to be, if not an arbitrary distinction, at most a convenient one; but the division exists in the nervous system and it is there that the significance of the distinction begins to emerge:

> Muscle activity in each segment is served by a left and a right pair of nerves from the brain or spinal cord, each of which branches into two branches (rami). One branch serves ventral muscle; the other branch, dorsal.[43]

As Schleip puts it, the extensors are "innervated from a dorsal primary ramus or the dorsal branches of the plexi," while the flexors are "innervated from the ventral branches of the plexi."[44]

The division between dorsal and ventral is thus also the division between the primarily tonic extensors and the primarily phasic flexors.

The evolutionary development of pelvic and pectoral girdles with extremities introduced complications into this scheme of motor neurological architecture, but the bi-ramic logic of the ancestral "idea" persisted:

> Pectoral and pelvic anatomy evolved much later than the axial system, so some of the segmental axial nerves are extended and borrowed. Since the appendages are outgrowths of the ventral body wall, the appendages are served by ventral branches of the spinal nerves. These ventral branches also divide into dorsal and ventral divisions.[45]

Note that the limbs also have upper, dorsal surfaces and lower, ventral surfaces.[46]

It should also be noted that our phylogenetic "anatomical position" is not only on all fours but also with external rotation of the limbs. This means that the origin of sartorius is presented on the dorsal surface of the body and is part of the group of extensors.[47]

Data from fetal and early childhood development provide an interesting confirmation of the fundamental bifurcation of dorsal from ventral:

> The sequence in which the head develops ahead of the tail and the back ahead of the belly is maintained, as far as we can tell, after birth...at birth, the most developed pelvic musculature is in the back. The gluteus maximus muscle is very well developed. The erector spinae...are strong, while the belly is less so.[48]

Furthermore, the adductors of the thigh are "even less strong."[49] Of course the adductors are "ventral" in the sense mentioned by Zahourek – that is, they are adjacent to the inside or "lower" surface of the limbs. "Flexion...is any movement that brings the ventral surfaces toward one another,"[50] as adductors do in our ancestral quadrupedal posture.

It is a case of "ontogeny recapitulating phylogeny": the infant can acquire bipedal locomotion and erect posture only after passing through quadrupedalism into a phase of "apprenticeship" (Feldenkrais' term) in bipedalism. It might be reasonably

asserted, as Rolf did more than once, that man as a species is in an epoch of apprenticeship in bipedalism. The (ventral) flexors develop more slowly than the (dorsal) extensors. Oddly, it is ordinarily the flexors that dominate in the adult, despite developing after the extensors

> A human being is evolving as an erect animal. How erect he's going to be as an individual will depend on the degree of balance between his flexors and extensors. If our description of evolution is accurate, then we have slowly come up to the place where we are putting more responsibility on extensors and trying to take away responsibility from flexors.[51]
>
> The development of the fetus establishes the pattern of the later development of the body; it's a pattern moving from habitual flexion toward balance between flexion and extension. Obviously, we will do well to get strength and life and vital quality into extensors.[52]

And there appears to be an additional complication – or really many interrelated complications – added to this picture by the existence of what Rolf calls the "hypererect" type of body or, in general, what is now referred to as the "external" type in which extensors are dominant.

Zahourek's presentation includes a pair of evocative illustrations, both representing the body, in profile, divided front to back, in two different ways. The first is with a vertical line extending from the crown of the head through the hip joint to the soles of the feet at a point just in front of the heels; the second illustration represents the division separating the ancestral dorsal from ventral.[53] It is especially interesting to note that, in the head, this division is just above the roof of the mouth, recalling one of the "models" of Maitland.

The particular slowness of the thigh adductors to develop in utero (and also in early infancy, as Schultz and Feitis note) associates them with the flexors in the torso. This is consistent, not surprisingly, with the ancestral quadrupedal pattern and the architecture of the nervous system, as noted by Zahourek. We have already cited Maitland's observation about adductor manipulation, and his comment that some "models" of the core include the inside of the legs – that is, the ancestral flexors. Can it be that we may best think of the core as being equivalent to the ventral division of the human anatomy and the sleeve to the dorsal division? Developmental and neuroanatomical data already divide the body into two divisions along these lines.

The importance of flexor / extensor balance was fundamental for Rolf:

> You must remember that in your appreciation of a body what you are looking at is the relationship between flexors and extensors.[54]
>
> ...in flexion extensors extend when flexors flex. This is something that doesn't happen in an unbalanced body.[55]

There is also a physiological distinction between flexors and extensors in general, as extensors normally contain more red fibers than flexors do.[56] The distinction has functional dimensions as well as structural:

> The first reaction to the frightening stimulus is a violent contraction of all the flexor muscles, especially of the abdominal region, a halt in breathing, soon followed by a whole series of vasomotor disturbances such as accelerated pulse, sweating, to micturition and defaecation.[57]

Feldenkrais "saw that negative emotion strengthens flexors."[58]

> People go to flexion for emotional security. They curl up for protection... immature behavior, negative emotions demand flexion and are expressed through flexion.[59]
>
> ...the chronaxies of the flexors are in general lower than those of the extensors, and they contract first.[60]

Feldenkrais chooses an appropriate moment to speculate and, in doing so, points to a fundamental distinction in our ancestral morphology:

> ...limbs are thus drawn nearer to the body in front of the soft, unprotected parts – the testicles, the throat, and the viscera. This attitude gives the best protection possible and instills a sense of safety. The flexor contractions, when maintained, are instrumental in restoring the normal, undisturbed state.[61]

Obviously any quadruped has a profoundly different feature to its structure, as compared to an erect-standing human being: namely, that the viscera are automatically more protected merely by virtue of the fact that the quadruped's extensor side is on the surface, exposed to the uncertainties of the world, while its flexor side is protected by the earth on the underside – the flexor side is, effectively, intrinsic. What Feldenkrais calls "the body pattern of anxiety"[62] is a return not only to a fetal pattern, but also to the primordial pattern of our evolutionary ancestors (in effect recapitulating phylogeny in reverse). The physical response to fear is a return not only to the womb but to the evolutionary trunk.

The erect posture that distinguishes our species serves to obscure one of the fundamental spatial distinctions of our evolutionary patrimony: dorsal equals outside, and ventral equals inside. The quadruped's ventral surface faces the earth, affording the contents of the visceral space a measure of protection. The "soft underbelly" is proverbial, signifying the vulnerability of the ventral surface.

From this perspective, erect posture looks as though it should be evolutionary folly: not only is speed sacrificed, with only two limbs available for locomotion, but the organism's vulnerable parts are extended up into vertical space where they are exposed. Clearly these are not the only relevant factors in our troubled evolution. To look at it another way, the structure of the human being is indeed quite a "different idea" in Zahourek's phrase.

Human posture, furthermore, seems to call for social and psychological innovations simply because of the fact that, in standing face to face, we also stand belly to belly (core to core?). The degree of intimacy that this implies is unprecedented among our mammalian relatives, even our closest ones. Jane Goodall once made a film detailing chimpanzee sexual behavior. While to watch it is to recognize one's own species in many things, it is also to be astonished, even shocked, at the absence of those things that matter most in sexuality to most humans: depth of involvement and intimacy, and the intensity of physiological response and orgasm.

The numerous anatomical conceptions of "core and sleeve" reviewed here fall into four categories (excluding Schwind's, the core as "symbol for the integrity of the organism"). These might be characterized as follows: 1) core as line; 2) core as axial complex vs. sleeve as appendicular

complex; 3) core as intrinsics vs. sleeve as extrinsics; 4) core as visceral space.

Each of the four prevalent conceptions represents one of Rolf's basic concepts (with the possible exception of the last one) viz.: 1) a man is a something built around a line; 2) independence of appendicular from axial; 3) independence of intrinsics from extrinsics; 4) balance between flexors and extensors. None of the writers reviewed is in complete agreement with any other.

Unfortunately the present essay has not joined with any one of these writers; it adds yet another theory to the list. (One other aspect of the confusion surrounding core and sleeve is the variety of ways that the ideas are framed; they are variously called models, or conceptions, or definitions, or theories. There are big differences among these terms, however.)

On the other hand, the present theory has an advantage over the previous ones. It embraces, as it were, the "core as visceral space" theory, while it is also closely allied with a distinction – the dorsal/ventral division – that is already well recognized by mainstream biologists. Therefore, it both explains phenomena that Rolfers have observed and also puts them in the context of what is already accepted. It also puts the "core as visceral space" theory into an easy relationship with one of Rolf's fundamental concepts: the balance between flexors and extensors. Most importantly, it poses "questions," in Flury's sense, that make it a necessary theory.

It is incompatible with the other three definitions/theories/models, however. Incidentally, Maitland's contention (or rather, that of his unnamed sources) that the core as visceral space reaching down the inside of the legs must also reach into the cranium is not identical with the dorsal/ventral model presented here; though the adductors are ventral, the cranium is in the dorsal half of the ancestral model (the pharynx, however, being ventral).

"That emergent quality" could be due to "giving more responsibility to extensors"; to balancing flexors and extensors; to relieving the man of his "body pattern of anxiety"; to freeing the viscera from constriction; to the advantage of their essential functions; or to a combination of all of these; or, indeed, to other additional factors.

III.

The intrinsics/extrinsics conception of core is not apparently being promoted much nowadays, though it still receives acknowledgment. Nevertheless, it might have been Rolf's original conception of core and sleeve:

> If the head is too far forward, rotation is done by the extrinsics because the intrinsics then lack span and can't function, but to the extent that this happens, the normal patterning of the body is destroyed. The balanced core-and-sleeve pattern of the body gets lost.[63]
>
> Additionally, and most important of all in humans – systems which are vertically organized and move in space – there is the intrinsic-extrinsic symmetry which is concerned with the relations between deep and superficial myofascial structures in the body.[64]
>
> We have used intrinsic and its correlate, extrinsic, to denote, respectively, muscular elements that are invested in the deepest fascial layers of the body (intrinsics), and their paired antagonists (or cooperators), the extrinsics, which are more superficial, occupy greater volume, and are more directly and obviously subject to the plastic changes of the integrative technique. [A basis for Deckebach's claim that traditionally Rolfers have put more emphasis on the sleeve.]
>
> We have found it both convenient and logical to use this nomenclature in describing what is a functional rather than a descriptive parameter. Relatively little organized work has been done mapping the unexplored territory of fascial anatomy. Time and research in the future will certainly define these terms more clearly as scientific attention in the biological field focuses on the dynamic rather than the static aspects of humans.[65]

This last paragraph is especially striking. It is clear that Rolf saw the difficulties in the lack of precision in distinguishing intrinsics from extrinsics. Furthermore, her wording seems to imply that she is thinking of discrete structures; her expectation, therefore, was that eventually each structure could be put into one or the other category.

Isn't this concept the primary and only necessary one? It was Rolf who coined the expression "core and sleeve"; what sense does it make to use her coinage to denote a different concept? The "core as visceral space" idea should be given another name – not "core." This essay has attempted to identify it with the widely recognized flexor/extensor classification. Rolf herself saw this as a primary system of orientation for her work, but it is a classification that is clearly distinct from her "core/sleeve as intrinsic/extrinsic" idea.

Both Cottingham[66] and Silverman, et al.,[67] have done research for which different core/sleeve relationships have been identified on an intrinsic/extrinsic basis. Unfortunately, their sample sizes are small and they do not provide precise methodology for determining their distinctions. Nevertheless, it appears possible to develop such a methodology, as Rolf hoped. Cottingham's illustrations do seem in some way to illustrate the categories he has put them in; even though the system of classification is imprecise, it is also the case that his distinctions are visible. Unfortunately, the work of these researchers has been neither duplicated nor developed. It, like the elecromyographic studies of Dr. Hunt, remains an intriguing suggestion.

It would be very helpful to be able to say whether a given myofascial structure is intrinsic or extrinsic, absolutely and not relatively, or to have some other precise way of distinguishing one from another. Then it would make sense to speak casually of a core and a sleeve. It might take some long time for the interest in and the recognition of the value of the work that would be necessary to clarify this distinction to be aroused in the scientific community, but that is no justification to continually be inventing new interpretations for the same terms. Only confusion can come from such inventions.

Unfortunately, Rolf herself seems to be responsible for confusion on this issue:

> The spine is the connecting rod of the body, a segmented armature resting in the pelvis. Its two polar terminals, embodied in pelvis and head, make the spine a vital core [!] that integrates the human with his gravity environment.[68]
>
> In order to fit the smaller core [!] of the cervical structure into the larger overlying sleeve [!] of shoulder

girdle and ribcage, a structural "gap" between cervical and dorsal sections of the spine must be bridged.[69]

It is clear that in these quotations, Rolf is thinking of the core/sleeve distinction as being equivalent to the axial/appendicular distinction (the ribs would be included in the appendicular skeleton, however). It is not surprising, then, that Feitis' view, and later Feitis and Schultz', appear to be so ambivalent; the ambiguity originates with Rolf herself. Even the "multiple personality" of Maitland's several theories might have originated in the apparent ambiguity of Rolf's talk and scanty written treatment of the subject. Sultan's assertion that "I don't think we need to look any farther than Ida Rolf's original formulation"[70] now has taken on a certain irony. Perhaps we need not look any further; but what was her original formulation?

Perhaps for her the concept did not deserve the status of a theory or even to be associated with something particular. In these two quotations, the core/sleeve metaphor is accompanied by other metaphors ("connecting rod," "armature," "gap," "bridge") in a setting of colorful, imaginative language. Perhaps the metaphor of core and sleeve was congenial to her; and she used it, unrigorously, in different contexts without it always having to signify the same physical objects or relationships, in much the same way as she is using "bridge" here. With so few examples of her thought on the matter before us, it is difficult to know if that is a reasonable interpretation or what the wisest choice between her two conflicting uses of the terms might be or, indeed, if it is possible to make a choice.

If the quotation having to do with core/sleeve as intrinsics/extrinsics (note 63 above) seems more serious, the thinking around the point more highly developed, and her attention to it more focused, it could be because in speaking of intrinsics and extrinsics she was exploring territory in which few if any researchers had been. The possibility that there might be a boundary not only at the skin (between individual and environment), but one also between the outer myofasciae and the inner, was raised perhaps originally by her. And perhaps for the same reason we should call this division the one between core and sleeve and not any other. In any case, she was without any doubt not talking about the visceral space, however defined, and we should therefore reject this definition.

NOTES

1. Michael Salveson, et al., "Core: Structure and Function." *Rolf Lines*, Jan. 1994, p. 27.

2. Ida P. Rolf, *Ida Rolf Talks about Rolfing® and Physical Reality*, ed. Rosemary Fetis. Rochester, NY: Harper & Row, 1978), pp. 211-212.

3. Ibid., loc. cit. On what basis are we to assess this supposed "probability"?

4. Ibid.

5. Ibid.

6. Ibid., p. 208.

7. Salveson, et al., p. 27.

8. Louis Schultz, "Thoughts on Core and Sleeve." Rolf Lines, Jan./Feb. 1988, p. 16.

9. Louis Schultz and Rosemary Feitis, D.O., *The Endless Web*. Berkeley, CA: North Atlantic Books, 1996, p. 36.

10. Ibid.

11. Ibid.

12. Ibid., p. 37.

13. Jeffrey Maitland, *Spacious Body: Explorations in Somatic Ontology*. Berkeley, CA: North Atlantic Books, 1995, p. 220.

14. Ibid.

15. Rolf, 1978, p. 211. My emphasis.

16. Maitland, p. 220.

17. Ibid., p. 181.

18. Ibid.

19. Ibid., p. 60.

21. Ibid., p. 180.

22. Ibid.

23. Ibid. Since when can a model "insist" on something?

24. Ibid.

25. Hubert Ritter, "Optimizing the Animal, an Interview with Hans Flury (part two)." *Rolf Lines*, Winter 1997, p. 7.

26. John Deckebach, "The Core's Role as Causal in Structural Distortion." *Structural Integration*, Feb. 2003, p. 17.

27. Ibid.

28. Ibid. This is interesting news, of course.

29. Ibid. But *why* has he changed his premise?

30. Ibid.

31. Peter Schwind, "Preliminary Considerations for a Theory of Core." *Rolf Lines*, Fall 1992, p. 17.

32. Ibid.

33. Salveson, et al.

34. Schwind, p. 17.

35. Ibid.

36. Ibid.

37. Salveson, et al., p. 27.

38. Ibid., p. 32.

39. Schwind, p. 17.

40. Salveson, et al., p. 32.

41. Ibid., p. 31. What does "*almost* metaphysical" mean?

42. Jon Zahourek, *Myologik Atlas Series*, vol. 1. Loveland, CO: Zahourek Systems, Inc., 1996, p. 16. Of course, if this is taken literally, Zahourek is guilty of the so-called "watchmaker fallacy"; namely, that if there is an "idea" there must also have been someone to have had the idea – a god, for instance. It's a seductive concept.

43. Ibid.

44. Robert Schleip, "The Flexor-Extensor Typology." *Rolf Lines*, Nov, 1995, p. 10.

45. Zahourek, p. 16.

46. Ibid., p. 17.

47. Ibid.; see his excellent and evocative illustrations. Cf. also Schleip, p. 10.

48. Schultz and Feitis, p. 23.

49. Ibid.

50. Zahourek, p. 17.

51. Rolf, 1978, p. 133; cf. also Rolf 1977.

52. Ibid.

53. Zahourek, p. 16.

54. Rolf. 1978, p. 69.

55. Ibid., p. 158. Her use of terms is eccentric (as is her use, not incidentally, of the terms "intrinsic" and extrinsic").

56. Moshe Feldenkrais, *Body and Mature Behavior*. NY: International Universities Press, 1970, p. 21.

57. Ibid., p. 83.

58. Rolf, 1978, p. 133.

59. Ibid., p. 98.

60. Feldenkrais, pp. 83-84. Chronaxie: "The minimum interval of time necessary to electrically stimulate a muscle or nerve fiber, using twice the minimum current needed to elicit a threshold response."

61. Ibid., p. 92.

62. Ibid., pp. 83 ff.

63. Rolf, 1978, p. 188.

64. Ida P. Rolf, *Rolfing: The Integration o Human Structures*. Dennis-Landman, 1977. p. 290.

65. Ibid., p. 120n. Her comment to the effect that the extrinsics "are more directly and obviously subject to the plastic changes of the integrative technique" may be what Deckebach is talking about when he says that Rolfers give precedence to the sleeve.

66. John Cottingham, *Healing through Touch: A History and a Review of the Physiological Evidence*. Boulder, CO: The Rolf Institute of Structural Integration®, 1985, pp. 155-159.

67. Julian Silverman, et al., "Stress, Stimulus Intensity Control and the Structural Integration Technique." *Confinia Psychiatrica*, vol. 16, 1973,

68. Rolf. 1977, p. 175.

69. Ibid., p. 194.

70. Cf. note 1. She has also been quoted as having said that "core is anything you can't do without." And here she gets very close to Peter Schwind's "…different elements of the body which are most significant for the maintenance of the structure in time" – except that she seems to be speaking in more general terms than specificaly structural.

If'n I wanted to get to Pittsburgh,
I wouldn't start here.

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Interview with Serge Gracovetsky, Ph.D.

By Certified Advanced Rolfers™ Kevin McCoy and Kevin Frank

Editor's Note: Serge Gracovetsky will be a keynote speaker at the 2008 Rolf Institute® Annual Meeting, The Art and Science of Fascia. His presentation, From Fish to Man: the Story of the Human Spine will be held on August 1, 2008. He is the author of The Spinal Engine *and was awarded "Best Paper Presentation" at the 2007 Fascia Research Congress.*

KM and KF: Thank you for taking the time to speak with us. Your work has clearly shifted current thinking about the nature of the human spine and musculoskeletal function, which has impacted our work in the field of structural integration. We would like to use this interview to give Rolfers and other structural integrators who are not already familiar with your work a taste of your contributions.

First, your background is in computer science and yet you wrote a book about the evolution of movement and functional anatomy that has revolutionized research in biomechanics. How did your book *The Spinal Engine* come about? What made that investigation interesting to you?

SG: Actually my background is nuclear physics. Physics is the application of mathematics to natural sciences. During my university years I had a painful back problem. The physicians I consulted generated evasive and quite different answers. I concluded that they did not know what I had and decided to do something about it.

KM and KF: It seems like you were interested in modeling the problem and you investigated the different models already in use, and then when those were found lacking, you started to create your own. In *The Spinal Engine* you showed how the fish body action is, in the human spine, converted into contralateral movement in walking. In a follow-up article you describe how the feet and legs recycle the kinetic energy of walking back in to the spine so that contralateral gait is amplified and supported. This has led to interesting applications in our work. For example, some Rolfing instructors have started to refer to the three pathways by which energy is recycled from the feet and legs back into the spine as "Gracovetsky's chains." These three "lines of transmission" are used as a template to help assess preferences in coordinative strategy while a client walks. This assessment is then used to devise perceptual interventions that awaken fuller expression in one or more of the three pathways of kinetic energy.

Your spinal engine model also shows how the transversus abdominus effects lateral pull in the lumbar fascia, which stiffens that fascia. This stabilizes the spine for loading, in response to action of the psoas, and helps (in conjunction with the multifidus) to hold the spine erect. For some structural integrators, a strategy for restoring spinal stability – such as for rehabilitation from back injury – is to restore the ability of the transversus abdominus and multifidus to activate early. In other words, our job in structural integration can be viewed as work to establish better motor control in terms of the timing of core muscles. Carolyn Richardson and Diane Lee have advocated working in a similar way.

It seems your spinal engine model pioneered this viewpoint, which now seems revolutionary. Was this something you were hoping for in your work?

SG: No. I looked at the problem from the point of view of a physicist. I was interested in constructing an animal that would walk efficiently on two feet. The spinal engine was a logical consequence of that premise. It was only after that work was published that vigorous unsolicited criticism began to rain in on me and made me look more closely for clinical applications such as spinoscopy to see if these theoretical ideas had any real use.

I always thought that it was not for me to make that discovery. Many other people at that time were far more conversant with the spine and they should have logically made the discovery. Perhaps the fact that I was trained outside the influence of classical biomechanics allowed me total freedom in considering my options. In retrospect, I had nothing to defend, and I looked at the problem without passion or prejudice.

KM and KF: What are your thoughts on how / why human beings get low back pain? What do you see as opportunities for people to improve spinal health?

SG: It is estimated that 90% of low back pain has a mechanical component. It can be shown that there are two main types of injury: once due to excessive compression on the spine, and one due to excessive torsion. A compression injury is essentially a fracture of the end plate (Smorld's node). The cancellous bone of the end plate heals rapidly, and in a few weeks the patient is essentially fine. In contrast, a torsion injury is a collagenous injury where the multiple layers of the annulus fibrosus get damaged and delineated thereby opening a channel for the nuclear material to escape in the foramen or the canal. Collagenous injuries are notorious for taking a long time for healing, and even then the scar material replacing the damaged collagen does not have the same mechanical characteristics

of the original collagen. Indeed, it takes six weeks to recover 50% of the original strength and six months to reach 80%. This long process exposes the patient to the risk of re-injury. Hence one never really heals from a torsional injury, which is a prime candidate for chronicity.

The problem is that both compression and torsional injuries have similar symptomatology. It is therefore difficult to separate the two, and close to 90% of the time the diagnosis is an unhelpful "nonspecific low back pain." Since the course of each type of injury is different, they cannot be lumped in one category. Hence the frustration in having some patients recovering in a month or so while others do not do so well and even become chronic. Spinal health means above all a good understanding of the function of the spine and its limits.

KM and KF: What are your thoughts about other contributions to low back pain such as muscle spasm, ligamentous strain, and issues related to facet joints? What about motor programming or the role of consciousness (e.g., feeling state, awareness, or attitude) as a contributing factor? You created "spinoscope" technology for pinpointing spinal movement for patients as they move; does this assist in the diagnosis of spinal injury, or in assessing how to treat spinal injury?

SG: A diagnosis for low back pain is unknown in 90% of the cases. And there is no reliable correlation between pain, anatomy and function. So to assess the condition of the patient you should measure separately pain, anatomy and function. Spinoscopy was developed to assess function independently of pain or anatomy. For instance, the patient may report pain, but have a perfectly normal spine from a functional point of view.

KM and KF: Your work draws on evolution for explaining our human predicament. What would you say is the difference between primates and human beings in terms of musculoskeletal health?

SG: Primates are quadruped. Humans are biped. The use of the spine is different.

KM and KF: Yes, humans are the only true biped. What changes in the movement of the spine when we compare quadrupeds and bipeds? You stated in your presentation at the Fascial Congress in the fall of 2007 that human bipedal structure is inherently unstable, and that is an evolutionary advantage because proper motor control becomes more vital. Is the implication that we humans had better understand how to evoke healthy coordination if we wish to avoid musculoskeletal problems?

SG: Humans are not the only true biped. Many birds, including the now-defunct dodo, are perfectly functional on two feet. A lot of dinosaurs used that mode of locomotion for a much longer time than we have on this planet. So the jury is still out on us. You cannot separate the control system from the system itself. A deconditioned patient probably has a control system adapted to his lousy physical status. Healthy coordination is a consequence of maintaining the musculoskeletal system in top shape. This is elementary system integration.

KM and KF: Do you have any thoughts on the force closure / form closure debate regarding the sacroiliac (SI) joint? What have you learned about the evolution of the human SI joint and its vulnerabilities?

SG: The form / force closure debate is centered upon the hypothesis that the SI join is flat, and therefore the SI join on its own will dislocate unless forced to remain closed. That is incorrect. Cursory investigation of the SI joint has demonstrated (since 1957) the warped surfaces of the joint and the very strong collagenous structures that keep it as a unit. There is no need for a force closure / form closure argument to close an already closed joint. Besides, it is not unreasonable to consider the SI joint to be a particular form of a costovertebral join in which the vertebrae are fused (sacrum) and the ribs are also fused (pelvis). This representation unifies the spine function as a single machine extending from C1 to the acetabulum. The SI join is fairly strong, and it takes quite a bit of abuse to bring it down.

KM and KF: Given your description of the SI joint as inherently very stable, why is that so many people have discomfort there? With the functioning you describe, is it still possible that proprioceptors send distress to the brain even if there is a tiny amount of misalignment? Or is it a matter of muscular distress that we interpret to be subluxation of the SI joint?

SG: I do not know where the pain comes from, and I do not see how we can assess "tiny misalignment" of the SI joint in vivo and relate that to pain.

KM and KF: What aspects of biomechanical or fascial research look interesting to you, going forward? What is the role of fascia in healthy functioning, and what does the role of fascia tell us about effective rehabilitation?

SG: The energy storage properties of the collagenous fascia are unclear to me. The fascia is essential to explain function of the spine, and damage to the fascia will definitely prevent full rehabilitation.

KM and KF: What are the implications of fascia storing energy? It seems that you have pointed to fascia as a means by which energy is transferred, but why should we want to know about energy storage? Certified Rolfers™ like to think that they assist with improvement in the quality or differentiation of the fascial planes, so we are curious what you consider to be damage to the fascia and how that would impede rehabilitation. What do you think can be done to assist rehabilitation of the fascia?

SG: Storage and release of energy is inherently related to the efficiency of the gait process. An appreciation as to how this is done would help to understand the process and quantify the disability that results from a loss of collagenous tissue. Damage to the fascia forces tasks to be carried out by surrounding muscles at a cost of increased stress on the spine.

I do not know how damaged fascia could be rehabilitated. We know that the scar tissue that replaces damaged collagen has a different mechanical property, and therefore the efficiency of the original system is compromised for good. Hence, the only thing rehabilitation can do is to stop the patient from degrading any further, and help him recover the best possible residual function given the amount of scar tissue that has replaced the good collagen.

KM and KF: We are not sure how familiar you are with the Rolfing / structural integration as a profession, but we are interested in what our work looks like to you and how it fits into your understanding of human function.

SG: There is little doubt that the body functions as a unit driven by many factors, including emotional factors. The problem that Rolfers encounter in their relation with traditional medicine is rooted in the near impossibility of assessing the factors Rolfers add to standard biomechanics in the design of rehabilitation techniques. For instance,

we know that there is some correlation between reported low back pain and work satisfaction. But how do you measure unhappiness in relation to an increase in perceived pain, and how do you measure the improvement in happiness following a Rolfing® treatment?

The concept of structural integration is probably correct but suffers from the inability to quantify the very elements that are to be modified to enhance the overall balance of the individual. And it is precisely this inability to measure objectively the impact of Rolfing in a controlled environment that opens up Rolfing to criticism. The way to go is to test every hypothesis that forms the basis of Rolfing, one at a time, using the time-honored techniques of blind studies with control groups. This is, in my opinion, the price to pay if Rolfing is to gain acceptance in mainstream medicine.

KM and KF: Our colleague Hubert Godard has begun to work with researchers who use motion capture to determine the timing and activation of movement within the body, pre- and post-intervention. It is also a feedback strategy that helps people learn to change their motor control. Some of us believe that it will be through evaluating pre-movement (i.e., preparation to move, which is an aspect of motor control) that structural integrators will ultimately prove the value of our work in a rigorous manner. In other words, our claim to change structure may be better validated through capturing changes in coordination than by trying to study changes in the physical structure, which appears somewhat elusive so far. Comments?

SG: I will need to see the data published in a peer-reviewed journal such as *Spine* before I can offer any relevant comment. This being said, I have measured pre-movement in lifting and the changes in coordination associated with certain types of injury. That was the basis of the design of an automated diagnostic system, and its performance against [assessment by] real spine specialists was published in *Spine* almost ten years ago. This will be the subject of a breakout session in Boulder in August.

KM and KF: That's at the Rolf Institute's® annual meeting, August 1-3, 2008, where you will also be the keynote speaker. Can you give our membership a little taste of what your presentations will be about?

SG: On Friday evening, I will be presenting on how the function of our spine came about. My approach follows the argument of energy efficiency, in which each step of the evolutionary sequence from our fish ancestors represents an improvement in the ability of the animal to survive. Then in a breakout session on Saturday, I will be showing that the diagnosis of low back pain is strongly dependant on reported pain. The clinician cannot statistically override what the patient wants him to know; consequently, it is the patient who dictates the outcome of the clinical examination in the majority of the cases. That does not bode well for inserting nonmeasurable elements into the definition of the wellbeing of a patient.

KM and KF: Thank you very much.

SG: See you in August.

Conference Report

Fascia 2007: The First International Fascia Research Congress

By Kim LeMoon

Journal of Bodywork and Movement Therapies (2008)], 12, 3-6

Editor's Note: This article appeared in the *Journal of Bodywork and Movement Therapies* (2008) [12], pp. 3-6 and is reprinted with permission from Elsevier Publications at www.intl.elsevierhealth.com/journals/jbmt . The 2nd International Fascia Research Congress will be held at Vrije Universiteit in Amsterdam, The Netherlands, October 27-30, 2009. Registration will begin by October 2008. The research abstract submission deadline is February 15, 2009. For more information go to http://www.fascia2007.com/fascia_conference_2009_amsterdam.htm

The quality of the presented material, the questions raised, and the promise of collaboration yet to come as a result of this congress, was far beyond the expectations of all in attendance.

–George Pellegrino, LMT, CMTPT, RMTI, Codirector of Myofascial Rehabilitation Center and Co-Founder of the American Institute for Myofascial Studies

Thomas Findley, M.D., Ph.D., and Robert Schleip, Ph.D., [both Certified Advanced Rolfers™] thought it was due time that the scientists that were studying fascia meet with the clinicians that were treating it. They started to plan a gathering where the finest researchers in the field would present the latest and best scientific fascia research. Seventeen of the world's most eminent fascia researchers, who between them had published over 1500 publications in peer-reviewed journals collaborated, and along with a further 16 key representatives from various clinical disciplines, a multidisciplinary team was formed that collaborated over a period of 2 years to create a landmark event: The First International Fascia Research Congress (see Figure 1).

On October 4 and 5, 2007, the stylish modern glass building of the Joseph B. Martin Conference Center at Harvard Medical School played host to healthcare professionals from twenty-six countries and forty U.S. states. The conference drew interest from a wide variety of disciplines: 75% of the participants were manual therapists or practitioners (chiropractors, osteopaths, acupuncturists, physical and massage therapists) while 25% were medical physicians or scientists. This diverse group assembled in Boston, eager to learn about fascia in all its various forms and functions.

Fascia Research Congress book, Fascia Research, by Tom Findley, M.D., Ph.D. and Robert Schleip, Ph.D., eds.

Interest in the conference was greater than anyone could have expected. When the conference sold out nearly six months before the event, state-of-the-art audio-visual transmission was organized to allow presentations to be viewed from auxiliary rooms throughout the conference center. With enough material for three days and a conference center that was only available for two, the organizers decided to extend the conference hours to a twelve-hour program on the first day and a ten-hour program on the second. With everyone's cooperation, this jam-packed agenda was amazingly able to run according to schedule.

Mechanotransduction was the first of four main topics addressed:

- Donald Ingber, M.D., Ph.D. started things off by discussing tensegrity and mechanoregulation (see Figure 2).
- Paul Standley, Ph.D., M.D., spoke about how human fibroblast cytokine

Figure 1 Thomas Findley, M.D., Ph.D., opening the proceedings of the Fascia Congress (photo credit: Hallie Robbins, D.O.).

Figure 2 Donald Ingber, M.D., Ph.D., describes the tensegrity model.

expression is regulated by biomechanical strain and suggested an in vitro model for myofascial release.

- Helene Langevin, M.D., presented her findings on the dynamic connective tissue fibroblast cytoskeletal response to tissue stretch and acupuncture.
- Alan Grodzinsky talked about chondrocyte mechanobiology and its relevance to matrix molecular mechanics and tissue remodeling.
- Frederick Grinnell, Ph.D., taught the basics of fibroblast mechanics in three dimensional collagen matrices.

Collectively, this segment of the event explained the role of mechanotransduction in cell culture systems, in tissues and in the entire living organism. The research presented on mechanotransduction had exciting implications for bodyworkers, suggesting that the efficacy of manual therapies may be explained as the action of mechanical pressure being converted into chemical signals in the body.

As the second featured topic of the conference, Giulio Gabbiani, M.D., Ph.D., James Tomasek, Ph.D., and Boris Hinz, MER, Ph.D., addressed the evolution, mechanoregulation, and contractile function of myofibroblasts. Myofibroblasts are atypical fibroblasts that combine the ultra-structural features of both fibroblasts and smooth muscle cells. Due to their expression of stress fiber bundles containing alpha smooth muscle actin, and due to strengthened adhesion sites on their membrane, these cells possess a much higher contractile potential than normal fibroblasts. The contribution of myofibroblast contraction in wound healing is well established; however, more recent discoveries of the presence of myofibroblasts in other connective tissue, such as ligaments, tendons and broad fascial sheets has provided early evidence that connective tissue contractility is also an important factor in normal musculoskeletal dynamics.

One of the problems with connective tissue research has been ambiguity about what is fascia and what is not. Frank Willard, Ph.D., cleared up this confusion in his presentation on the four layers of fascia in the first of three main presentations on the anatomy and biomechanics of fascia. He pointed out that ligaments, tendons and aponeuroses are comprised of dense regular connective tissue and are technically not fascia. Fascia, or dense irregular connective tissue, can be understood as four concentric tubular-shaped layers made up of pannicular, axial, visceral and meningeal fascia, within which all organs systems of the body develop.

Peter Huijing, Ph.D.; Andry Vleeming, Ph.D. and Moshe Solomonow, Ph.D., continued the theme by explaining how essential connective tissue is to force transmission and power, while Serge Gracovetsky, Ph.D., rounded out the panel in his presentation that asked, ''Is the lumbodorsal fascia necessary?'' Participants laughed hard as he wove humor into his convincing demonstration of what the human body would be like without this large aponeurotic sheet of tissue. Gracovetsky was later awarded the $2000 Dr. Ida P. Rolf Award, sponsored by the Rolf Institute of Structural Integration®, for the best oral presentation. Who knew how funny fascia could be?

Fascia pain mechanisms were the final main topic of the Fascia Research Congress, and were of special interest to all the attending clinicians who treat people in pain.

- Siegfried Mense, Ph.D., explored the neuroanatomy and neurophysiology involved in low back pain.
- Jay Shah, M.D., shared his research using a novel microdialysis technique that showed increases in the levels of chemicals associated with nociception, inflammation and muscle contraction in the area of myofascial trigger points.
- Geoffrey Bove, DC, Ph.D., reviewed the epiperineurial anatomy and reported how this nerve fascia can cause pain symptoms in its own right.
- Partap Khalsa, DC, Ph.D., concluded the session with his insights into the proprioceptive and nociceptive mechanisms of joint capsules.

In addition to his scientific contributions, Khalsa also presented information on the funding program of NCCAM – the National Center for Complementary and Alternative Medicine. Dr.Khalsa had good news for all of the budding researchers in attendance. Grant money is available for fascia research projects and the funding officers of the program are there to help prepare proposals.

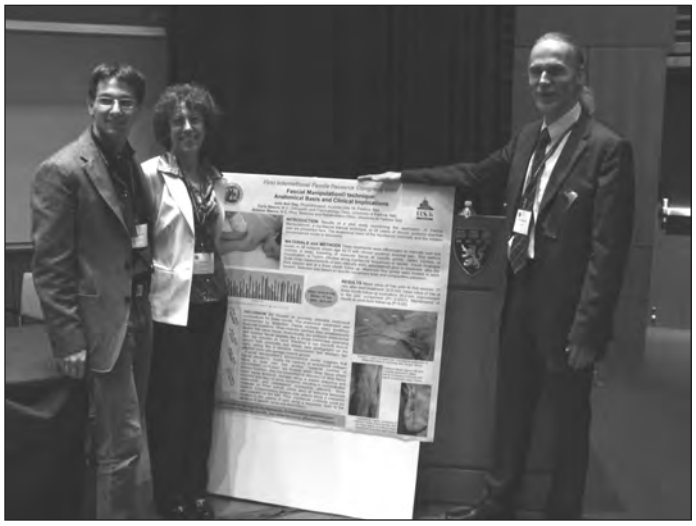

Figure 3 Antonio Stecco, M.D., and Julie Ann Day, P.T., accept their award for the best poster from conference organizer Robert Schleip, Ph.D. (photo credit: Julie Day)

Figure 4 The Clinician–Educator/Scientist Panel. (photo credit: Hallie Robbins, D.O.).

Concurrent parallel sessions provided participants with a large array of choices to further explore their particular interests. The presenters included those whose submitted abstracts were accepted for oral presentation as well as invited speakers. "Presenters from around the world brought invaluable and unexpected insights into fascial function and dysfunction. For example, W.J. Fourie of South Africa showed that the fascia lata coordinates complex thigh muscular activity, with a critical role played by the integrated vastus medialis and fascia lata. This relatively minor insight immediately affected my practice," said Rena Margulis, developer of Tandem Point Integrated Acupressure therapy.

Forty-three of the accepted abstracts were presented as posters and were available for viewing during the entire conference. A $500 award for the best poster, sponsored by the Fascia Research Congress, was presented to Julie Ann Day; Carla Stecco, M.D., and Antonio Stecco, M.D., from Italy for their work entitled "Fascial manipulation technique: anatomical basis and clinical implications" (see Figure 3). They reported that "The First International Fascia Research Congress was an intensely exciting experience. Extremely well organized, it was a true smorgasbord of information, with state-of-the- art presentations of scientific research concerning the fascial system. We were thrilled to have received the Best Poster Award. This acknowledgement of our work and, in particular, the lifetime of clinical research and study of our mentor, Luigi Stecco, encourages us to continue in our efforts to comprehend the intricacies of the fascial system."

For Sue Hitzman, developer of MELT (Myofascial Energetic Lengthening Technique), one of the highlights was seeing the movie "Strolling Under the Skin" by J.C. Guimberteau, M.D. On the second day, participants had the choice of attending the Ida P. Rolf Research Foundation Inaugural Address given by Richard and Alan Demmerle [Dr. Rolf's sons].

Peter Lelean, a structural integrator and clinical masseur from Australia remarked, ''The principles of cellular tensegrity, covered by some of the main speakers, are directly translatable to the techniques used to restore fascial function as part of structural integration on the macro level. There is clearly much to be gained from further interdisciplinary discussion.''

The existing body of research on connective tissue has generally focused on specialized genetic and molecular aspects of the extracellular matrix. However, the study of fascia as a function of support, as a contribution to human force potential and as a source of pain has been largely neglected.

The congress generated many questions that have yet to be answered. During the final panel session, co-chaired by Partap Khalsa and Leon Chaitow, ND, DO, clinician/educators (Joseph Ardette, M.D.; Tom Myers, Certified Advanced Rolfer™; Diane Lee, PT and Michael Patterson, Ph.D.) asked questions of scientists (Langevin, Shah, Huijing, and Solomonow). Langevin emphasized the dearth of evidence. To many of the posed questions, she humbly answered, ''We don't know.'' For many, such apparently negative answers, were a justification of the intent of the session – to inform scientists of what clinicians and educators need to know (Figure 4).

For those who were unable to attend the conference, a DVD recording of the proceedings was shown at nineteen U.S. and fourteen overseas locations around the world. In addition, a conference proceedings book was made available. Fascia Research: Basic Science and Implications for Conventional and Complementary Healthcare is a compilation of sixteen full-text articles written by the main speakers, that also includes all of the abstracts that were accepted by the Scientific Review Committee. This companion book, as well as the DVD, are available for purchase through the congress website www.fascia2007.com. Plans for the Second International Fascia Research Congress are already underway. Huijing has offered to host the next conference at Vrije Universiteit in Amsterdam in 2009.

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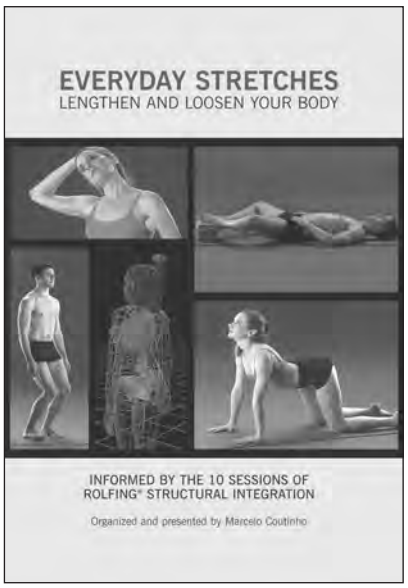
The First International Fascia Research Congress was a great success. In fact, it was an important, interesting and fun occasion. Practitioners of every stripe were brought into contact with leading clinicians and bench scientists. Listening to people articulate their research was to have the momentary privilege of peering into brilliant minds. One of the delights were seeing how humor, patience, humility and graciousness could coexist with penetrating intelligence. Another was to realize how important thorough literature reviews, technical expertise and uncommon sense are in the research arena. Last of all, it was delightful to bathe in the sea of good will and euphoria that came from the interaction of practitioners and researchers at the top of their game.

– John Hannon, D.C.

Everyday Stretches: Lengthen and Loosen Your Body

by Marcelo Coutinho, Certified Advanced Rolfer™

Reviewed by Robert McWilliams, Certified Rolfer™, BFA, MFA Dance



Everyday Stretches: Lengthen and Loosen Your Body. Informed by the 10 sessions of Rolfing® Structural Integration, a new DVD, takes the viewer step-by-step through simple stretches and movement aimed at the connective tissue network. It is organized and presented by Marcelo Coutinho, a Certified Advanced Rolfer and Rolf Movement Practitioner who has a practice in New York City (which he shared with the late Louis Schultz). Besides his Rolfing certifications, Coutinho holds a degree in physical education and has an extensive background as a movement coach and professional dancer. The DVD presents gentle Rolf Movement-based routines, using basic props (yoga strap, block, and tennis ball) promote increased flexibility, coordination, body awareness and improved body alignment. Coutinho coaches two beautifully aligned models through the sequences as he offers basic rules for safe and effective stretching and therapeutic movement. He has a warm, pleasant voice and clear, comfortable manner with the models that puts viewers at ease and keeps their attention.

Intended to reinforce and deepen lessons learned in the Rolfing Ten Series, the movement used will be familiar to those who have studied Rolf Movement. For example, slowly lifting and lowering the body with a tennis ball placed under forefoot, center and heel help to make the plantar fascia supple, as well as awaken kinesthetic awareness and righting reflex responses in the ankle area and lower limb. This increases sensitivity and sureness of bilateral support for the mover, a goal of session two in the Ten Series and a "sure-footed" reminder of the principle of support. Marcelo Coutinho's calm guidance and direction through the exercises help ensure that most viewers will achieve a more flowing, supported and expansive movement experience.

The program is appropriate for persons of any fitness level, easy to follow, and presented with precise verbal instruction and detailed 3-D animation. To this reviewer, it seems a wonderful tool to use with Rolfing clients, to help them reinforce and maintain their gains from the session work. It is not meant as a complete guide to Rolf Movement. It is very suitable as an aid in the process of structural integration, and is also accessible to people interested in other movement and somatic disciplines such as Pilates, yoga or Gyrotonics.

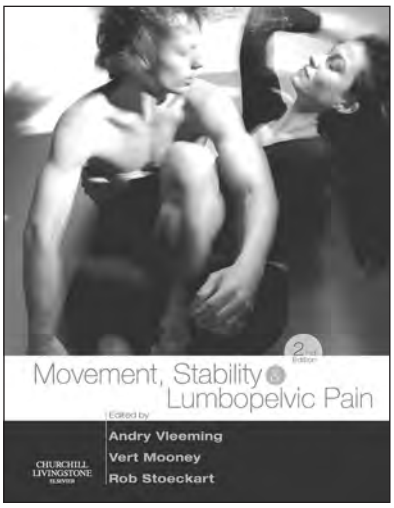
The DVD includes a forty-five-minute total body routine, as well as three additional short routines designed to focus on problem areas. The viewer can also pick and choose among the twenty individual routines to assemble his own workout. *Everyday Stretches: Lengthen and Loosen Your Body* is available on Amazon.com.

Movement, Stability & Lumbopelvic Pain: Integration of Research and Therapy

2nd Edition, Edited by Andry Vleeming, Vert Mooney and Rob Stoekart

By Robert McWilliams, Certified Rolfer™, BFA, MFA Dance

Movement, Stability & Lumbopelvic Pain: Integration of Research and Therapy (2nd Edition; Churchill Livingston, Elsevier 2007) is a compendium of articles on lumbopelvic function and pathology from over fifty authors, including many hundreds of book and study source citations. As the editors state in the preface, one individual author could never put forward so many diverse aspects of the anatomy, epidemiology, clinical treatment experience and theory of this subject. All the material presented is "evidence based," and as it doesn't all agree yet, the editors seek to help clinicians develop an "evidence informed" approach to helping clients with lumbopelvic pain. For me, as a "non-scientist" and new Rolfer, it was hard to get through some of it, because of the density and depth of presentation. I have, however, found the sections I persisted with to have paid off. In practical terms, the work has given me a clearer sense of structures to free, connect and stabilize in order to achieve a particular effect. It is an opportunity for Rolfers who are not yet familiar with the vocabulary employed by physical therapists, osteopaths and orthopedists, to become more so. Concepts ranging from the lumbopelvic "self-bracing mechanisms" of form and force-closure, "moments of force" in joint kinesiology, and coupling motion concepts in the spine with alterations depending on the center of rotation are detailed and explained. For example, a different center of rotation will create either a counterclockwise, clockwise or fixed position of a vertebral problem given the same mix of lordosis and side-bend, a fact which has definite implications in "spinal mechanics" work with clients.



The opening chapter starts off describing the continuous ligamentous "stocking" in which the lumbar vertebrae and sacrum are positioned as being a key to its support, stability and function through the "self-bracing mechanism" of the area. It goes through a series of layer-by-layer dissections, with clear descriptions of the interconnections of the fascial layers and muscles affecting the whole region, ranging from the hamstrings to connections through to the mid-thoracics. Much discussion is devoted to potential stabilizing and de-stabilizing factors for the sacroiliac joint (SIJ), and lumbars. I think most Rolfers would find the images and discussion contained in the first chapter enlightening, as it includes clear imagery and concepts based on new information. The evidence in the work is often based on porcine and cadaver studies. Some of this information is hard to make out with the grayscale used, and some of the graphics were not always the easiest to follow, but definitely worth the effort.

This 2nd edition is significantly updated from the previous one, with new authors, and drawing on many studies as recent as 2006. Though it seeks to be based on hard science, it is not monolithic. Several points of view are represented, and some of them conflict. For example, questions about form closure versus force closure at the SI joint remain unresolved, in sum, by the array of varying ideas, dissections and kinematic studies presented. The work is full of amazing facts to ponder, such as "the degree of pain perceived from injury to the spinal ligaments is related to the speed of the injury and not to its extent" (Willard, referring to Olmarkrer et al., 1990). This would speak to the trauma and problems caused by car accidents, and some of the difficulty treating them.

In addition to sections on lumbar and sacral anatomy, the book focuses on function, clinical experience, kinematics, theory of SIJ stability, instability, form and/or force closure, diagnostic methods including CAT, MRI and x-ray, and demonstrates many manual tests for instability at the SIJ. In a photographed case study, Diane Lee shows the clinical benefits of specific motor control retraining of the multifidi and associated stabilizers to ease lumbar pain. Levin presents tensegrity theory, and theories on the possible evolution of the pelvis from costovertebral joints are gently disputed within various articles throughout the work. I was intrigued by Serge Gracevotsky's wide-ranging discussion of "stability or controlled instability" that rolls through evolutionary subjects, gait, "creep", spinal coupling, until concluding with the importance of a ridge structure at the tip of the transverse processes of S1 and S3 that locks into the innominates and "transfers the vertical loads" that he considers to be weight-bearing.

If there is a fault, it might be the decidedly mechanistic slant of most of the articles, as if "lack of stability in structure X here is remedied by exercising muscle Y there," which is clearly limited as an approach. There is no real development of ideas anywhere on psychosomatic pain in the lumbopelvic region. Many passages on rehabilitative movement and exercise

contain no discussion of quality of motion. Anticipatory reflex action mechanisms and their importance in setting muscle tone are discussed in a fascinating article, "Motor Control in Chronic Pain: new ideas for effective intervention" by G. Lorimer Mosely. Diane Lee and Andry Vleeming are given the last word in "An integrated therapeutic approach to the treatment of pelvic girdle pain." This article focuses on combining the physical and emotional/cognitive factors involved in influencing joint motion, termed a "functional integration" approach to detrimental motor and patterns.

No Certified Rolfers® are quoted in the work, but some of the authors are probably already familiar to the Rolf community: Jean-Pierre Barral is cited; so are Serge Gracevotsky, author of *The Spinal Engine*, Diane Lee, an eminent clinician/author on pelvic pain, and Stephen M. Levin, MD, who writes here about the tensegral model. To me this begs the question: why no mention of Rolfing®? It would seem that Rolfing is completely off their radar. Because of the focus on fascial planes, functional "slings" and the interconnectedness and relatedness of structures in cases of dysfunction and pain, it would seem that the editors are looking for a general, holistic model. Perhaps some scientific minded Rolfer can present it to them in a way that is "evidence-based."

Review of *Anatomy of Breathing* and *The Female Pelvis*

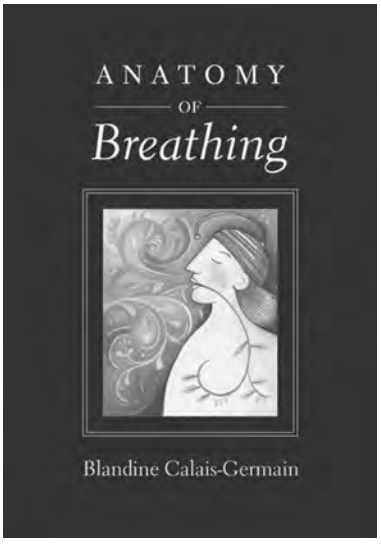
by Blandine Calais-Germain

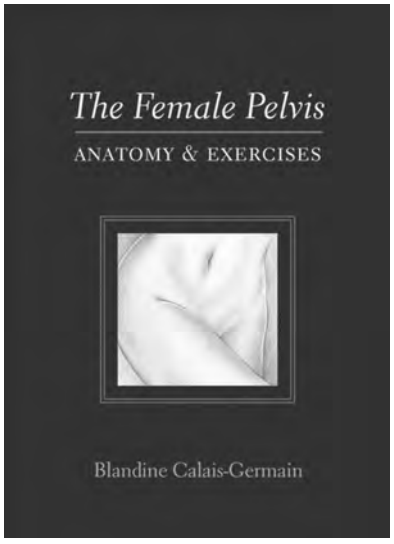
Susanna Baxter, Certified Rolfer™, LMP, LAMP, AKC, IKFF Advisor

In 1985, Blandine Calais-Germain first released her French language book, *Anatomy of Movement*, which lent a fresh face to traditional anatomy texts. Originally a dance instructor, Calais-Germain completed a course of studies in kinesiology and, at the behest of her students, taught anatomy courses. It became clear that a solid understanding of functional anatomy is essential to preventing physical injury and enhancing movement. In 1993, English speakers were treated to a translated version of her work, which replaced the standard anatomical diagrams depicting musculature, bones, organs, and nerves in a microcosm of attachment sites with simple, yet clear, illustrations of the musculoskeletal system and explanations of associated movements. Calais-Germain's straightforward writing made functional anatomy accessible to non-medical professionals, and her work became a core text for any student of bodywork.

In her latest works, *Anatomy of Breathing* and *The Female Pelvis*, Calais-Germain has again cut through the medical jargon. In both books, she meticulously details the pertinent structures, starting at the skeletal level and working outward to muscles, ligaments, and organs. Despite having a relatively comprehensive understanding of anatomical breathing structures, I certainly gleaned new knowledge from the anatomy pages of *Anatomy of Breathing*. First, Calais-Germain makes a distinction between skeletal structures that move to allow breathing and those that support this movement. The black and white illustrations are uncomplicated and show the intricate network of ribs, sternum, and spinal column. She then goes beyond depicting structures of the thoracic cage and includes the pelvis, noting that the pelvis and thoracic cage are linked by the lumbar vertebrae, and therefore movement of the one affects the other. In today's world of divide and conquer with respect to different areas of the body, it's refreshing to see a work that helps us remember that our entire body functions interdependently as an integrated organism.

After a thorough depiction of the organs and muscles of respiration from the mouth all the way through to the pelvic floor, Calais-Germain delves into the forces and movements of breathing. These chapters contain the true value of the book. This is where we as bodyworkers learn how and why breathing occurs, such as how the principle forces act differently with respect to variances in volume of breath during inhalation, exhalation, and apnea (breathing cessation). Calais-Germain analyzes the principle types of breathing, such as diaphragmatic, costal, and paradoxical breathing. In helpful call-out boxes, she lists the advantages and disadvantages of each variation. As a bodyworker, I can see the benefit of having a specific "how-to" guide for teaching clients to find a new awareness of their breath. Following this more technical exploration of the anatomy of breathing, Calais-Germain includes a chapter of practice exercises that could be done with the guided assistance of a bodyworker or given to clients to be used at home between sessions. Of course, this chapter is truly a bonus as the entire book is laced with useful exercises to increase awareness.





The Female Pelvis is similar in style to Calais-Germain's other two works. She begins the book by clearly laying out the anatomy of the pelvis. This book is definitely geared towards women who wish to better understand their bodies before, during, and after pregnancy as well as therapists who wish to work with women in this condition. Never having studied midwifery, I cannot say whether there are other works that approach the level of attention to detail of Calais-Germain's book. I can say that, having only a general background in the subject, I found her anatomical depictions enlightening. I also loved that she addressed possible complications stemming from pregnancy in a matter-of-fact manner. This book would be useful for a practitioner to refer to when relating to female clients. Calais-Germain takes a subject that is often difficult to broach – female fertility and sexuality – and brings it to an educational and non-threatening level.

Both *Anatomy of Breathing* and *The Female Pelvis* should reside on every bodyworker's bookshelf. After being read cover to cover, they will continue to be a valuable source of information, illustration, and practice exercises to help the practitioner connect with clients. In addition, practitioners could easily recommend that clients read either of these books on their own to further acquaint themselves with their functional anatomy as both books are written for the non-medical person.

The Body Has a Mind of Its Own

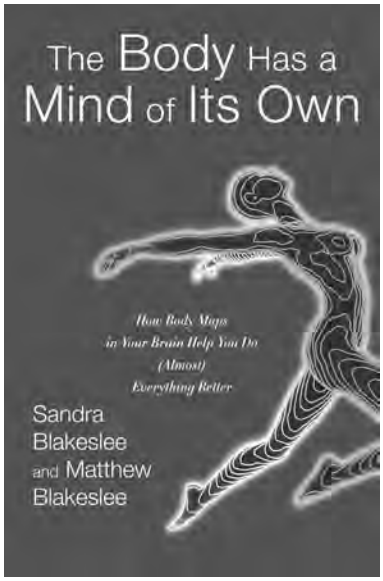
by Sandra Blakeslee and Matthew Blakeslee

By Kevin Frank, Advanced Certified Rolfer® and Rolf Movement Practitioner

In the 1930s, a neuroscientist named Wilder Penfield was able to map how each part of the brain's sensory cortex corresponds to different sensory regions throughout the body. We all encountered a version of his map, called the "homunculus," in anatomy class. The hands, face, and feet are huge in comparison to everything else because there is vastly more brain involved in registering signals from those parts of the body. It makes for an amusing but logical picture of a human body.

Since Penfield's era, neuroscientists have learned a lot more about our body's way of mapping itself. For two decades, there has been an explosion in research about the function of the brain in relationship to motor control, including the function of body maps, and their plastic nature. For example, we know that the representation of body regions in the brain change proportionally in response to perceptual and behavioral changes in a person's life. There are also many body maps in the brain. Some involve conscious awareness; others work quietly behind the scenes. Some involve movement or imagining movement, and some inform sense perception. These kinds of discoveries are the substance of *The Body Has a Mind of Its Own* by Sandra Blakeslee and Matthew Blakeslee (Random House, 2007).

As structural integrators, we have many reasons to love this book. We are in a position to benefit from knowledge about body maps and their plasticity, because this is where hard science shows how structures in living beings can change. Postural structure is a form of coordination that is necessarily informed by body maps. Body maps include the space surrounding the body, as well as the body itself. The body and its immediate environment of "peripersonal" space are represented in the brain. When this body and space map changes, such as after an accident, the way a person stands and moves changes along with it. Structural integrators help people revive function that has been impaired by faulty or missing places in their body map by differentiating fascia, and help people differentiate their experience of their body and environment.



The Blakeslees (Matthew is Sandra's son) are third- and fourth-generation science journalists. We have come to know Sandra's writing through her articles in the *New York Times* Tuesday Science Times section on topics like the "Enteric Brain," "Cells that Read Minds," and "The Brain's Moral Center." In this new book, the Blakeslee team surveys advances in neuroscience, with emphasis on recent discoveries, and delivers a synthesis of what is most relevant about how we perceive and move. Each discovery is accompanied by creative, practical examples that show how we learn, how we move, and what can go wrong in motor control.

This book is a good source to find out about "mirror neuron" theory, a group of discoveries that explain how we learn to move through watching other people move. It also explains why we all have the ability to "body read," to empathize with another's movement. This book covers a broad catalog of phenomena with a few delightful surprises. Reading about them may change how you think about fascia and structural integration.

The book was published at a poignant moment; it coincided with the first Fascia Research Congress in Boston in October 2007. Out of many fascinating papers and presentations comes the impression that fascial networks link every cell of the body together, mechanically and biochemically. Injury causes fascia to defend itself and skillful touch helps fascia restore itself. But even if skillful touch helps fascia to heal, how does fascial touch improve posture? How does touch change how bodies stand and move over time?

Researcher and Rolfing instructor, Robert Schleip made a number of contributions to the fascial conference. At one presentation, he explained that where fascial planes intersect, we find the greatest number of mechanoreceptors. These mechanoreceptors are a robust source of information for motor control. A logical conclusion is that much, if not all, of the work a structural integrator does by making sensory contact with fascia serves to update and inform the places in the brain that collect information for movement: the body map.

Another major topic in *The Body Has a Mind of Its Own* is a discussion of the body schema/body image model, a historically durable and clinically useful construct in the world of neuroscience. Briefly, body image is the part of motor control influenced by our personal history. Body schema is the capacity of the body to respond through automatic coordination. The interplay of image and schema is a large part of what structural integration is about. The body image/body schema paradigm clarifies the process by which a new movement is learned: first, through body image, and then later as it becomes part of body schema. Just as important, body image can be an obstacle to new movement acquisition, and you address body image to negotiate change of movement or change of posture. Work with body image and schema is one feature that distinguishes structural integration from other manual therapies.

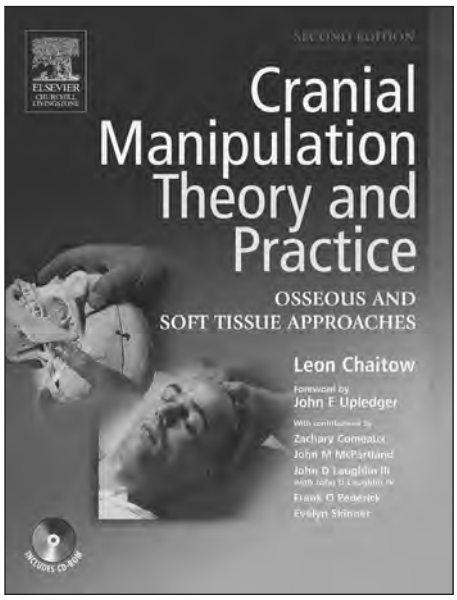
Other topics covered in this book include: out-of-body experience, the mechanisms of pain and perceptual strategies for alleviating

pain, phantom-limb rehabilitation, and use of "proprioceptive underwear" to mitigate anorexic behavior. It's an exciting read; each time I picked it up, I thoroughly enjoyed reading it.

As of now, *The Body Has a Mind of Its Own* deserves to be put alongside other essentials in a structural integrator's education: books like those by Dr. Rolf, or *The Thinking Body* by Mabel Todd. Blakeslee and Blakeslee provide a window to research that validates the possibility of meaningful change in this body-mind.

Three Books on the Cranium

By Russell Stolzoff, Certified Advanced Rolfer™, Rolf Movement Practitioner

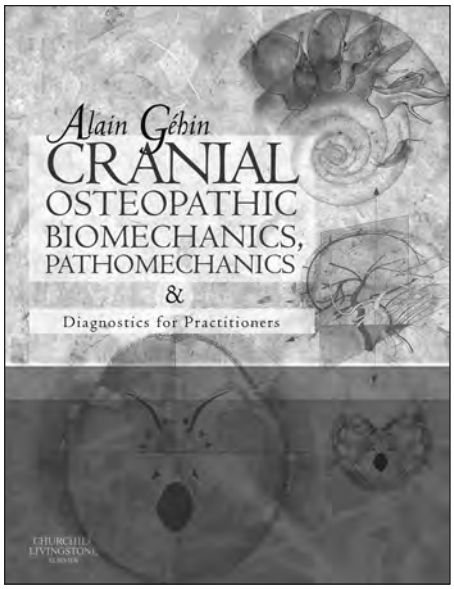


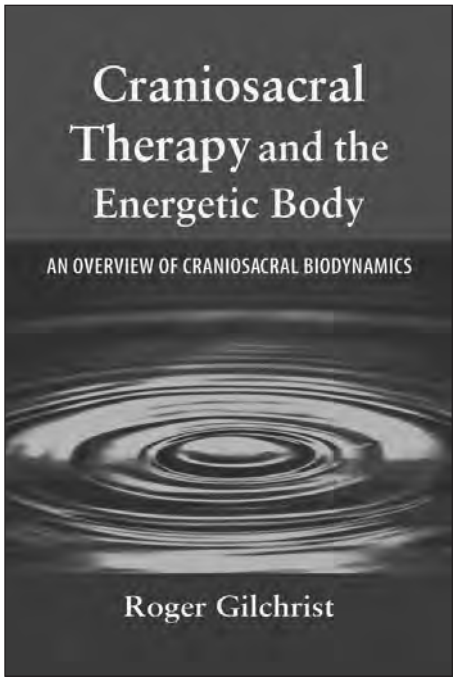
All structural integration (SI) practitioners must eventually confront the need to deepen their understanding and ability to work with the cranium. There is a notable lack of published material on topics such as the cranium, viscera, and nervous system as they relate to the discipline of SI Basic and Advanced Rolfing® training don't delve deeply into study of the cranium. Thankfully, there are courses becoming available to learn SI approaches for the viscera and nervous system, but so far cranial SI continuing education is not being taught or written about. For more than twenty years SI practitioners have read and trained about the cranium outside the SI discipline, and have digested and imported the most relevant and useful aspects of various cranial approaches into their practices.

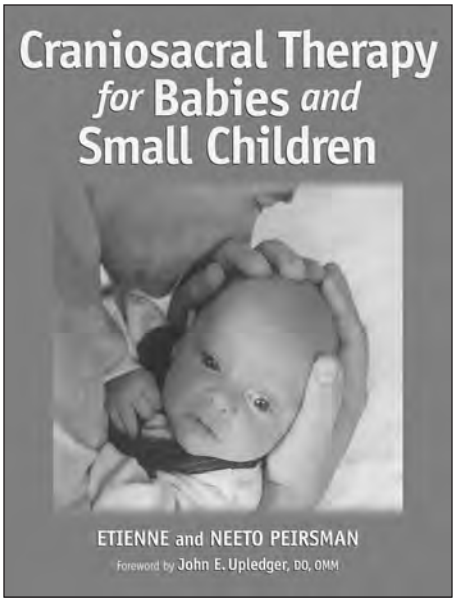
Of all the cranial books that I have come across, *Cranial Manipulation: Theory and Practice* (Churchill Livingstone, 2005) by Leon Chaitow is, by far, the best basic book I have read on the subject. To be sure there are others that come to mind. However, Chaitow's survey on the subject is rigorous, overarching across disciplines, and sets a non-sectarian standard by pulling from the various schools of cranial manipulation to create a thorough basic exploration of the topic. His book is filled with research references, clear descriptions of anatomy, functional rationale, and skill-building exercises. It is with reference to the high bar that Chaitow has set that I evaluate three books on the subject of cranial manipulation. Each of the three authors has written from a particular perspective on the subject, and as such, the books reflect their conceptual orientations to the cranium.

Of the three books, Alain Géhin's *Cranial Osteopathic Biomechanics, Pathomechanics and Diagnostics for Practitioners* (Churchill Livingstone 2007) comes the closest to presenting material that Rolfers can directly use. I consider knowledge of his biomechanical approach to be fundamental, like scales are for a musician. Without this knowledge a complex subject like the cranium remains vague and treatment haphazard. Géhin's book is not easy to digest, but it will reward those who are willing to spend the necessary time it takes to understand it.

Where Géhin chooses to shorten the discussion on the energetic component that all sensitive and effective cranial work must have, the energetic aspect of the cranial discussion is the primary view put forth







by Roger Gilschrist in his book, *Craniosacral Therapy and the Energetic Body: An Overview of Craniosacral Biodynamics* (North Atlantic, 2006). However, the book's accessibility will be compromised for anyone who is uninitiated into the biodynamic system, or is unwilling to venture out on a limb. If the reader can allow convoluted definitions and suspend judgment of beliefs stated as fact, this book has some wisdom about how to sensitively witness and contact another person with an energetic approach.

Unfortunately, *Craniosacral Therapy for Babies and Small Children* (North Atlantic, 2006), by Etienne and Neeto Peirsman, has neither the rigorous biomechanical approach, nor detailed descriptions of the sensitive energetic approach that doing cranial work with babies requires. In fact, it is hard to say positive things about the book, except that it has beautiful color pictures that ooze the author's skillful contact and presence. Otherwise, *Craniosacral Therapy for Babies and Small Children* is written in such a choppy way that it even makes reviewing it difficult. In one way it is a very general, opinionated discussion of why cranial manipulation is important for babies. In another way, it presents complex information incompletely. Interspersed are descriptions of some techniques that are accompanied by warnings that only very experienced practitioners should use the techniques. If you seek an intelligent methodical discussion of how, why, and when to perform cranial manipulation with babies, this book will disappoint you.

There are however some nicely presented tidbits. These are to be found in Chapter 5: Guidelines for the Treatment of Mother and Child after Birth, and Chapter 6: The Different Techniques. The few well-phrased pieces hardly make slogging through the book worthwhile. The rest of the book is a bizarre amalgamation of hippiesque expressions of love and appreciation for the miracle of babies mixed with judgments about how birthing has gone wrong in the modern world. If it weren't so heavily biased it could be better read as a primer for uninformed parents who are interested in the natural way of birth. All this makes for a confused presentation. Practitioners who already understand the need for cranial work for babies don't need to know the elementary arguments for the work, or to be thumped on the head again with the cultural conditions that sometimes contribute to the need for babies to have cranial work. In a similar way, how can parents and newly curious practitioners use such general instructions on infant cranial techniques combined as they are here with warnings on the dangers of doing so without proper training?

Finally, I find it discrediting to his reputation as a leader in the craniosacral field that John Upledger saw fit to write the foreword to this book. One can almost tell from the half-hearted paragraph he mustered up that he must have had been unable to say "no thank you" to this one. Similarly, I had to wonder why North Atlantic books would even consider publishing a book that does not contain a proper bibliography or an index.

North Atlantic also published Roger Gilchrist's book *Craniosacral Therapy and the Energetic Body, An Overview of Craniosacral Biodynamics*. This effort is serious and is a worthwhile read on the topic of biodynamic cranialsacral therapy. It proceeds logically according to the questionable internal logic of the biodynamic framework. In the early chapters, Gilchrist presents a version of the history of cranialsacral therapy and introduces the so-called Breath of Life. He follows this with valuable chapters devoted to therapeutic presence and other practitioner-oriented fundamentals for being able to skillfully "negotiate space," create contact, and listen to the "tide." Gilchrist then proceeds to discuss more esoteric aspects of the biodynamic work like "Layers of the Tide", and "The Holographic Nature of the Tide." Gilchrist concludes with discussions on the applications of the work, case studies, and "The Spiritual Dimensions of Craniosacral Therapy."

It would be hard to say the biodynamic orientation isn't intriguing. Reading *Craniosacral Therapy and the Energetic Body* arouses awareness and sensitivity. However, Gilchrist presents a theory of life and therapy that is more religious than factual. There is no argument over the perceptual descriptions of the phenomena that Gilchrist and others describe, but believing the biodynamic attribution of meaning and importance to the phenomena is difficult. Like religion, belief in the biodynamic rationale comes down to faith. It can never be proven. Perhaps with the proper training and indoctrination into the biodynamic faith, anyone could become a believer in the Breath of Life.

According to Gilchrist, the Breath of Life "…is a specific phenomenon operating in the core of our being, yet it is challenging to describe because it relates to the most esoteric dimensions of experience…is mysterious and subtle, yet at the same time concrete and palpable." If this seems ambiguous, there's more:

> The Breath of Life is believed to have a potency by which it conveys itself into each individual. This potency establishes the inherent ordering principle within the individual and organizes our life experience in relation to this core energy dynamic. The potency of the Breath of Life causes the body to respond in all its activities. The development of the body, in the first place, is driven by the potency of the Breath of Life. The continued functioning of the body throughout life, our physiology, is governed by the potency of the Breath of Life. Our psychology and how we respond to experiences in life are held in the field of potency. The potency of the Breath of Life creates a vehicle for the expression of our spirit in this world.

This is only one of Gilchrist's confusing definitions. Throughout the book there are others. For example, Gilchrist's definition of potency: "…it is a primary energy function acting through the cerebrospinal fluid in the core of the body". On one level, it's easy for one's head to nod its way through the book in agreement. It would be so easy to say, "so that's what I've been feeling all these years!" On the other hand easy agreement with these concepts is the equivalent of blind faith.

If you haven't realized by now, *Craniosacral Therapy and the Energetic Body* is not about structure and function. It surely won't help you understand structural relationships within the neural cranium, or do better mouth work. At various points Gilchrist conceptually touches on and acknowledges the importance of structure. But he quickly pivots and repeatedly relegates structure to a level of importance somewhere below the concept of potency. According to Gilchrist, when potency becomes aberrant it forms *inertial fulcrums*, which are energetically akin to structural strain patterns. At this point the thinking SI practitioner should ask, "aren't these phenomena different aspects of the same thing?" It is here that we can realize that the theories of biodynamic craniosacral therapy are not holistic. Rather

they are reductionistic. While the theory of Rolfing® has not yet clearly articulated the energetic domain encompassed within it, biodynamics, as presented by Gilchrist, reduces all phenomena to a set of specious interpretations. This said, even with all the questionable "meaning-making," the book is still worth checking out. But remember to keep your skepticism close by in a parallel stream.

A quote from Chaitow is relevant here:

> The truth is that even after detailed assessment of the current research, when set against cranial beliefs, we will find that we are left with areas which remain ambiguous. This should not be seen to negate craniosacral therapy, but to offer a series of challenges which need to be met so that what, at present, is vague and unacceptable can be validated.

In contrast to Gilchrist's publication, Alain Géhin's *Cranial Osteopathic Biomechanics, Pathomechanics and Diagnostics for Practitioners* is a breath of fresh structural/functional air. While this book doesn't have an index or a list of references, it does have a concise table of contents that reveals Géhin's no-nonsense approach to the cranium. The book is full of further evidence that Géhin is one of today's most cogent teachers of cranial theory and technique.

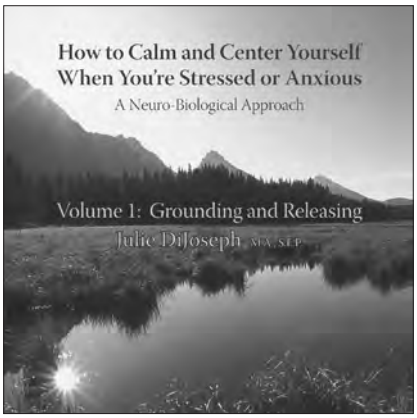
The introductory section of the book discusses cranial anatomy, blood supply and circulation. The drawings here and throughout the book are unique, superb, and unlike any others I have encountered. Part One: Cranial Biomechanics details the complex movements of all cranial bones and the laws of cranial adaptation to strain. Part Two: Pathomechanics describes the concepts of "the cranial osteopathic lesion," diagnosis, and basic categories of osteopathic techniques and the relevance of these techniques to treatment of cranial lesions. Part Three: The Therapeutic Tools describes the therapist's posture. Here Géhin's provides a simple yet excellent formulation of the client-practitioner interface, as well as brief descriptions of the concept of fulcrums, palpation, and "the art of uniting and separating." Part Four: Manual Diagnosis delves deeply into the various holds that allow the practitioner to assess and treat lesions. The complexity of the drawings and diagrams that accompany the text of Géhin's latest work reveals that understanding and being able to affect the working relationships of the cranium is no small undertaking for any practitioner.

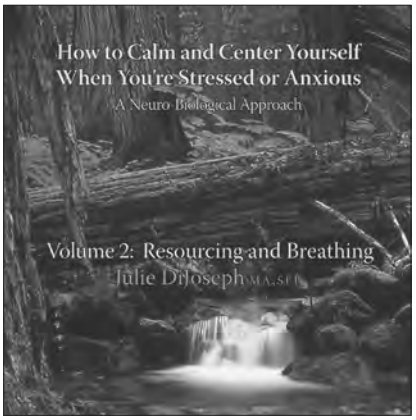
There are no clues or simple steps here for how to import Géhin's, Gilchrist's, or even Chaitow's work into the SI framework. However, thoughtful reading of these authors provides a lot of food for thought and practice, which hopefully someday can bring us a step closer to a unique, detailed SI perspective on the cranium.

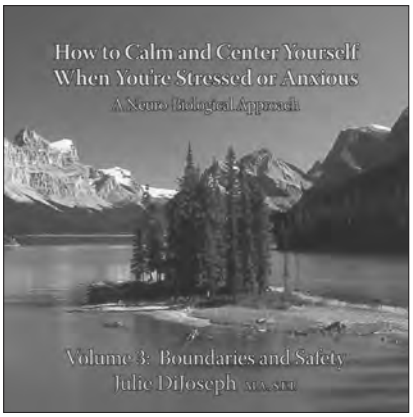
How to Calm and Center Yourself When You're Stressed or Anxious: A Neuro-Biological Approach (Volumes 1-3)

By Julie DiJoseph, M.A., S.E.P.

Reviewed by Anne F. Hoff, Certified Advanced Rolfer™







This is a set of three CDs by Julie DiJoseph, a somatic psychotherapist who credits Peter Levine (Somatic Experiencing®), Emily Conrad and Susan Harper (Continuum), and Donald Epstein, DC (Network Spinal Analysis and Somato Respiratory Integration) as the primary sources and influences on her work. The common base to all three volumes is awakening of the felt sense as a means to become more embodied and to gently discharge trauma, a key underpinning of Levine's work. The CDs bring basic concepts and practices from Somatic Experiencing and Continuum into a practical exercise format useful for practitioners and – especially – our clients.

Volume 1: Grounding and Releasing is the simplest of the three. The CD is essentially two main practices – grounding while sitting and grounding while standing – each in two versions. On the first versions, DiJoseph introduces concepts about the autonomic nervous system, charge and discharge, and the impact of the felt sense on the brain, but in digestible pieces that do not distract the listener from the process. The second version of each is streamlined to simple instructions for regular use once the listener is familiar with the exercise. I can see this CD being a useful recommendation for certain types of clients: those who are too much in their heads, those who have trouble feeling and relating to the body kinesthetically, the frantically busy and stressed, and clients who would like to have a meditative practice but do not want anything from a particular religious or spiritual tradition.

Volume 2: Resourcing & Breathing is geared toward "using the felt sense of the body to calm and center yourself in the midst of stress, anxiety, and 'fight or flight' and 'freeze' energies." It offers a much broader spectrum of exercises, ranging from more work with the felt sense and identifying resources, going deeper into Levine's work (tracks 1-5), to breath work from Somato Respiratory Integration and Buteyko Breathing (tracks 6-9), to sound exercises from Continuum (tracks 10-12), to an introduction "spiritual resources" (tracks 13-14) – which she defines non-theologically as being as simple as things that "make you happy or grateful or … fill your heart with positive loving thoughts." Some of the sounding might be a bit strange and new for a straitlaced client, but the presentation is calm and sensible enough to be met with openness by most listeners. I can see recommending this CD to clients who are sincerely interested in homework on the felt sense and understanding charge and discharge in their nervous systems.

Volume 3: Boundaries and Safety also provides a full plate of exercises including many that encourage contemplation and exploration into understanding one's energetic boundaries – feeling them, noting where they are weak, and restore those that seem ruptured. I can see this being particularly useful for clients with a trauma history, those who spin out energetically, and those facing difficult interpersonal relationships.

The CDs have excellent audio quality and are clearly well-planned and professionally produced with appropriate musical bridges between tracks. DiJoseph's voice is calm and well-paced, yet authentic and natural. She displays a therapist's training and care in her wording, which guides the listener to understand and accept whatever his or her experience is in the moment. Through her voice and words she moderates the exercises to encourage only gentle discharge, at a level that can be managed. She is also clear that the CDs are not a substitute for one-on-one work with a trained practitioner, so clients with an activated or unexplored trauma history are best sent to one-on-one work rather than referred to these CDs.

The CDs are available from www.juliedijoseph.com and cdbaby.com, where there are a number of positive testimonials from users.

Robert Fulford, D.O. and the Philosopher Physician

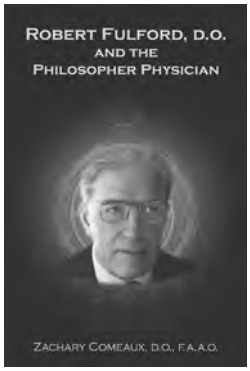
by Zachary Comeaux

Reviewed by Anne F. Hoff, Certified Advanced Rolfer™

The back jacket to *Robert Fulford, D.O. and the Philosopher Physician* (Eastland Press, 2002) reads "Fulford (1905-1997) was an important, if enigmatic, figure in late twentieth-century osteopathy." Reading Zachary Comeaux's book I'd certainly have to agree. In Fulford I see the same spirit of inquiry and the same mix of scientific acuity and intuitive brilliance that informed Ida Rolf's genius.

Fulford studied classical osteopathy under students of Andrew Taylor Still, graduating from the Kansas City School of Osteopathy and Surgery in 1941. Beginning in 1945, he was closely associated with William Garner Sutherland. During his lifetime, he presented at both the American Academy of Osteopathy and the Cranial Academy (he once served as president of the latter organization), and he was honored by both after his death (the AAO dedicated its 1998 convocation to Fulford's work, and the Cranial Academy published a book of his papers and speeches in 2003 entitled *Are We On the Path?: The Collected Works of Robert C. Fulford, DO, FCA*). Although he taught some during his life (particularly the percussor), he was largely a clinician, and as the deficits of this book indicate, the details of his clinical mastery left this world with him.

Although his work and ideas were grounded fully in osteopathy, Fulford had a broad-ranging mind that explored religion, Eastern traditions, science, philosophy, and the energetic dimensions of being. From the latter, he developed and brought into his treatments what he called "twenty-first century medicine", drawing on research by scientists (including neurophysiologists H.S. Burr and Valerie Hunt; Robert Becker M.D.; Candace Pert) as well as treatment ideas put into practice by both energy healers and fellow osteopath Randolph Stone (who developed Polarity Therapy). At his



final presentation – to the 1997 convention of the Cranial Academy – he demonstrated a protocol based on energy medicine. As Comeaux relates: "He was asked, 'Do you have to be an osteopath to do this – this does not look very osteopathic?' to which he responded, 'If I weren't an osteopath, how would I know what to do?'"[1]

I think there is something for the Rolfing® community to consider from this exchange, given how various of our colleagues have criticized other colleagues for work that does not look exactly like classical Rolfing.

Comeaux, also an osteopathic physician, studied with Fulford, and later was an associate, exchanging treatments and ideas as well as working with him on patients. In the months following Fulford's death, Comeaux had full access to Fulford's books and papers before they were distributed according to his will. Despite this, and because Fulford seems to have been a man of few words, Comeaux is often left inferring what he believes Fulford was after in his thinking and treatments.

Parts One and Two of *Robert Fulford, D.O. and the Philosopher Physician* provide interesting biographical information (how Fulford came to osteopathy is quite interesting, as is the trajectory of his life) and discuss Fulford's influences. Part Three on "Fulford's Practice" sounds promising, with chapters entitled "Diagnosing with Dr. Fulford," "Treating in the Style of Dr. Fulford," and "Adjunctive Modalities," but the first two of these are ultimately disappointing. As Comeaux relates, "Fulford's diagnostic principles and methods underwent constant change, often weekly, even up to the final days of his life."[2] This, and Fulford's tendency to speak little, mean that Comeaux can only give a sketch view of sequences and common handholds that he observed; he cannot tell us what Fulford was really thinking and doing.

Perhaps because Fulford taught the use of the percussor, the section on the Foredom Percussion Vibrator (aka, percussor) in the chapter on "Adjunctive Modalities" offers more substance. Although relatively brief, it contains enough discussion of Fulford's pioneering work with the percussor to clearly demonstrate that he did not apply it randomly or blindly. Instead, it was "an extension of his intention to intervene"[3] to which he applied the same sensitivity and focus that he was capable of with his hands alone. He was all for devices and methods that augmented his ability to work while lessening the drain on his own energy. Again, I believe this offers useful food for thought to the Rolfing® community as more of our members incorporate percussors, lasers and other tools to good effect while still maintaining practices focused around Rolfing.

Part Four is Comeaux's thoughts on the future of osteopathy, as it expands and integrates new ideas, as Fulford himself did. The appendices provide Comeaux's notes on Fulford's final presentation to the Cranial Academy, selections from his case files (again, sketchy bits of info rather than a lot of substance), and his daily supplemental exercises for better health.

Despite its lack of robust substance on how Fulford actually treated, *Robert Fulford, D.O. and the Philosopher Physician* remains an interesting read for fans of osteopathy, its history, and its leading lights. It is a worthy tribute to the spirit of a man whose inquiring mind led him down wildly diverging paths in his endeavor to understand and treat the whole person.

NOTES

1 Comeaux, Zachary, *Robert Fulford, D.O. and the Philosopher Physician*. Seattle: Eastland Press, 2002, p. 10.

2 Ibid., p. 90.

3 Ibid., p. 131.

John Garbutt Lodge

1922 - 2008

■ The extraordinary artist and "Master Rolfer" John Lodge completed his terrestrial journey on February 1, 2008, in Everett, Washington, from complications related to prostate cancer.

John was born Jack Arthur Garbutt on January 5, 1922 in Oakland, California, the son of a British father and Hungarian mother. John was a lifelong anglophile and claimed a strong affinity for "music, magic, and mystery" from his Hungarian "Gypsy" ancestors.

During World War II, John served in the U.S. Air Force as a B-17 pilot based in England. He flew thirty-five missions over Nazi Germany, earning the Distinguished Flying Cross – American's oldest military aviation award – for heroism in flight.

While stationed in England in the 1940s, John studied watercolor under the famed British painter and architect Paul Earee. After the war, John returned to California and pursued his calling as an artist through multiple mediums. He earned a Master of Arts from the University of California at Berkley, where he also served as an art instructor for two years. He then served as a professor of art at the University of Michigan for seven years, and exhibited his work at galleries across the nation. Often exploring metaphysical themes in his watercolor paintings, John stated "water media in this Aquarian Age became the key to my inner mind."

John's tall stature and deep, articulate voice served him well as he also pursued self-expression through acting in Hollywood, where he adopted the stage name John Lodge, by which he was known for the rest of his life. John played the title role in the cult classic horror film "The Witchmaker," as well as roles in several other films such as "In Like Flint." He appeared in many popular television series during the

1960s, most notably as the deputy sheriff on "Bonanza." (*Editor's note: Additional credits are shown in the sidebar.*)

John's artistic talents led him in a new direction in the 1970s when, at a fateful dinner party on the Florida coast, he met and later became a close personal associate of Dr. Ida Rolf. John illustrated the anatomical drawings for Dr. Rolf's book *Rolfing®: The Integration of Human Structures* and later served on the faculty

John Lodge Filmography
(source: IMDb.com)

As an Actor

1. "Revenge is My Destiny" (1971) …. Lt. Craig
2. "The Jackie Gleason Show" (1970 TV episode "The Honeymooners: Operation Protest)
3. "The Witchmaker" (1969) …. Luther the Berserk
4. "Judy's Little No-No" (1969) …. Dan Turner
5. "Bonanza" …. (1968, TV episodes "In Defense of Honor" and "The Crime of Johnny Mule" as the Deputy, and "The Thirteenth Man" as Terry)
6. "Garrison's Gorillas" (1967 TV episode "Friendly Enemies) …. Capt. Thompkins
7. "Daniel Boone" (1967 TV episode "The Fallow Land") ….Harris
8. "Riot on Sunset Strip" (1967) …. Beverly Hills police officer
9. "In Like Flint" (1967) …. Russian agent
10. "The Road West" (1967 TV episode "Reap the Whirlwind") …. Daniel Bethel
11. "Run for Your Life" (1966 TV episode "The Man Who Had No Enemies") …. Neil Trotter
12. "Out of Sight" (1966) …. John Stamp
13. "Bob Hope Presents the Chrystler Theatre" (1965 TV episode "The Admrial") …. Henshaw
14. "Convoy" (1965 TV episode "The Assassin") …. Doctor
15. "Combat" (1965 TV episode "Evasion") …. Major Ramsey
16. "Dr. Kildare" (1965 TV episode "A Life for a Life") …. Dr. Secaras
17. "The Virginian" (1965 TV episode "Farewell to Honesty") …. Doctor
18. "Kraft Suspense Theatre" (1965 TV episode "The Last Clear Chance") …. Wing Commander Tarns
19. "Ben Casey" (TV episodes: 1964 "For a Just Man Falleth Seven Times" and 1962 "Saturday, Surgery, and Stanley Schultz")

As Himself

1. "The Mike Douglas Show" (10 September 1964)

and board of directors of the Rolf Institute of Structural Integration®. Over the next thirty years, John brought pain relief and balance to the lives of thousands of clients as a Rolfing practitioner in his Seattle-area private practice.

In later years, John continued to seek the "zen" in all the things he enjoyed in life, whether as an avid golfer, camping in the mountains, or fishing in the Pacific Northwest and the Great Lakes. With extraordinary stamina, he continued both practicing Rolfing® and copiously producing paintings until suffering a stroke in 2006. Even with diminished physical abilities in his last year, his penetrating insight and intense curiosity never faded. All his life, John possessed an uncommon passion for art, for healing, for spirituality, for nature, and for love. His great, old soul has now returned Home.

John Lodge Estate

■ The first impression that pops up when I think of John is: BIG! One just knew when he was in the area. True, he was a large man physically, but it was more than that, much more. His energy was truly substantial, and his great voice boomed across any room with enormous presence and enthusiasm. If he was smiling, it was a huge smile, and when he was angry, it was a monumental rage. John always seemed bigger than life, and he lived his life large, accomplishing several careers (besides Rolfing) in one human span: he was a bomber pilot during World War II (he didn't like to talk about it); he was an actor, and apparently played both bad guy and sheriff's deputy on the series "Bonanza"; and he was a very talented artist, responsible for the illustrations in Dr. Rolf's magnum opus, *Rolfing: The Integration of Human Structures*.

In the invaluable book *Ida Rolf Talks About Rolfing and Physical Reality*, Rosemary Feitis describes John's infinite patience: "He'd work all night showing how a set of ribs articulated with the vertebral column, only to have Ida say the one in the middle couldn't be at that angle. So he'd correct it, working all night again to make a new drawing, and the next morning he'd find out that the vertebra needed to be moved. The difficulty seemed to be that IPR could move the flesh, so she felt it only reasonable to ask that John move the bone. For John, it meant re-creating the whole drawing each time – flesh is more amenable to movement."

John was a totally devoted Rolfer and Rolfing teacher. He brought to his classes the evangelical fervor of a biblical prophet spreading Ida's gospel, and a sense of absolute commitment ¬– which occasionally went a bit amiss. Peter Melchior told me that John's initial act at the beginning of his very first class was to introduce himself by suddenly stepping out from behind a screen totally naked, announcing "Here I am. This is the real John Lodge." While apparently his intention was to display his commitment to be utterly open and honest with his students, he displayed, of course, much more. Faced with the vision of a bear-like man with flowing silver hair and beard, completely nude, his massive, hairy body accentuated here and there with unnerving, scarlet splotches of scaly psoriasis, the students were frozen in breathless, wide-eyed silence. Somehow, everyone survived. When Peter heard about the dramatic entrance, he pulled John aside and counseled a calmer, more orthodox beginning in future classes.

In the fall of 1982, I assisted John in teaching a Rolfing class in Boulder. He began that class in a more conventional way: some ground rules and an excellent lecture on and demonstration of the first hour of the Rolfing series. The weeks of class went well, with probably only a little more than the normal amount of drama. But there was something different about a class with John that was unlike any class I'd known with Ida or Peter, Emmett or Stacy. It's not easy to capture, but imagine a charged atmosphere, the feeling of an incipient upheaval, like hiking in the mountains and suddenly having the sense lightning was about to strike, or that you would turn a corner and come face to face with a grizzly bear. My hunch is that it had to do with John's struggle with his ego, the way he fought to let go of his drive for perfection (that could scare the hell out of any student), so that he could clearly transmit the highest and purest expression of Ida's teachings.

He was a man of great passions, and one of the greatest was for the vision and work Ida Rolf had given him. I don't remember any of us on the faculty who ever viewed our responsibilities casually, but John would openly speak of it as a sacred charge. When others are being cool, that can seem a little unsettling.

The clearest memory I'm left with, though, is of John singing. During that class in 1982, both of us were staying with Peter and Susan Melchior and their children in the hills north of Lyons, above Boulder; I had a small room on the main floor of their house, and John had a larger room in the basement. In the mornings, talking about class over coffee, Peter and Susan and I could practically feel John rumbling around down below us, reviewing his notes and preparing for the day. (He had large notebooks full of notes from his time with Ida, a treasure trove unlike any other collection I've ever seen.) Some days he'd worry himself into a dark cloud – but we knew it was going to be a pretty smooth day in class when we heard John singing



John Lodge and Rolfing client in 2006.

his favorite hymns, 19th century Protestant classics such as "Shall We Gather At The River?," or his apparent favorite, "Bringing in the Sheaves." It can't have been just the acoustics of the room that set that booming voice to vibrating our chests and our coffee cups. I think John was determined to be a clear channel for Truth, and those hymns were the mantras he chose to help him let go of what he wanted, in his passion to express something greater. And whatever that was, it touched us as it would touch his students:

Bringing in the sheaves,
bringing in the sheaves,
We shall come rejoicing,
bringing in the sheaves,
Bringing in the sheaves,
bringing in the sheaves,
We shall come rejoicing,
bringing in the sheaves.

Peace to his great big heart.

Nicholas French
Certified Advanced Rolfer™

■ It was a privilege for me to be a student in John Lodge's Rolfing class during the summer of 1980 in Boulder. When we, the students, entered the Skylight Room the walls were covered with impressive sketches of possible variations of human structure. Those drawings were John's pre-studies for Ida Rolf's book. John was welcoming us with an enormous authenticity and presence. He would communicate cordially, but at the same time there was an atmosphere of strong discipline in the room: class would start at seven o'clock in the morning; if a student was late the doors were locked until the next coffee break.

John had been preparing this class for one year. He had been collecting all the notes from Ida Rolf's teachings, he had been dialoguing with colleagues to make the resources for this teaching as complete and concise as possible. When he demonstrated he worked with two models in this class. When he worked with model one doing a first hour, and then followed with model two doing a first hour two days later, we realized that the ten sessions are not a series of scheme-like strokes but rather a ritual that shows the same form while it is actually different each time it is happening.

John's teaching emphasized the originality of the structural integration approach. He tried to build the learning process on a large collection of quotes from Ida Rolf. However, we the students experienced clearly that here was a person who added to the thinking of the founder of this approach by his giftedness and the depth of his life experience. John – the artist, the actor, the bomber pilot, and, finally, the exceptionally talented manual practitioner – delivered the concept of structural integration in a way both inspiring and challenging for beginners. I still have a notebook from that class, and whenever I teach a Rolfing class I take this notebook with me.

Almost thirty years have passed since then, and I never had the chance to meet John Lodge again. But that first class with him has accompanied my work and that of some of the first European practitioners up to this very day.

Peter Schwind, Ph.D.
Advanced Rolfing Instructor™

■ He was a deep presence and a profound and elegant anatomical Rolfer. He spoke of the body as liquids awash in light-filled gas in fibrous space. That we used light to work...

He was an artist and an actor and was considered a shaman. I first got to know him when he was doing the drawings for Dr. Rolf's book. He worked so hard doing over 600 drawings, some many times over, that he damaged his eyesight. They used 200 of those fine drawings for Dr. Rolf's book.

He was a lead pilot for the B-17s of WWII where he knew my father, who was a bombardier pilot for the B-17s. To have survived the war flying B-17s is quite miraculous as life expectancy for the B-17 crews was three to seven missions. (My dad, who had some kind of luck, flew fifty missions, and his large yearbook for officer's training had almost everyone' s picture crossed off with a date of death beside it. There were only a couple of guys who survived from his graduating class out of many, many hundreds.)

John said the reason he had gotten into Rolfing® was an episode in a B-17. They had an oil fire and had to jump. His parachute would not open out and John landed on his head. He was in quite some pain for quite some time. He met Elisa, his first wife, in Miami and got to know about Rolfing. Dr. Rolf helped twenty years of pain in six sessions, and John devoted himself to Rolfing as a life work. He taught for us for many years. Elisa was my friend at Esalen.

John practiced in the Seattle area. I sent my daughter to him for her first ten sessions. He showed me some of his beautiful anatomy books and we happily talked shop. I received some wonderful work from him when I first moved to Seattle in 2002. I could feel him finding his beloved anatomy.

He was generous with his time and gave us local folks a talk and demonstration of what to do for carpal tunnel syndrome – arm work that was quite fine. He termed himself a "Master Rolfer," but it was no more than an accurate description. He was at peace with his life and his ability.

Sharon Hancoff
Certified Advanced Rolfer™

Graduates

Unit II, December 14th 2007, Boulder, Colorado

Front Row: Duffy Allen (Instructor). Second Row, Left to Right: Jonathan Pickett, Daryl Cooper, Audrey Goldberg, Mackenzie Sanderson, Kathy Pitts . Back Row, Left to Right: Michael Valenti, Ryan Goralski, Gian Gibson, Bethany Ward (Assistant Instructor), Travis Foster, Antonio Flores de la Rosa

Unit III, March, 19, 2008, Germany

Front Row, Left to Right: Ferran Moreno, Amy Tan. Middle Row, Left to Right: Catherine Fong, Kalen Chia-Ling Hsu, Patrick Ward, Martin Wirth, Anise Smith, Christina Ziembinski, Theres Grau, Bärbel Dubler. Back Row, Left to Right: Andrea Clusen (Assistant Instructor), Mike Schmelzle, Raymond Smith, Ray McCall (Instructor), Jon Bowley, Samuele Serreli, Craig Eubank, Margarete Blankartz, Sonja Yount, Isabell Brand (Assistant), Miquel de Jong

2008-2009 Class Schedule

BOULDER, COLORADO

Unit I: Foundations of Rolfing® Structural Integration/ FORSI

August 25 – October 6, 2008
Coordinator: Suzanne Picard

Unit I: Advanced Foundations of Rolfing Structural Integration/ AFORSI

July 13 – July 26, 2008
Instructor: Suzanne Picard

October 26 – November 8, 2008
Instructor: Juan David Velez

Unit II: Embodiment of Rolfing & Rolf Movement Integration

October 13 – December 11, 2008
Instructor: Jon Martine
Principles Instructor: Carol Agneessens

Unit III: Clinical Application of Rolfing Theory

August 18 – October 10, 2008
Instructor: Libby Eason
Anatomy Instructor: Juan David Velez

October 13 – December 12, 2008
Instructor: Ray McCall
Anatomy Instructor: John Schewe

Rolfing Movement Certification

August 4 – August 14, 2008 – Unit 1

October 14 – October 24, 2008 – Unit 2
Instructors: Jane Harrington, Rebecca Carli-Mills and Kevin Frank

CHARLES TOWN, WV

Advanced Training (Extended Format)

September 12, 13, 14 2008
October 10, 11, 12 2008
November 21, 22, 23 2008
January 9, 10, 11 2009
February 6, 7, 8 2009
March 6, 7, 8 2009
April 3, 4, 5 2009
May 1, 2, 3 2009
Instructor: Tessy Brungardt
Co-instructor: Jane Harrington

MUNICH, GERMANY

Unit I: Foundations of Rolfing® Structural Integration

Intensive Training 2008 / 2009

Movement Week

August 04 – August 8, 2008
Instructor: Pierpaola Volpones

Anatomy Week

August 11 – August 15, 2008
Instructor: Conrad Obermeier

Touch Week

August 18 – August 23, 2008
Instructor: Harvey Burns

Unit II: Embodiment of Rolfing & Rolf Movement Integration

October 06 – November 28, 2008
Instructor: Harvey Burns

Unit III: Clinical Application of Rolfing Theory

February 2 - March 25, 2009

Instructor: Monica Caspari

ITALY/GERMANY

Advanced Training 2008-2009

September 28 – October 10, 2008
in Bologna, Italy

April 20 – May 06, 2009
in Munich, Germany
Instructor: Peter Schwind
Assistant Instructor: Pierpaola Volpones

SPAIN

Rolfing Movement Certification

November 21 – November 30 2008

May 21 – May 31 2009
Instructors: Rita Geirola and France Hatt-Arnold

MELBOURNE, AUSTRALIA

Unit 1: Advanced Foundations of Rolfing Structural Integration

Part 1 / The Rolfing Touch - Myofascial Approaches

July 5 - 6, 2008
Instructor: Michael Stanborough

Part 2 / Fascial Perspectives - Understanding Structure

July 12 - 13, 2008
Instructor: Michael Stanborough

Part 3 / Authentic Presence - Therapeutic Contact

July 19 - 20, 2008
Instructor: Ashuan Seow

SYDNEY, AUSTRALIA

Unit II: Embodiment of Rolfing & Rolf Movement Integration

September 8 - October 30, 2008
Instructor: Ashuan Seow
Assistant: John Smith

Unit III: Clinical Application of Rolfing Theory

March 2 – April 24, 2009
Instructor: Ray Mc Call
Assistant: John Smith

Rolf Movement Certification

November 10 – 28, 2008
Instructors: Monica Caspari and Ashuan Seow

March 2 – Apr 24, 2009
Instructor: Ray Mc Call
Assistant: John Smith

KYOTO, JAPAN

Unit II: Embodiment of Rolfing & Rolf Movement Integration

January – March 2009
Principle: Leal Keen
Instructor: Jim Asher

Unit III: Clinical Application of Rolfing Theory

September – October 2009
Instructor: TBA

BRAZIL

Rolf Movement Certification

November 3 – November 27, 2008
Instructor: Lael Katharine Keen
Assistant Instructor: Kevin McCoy

Unit III: Clinical Application of Rolfing Theory

October 6 - December 11, 2008
Instructors: Jan Sultan and Monica Caspari

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