

Towards a Fuller Understanding of the Interaction Between Myofascial Tone and Water



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Abstract

An incipient understanding of the interaction between myofascial tone and water has proven to be helpful in restoring the flow of sensations that allow recognition of the somatic patterns that interfere with sensory awareness. It has also been helpful in introducing new information into the system. A fuller understanding would help to protect health, prevent injury, and promote healing from sickness, injury, and trauma, both physical and psychological. The coherent order observed in interfacial water makes it highly sensitive to very weak signals and gives way to an electromagnetically assisted catalysis at the surface of coherent domains in water. This process seems to lie at the root of sensitization and desensitization, leading up to the establishment and interruption as well as the strengthening and weakening of synaptic connections in the nervous system, thus contributing to the selective coordination of complex patterns of interconnectivity between neuronal groups through re-entry, considered to be the foundation of behavior.

The Duggan/French Approach to Somatic Pattern Recognition Celebrates its 25th Anniversary

In December 1988 in Barcelona, Spain, Annie B. Duggan and Janie French certified their first group of DFA practitioners. I had the great luck to be one of them. I feel eternally grateful to Annie and Janie, because their great effort in formulating their approach to Somatic Pattern Recognition and in coming to Spain to teach it has given me the tools to lead my life into a direction that is coherent with my innermost being as well as the major force fields of this world. Both Annie B. Duggan and Janie French trained with Ida Rolf and Judith Aston and were movement instructors at the Rolf Institute® in the 1980s. Their interest went, however, to the ways in which belief systems affect the alignment patterns throughout the body. Trying to understand how belief systems can have a bearing on the shape of the body opened a field of inquiry and research that has kept me intrigued and engaged throughout this quarter of a century.

After certification as a DFA practitioner, I stayed in close contact with Annie Duggan and Janie French, trained as an instructor in practitioner trainings, and participated in as many advanced classes as I could. During this time, I have written and published several articles and two books

(Hansmann, 1997, 2013) about the Duggan/French Approach, or DFA, mostly in Spanish. In English there are three articles in the 2009, 2011, and 2013 editions of the *IASI Yearbook of Structural Integration*, the latter presenting the hypothesis that protein-associated water plays a major role in the way beliefs are held in the body. I was grateful for an invitation to present a poster (Hansmann, 2012) about this hypothesis at the 7th Annual Conference on the Physics, Chemistry, and Biology of Water, in Vermont as well as for the financial help that was granted to me by the organizers. The poster was well received by the researchers I quote in it as well as by several others. When I saw the abstracts for the posters at the 8th Conference in 2013 in Bulgaria, despite an absolute lack of funds, I knew I had to go. I thank Annie Duggan and Mónica Extremiana with all my heart for their help in financing the trip.

Water Structure is Highly Sensitive to the State of Muscle

Hyok Yoo, a PhD student from Gerald Pollack's research team at the Department of Bioengineering of the University of Washington in Seattle, was going to present a poster on the "Changes in Structure of Hydration Water Induced by Contraction of Skeletal Myofibrils" (Yoo & Pollack, 2013). The key piece of the hypothesis I had presented at the 2012 Water Conference was the

interaction between myofascial tone and water. I had to speak with Hyok Yoo about his research and to find out what he thought of my hypothesis. During the 2012 conference I had been able to ascertain that the water researchers I had had the chance to talk with were not familiar with myofascial tone or had not given much thought to its significance. So I knew I had to start by defining it and describing its effects. I decided to concentrate on hypertonic myofascial tissues because Hyok Yoo studied the effect of muscle contraction on water, and I wanted to clarify the difference between muscles that contract upon activation and hypertonic muscles, which present a degree of tension that keeps them in a state of constant sympathetic activation. Besides, my clients usually come with complaints derived from myofascial hypertonicity. As the structures of their bodies are becoming more integrated in relationship to the gravitational field, and they begin to experience the true myofascial resting tone that comes with being aligned in and supported by the planet's greater force field, hypotonic tissues usually acquire more tone as hypertonic ones lower theirs.

This article is based on the poster (Hansmann, 2013) I presented at the 8th Conference on the Physics, Chemistry, and Biology of Water in Bulgaria. It was directed to water researchers with the intention to obtain answers to a number of questions I had arrived at in my studies of water dynamics in the attempt to understand the effects of my work as a DFA practitioner. Also, I hoped that my observations and questions might lead to further research in this area. During the conference I had the chance to introduce my poster to the plenum in a three-minute presentation. During the poster session, it received many visits, and started an on-going discussion via e-mail or Skype with several researchers who were interested. In this article I will combine the information from the poster with some of the researchers' responses, and I hope that I will manage to do it using language in a way that allows me to share with my greater community of structural integrators the excitement of beginning to uncover some of the undreamt-of properties of the most elementary substance in our body: water.

Myofascial Tone

The tone of myofascial tissues is the degree of tension these tissues present in the relaxed state. It is regulated by the autonomic nervous system. Myofascial tone designates the tissues' readiness

to respond to stimuli, it helps maintain balanced postures, and is an essential element of habitual patterns in movement and behavior.

Charge, Hydration, and Dehydration

Gerald Pollack's team found that in water next to hydrophilic surfaces, including those of biomolecules like proteins in muscle and connective tissue, charges separate. Pollack (2008, 2013a, & 2013b) named this water *exclusion zone*, or *EZ water* because, due to the tight molecular order in the water layers next to hydrophilic surfaces, particles of other substances have no space and are excluded. Before becoming involved in water research, Pollack's original field was muscle research. In a personal conversation he assured me that muscle protein presents a negative charge, the same as the water next to it. In a water molecule, the oxygen end is electronegative whereas the hydrogen end is electropositive. Time and again, Pollack's tests have shown that hydrogen protons or hydronium ions (H^+ or H_3O^+), accumulate at the edge of the exclusion zone, creating a charge gradient that is available to do work, just like a battery.

The buzzing, electric, or acid sensations reported by a number of clients suggest that hypertonic myofascial tissues present a stronger charge separation.

Observing the effects of lowering the tone of hypertonic myofascial tissues to a more balanced level by means of the specific wave-like, hands-on intervention used in DFA, has led me to suppose that there may be a difference between the charge gradients in hypertonic tissues and in those with a balanced tone. The buzzing, electric, or acid sensations reported by a number of clients suggest that hypertonic myofascial tissues present a stronger charge separation. This would imply a higher proton count, and thus more acidity, at the edge of the exclusion zone. So my first question was: Does this mean that myofascial hypertonicity generates a more positive charge or a more pronounced charge gradient? Gerald Pollack's nodding head during my three-minute presentation said yes, it does, confirmed by email after the conference. In his talk on the role of EZ water and health Dr. Pollack (2013b) stated, "It looks like the body is designed to get rid of positive charge and to maintain negative

Myofascial Tissues with Balanced Tone

- present a range of contractibility and responsiveness that allows for precision, strength, and resistance in the execution of the activities they are involved in.
- generate movement that shows ease, fluidity, and grace.
- are capable of efficiently dissipating stress concentrations by transferring or absorbing them (Masi, Nair, Evans, & Ghandour, 2010).
- are well hydrated, as suggested by observations in clinical practice with DFA Somatic Pattern Recognition.
- allow movements that appear easier and more fluid and graceful than activity carried out with dehydrated myofascial tissues. Intuitively, it seems likely that energy released by protein-water interaction contributes to the energy required for muscle contraction, making movement thus fueled more fluid.
- appear to present a high degree of order in the hydration water. This would provide an explanation for the promptness of effects encompassing the whole body, observed in clinical DFA practice, when hypertonic tissues are brought to a more balanced tone and sensory information, that had been held underneath the threshold of consciousness by hypertonic tension, rises to awareness, because the speed and overall extension of these effects goes beyond the speed of transmission through complex nervous circuits, but has been found to be possible through the network of protein-associated water (Oschman, 2003).

Hypertonic Myofascial Tissues

- are chronically shortened.
- present a reduced range of contractibility and responsiveness.
- require a much greater amount of energy and are prone to fail earlier in terms of precision, strength, and resistance.
- are responsible for limited joint mobility and flexibility and a rigid quality of movement.
- less effectively absorb or distribute forces, thereby transmitting greater stresses to tendons or ligaments and to bony attachment sites (Benjamin et al., 2006; Maganaris, Narici, Almekinders, & Maffulli, 2004; Masi et al., 2010).
- create chronically enhanced stress concentrations that predispose to greater tissue injury and lead to maladaptive repair processes (Benjamin et al., 2006; Maganaris et al., 2004; Masi et al., 2010).
- appear dehydrated in clinical practice with the physical DFA intervention.
- generate mechanical pressure through their high degree of tension, which expels water from the tissues and makes it difficult for them to rehydrate.
- are sometimes described by clients with a felt sense of dryness in the tissue; but mostly, they keep clients rather insensitive and unable to describe any sensation at all.
- often come to awareness through a buzzing, electric, or acid sensation, when hypertonic tension begins to subside following the physical DFA intervention.

charge.” He went on to show that positive charge is being eliminated from the body through the exhale, sweat, and urine. Myofascial hypertonicity interferes with the motions of breathing, in particular with the motion of resting inward and towards the ground during the exhale, so in hypertonic individuals the amount of positive charge being eliminated from the body through the exhale is quite limited. In this way hypertonicity not only contributes to generating a higher level of positive charge, it also interferes with its elimination from the system. The acid

environment this creates is a breeding ground for inflammation and cancerous diseases.

In theory, a pronounced charge gradient would be equivalent to a high level of energy, but this kind of charge is not available to do work; it seems to be caught in a stationary electromagnetic field instead. The sensation is like being suspended away from the ground without being able to rest within one’s own body or on one’s base of support. In his new book, Gerald Pollack writes: “charge effects can be strong

enough to defy gravity” (2013a, p. 270). Although it is not very pleasant, when the charge and the acidity of hypertonic tissues are being perceived, it usually is a first step towards reaching a more balanced tone and more support in gravity.

Coherent Order

In their article on water respiration, Vladimir Voeikov and Emilio Del Giudice write about oxygen reduction in coherence domains as combustion of water (2009, p. 61). Coherence domains are certain areas in liquid water that present a coherent order in their molecular structure. The exclusion zone is one such coherent domain. All hydration water in the body is interfacial water, i.e., water between surfaces. So it is EZ water, water that is organized in a coherent order, making up coherent domains. Could it be that the sticky, dry, acidic, and rigid quality of hypertonic myofascial tissues may at least partly be due to their elevated electromagnetic charge literally burning up hydration water? This was my second question, and Emilio Del Giudice answered it with a clear yes, the same as my third question: Is it possible that, on the other hand, a balanced tone facilitates rehydration by means of the oscillations between order and loss of order in the hydration water during movement? During my three minutes, Jerry’s head signaled agreement again.

As hydration diminishes, hypertonic tissues become denser and denser. Voeikov and Del Giudice write: “When the assembly of molecules becomes dense enough, the electromagnetic field produced by the molecule fluctuation becomes large enough to keep the molecules oscillating and transform the phenomenon from a transient to a stationary state” (2009, p. 67). Today a client observed: “Here I am lying down and there is no reason whatsoever for these muscles to be as tense as they are, but I cannot relax them no matter how much I try. And it surely doesn’t feel like I am doing anything to create the tension.”

The flow of information and sensory awareness appears impaired in clients with mostly hypertonic myofascial tissues. This lack of sensory perception seems, at least partly, to be attributable to myofascial tissues being suspended in a state incapable of relaxation. If dehydration and an electromagnetic field generated by their charge contribute to this high-strung state, do they bring about a low degree of order in the remaining hydration water? Or would

it rather be too much order or too rigid an order due to the lack of sufficient hydration that reduces the tissues’ responsiveness? Emilio Del Giudice pointed out that both a lack of order and too much order or too rigid an order would be detrimental to health, bringing about sclerotic and/or cancerous diseases (personal communication, October, 2013). Gerald Pollack (2013c) talked about the lack of sufficient cell hydration as an indicator of sickness.

Hyok Yoo observed a loss of order, or de-hydrogen bonding of muscle water, upon activation, i.e., upon contraction of the muscle, in his experiments. On his poster (Yoo, & Pollack, 2013), he summarized his conclusions as follows:

- *Muscle water has significantly stronger hydrogen-bonding compared with bulk liquid water.*
- *IR [infrared] water absorption map of single myofibril in OH [oxygen hydrogen] stretch region shows sarcomeric periodicity.*
- *Contraction is associated with significant de-hydrogen-bonding of muscle water.*
- *The de-hydrogen bonding of muscle water during contraction is associated with α -helix to α -sheet transition of muscle proteins*
- *Single myofibril shows de-hydrogen bonding of water, indicating the changes in water are occurring within the myofibril lattice of muscle.*
- *‘Breakage’ of strongly hydrogen bonded muscle water allows the proteins to change their conformations.*

In our conversation, Hyok Yoo confirmed that upon relaxation the hydration water returns to its coherent order of stronger hydrogen-bonding. So an indicator of healthy tissues would be the ability of their hydration water to undergo de-hydrogen-bonding and re-hydrogen-bonding, i.e., to lose and recover its coherent order, during movement. In hypertonic tissues, on the other hand, this process seems to be impaired.

Coherent Order Allows Ease and Uplift

The sensory experience of alignment in the gravitational field is like being held by a greater force, like being able to rest within the living being one is and the material world one is a part of. Here, the myofascial resting tone is optimal. While at first glance this sensation seems to arise out of the mechanical correlation between the body’s mass and gravity, upon closer observation, the coherently-ordered structure of water may contribute a sense



Figure 1. This image may be more than merely metaphorical.

of ease and uplift. The image of the fountain as the central axis may thus be more than merely metaphorical.

Gerald's head went vigorously up and down in agreement when I presented this statement. Also James Oschman, who not only has had an experience of structural integration but knows a great deal about it, stated his agreement.

An Electromagnetically Assisted Catalysis

Due to its coherent order, protein-associated water is highly sensitive to very weak signals. In terms of evolution, it can be considered a precursor to the nervous system. Transmission of information through the liquid crystalline lattice in unicellular and simple multi-cellular organisms, led up to "the high-speed digital impulse system for handling more complex information [beginning] to form inside the older one. Today all multicellular animals have this kind of hybrid system, whose complexities should provide work for at least a few more generations of neurophysiologists" (Becker, 1985, p. 260). Voeikov and Del Giudice described an "electromagnetically assisted catalysis able to evolve with time as a product of its past history, taking place at the surface of coherent domains in water" (2009, p. 73). Catalysis is an increase in the rate of a chemical reaction. A tiny stimulus may thus trigger an ultrafast reaction, particularly if the organism has been sensitized to stimuli of this kind. Stimuli the organism has been desensitized to may slow down or inhibit a response.

This electromagnetically assisted catalytic process at the surface of hydration water seems to contribute to both sensitization and desensitization. In this way it appears to play a crucial role in the generation of patterns in movement and behavior and in maintaining myofascial tone at its habitual level.

Consciousness might be compared to a path through the forest. Vast areas of the forest remain outside conscious experience, and the number of processes taking place underground is unfathomable. Gerald Edelman (1992, p. 69) described interactive events in the nervous system as complex, much like those taking place in a forest. Sometimes subtle changes in shape bring along extraordinary changes in behavior (1992, p.48). In the early stages of life, faced with different stimuli coming from our inner and outer environments, synaptic connections are established, interrupted, strengthened, or weakened through behaviors aimed at adaptation to the situations we are in. This selective coordination of complex patterns of interconnectivity between neuronal groups through re-entry (see Endnote) has been considered the foundation of behavior by Edelman (1992, pp. 83-85). Dr. Becker described a similar process in the liquid crystal lattice of protein with its hydration shell: "Repeated passage of current through some semiconductors *permanently* changes the materials' characteristics so as to make the same electrical response easier in the future" (1985, p. 257). The electromagnetically assisted catalysis taking place at the surface of coherent domains in water, described by Voeikov and Del Giudice (2009), also evolves with time as a product of its past history. These findings suggest to me that the establishment of new synaptic connections in the nervous system, and the interruption of existing ones, as well as the generation of patterns, is preceded by repeated passage of currents through the more ancient system of information transmission through proteins with their hydration shell.

When patterns have their origin in traumatic experiences, they disrupt healthy function, lead to maladaptive behaviors and disproportional bursts of affect. In general, unconscious patterns keep experience trapped in a primary level of consciousness, named *remembered present* by Edelman (1992, p. 122). It constitutes the emotional background tone of our perceptions. "That's how life is," we say, or "That's how I am. The world is like that, there's nothing you can do about it." However, with adequate training of

perception of posture and movement in relationship to the gravitational field, the catalytic function described by Voelkov and Del Giudice (2009) may also contribute to the development of the higher order consciousness humans are capable of, but unfortunately often do not develop, as well as to speed and excellence in performance, clarity in perception and maturity in behavior.

When the body is aligned within the gravitational field, this energy conveys a sense of uplift and ease in movement, a sense of moving and living in consonance with a greater force.

Myofascial Tone and the Spin Axis of Hydrogen Nuclei

It seems clear that myofascial hypertonicity has an adverse effect on water's ability to maintain myofascial tissues in a well-hydrated state. Hypertonicity also appears to interfere with the process of losing and recovering water's molecular order upon muscle activation and relaxation. Beyond water's order, however, there may yet be another area, where myofascial hypertonicity has an adverse effect on hydration water, namely the spin axis of hydrogen nuclei.

I am not sure whether this is a purely metaphorical comparison or whether there is an actual correlation. When I read Robert Becker's *Body Electric*, his description of nuclear magnetic resonance jumped out at me. "The phenomenon requires two external magnetic fields, one steady and one pulsating . . . In 1983 a research team under A. H. Jafary-Asl showed that the earth's magnetic field could serve as the steady field" (1985, p. 297). I was on fire!

On several occasions I have witnessed a defense mechanism being activated by a word or a brief sentence, by a look or gesture or some other small and seemingly inoffensive stimulus. The effect is comparable to a magnetic field being switched on, organizing iron filings in a specific pattern. It involves an instantaneous increase in muscle tone impossible to relax voluntarily. I read and re-read those lines in Becker's book, and I knew that I had to find out more about nuclear magnetic resonance (NMR), or magnetic resonance imaging (MRI)

as it was later termed. I found two little videos on *YouTube* that illustrate the phenomenon very clearly and were highly suggestive for me (Oostendorp). The following images are snapshots from these videos.

Figure 2 shows hydrogen nuclei aligned within the steady field in MRI. According to Becker the steady field could be the magnetic field of Earth. It seems reasonable to me to surmise that the magnetic field of Earth would be the environment for the preferred spin axis of hydrogen nuclei in hydration water. The term *preferred spin axis* comes from a third little clip I found on *YouTube* explaining MRI (Wilmot, 2009). In upright stance in alignment with the gravitational field of Earth, myofascial tissues present an optimal resting tone, are easily activated, and easily relax after activation. It seems to me that these optimal conditions grant nuclei the freedom to align with their preferred spin axis.

Myofascial hypertonicity, on the other hand, generates a field that could be compared to the second resonant field in MRI which forces the nuclei's spin axis away from its preferred alignment within the magnetic field of Earth, a process called *precession* (see Figure 3).

In MRI, spins gradually get out of phase because of a slight difference in precession frequency (see Figure 4). This happens after the second field has been turned off. To tell the truth, I have no idea what this means in terms of MRI, but the fact that something that has been synchronized within the confines of a field becomes desynchronized, once this field is no longer active, is highly suggestive to me. Again, it may be nothing more than a metaphor,

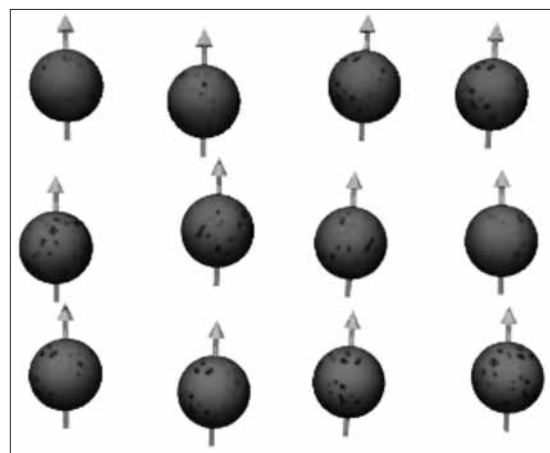


Figure 2. Hydrogen nuclei aligned within the steady field in MRI. Image courtesy of Thom Oostendorp (see Illustration Notes).

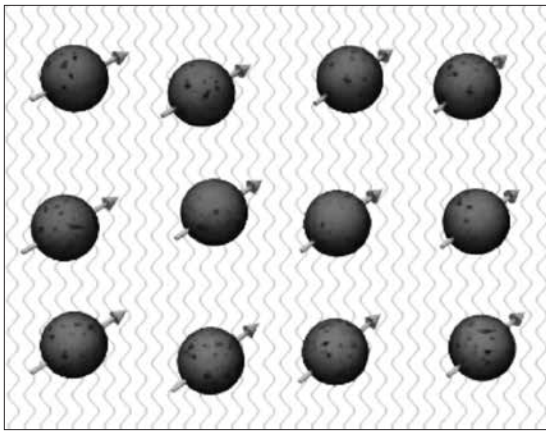


Figure 3. The nuclei's spin axis precesses in the resonant field. Image courtesy of Thom Oostendorp (see Illustration Notes).

but it sounds like a far-from-equilibrium state that is capable of giving rise to a new order, a process I get to witness when my clients discover a way of being and moving that is different from the habitual pattern that up to this point has been the only way of being and moving they knew.

Even more suggestive is what happens when the hydrogen nuclei, one after the other, recover their preferred spin axis within the steady field (see Figure 5): In that moment, the energy they had absorbed from the tuned resonant field is re-emitted as a signal, represented by the circles around the nuclei aligned with the steady field. This signal coming from an immense number of hydrogen nuclei makes it possible to obtain an image from the inside of the body. Similarly, as tissues acquire a more balanced tone through the combined DFA interventions, and the field generated by their hypertonicity subsides, information held underneath the threshold of consciousness arises to awareness.

Somatic pattern recognition being my field of expertise, it seems natural that the similitude of these phenomena would get my attention. Maybe they are fractals, repeating shapes or dynamics at all orders of magnitude. As I said earlier, the comparison may be purely metaphorical in nature, no matter how highly suggestive it might seem to me. But both Emilio del Giudice (2012) as well as Elmar Fuchs (2012), who I spoke with in 2012 about this idea, stated that it seems highly likely that the spin axis in hydration water would be in alignment with the magnetic field of Earth because, after all, we have evolved within it. In a post-2013-conference email

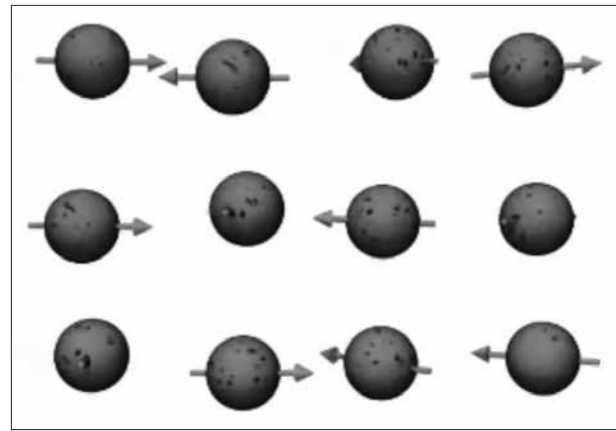


Figure 4. The spin desynchronizes due to a slight difference in precession frequency. Image courtesy of Thom Oostendorp (see Illustration Notes).

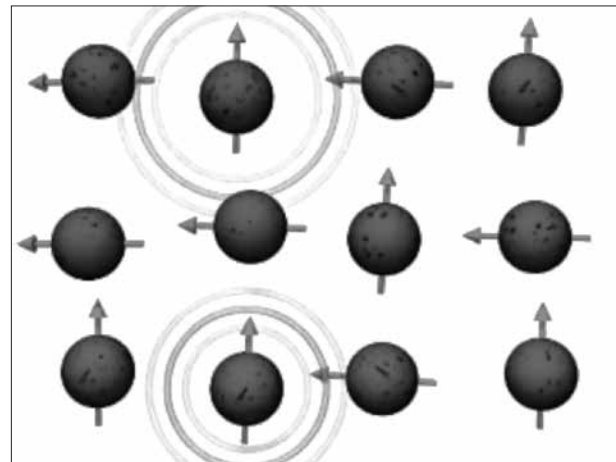


Figure 5. When the hydrogen nuclei recover their preferred spin axis within the steady field, the energy they had absorbed from the tuned resonant field is re-emitted as a signal. Image courtesy of Thom Oostendorp (see Illustration Notes).

exchange, Nigel Dyer, post-doctoral research fellow at Warwick University with a special interests in the physics of water and its implications for biology and Professor Herbert Fröhlich's ideas on resonance and their possible implications for living organisms, wrote to me:

But yes, I think you are right to be excited about MRI. John Swain and myself think there may be an interesting example of this in one of the water bridge presentations in previous years. Elmar Fuchs mentioned that they had an electrical instability at about 1 kHz which got in the way of their measurements. The protons in water precess at about 1 kHz in the earth's magnetic field, and the fact that they were seeing such a strong signal was, John Swain and I believe, because the spins

of many protons were precessing coherently, and that happened because the water in the water bridge is EZ water. The fact that the signal was so strong means that the system was being "pumped" with energy so must have been acting like a laser.

(Dyer, personal communication, November 17, 2013)

Water in the body is EZ water as well, and as the spins of its protons precess coherently, the living system is "pumped" with energy. When the body is aligned within the gravitational field, this energy conveys a sense of uplift and ease in movement, a sense of moving and living in consonance with a greater force. Hypertonic tissues, however, interfere with this alignment and under these conditions the system is pumped into a state of "coherent excitations," to use Herbert Fröhlich's expression (1968) by the energy that is held within these tissues underneath the threshold of consciousness. In this manner hypertonic tissues maintain experience and behavior within the narrow range of habitual patterns. Life then often feels like a constant struggle against invincible opponents.

The example of my client Berta might illustrate how information comes to awareness once the hypertonic hold of the tissue relaxes. The other day we were working with her left arm. For some weeks now there had been a pain in her shoulder that appeared when she moved her arm a particular way. "I don't know what to do," she said. "I can feel this tension, and I don't know how to relax it." I told her that right now she didn't have to do anything and invited her to close her eyes, be silent, and just let the tension be there. If it was too much or too unpleasant to feel it, I suggested that she could just try to feel me instead, to feel my hands and the motion I was creating. As soon as she did this, the intensity of the tension diminished slightly. She clearly dropped inside a tiny bit more. She opened her eyes and the tone of her voice was softer and her speech slower, when she said: "I cannot feel you. All I feel is how I am pulling away from you, because if I would let myself feel you, I would feel an unbearable anxiety because of the impossible desire to merge with you that would devour me."

Berta had been prematurely separated from her mother when she was four months old, because her mother had an infectious disease and was in quarantine. At the age of four months, the infant's nervous system is fully entangled with that of the primary caretaker. The structures necessary for ego consciousness are not yet developed. So Berta

did what she could to keep the unbearable anxiety and desire for the comfort of feeling merged with her mother at bay; she contracted her muscles a particular way that kept the sensations that threatened to tear her apart outside her awareness. During the session, the other day, the absolute hold of this hypertonic pattern relaxed enough for her to feel how she is pulling away from the sensations that come with contact. This is a whole-body event. Just as in the little video about excitation and recovery of spins, once the resonant field is turned off, as the hydrogen nuclei recover their preferred spin axis, one by one, they give off a signal. While she was listening to the sensations in her body that appeared one after the other, she understood more and more about how this pattern has been affecting her in her relationships as well as in other areas of her life. The information did not come from her head but popped up from sensations spread all through her body.

It becomes possible to introduce new options into the pattern only when myofascial tone is lowered to a level where posture and movement can be (re) oriented within gravity, paving a path towards a sensory and cognitive understanding of the pattern.

A Collective Dimension

The collective behavior of water molecules in coherent domains makes hydration water in the body exquisitely sensitive and responsive to very weak signals, so that "the organism is like an exquisitely tuned receptor (and emitter) for electromagnetic fields over the widest possible range of frequencies . . . Its antennae are tuned to signals from many frequencies, even from far-away galaxies, and will respond to them with new music," writes Mae Wan Ho (2006, p.13) about Quantum Jazz, her term for the coherence observed in certain areas of water. In my article in the *2011 IASI Yearbook* (Hansmann, 2011), I suggested that the body's interfacial water is sensitive and responsive also to the morphogenetic fields described by Rupert Sheldrake (1988, 1995, & 2001) and archetypal fields described by Michael Conforti (1999, 2008).

"The morphic field extends throughout space, and includes all objects, near and far," said James Oschman in his presentation at the 8th Water Conference (2013), stating the hypothesis that resonance takes place between the fabric of space and the fabric of organisms, and pointing to water as the two-way connector between environmental fields and the organism.

As a matter of fact, experience that seems utterly personal and intimate often turns out to have a collective dimension, linking the individual to all other living beings across space and time. It is important to note that the interaction takes place in both directions. Personal experience is under the influence of environmental fields of all kinds, those belonging to nature as well as those created by man. Environment and collective are just as much under the influence of individual behavior and experience.

In his book *Depth Psychology and a New Ethic*, published first in 1949 in German, Erich Neumann wrote about the unconscious aspects of one's experience called the shadow in Jungian circles:

Responsibility for the group presupposes a personality which has become conscious of its shadow problem, and which has come to grips with this problem with all the forces at its disposal. The individual must work through his own basic moral problem before he is in a position to play a responsible part in the collective.

(Neumann, 1990, p. 93)

Hypertonic tissues keep wide areas of human experience underneath the threshold of consciousness, not only those belonging to the shadow Neumann refers to, but also the experience of relatedness. With structural integration and somatic pattern recognition one becomes aware of the way the body relates to the gravitational field. It becomes possible then to find support within oneself as well as in the material world we all are a part of, and take on the task of recognizing one's own "shadow side as a part and a representative of the shadow side of the whole human race" (p.95). Leaving decisions that affect the collective in the hands of people who have not done this basic inner work, Neumann speculates, in the future would seem as grotesque as leaving a person sick with diphtheria in charge of nursing infants (p. 91). Unfortunately, 65 years later, the world's leaders in governments and business seem as far from this alleged future as in 1949.

The new ethic . . . is no longer individualistic; it does not merely take into account the ethical situation of the individual, but also considers the effect which the individual's attitude will have upon the collective. In the second place it is no longer a partial ethic of consciousness, but also includes within its reckoning the effect of the conscious attitude upon the unconscious. In fact, responsibility now has to be carried by the totality of the personality, not simply by the ego as the center of consciousness.

(Neumann, 1990, pp. 92-93)

Responsiveness Instead of Reactivity

When myofascial tissues acquire their optimal resting tone, possible with efficient alignment in the gravitational field, the flow of sensory information is recovered. It becomes possible then to examine it and to discern to what extent experience belongs to a remembered present or actually reflects the present moment, because to an educated eye it becomes clear like a reflection on the surface of coherently-ordered water. From underneath the threshold of consciousness, on the other hand, highly charged contents are usually projected onto others, and one remains caught in repetitive cycles of reactivity.

As a matter of fact, experience that seems utterly personal and intimate often turns out to have a collective dimension, linking the individual to all other living beings across space and time.

A fuller understanding of the interaction between myofascial tone and water may help to protect general health, prevent injury, and promote healing from sickness, injury, and trauma, both physical and psychological. Just beginning to understand this correlation has already proven to be helpful in restoring the flow of sensations that allows recognition of the somatic patterns that interfere with sensory awareness, and in introducing new information into the system. Responsiveness instead of reactivity, conscious choice instead of blind habit, and the possibility of more freedom, complexity, and diversity in behavior can thus be enhanced. One by one, every individual has the power to bring mankind a step closer to truly ethical behavior or to move us farther away from it.

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Illustration Notes

Figure 1

Besses, L., From *Con los pies en el suelo: forma del cuerpo y visión del mundo* (p. 47), by B. Hansmann, 1997, Barcelona: Ediciones Icaria. Reprinted with permission.

Figures 2, 3, & 4

MRI: Spin desynchronization by T. Oostendorp, 2009. Retrieved from www.youtube.com/watch?v=POYuwCphcRU . Reprinted with permission.

Figure 5

MRI: Excitation and recovery of spins by T. Oostendorp, 2009. Retrieved from www.youtube.com/watch?v=0YBUSOrH0lw. Reprinted with permission.

Endnote

Edelman defines reentry as the ongoing recursive dynamic interchange of signals that occurs in parallel between brain maps, and which continuously interrelates these maps to each other in time and space. Edelman demonstrates spontaneous group formation among neurons with re-entrant connections. Reentry depends for its operations on the intricate networks of massively parallel reciprocal connections within and between neuronal groups, which arise through the processes of developmental and experiential selection outlined above. Edelman describes reentry as “a form of ongoing higher-order selection . . . that appears to be unique to animal brains” and that “there is no other object in the known universe so completely distinguished by reentrant circuitry as the human brain”.

Retrieved January 3, 2014 from http://en.wikipedia.org/wiki/Gerald_Edelman