

What's In A Handshake?

A commentary on human energetics

by James L. Oschman, Ph.D.

Dr. Jim Oschman made a commitment to Dr. Rolf when he first met her to do extensive research into the scientific ramifications of her work. He has steadfastly kept his commitment, and is considered a leading expert in the field of connective tissue. He is an internationally recognized scientist who directs his own corporation (Nature's Own Research Association) in Dover, New Hampshire. He has written extensively in all areas of biological research. Jim has the greatest understanding about the physiology and bio-mechanics of our work. We feel very honored to have Dr. Oschman as a friend of the Rolf Institute. We are grateful to him for his article which appears in this issue of *Rolf Lines*.

**"The wind blows over the lake
and stirs the water.**

**Thus visible effects of the invisible
manifest themselves."**

I Ching

The anniversary of Dr. Rolf's birth has prompted many to review the paths their lives have followed since their first contacts with her work. One of my early and profound experiences was shaking hands with Dr. Rolf. I was to give a talk on the energetics of connective tissue in an advanced class in Philadelphia that turned out to be the last one Ida taught.¹

The immediate and startling sensation of shaking Dr. Rolf's hand was that my entire being, in all its dimensions, was being opened to her full view. I distinctly recall feeling that this "hand shake" connected all the way down to my feet.

There was no time to dwell on this experience, because it was time for my lecture. But I recall thinking that Ida had somehow already connected with everything I could possibly know or say about connective tissue.

In retrospect I can see that much of my research following my meeting with this remarkable person has involved, in one way or another, an exploration what happened during that moment of formal connection with Dr. Rolf. The overall theme of the exploration is the energetic aspects of the structural work. This has included clarifying the nature of the energies that flow during all kinds of bodywork as well as the structures through which the energies flow. The process has involved integrating Dr. Rolf's insights with those of many of her contemporaries who made important discoveries in other branches of inquiry.

Dr. Rolf preferred to keep the energetic aspects of her work to herself in order to maintain everyone's focus on the verifiable physical, anatomical, mechanical aspects of human structure and function. She wanted to avoid anything "quirky or unphysical or undocumented."² Those who knew her well have told me, though, that she was deeply perplexed by the enormous energy that seemed to emanate from her hands.

Of course, "energy" is a subject that physicists know something about.

From the scientific perspective, energetic interactions are certainly not quirky or unphysical or undocumentable. But the application of energy concepts to biology has been surrounded in controversy and confusion. Many have categorized biological energy in a derogatory vein as "occult phenomena." But the word "occult" simply means invisible. Matter is visible and palpable, and you can get your hands on it. Energy is often invisible, and therefore a bit mysterious, unless you have the instruments to detect it. Science has ways of "seeing" that which is normally hidden from view.

Our culture seems to have a collective "mental block" about energy, as evidenced by our willingness to have an occasional "energy crisis." But the forces of nature surround and penetrate us, and their effects underlie all that we see and touch.

Peter Melchior facilitated my inquiry into energetics when he told me about the research of Harold Saxon Burr. This distinguished scientist, who was a professor of anatomy at Yale University, had spent many years studying the ways living systems produce and interact with energy fields.⁴ I was astonished by the fact that I had never heard of Burr's remarkable research during my 20 years of formal scientific training. Just as fascinating as Burr's discoveries was the question of why his work had been totally bypassed by mainstream science.

It is easy to see why "healing energy" has been "off limits" to scientific inquiry. Burr's work on energy fields, from 1932 to 1956, was way out of step with the mainstream medicine and biology of the time. This was a period of explosive growth in pharmaceutical medicine and the use of X-rays for diagnosis. The antibiotics were winning the war against dis-

ease, and the thrust of medical research and public policy was toward a pill for every disorder. The public was dazzled by the seemingly continuous and accelerating rate of scientific and medical progress. There was a successful academic concept of bioenergetics, but it was focused on

During this period, it was prudent for Dr. Rolf to separate her work from such an unfashionable line of inquiry. The consensus was that healing with energy fields was fantasy. Any notion that light could be emitted by the body was certainly absurd.

the study of biochemical reactions and the ways molecules store and release chemical energy. Other kinds of energy, such as electricity and magnetism, were not fashionable topics for research.

During this period, most biologists and physicians were certain that all notions of "energy therapy" and "life force" were complete nonsense. In this atmosphere, Dr. Rolf's reluctance to connect her work with such a controversial line of inquiry was prudent. In academic circles, the experiences of practitioners and recipients of energy therapies were dismissed, either by ignoring them, or by stating that participants were victims of deception, illusion, trickery, fakery, quackery, hallucination or

the "placebo effect." Scientists could say with certainty that any "energy field" around an organism would be far too weak to be detected. If such a field existed, it surely had no biological significance. Healing with energy fields was fantasy, and any notion that light could be emitted by the body was certainly absurd. Dr. Rolf was wise to avoid connecting her life's work with such an academically unpopular topic.

Dr. Rolf was, however, well aware of the research of Harold Saxon Burr. I know this is so because I have a copy of Dr. Rolf's personal reprint collection, which was assembled by Geo Hall during the 1970's. Included in the collection are many of Burr's scientific articles, including a bibliography of his life's work. On the cover of the bibliography is Geo's handwritten note, "given me by Dr. Burr during interview, Tuesday afternoon, January 26, 1971, at his home in Old Lyme, Connecticut."

The historical reasons for the bias against Burr's research and "healing energy" have been reviewed in a series of articles written for a new publication, *The Journal of Bodywork and Movement Therapies*⁵ as well as in a 1982 book, *Electromagnetism and Life*, by Becker and Marino.⁶

Energy fields have been used for healing since ancient times, but there is a natural and realistic fear of the powerful forces of nature. The Shaman and other religious figures derived authority from their ability to explain and control invisible energies. For centuries, there has been a tradition of maintaining a sharp intellectual and political separation between science and religion.

For biologists, the relationship between energy fields and life has been a subject of bitter and continuous controversy for over 400 years. The battle concerns a fundamental

disagreement about the nature of life. Competing philosophies have generated much emotion and dogma. The argument is referred to as *mechanism vs. vitalism*. Mechanists hold that life obeys the laws of chemistry and physics, and will ultimately be totally explained by those laws. In contrast, vitalists thought that life will never be explained by normal physics and chemistry, and that there is some kind of mysterious "life force" distinguishing living from non-living matter. This concept is ancient and universal, appearing in some form or another in many different cultures and religions.

Medical use of energy fields began shortly after the discovery of "animal electricity" at the end of the 18th century. By the late 1880's, thousands of physicians in the U.S. and Europe were using electricity daily to treat a wide range of ailments. All of this went on while mainstream science was vigorously rejecting vitalism.

In 1910, science was formally established as the basis for medicine, and Medical schools were overhauled. Clinical electrotherapy became illegal in the U.S. Few academic scientists dared to study the therapeutic possibilities of energy fields. Harold Saxon Burr was an exception. Like a few others, he established his credentials with conventional research, became a tenured professor (he could not be fired from his academic position) and then began to study energy fields.

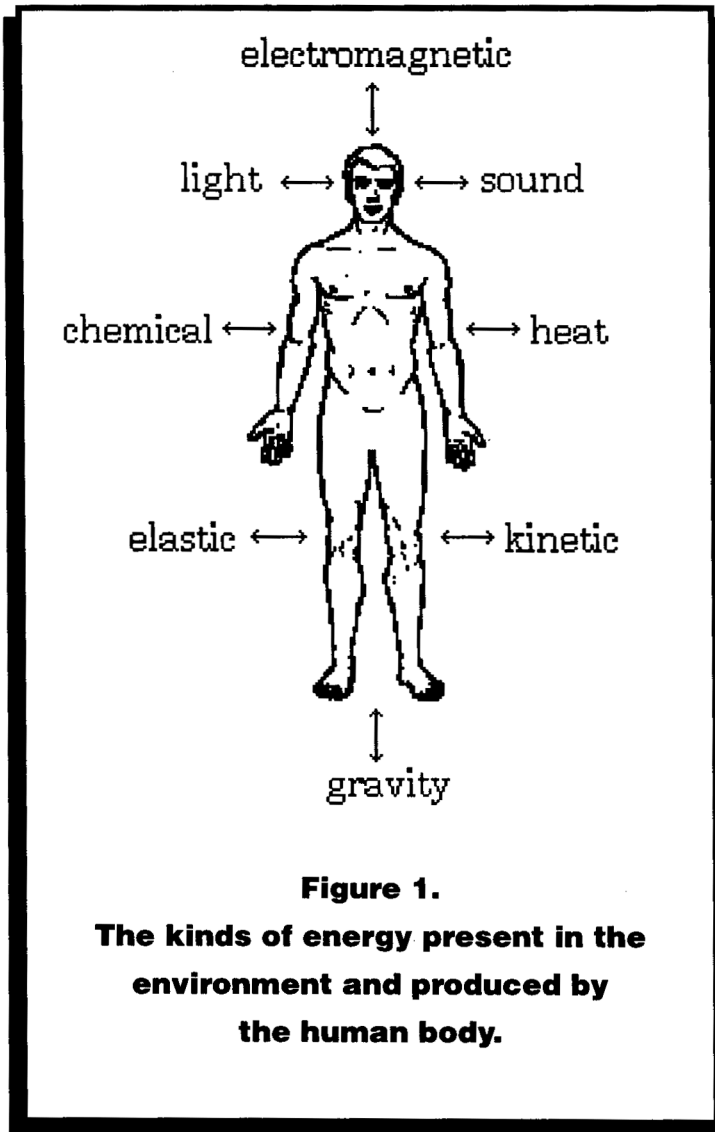


Figure 1.
The kinds of energy present in the environment and produced by the human body.

Burr was convinced that energy fields are the basic "blueprints" for all life, that every physiological process has an energetic counterpart, and that diseases alter energy fields before pathological changes begin.

Many of Burr's discoveries and concepts are being verified, now that sophisticated instruments are available to measure the fields produced by living systems. In a few decades scientists have gone from a conviction that there is no such thing as an energy field around the human body, to an absolute certainty that it exists. Sensitive instruments are now used widely in medical research to map

the electric, magnetic, thermal, acoustic, and photonic fields produced by the various tissues and organs.

In the early 1980's, the FDA cautiously began to approve electrical and magnetic devices to stimulate bone repair. This was the start of a new era of "electromagnetic medicine." Research from around the world is now confirming many of Burr's conclusions about the importance of energy fields in physiology and medicine. A variety of electrical and magnetic healing devices are being researched, validated, and introduced into clinical practice. Remarkably, the signals produced by these devices correspond to those emanated by the hands of certain bodywork practitioners while they are doing their work.

With respect to Structural Integration, a crossroads has been reached. The subject that fascinated and

bewildered Dr. Rolf, but that she was reluctant to discuss openly, has gradually become a part of the mainstream. As one example, the ancient method of laying-on-of-hands, mentioned in the Bible, has been incorporated into nursing practice, under the name of "therapeutic touch."⁷ Because of a variety of scientific advances, it is now much easier and more acceptable and even exciting and profitable to talk about the energetic aspects of structural work.

The story of how this change took place can be found in our various articles in this and other journals. It is

a tale that grows simpler and more complete with each telling. This is so because of the remarkable research being done in laboratories around the world. Major pieces of the puzzle can be summarized in three parts. First, we will look at what we mean by the term "energy" in terms of human physiology. Then we examine the various structures in the body that handle energy. Finally, we can appreciate the deeper meaning of the structure/energy relations when we see how they manifest as beneficial feeling states correlated with healing and wholeness.

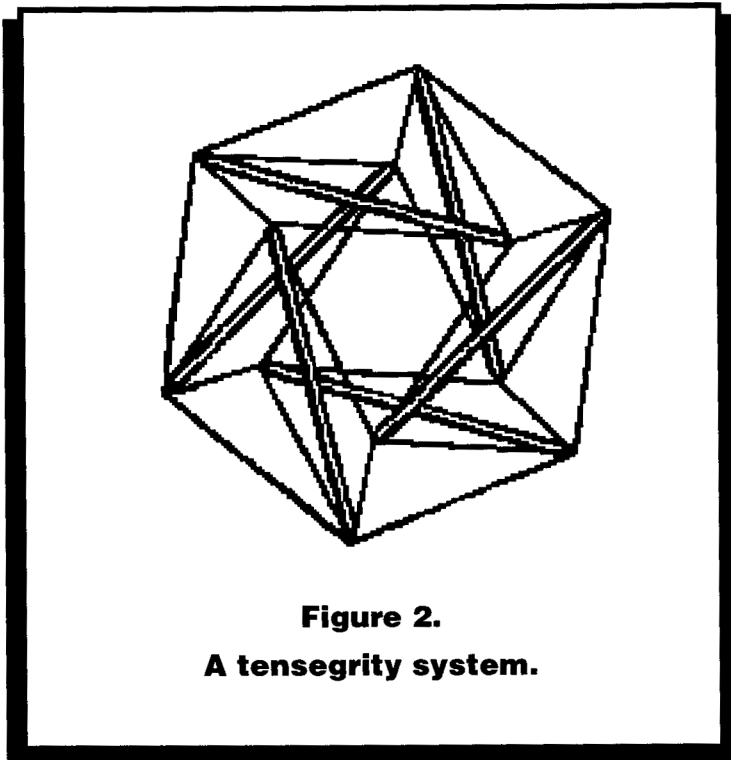


Figure 2.
A tensegrity system.

•**energy fields.** Various instruments have been developed to measure the energies generated by living systems. The roles of these energies in physiological processes are being explored in medical and academic laboratories around the world. The heated debate over whether or not there is a "life force" has been replaced with serious study of how living systems generate energy fields, and the ways these fields influence form and function. The illustration below shows some of the different kinds of energy the human body is immersed in and that are, at the same time, produced by the body.

•**tensegrity.** This concept from Buckminster Fuller provides a conceptual link between structural patterns and energy flows. The body as a whole and the various parts, including the interiors of all cells, are tensegrity systems. This is to say, they consist of a continuous network of tensile elements (called tendons) and a discontinuous system of compression members (called struts). See Figure 2. The tensegrity concept helps

explain the ability of the integrated body to absorb impacts without being damaged. Energy flows away from a site of impact through the tensegrous network. The more flexible and balanced the network, the more readily it absorbs shocks. (This explains the lower incidence of injuries in athletes who have received Rolf work). Tensegrity also accounts for the fact that inflexibility or shortening in one part influences structure and movement in other parts. Since the tensegrity network is simultaneously a mechanical and a vibratory continuum, restrictions in one part have both structural and energetic consequences for the entire organism. Structural integrity and vibratory or energetic integrity go hand in hand. One cannot influence the structural system without influencing the energetic system, and *vice versa*. Donald E. Ingber and his colleagues at Harvard Medical School have brought tensegrity concepts into mainstream biomedicine by describing how physical forces exerted on molecular scaffolds regulate bio-

chemical pathways involved in determining biological patterns.⁸

•**the living matrix.** Discoveries in cell and molecular biology have led to a detailed understanding of the tensegrous molecular frameworks of the body. These can be studied at the level of the whole body, or in tissues, or within cells. Tensegrous frameworks are also the pathways various kinds of energy take as they stream through living tissues. Connective tissue, the focus of a variety of kinds of structural bodywork, extends throughout the body, even into the delicate matrix within

every cell and nucleus. The ways energies of various kinds travel through this system are explained by solid state physics and electronics, for the entire tensegrity matrix is composed of semiconductors. While semiconductors have many applications in sophisticated technologies, where energies must be converted from one form to another, the most elegant semiconductor networks, by far, are those within living flesh.

We usually associate the perception of energies in the environment with specific sensory receptors, such as the eyes, ears, nose, etc. While there is no doubt of this, current research also shows that all parts of the living matrix respond in specific ways to virtually all forms of energy in the environment.

Awareness of one's place within the world matrix is a consequence of input to the primary sensory receptors, augmented by energy detection throughout the living matrix. It is at the level of the molecular tensegrous network that one can begin to answer

the questions Dr. Rolf posed about the relations between the small fields of the body and the larger fields of the planet.

• **coherence.** An explanation for the enormous energy that emanated from Dr. Rolf's hands has emerged from the brilliant research of Herbert Fröhlich. Quantum mechanical calculations on the nature of the vibrations that take place in highly organized repeating systems, such as the collagen arrays in fascia, tendons, ligaments, and cartilage, have led to a remarkable conclusion. These lattices vibrate extremely strongly at very high frequencies and therefore emit huge coherent energy fields.⁹ Living tissue is extremely responsive to coherent energy of this sort.¹⁰

As tissue becomes more and more integrated in terms of structure, it becomes more energetically coherent. As your clients become more ordered in terms of their personal structure and energy, it becomes easier for you to couple your energy system with theirs, and *vice versa*. In terms of regulatory biology and information theory (cybernetics), a positive feedback is created. As their structure becomes more integrated, they become more responsive to your energy field, which is a product of your structure. Likewise, as you become more responsive to their energy fields, it is easier for you to obtain information from them and to project order into their tissues. The better it gets, the better it gets! A delightful attribute of complex

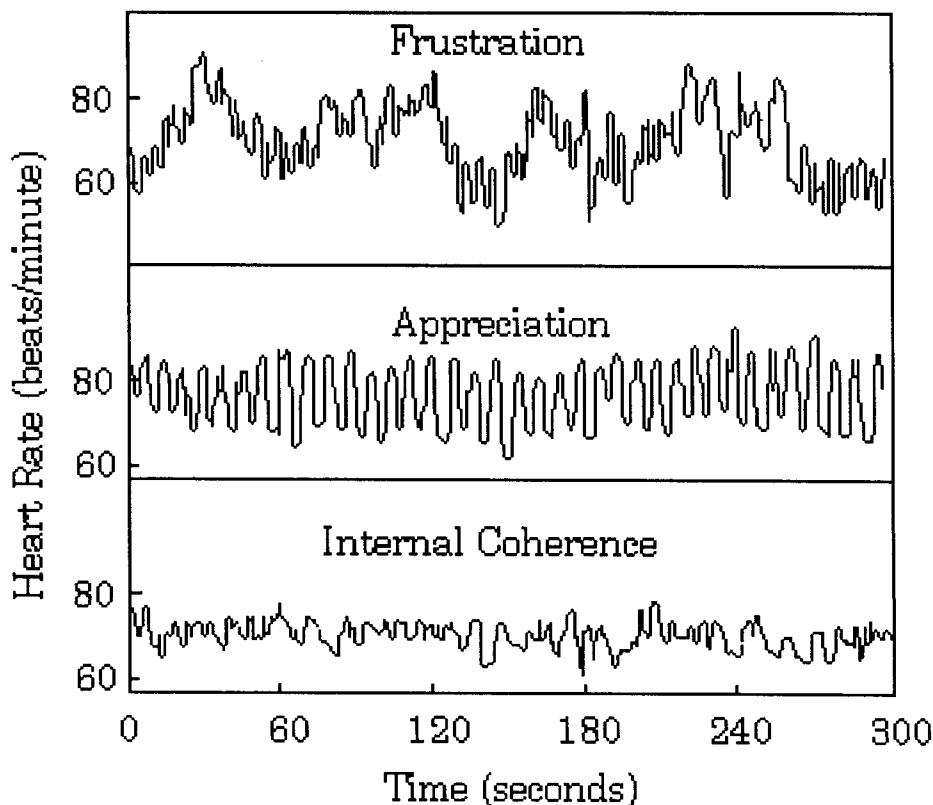


Figure 3.
Heart rate measurements for three different mental/
emotional states.
From McCraty, et.al., reference 12.

positive feedback systems such as this is that they are synergetic—they are one mechanism for the drive in nature to perfect itself, so eloquently articulated by Albert Szent-Györgyi.¹¹

• **information and systems theory.** Norbert Wiener has stated that to live effectively is to live with information. This applies to societies, individuals, and parts of organisms. For two adjacent cells to function effectively, each must “know” what its neighbor is doing. Likewise, for two distant cells in an organism to coordinate their activities in terms of what is being demanded by the organism as a whole, they must communicate. The

nervous and circulatory systems are informational networks, but there is far more to the story. Coherent vibratory communications in the continuous tensegrous living matrix are another means of rapid communication and information processing. Practitioners of SI and other methods see remarkable, even miraculous changes in the individuals they touch. The living matrix is a domain of miracles.

• **the energetics and rhythms of love.** Among the most remarkable discoveries in recent decades concerns the physiological oscillations associated with certain feeling states, such as

love, peace, and appreciation. The research was summarized in 1993 by McCraty and colleagues at the Institute of HeartMath.¹² Emotional states have been correlated with measurable changes in the electrical energy spectrum of the heart.

Some of the results are shown in Figure 3. Electrocardiograms are shown for an individual feeling *frustration* (top panel) versus *appreciation* (middle panel). In *frustration*, the heart rate varies somewhat randomly, a condition the authors refer to as *incoherence*. The various oscillators in the body exhibit simple harmonic or sine wave behavior of different phase, frequency, and amplitude.

Various practices that intentionally focus one's attention on the area of the heart, while invoking sincere feelings of *love* and *appreciation*, lead to a more regular variation in heart rate, a condition the authors refer to as *coherence*. This regular variation reflects a balance and coherence between the heart rate and the rhythms of the two branches of the autonomic nervous system, the sympathetic and parasympathetic, that regulate heart rate.

With appropriate intention and training, a third state can be achieved that is referred to as *internal coherence*. Here the variation in heart rate decreases almost to zero (lower panel). This is a calm, peaceful, harmonious, and highly intuitive feeling state. One becomes aware of one's electrical body, and of the minute currents flowing throughout. This state is associated with a coupling or entrainment or phase-locking of a variety of electrical and mechanical rhythms, including the heart, respiration, autonomies, and the baroreceptor feedback loop to the brain. These highly ordered physiological states, with optimum cou-

pling of rhythms, beneficially affect the functioning of the whole body, including the brain.

The energetics of love and the living matrix. A relationship between DNA and heart coherence has been suggested by work of Rein, McCraty, and others, 1993.¹³ Their model involves

**“This thing is the
strongest
of all powers,
the force of all forces,
for it overcometh
every subtle thing
and doth penetrate
every solid substance”**

Tabula Smaragdina²³

the well-documented ability of DNA to act as an antenna. In this case, the DNA throughout the body both receives and transmits information encoded in the heart's electrical rhythms and in the oscillations of the DNA molecule itself.

A simple molecular explanation for such a relationship emerges from consideration of the living matrix concept. The rhythmic coherences described by McCraty and colleagues can arise naturally in part because of the piezoelectric and other solid state properties of the living matrix. The piezoelectric effect (pressure electricity) is reversible: mechanical waves generate electrical waves, and electric waves produce mechanical waves. Hence all of the so-called mechanical waves, such as produced by the cranial-sacral system or the beating of

the heart or the breath will give rise to electrical waves. The living matrix system conveys these electromechanical rhythms to every nook and cranny of the body. Chemical oscillations are also entrained, via switches on the tensegrity matrix described by Ingber and colleagues. In some cases the various waves can condense into a coherent soliton wave.¹⁴

One explanation of why these internal states are so beneficial is based upon new understandings of the way energy fields influence protein functioning. Proteins carry out all of the vital tasks in living systems, and each protein must fold in a precise way to be most effective. It now appears that oscillations set up in particular regions of the DNA create informational signals that spread through the living matrix, where they energize particularly effective protein conformations.¹⁵ For this to happen, the living matrix must obviously be communicating to all parts of the body.

A sensitive individual can begin to “tune in” to these phenomena by focusing on any body rhythm. The work of McCraty and colleagues focuses on the heart rhythm and then connects with other rhythms in the body. Cranial therapists begin with the cranial pulse, and then develop an awareness of other rhythms becoming entrained. The breath is another widely used entry into the rich and elegant domain of the rhythmic matrix. This dynamic matrix has aspects that are mechanical, electrical, magnetic, gravitational, thermal, acoustic, and photonic. Like different religions, different therapeutic approaches may focus on one or another of these phenomena as the one and only method to obtain mastery, but all of them work. Different individuals have different sensitivities and different skills that make it easier for them to take one

route or another.

The method used by McCraty and colleagues has been termed *Freeze-Frame*[®]. Other valuable approaches include the work of *compassionate self-care*, developed by Stephen R. Schwartz (1949-1993)¹⁶ and the *Embodiment Training* of Will Johnson.¹⁷

• **collective or cooperative or distributed properties.** In living systems, information is a distributed property. Neurophysiologists continue to search the brain for the location of memory and consciousness, but evidence accumulates that both of these phenomena are distributed or emergent properties of the entire living matrix, including all of the cells and nuclei throughout the body.

• **superradiance.** Where does the synergetic path lead in terms of human experience? One remarkable answer emerges from solid state physics of superconducting semiconductors. Evidence accumulates that these exist in living matter at body temperatures. Under certain conditions, polymer systems such as those comprising the connective tissue can exhibit phenomena called superradiance or superfluorescence.¹⁸ For a picture of the experience of these phenomena, see *Living with Kundalini* by Gopi Krishna.¹⁹

A recent interview with Rosalyn Bruyere describes Dr. Rolf working on Valerie Hunt, who had developed some physical problems as a result of the long and intense concentration she had put into analyzing the data from the Rolf study.²⁰ Sipping tea and watching the end of the session quietly from a corner of the room, Rosalyn saw Ida hold her hand over Valerie's back, above her heart Chakra. At this point, she saw a "blue light that came up through her body, out through her heart, and she made swirls of green and she'd make circular motions over the heart

Chakra, and she was clearly moving energy....."²¹ When asked "What is that you're doing?" Dr. Rolf quickly pulled her hand away and put it behind her back, and said, "Nothing."

The story that is emerging from the arcane world of science is now allowing us to talk about what Dr. Rolf kept to herself. In future articles, we will examine the ways the living matrix generates light. What is particularly fascinating about Rosalyn Bruyere's recollection is that it ties together many facets of the story of Dr. Rolf's own touch. Dr. Rolf embodied the concepts outlined above, and more. Awareness of the various attributes of the circuitry of the body cannot help but influence one's experience of one's own flesh. In a large sense, this is what conscious evolution, or the evolution of consciousness, or human potential, are all about.²² As we more deeply understand what living flesh is capable of, we can manifest this in our lives and in our contacts with others. Conversely, new experiences of self give rise to deeper understandings of the subtle science of the living matrix.

None of this should be taken to imply that the scientific story provides a complete picture of how the human body works or of how Structural Integration has its effects. Energetic understandings complement our understandings and experiences of structural phenomena. Just as waves and particulate aspects of matter are complementary descriptions rather than complete unto themselves, so are structural and energetic explanations complementary or intertwined.

Superficially, a hand shake is a widely practiced ritual formality. More deeply, it is a profound energetic and informational connection that can change the course of one's

life. It is a form of energetic body-work!

Looking back over Dr. Rolf's life, one wonders about the synergy of her insights with those of her contemporaries who were advancing our understanding of the nature of life on many fronts: Buckminster Fuller, Albert Szent-Györgyi, Herbert Fröhlich, Harold Saxon Burr, Robert Becker, Gopi Krishna, Moshe Feldenkrais, Thomas Hanna, the great quantum physicists, and so many others.

I thank Randy Mack for introducing me to the work of Stephen Schwartz and to the studies being done at the Institute of HeartMath. I thank Richard Stenstadvold for sharing some of his recollections of Dr. Rolf. This article was first published in *Guild News*, the newsletter of the Guild for Structural Integration, Boulder, Colorado, Fall 1996 issue, Volume 6, Number 2, pages 18-26.

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FOOTNOTES

- ¹ The invitation had been arranged by Jason Mixer. The hand shake experience and all that followed would probably never materialized without the ten sessions from Peter Melchior and Jason.
- ² From an interview with Rev. Rosalyn Bruyere, by Gil Hedley, *Rolf Lines*, August, 1996 issue, pages 24-31.
- ³ Russell, J., 1974. *The Meanings of Modern Art*. New York: Harper & Row, p. 42.
- ⁴ For a list of H.S. Burr's published research, see *Yale Journal of Biology and Medicine*, 1957. Harold Saxon Burr. Volume 30(3):161-167. Alternatively, see his book, *Blueprint for Immortality*. C.W. Daniel Company, Ltd., Saffron Walden, U.K.
- ⁵ *The Journal of Bodywork and Movement Therapies* is edited by Leon Chaitow and published by Churchill Livingstone. Complementary copies of the first issue can be obtained by calling 1-800-553-5426 in the U.S., 0500 556 242 in the U.K., or writing to Maria O'Connor, Churchill Livingstone, Nursing & Allied Health Dept., 1-3 Baxter's Place, Edinburgh, EH1 3AF, UK.
- ⁶ Becker, R.O. and A.A. Marino, 1982. *Electromagnetism and Life*. State University of New York Press, Albany.
- ⁷ See, for example, Quinn, J.F., 1984. Therapeutic touch as energy exchange: testing the theory. *Advances in Nursing Science* 6:42-49; Quinn, J.F., 1992. The senior's therapeutic touch education program. *Holistic Nurse Pract.* 7(1):32-37; Quinn, J.F., 1993. Psychoimmunologic effects of Therapeutic Touch on practitioners and recently bereaved recipients: A pilot study. *Advances in Nursing Science* 15(4):13-26.
- ⁸ Ingber, D.E., 1993. The riddle of morphogenesis: A question of solution chemistry or molecular cell engineering. *Cell* 75:1249-1252.
- ⁹ For a summary of Fröhlich's work, see Oschman, J.L. and N.H. Oschman, 1994. Book Review and Commentary: Biological Coherence and Response to External Stimuli. Nature's Own Research Association, P.O. Box 5101, Dover, NH 03820.
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- ¹¹ Szent-Györgyi, A., 1974. Drive in living matter to perfect itself. *Synthesis* 1(1).
- ¹² McCraty, R., M. Atkinson, and W.A. Tiller, 1963. New electro-physiological correlates associated with intentional heart focus. *Subtle Energies* 4(3):251-268.
- ¹³ Rein, G. and R. McCraty, 1993. Modulation of DNA by coherent heart frequencies. *Proceedings of the 3rd Annual Conference of the International Society for the Study of Subtle Energies and Energy Medicine*. Monterey, CA, June, 1993. This and related articles are available from the Institute of HeartMath, P.O. Box 1436, 14700 West Park Avenue, Boulder Creek, CA 95006, 408-338-8700; Fax 408-338-9861.
- ¹⁴ Oschman, J.L., 1993. Sensing solitons in soft tissues. *Guild News* 3(2):22025.
- ¹⁵ Fröhlich, H., 1988. The genetic code as language. A chapter in Fröhlich, H., editor, *Biological coherence and response to external stimuli*. Springer Verlag, Berlin, p. 192-204.
- ¹⁶ The work of Stephen R. Schwartz is available in various books and cassettes that can be obtained from Compassionate Self-Care Publications, P.O. Box 28214, Seattle, WA 98118-8214, phone 206-725-6920.
- ¹⁷ Johnson, W., 1996. Change, Transformation, and the Universal Pattern of Myofascial Holding. *Rolf Lines* 24(1):20-29.
- ¹⁸ Bonifacio, R., F.Casagrande, and M. Milani, 1984. Superradiance and superfluorescence in Josephson junction arrays. *Physics Letters* 101A(8):427-431; Bialek, W., 1984. Phonon super-radiance. *Physics Letters* 103A(6,7):349-352.
- ¹⁹ Krishna, G., 1993. *Living with Kundalini*. Shambhala, Boston.
- ²⁰ Hunt, V.V., 1977. A study of structural integration from neuromuscular, energy field, and emotional approaches. Abstract and report published by The Rolf Institute.
- ²¹ see Reference number 2.
- ²² Melchior, P., 1995. Structural integration: An intentional inquiry into personal potential. *Guild News* 6(1):16-22.
- ²³ *The Tabula Smaragdina, or The Emerald Table* or possibly also *The Secret of Creation* was translated by R. Steele and D.W. Singer and published in 1928 in the Proceedings of the Royal Society of Medicine 21:42.