



New PERSPECTIVES

A Quarterly Bulletin about Roling and Somatic Awareness

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Holistic Systems Analysis: Toward a Scientific Understanding of Structural Integration (Roling)

by Richard P. Ingrassi, M.D.

For man is an energy field, as the earth and its outward envelope of forces is an energy field. How well a man can exist and function depends on whether the field which is himself, his psychological and physical personality, is reinforced or disorganized by the field of gravity.¹

Ida P. Roling

The above statement represents the core of a scientific truth that I believe will soon result in Structural Integration (SI) being recognized as a major scientific breakthrough. This intuition is based on the fact that the most comprehensive models of the universe emerging from the "new physics" (based on Einstein's vision of a unified field theory) are entirely consistent with the fundamental principles of SI. A major scientific revolution based on this new scientific paradigm is already well under way because the new paradigm can better explain what is presently unexplainable using the old models—e.g., the nature of consciousness, and so-called paranormal phenomena such as clairvoyance, psychokinesis, telepathy, psychic healing, precognition, and astral projection.

I will briefly list some of the general characteristics of this emerging model of reality, those which I consider especially relevant to SI.

1. All things are interconnected (e.g., Mach's principle states that the mass of a single particle is determined by the mass of the entire universe.)
2. Our normal perception of reality is a composite of an indefinite number of universes in which we coexist.

3. All space-time is constructed by consciousness.
4. Gravity is the master field; there is a hierarchy of finite-range gravitational fields, one for each major scale of organization of matter in space-time. (SI is particularly concerned with self-organizing biogravitational fields, which control events on the scale of 10-4 cm, the scale of organization of biological processes.)
5. Time and space are not absolute, but are distorted by gravitational fields (according to Einstein's theory of general relativity, the rate of time flow and the size of space depend on the strength of the gravitational field).
6. Matter is gravitationally trapped ($E=mc^2$); self-organizing fields generate matter; biogravitational fields organize living matter.
7. Gravity can act at speeds greater than the velocity of light (instantaneously—the "paranormal channel") as well as less than the velocity of light (normal sensory perception).
8. Everything is living; there is consciousness in everything.
9. Tension and compression are inseparable and coordinate functions of all structural systems; they are coexistent and complementary behaviors in nature. Tension is continuous, comprehensive, attractive, and gravitational. Compression is discontinuous, local, temporary, and divisive. Gravity is the tensional principle of the universe.
10. The universe is like a hologram—every part contains the whole.

From this brief overview, we see that universes consist of vibrating energy fields that together form one unified whole—that

is, they are completely interconnected and intercommunicating. We see that gravity and consciousness are inextricably related (perhaps mutually causal?), and that a deeper understanding of the relationship between living systems and the self-organizing biogravitational fields associated with them might well result in the human species transforming itself to a higher state of consciousness.² So, my intuition is that SI is a tool for systematically transforming the physical structure of man into a more harmonious relationship with the gravitational fields that envelop him, and that ultimately this results in an evolutionary transformation of human consciousness. More precisely, SI facilitates human evolution (which is the only game in town!)

In terms of general systems theory, life is a manifestation of the general principle in nature called syntropy (or negative entropy). Syntropy is the tendency to reach higher and higher levels of organization, harmony, and order. Entropy, the opposite principle, is the tendency of organized forms to gradually disintegrate into lower and lower forms of organization. Living organisms are self-organizing, open systems—that is, they maintain their highly ordered spatial structure by a continuous input and output of energy and information. When a living system comes to rest there is an increase in randomness; thus function keeps the living system in its low entropy state (in thermodynamics, we say that an open system reaches its energy minimum—that is, its greatest stability—by working). Living systems give out energy as they improve and form more orderly, stable structures (a structure is a self-stabilizing pattern; structures are not things; structures are event constellations). Growth often takes the form of self-

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structuring hierarchical shifts in which unstable, conflicting subsystems reintegrate at a higher level of orderliness via structural transformations (e.g., one-celled organisms evolving into multicellular organisms).

Man is a living system—he is a synergistic synthesis of cells, tissues, and organs, the whole of which is greater than the sum of its parts. He is not only the atoms or molecules that make up his physical body, but also the structural relationships of these parts which are organized by his biogravitational field. (Ida Rolf: "An understanding of the integrative factor in man implies an awareness of the vital urgency of relationship. It is through the creation of appropriate relationship in three dimensional space that a man may be freed to a higher and more truly human functioning.")³

From the systems point of view, the goal of SI is seen to be to increase order and harmony in the human body (and thereby the person as a whole) by transforming the relationships among all the parts of the body through the manipulation of the deep fascia. A random, disorganized body may be "stuck" (at rest) in a variety of ways (e.g. intrinsic-extrinsic musculature imbalances, pelvic rotation, flexor-extensor imbalances, etc.), and these imbalances are always reflected throughout the whole system. A useful analogy is this: A 10-watt bulb doesn't provide very much light because the photons that are emitted are out of phase with each other, which results in destructive interference. If, however, we were to take the same number of photons and make it possible for them to be emitted in phase with each other, creating constructive interference (this is called a laser), then we would generate more energy than

on the surface of the sun! Random bodies are out of phase with gravity and therefore torn down by it; structurally integrated bodies are in phase (or resonating) with gravity, and therefore supported by it.

This last statement is a hypothesis that could be tested empirically. Now, I am fortunate to be working with one of the leading cosmologists forging the new model of reality described previously. His name is Ben Bentov; he is a gifted inventor and he has developed an instrument (he calls it a "transcendometer") which is capable of measuring the micro-motion of the body as it is reflected in the vibration of the aura surrounding the body. He measures the electrostatic field flux with this antenna-like sensor (no bodily electrodes) that he places approximately six inches away from the body (the aura is believed to be a reflection of the biogravitational field). Bentov originally designed this instrument to serve as a "meditation meter" for determining physical correlates to the "transcendent" state of consciousness. His research with Transcendental Meditation has resulted in some truly remarkable discoveries that are clearly relevant to SI.⁴

What Bentov has discovered is that the human body is a musical instrument—it is constantly vibrating and emitting "sounds". He has discovered five major oscillators in the body (heart, spinal column and skull, third and fourth ventricles of the brain, cortex, and an electromagnetic field around the head) that can be rhythmically entrained by inductive resonance. Resonance is another general principle found in nature. For example, if two grandfather clocks are connected by a wooden board and one of them happens to be ticking slightly faster, then very shortly they will both be synchronously ticking at the higher frequency. Higher frequency oscillators entrain lower frequency oscillators so they resonate (vibrate in phases) at the higher frequency.

This is not the place for a detailed description of Bentov's research, but let us briefly consider the most powerful oscillator in the body, the heart. Each time the heart beats, a pressure pulse is transmitted through the aorta. This pressure wave is partially reflected back towards the heart when it hits the bifurcation of

the aorta. In a "normal" state of consciousness, this oscillator is not "tuned"—that is, the pressure wave from the next heartbeat and the returning pressure wave destructively interfere with each other, resulting in a loss of energy from the body as heat. However, in deep meditation, a feedback loop develops (this involves breathing and muscle tension) which results in the next heartbeat occurring exactly as the returning wave reaches the heart—this is, a constructive interference is set up (the waves reinforce each other) and no energy is lost. A standing wave of 7 cycles per second (cps) is created in the aorta. This is a remarkable scientific fact.

When the heart oscillator and the other oscillators are all resonating together, the electromagnetic field surrounding the head is entrained by the earth's electromagnetic field, which oscillates at 7.35 cps (remember that gravity is the basis of all energy fields), so that the individual is resonating with the planet, which is resonating with the sun, which is resonating with the galaxy...etc. This state of consciousness is sometimes called transcendence.

The body is a musical instrument with five major oscillators. Then the body is "tuned", the biogravitational field of the body is locked into and reinforced by the gravitational field of the earth. Higher states of consciousness can be viewed, then, as a resonance with the higher order systems of nature. And gravity is the instantaneous (paranormal) communication channel, our direct link to the Whole.

One other interesting discovery that Bentov has made is that when these oscillators of the body are all resonating, the

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Editor David Laden

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Editor's Notes

Advanced Rolfling

The description of the 5 session Advanced Rolfling series in the last issue of *New Perspectives* brought overwhelming interest. Many people have by now finished their Advanced series. I am now able to take a few more people who are interested in this process. If you would like more information on Advanced Rolfling, please call me.

David Laden

vibrating of the sensory cortex of the brain creates a piezo-electric current (an electrical current caused by pressure on the neurons), whose path follows the sensory homunculus (toes, knees, pelvis, spine, heart, throat, top of head, and forehead) and eventually stimulates one of the pleasure centers of the brain (bliss consciousness!). He hypothesizes that this is the physical basis for the "raising of the Kundalini energy" which is described as starting in the toes and moving through the seven chakras (energy centers) of the body. There have been many reports of people experiencing intense heat and energy over the "third eye" or crown chakra during Roling sessions. Valerie Hunt's latest research includes electronic monitoring of energy changes in the chakras, with a special high frequency (20,000 Hz) electrode over the crown chakra.

It is probable that meditation is only one of many tools that produces a refinement of the nervous system in the manner I have just described. My intuition is that this is also what is happening in Roling. In other words, one would predict that SI produces more order in the body which would be reflected in the greater resonance of these physiological oscillators. This, of course, can be measured using the transcendometer and similar instruments, and that is exactly what we intended to do (Rolf, Bentov and I are meeting to design a research protocol for several studies along this line). Our work will complement Valerie Hunt's research measuring changes in the aura using Kirlian photography and EMG recordings; hopefully a more complete scientific understanding of SI will emerge.

But we cannot understand or explain the changes that we see and experience in SI using any of our old scientific models. It is imperative that we develop an awareness of the universe as a tensegrity structure, for only then, as Ron Kirkby has pointed out, can we begin to scientifically explain how gravity supports the body and lifts it up.

The Universe islands its spherical compression aggregates and coheres the whole exclusively with tension; discontinuous compression and continuous tension; I call this tensional integrity of the



"I'm putting you on two earrings."

Universe tensegrity ... Tension has been secondary in all man's building (and thinking) and compression has been primary, for he has always thought of compression as solid. Compression is that "realistic hard core" that men love to refer to, and its reality was universal, ergo comprehensive. Man must now break out of that habit and learn to play at nature's game where tension is primary and where tension explains the coherence of the whole.⁵

A tensegrity structure is a structure the shape of which is guaranteed by the tensional behaviors of the system, and not by the compressional behaviors. The human body is a tensegrity structure—the "soft" supporting tissues (dense and loose connective tissues) form a continuous tensional network, and as such are the principal structural elements of the body. The bones and cartilage form local islands of compression which keep the soft tissues from collapsing.

This is not what any of the anatomy books tell us, but clearly this is what's so. If you simply play with a movable tensegrity structure like the vector equi-

librium (every Rolfer should do this), it immediately becomes clear that changing the tension in the system asymmetrically results in bends and rotations throughout the system. Also, the vector equilibrium assumes its maximum height when tension is evenly balanced throughout the entire tensional net. In the body this means that bends and rotations are the result of imbalances in the tensional (fascial) network.⁶ Therefore, restoring tensional balance in the fascial network will result in a straightening and lengthening of the body.

Ron Kirkby's hypothesis is that "gravity supports the body by setting the correct tensions within the upright man". I believe that this is only partially true. Kirkby does not seem to be aware of the fact that there are different kinds of finite-range gravitational fields. The earth's gravitational field does not set or determine the tensions in the body, it only interacts with the body's own biogravitational field either constructively or destructively—that is, depending on the tensional balance in the body set by its

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own biogravitational field, the earth's gravitational field either reinforces or supports the body, or tears it down (destructive interference).

My hypothesis is that there are a number of important variables that contribute to setting the tensions in the fascial network. Kirkby mentions one of them—muscle tone. My intuition is that the most important tensional variable is the collagen molecules that are present in the intercellular substance of the fascia. My guess is that the tensile strength of the collagen molecule probably changes when a sufficiently strong force (perhaps one generated mutually by the Rolfer and the Rolfee) is applied to transform the steric conformation (spatial relationships) of the molecule. The body is a plastic medium.⁷ These structural transformations at the

molecular level are possibly self-structuring hierarchical shifts which result in a higher degree of order in the whole body. This is more stable structure, which might account for why changes produced by SI are permanent.

Of course, at this point most of these ideas are just theory, but I firmly believe that modeling SI from a holistic systems perspective will bear fruit in the very near future. I look forward to participating in the development of this frontier of human knowledge.

Footnotes

1. All quotes by Ida Rolf are taken from, *Gravity: An Unexplored Factor in a More Human Use of Human Beings*; Systematics 1, no. 1 (1963).
2. Harold Saxton Burr, *The Fields of Life* (New York: Ballentine books, 1973). See also, Lawrence

Blair, *Rhythms of Visions: The Changing Patterns of Belief* (New York: Schocken, 1976); and, Oliver L. Reiser, *Cosmic Humanism and World Unity* (New York: Gordon & Breach, 1975).

3. See also, William A. Tiller, *Energy Fields and the Human Body* (Paper delivered at the A.R.E. Medical Symposium, Mind-Body Relationships in the Disease Process, Phoenix, Arizona. January 1972).

4. Much of this is further detailed in a forthcoming book by Ben Bentov entitled, *Stalking the Wild Pendulum*.

5. Ron Kirkby, *The Probable Reality Behind Structural Integration* unpublished manuscript.

6. R. Buckminster Fuller, *Synergetics: Explorations in the Geometry of Thinking* (New York: MacMillan, 1975).

7. Here the work of Rudolph Laban takes on importance. Laban maintains that "movement is a synthesis and a unifying process". See his, *The Mastery of Movement*, 3rd ed. (London: MacDonald & Evans, 1971).

Bibliography

Resources of related interest:

Somatic Reality Stanley Keleman
Your Body Speaks Its Mind Stanley Keleman
The Power of Balance Brian Fahey, Ph.D.
Inner Bridges Fritz Smith, M.D.
Dreambody Arnold Mindell, Ph.D.
Working with the Dreaming Body Arnold Mindell, Ph.D.
Touching: The Human Significance of the Skin Ashley Montague, Ph.D.
Focusing Eugene Gendlin, Ph.D.
Addiction to Perfection Marion Woodman, Ph.D.

Future Issues

- The art of sitting
- Rolwing as a tool for re-discovering the feeling self
- Pain and disease as signals from the higher Self, calling us to greater integration and awareness
- Can Rolwing help your running?
- Activation of the intrinsic muscles as a key to managing stress