

NON-LINEARITY, ANISOTROPY AND HEALING

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This issue is slanted towards theoretical papers that try to extend our understanding of the paradigm of healing and Energy Medicine. Could non-linear dynamics and anisotropy help in understanding healing or is healing more complex than what these models could offer? Let us look at each one and draw a reasonable conclusion.

Non-linearity is a fundamental property of nature wherein inputs of different intensities to a system produce outputs at disproportionate levels. An example: if we increase the input by a factor two, the output does not increase by two. The output could be less than two or sometimes even more than two. We see this non-linear response in a drug administered to a person. If we increase the drug dosage by a factor of two the response is rarely twice as much. In simplistic terms, nature does not accept our mathematical representation that one plus one is two. In other words, the body is a non-linear system. However, non-linear dynamics is a difficult mathematical construct and hence most of the time we assume that a linear model could represent a system behavior sufficiently accurately. Presently, however, non-linear dynamics has come to reign supreme in physical and physiological sciences. For example, the electrical activity of the brain is modeled based on non-linear oscillators that couple to each other to produce all the myriad waves on the scalp. So too, cardiac activity and many other tissue responses in the body are modeled as non-linear coupled systems.

Chaos is a term we are all familiar with both at home and in the modeling field. Chaos theory is a mathematical model to elucidate the non-linear

behavior of the world we see around us. This tool seems to give researchers the ability to predict the behavior of a system without necessarily looking into the details of working of each individual part. This approach is discussed by James Gleick¹ in his popular book as follows: “Researchers increasingly recognized the body as a place of motion and oscillation and they developed the methods of listening to its variegated drumbeat. . . . Cancer specialists speculated about periodicity and irregularity in the cycle of cell growth. Psychiatrists explored a multidimensional approach to the prescription of anti-depressant drugs.” The heart and the brain electrical activities have been subjected to the Chaos mathematics and one of the leading researchers in this field, Dr. Goldberger at MIT has this to say: “Irregularity and unpredictability, then, are important features of health. On the other hand, decreased variability and accentuated periodicities are associated with disease.”² He goes on: “Deterministic chaos of nonlinear dynamics . . . refers to a constrained randomness, which remarkably, may be associated with fractal geometry.” Chaos thus gives rise to fractal states that could be essential for physiological self-organization. In simple terms—and losing some accuracy in the process—we may say that a chaotic heart and a non-coherent brain are signs of normalcy! We know from EEG research, if the neural oscillators get synchronized and generate a large signal, the person could be going through a seizure. Problems related to congestive heart failure has also come under scrutiny through non-linear behavior models. Obviously, chaos and non-linearity are here to stay.

If losing chaos behavior is disorder, then healing the body should bring it back to the same amount of chaos as a healthy body. In other words, healing introduces non-linearity to bring the body back to normal. Hence measuring the non-linearity could be a way to determine the disorder and its alleviation. This principle is already applied in clinical and behavioral medicine. In cardiac patients, the Heart Rate Variability (HRV) is a measure of fluctuations in heart rate that could indicate the normalcy of the heart. However, its use in CAM is yet to be fully established. One researcher in cognitive behavioral theory has used Heart Rate Variability during TFT for assessing cardiac health.^{3,4} Thought Field Therapy (TFT) is a treatment for psychological problems typically taking only a few minutes. HRV is shown to be a strong predictor of cardiac integrity; in depression and anxiety, heart rate tends to lose its inherent variability. The degree of improvements as noted in HRV as a result of TFT treatment exceeds those achieved through other, more conventional

methods. Improved HRV is correlated with client reports of improvements. “HRV may prove to be an appropriate objective measure of psychotherapy efficacy, given the correspondence between client report and HRV outcome” says the author.

Further, research has shown that HRV is useful in differentiating patients with Chronic Fatigue Syndrome from controls.⁵ It is possible with electric instruments already available, to follow the course of a treatment as a person goes through healing procedures.

Let us examine another characteristic of nature, namely *anisotropy*. The dissimilar characteristic of space in the cardinal directions is given the name anisotropy. In other words, if we consider the three spatial directions, then the properties (for example, the velocity of electromagnetic energy propagation) are not the same in the three directions. This may seem trivial and of theoretical interest only, especially if the difference in the velocities is minute. However, it could imply that efficacy of the “healing wave” to travel to certain locations may be compensated! The efficacy of distance healing may depend on factors such as magnetic lines of forces of the earth, longitude, latitude, lay lines (acupuncture channels of the earth?), rivers (both below and above ground) and other physical and environmental juxtapositions. Space is anisotropic; so also are the earth and the sea. The human body is anisotropic too since we know that acupuncture signals, for example, course through certain preferred paths only. The body tissues, bones, muscles, nerves and major blood vessels all seem to obey an unwritten law of anisotropy. Perhaps the subtle body is also anisotropic. Then, is the spirit also anisotropic? Does it have preferences in expression and activity? Perhaps not. It is said (in a philosophy that this writer is familiar with) that at $t = 0$, when evolution was about to start, all (without defining this “all”) was isotropic; the tension between gunas (characteristics of intelligence, activity and inertia or, in our terms, information, energy and matter) were all in equilibrium. The evolution starts when the gunas get to be anisotropic. Thus both in philosophic and scientific outlook, we may say anisotropy is a characteristic of evolution—whether at the gross or at the subtle level.

As seen above, nature is anisotropic and to understand her better, we need non-linear modeling. The more we try to understand nature, the more we are

drawn into complex mathematics and move closer to a better prediction of clinical outcomes. In healing, even time seems to be non-linear. It is difficult to predict at what time after a healing session the effects could be observed. After a “gestation” period, as it were, for cleansing and realigning of the body, an effect could be seen. This is not helpful to a researcher if she or he wants to study the changes during or just after a healing session. Perhaps, each type of healing could have its own response time, making this time non-linearity unique, further confounding the measurements.

We may say then, anisotropy is the characteristic of the universe that we need to deal with in holism as much as in physical sciences. How profound this effect could be in healing is difficult to detect at this time. In the first paper, *Psychic Healing and the Anisotropic Universe*, Drs. Barbara G. Koopman and Richard A. Blasband examine the theory and healing practice of Nicolai Levashov and report two cases of healing by that physicist-healer. In Levashov’s theory, the spatial anisotropy is applied to understand the evolution of the universe as well as to conceptualize the underpinnings of non-local healing. Based on his theory, Levashov conducts healing and teaches his method to others. The authors say: “Healers . . . must do what nature does: choreograph—at the healing site—the necessary materials and parameters for supporting their work.” The actual work of healing consists of mimicking nature in dissolution and creation; dissolve the sick cells and re-create healthy ones. How this is actually done is not discussed in this paper; however, Levashov trains others to be effective healers based on his model.

Eugen and Elena Vasilescu, authors of the second paper titled, *An Original Paranormal Therapy*, were initially working on psi healing and had used a radio frequency wavelength of 46.20 meters to enhance the psi ability in individuals. In this paper they report another property of the same wavelength, namely, that of healing. A healer holds one antenna of amplifier working at that specific frequency and the recipient holds another antenna (the output) connected to the same amplifier. The majority of recipients (around 78 percent) who worked in this manner benefited from healing messages transmitted by the healer to the percipient, improving or curing some diseases. The authors speculate that the bioenergy of different therapists could have a spectrum of frequencies with an overlapping part of this spectrum at the 46.20 meters wavelength. The authors conclude that “. . . the radio wave of 46.20 meters is not just a simple

telepathic one, but a component with possible multiple functions, it has effects such as precognition and, in complementary therapeutic procedures in the medical field.” This is an interesting observation and needs further study.

The third paper, *Skin Resistance vs. Body Conductivity: On the Background of Electronic Measurement on Skin*, is by Chang-Lin Zhang, Ph.D. deals with the source of electronic measurements on the skin to monitor acupuncture activity. Analyzing the results available thus far, the author postulates invisible dissipative structure for the electromagnetic field with the body forming a resonant cavity. The skin, its epithelial layers, fat, muscle and bone do not indicate a special structure underneath the acupuncture point, still the electrical property at the acupuncture sites are different from the surrounding tissues. The electromagnetic interference from many organs and tissues form a standing wave in the cavity of the human body that seems to provide a stable electrical characteristic for the skin. As conditions change due to pathology, then the electromagnetic wave pattern changes resulting in modified acupuncture activity at the surface of the skin. We have in this paper, a summary of the observations and a possible explanation for the electrical response at the skin acupuncture points.

The last paper in this issue, *Salutogenesis: A Unified Theory on Medicine, Health and Healing*, by Dale Sumbureru, is yet another view of the health-disease continuum in a person based on salutogenesis, (salus meaning health and genesis meaning source). Salutogens promote health, be they biochemicals, herbs, holistic procedures or self-help strategies. Salutogenic interventions could prolong health, fight diseases, and improve immunity and quality of life in the process. The author introduces a new concept, Cellular Cosmic Signature based on biophoton emission of cells and organs. Again, a model is valid only until we are sure there is no conflicting data; otherwise the model is ready for a change. Thus, we may say, science is dead, long live Science!

Lastly, the cover art is from Preetha Kannan, a prominent artist in Bombay. The peacock is a symbol of joy and abandonment, devotion and dedication to a higher power that brings life force to earth. In one of his poems titled *My Heart Like a Peacock on a Rainy Day*, the Nobel Laureate, Rabindranath Tagore writes: “Ah, my heart dances like a peacock. I care not if I become dust, for the dust is touched by His feet. I care not if I become a flower, for the flower

He takes up in His hand.” The artist, Preetha, is ceaselessly exploring, and is currently mining the rich veins of digital art.

REFERENCES & NOTES

1. James Gleick, Chaos, *Making a New Science* (Viking Penguin, New York, NY, 1987), p. 280.
2. Ary L. Goldberger, Chaos and Fractals in Human Physiology, *Scientific American* (Feb. 1990), p. 44.
3. Roger J. Callahan, Heart Rate Variability Studies of Thought Field Therapy, *Journal of Clinical Psychology*, (Oct, 2001). <http://www.interscience.Wiley.com>
4. Here is an interesting comment: “This paper was not subjected to peer review. The absence of peer review of both research papers and the reviews themselves emanated from concerns expressed by Dr. Roger Callahan that the review process was biased against TFT. This paper was published in an open review of the original research paper of TFT. The reader is encouraged to read the original article, along with this accompanying review, and the final critique of the Journal’s decision to publish this set of non-reviewed articles in order to gain a perspective on the issues presented.” Larry E. Beutler, Editor, *Journal of Clinical Psychology*.
5. HRV in Patients with Chronic Fatigue Syndrome from Controls, *Experimental Biological Medicine* **228**,2 (Feb. 2003), pp. 167-174.

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