

# HOW SCIENCE PROGRESSES

Patricia Norris, Ph.D.

*It is probably true quite generally that in the history of human thinking the most fruitful developments take place at those points where two different lines of thought meet. These lines may have their roots in quite different parts of human culture, in different times or different cultural environments or different religious traditions: hence, if they actually meet, that is, if they are at least so much related to each other that a real interaction can take place, then one may hope that new and interesting developments may follow.*

—Werner Heisenberg

The four papers in this issue all illustrate what can happen when two (or more) different lines of thought meet. Each of the authors refer to strong parallels between what they are now working on, and what other cultures and religions have put forth in earlier versions of science relying on direct experience. It is exciting, in this stage of development of our field, to have these ideas in print. Lesley Shearer's paper represents the intuitional stage, where ideas are being formulated. This preliminary stage of hypothesis development is a very important stage often neglected in science, or in descriptions and discussions of scientific procedure. John Stuart Reid is developing the theory and some of the details of the interactions between sound and light, and is exploring the territory where these two concepts cross in the genesis of electromagnetism. In the Bairs' paper, as a next step in hypothesis testing, Puran Bair is demonstrating what can be done with instrumentation, to wit spectral analysis and oscilloscopic feedback, to self-regulate his own energy centers in his body, with specific outcomes. Exemplifying final stages, Lenore Wiand gives us a controlled experimental study, examining the relationships between sacred sound and healing of Dissociative conditions, anxiety and trauma.

In *The Special Relationship Between Sound and Light, with Implications for Sound and Light Therapy*, John Stuart Reid leads the reader through a rigorous

scientific explication of what is known about the nature of sound, and the nature of electromagnetism. Citing concepts from acoustic physics and electromagnetics, parallels are drawn between these two energies in, among other things, their shape and propagation. Interestingly, the author mentions that the spherical concept of energy was recognized by ancient Hindu philosophers, and modern energy workers recognize that energy surrounding living organisms is spherical, as are the various energy bodies that surround the dense physical.

This exciting paper provides a number of hypotheses that await experimental confirmation. Following more in-depth analyses of the nature of sound and the nature of electromagnetism, Reid theorizes Sonic Propagation of Electromagnetic Energy Components, making predictions based on solid scientific foundations. Moving to therapeutic applications, he provides a model that may explain the mechanisms of the well-known healing properties of sound in the body. Building on therapeutic sound modalities that are currently in use, for example ultrasound for support of soft tissue injury and certain types of bone fracture, Reid suggests that it may be the electromagnetic component of acoustic modalities that is responsible for triggering the healing response in cells, rather than the sound itself. In examining the special relationships between sound and light, Reid supports the concept that biologically coherent electromagnetic energy initiated by sound may facilitate body processes such as growth, tissue repair, and defense.

The next paper follows on to these ideas in a compelling way. *In The Effect of Vocalized Sound on Consciousness and Energy*, Puran and Susanna Bair take the concepts of effects of sounds a step further, by exploring their impact on the energy body. Resonance of sounds can be utilized to affect not only certain areas of the body, but also certain human qualities; the center of the brain can be stimulated by sound to produce exceptional clarity, the center of the chest to promote courage, and the solar plexus to promote compassion. Puran Bair has experimented consistently on self-generated sounds with specific intents for outcomes. Bair tells us that the major energy centers in the body (five along the spine and two in the head) were first mapped by the ancient Hindu system of chakras, were updated most recently by the Sufis, and further updates will be forthcoming following new instrumentation and research.

Bair is a forerunner in this latter aspect. In his earlier article *Visible Light Radiated from the Heart with Heart Rhythm Meditation*, using his own body as an instru-

ment, he discovered effective procedures for intensifying the emitted light from his body as measured by a photomultiplier tube (*Subtle Energies and Energy Medicine, Volume Sixteen Number Three*). He used the information as biofeedback to enhance self-regulation of light emission from the heart chakra. In the present paper, sound is used to improve self-regulation of the energy centers in brain and body. By using self-generated sounds, Bair has found a way to voluntarily stimulate specific subtle energy sites such as the third eye energy center. You will see illustrated an effective convergence of feedback from scientific instruments (spectrum analysis and oscilloscope) with fine-tuning vocally produced sound to produce changes in quality of consciousness and energy. This paper outlines five research questions about characteristics of sound and their effects, and then examines each one by one, illustrating each with spectrum analysis and oscilloscopic feedback.

In *The Effects of Sacred/Shamanic Flute Music on Trauma and States of Consciousness*, Lenore Wiand also looks at the potential of sound, in this case of sacred/shamanic flute music, to affect consciousness and sensed wholeness. In a well-designed mixed factor controlled study, Wiand has examined the effects of sacred flute music, or of a modern piece to serve as “placebo” music, on subjects with a diagnosis of Dissociative Disorder, and on a control cohort of adult college students. The original study, Wiand’s Ph.D. thesis, was both statistical and qualitative, and in the present paper the author gives the reader a moving experiential sense of the qualitative changes in feelings of connectedness that occurred for the research subjects.

On a rich background of ideas, Wiand relates many perspectives on the power of sound, from creation stories of the ancients through latest work of notable explorers such as Robert Monroe, Helen Bonny, Oliver Sachs, Mircea Eliade, many others. She points out the generally universal belief that the world came into existence through the medium of sound, quoting the Christian Bible, the Hindu Upanishads, the Taoist Tao Te Ching. She discusses the findings of her own study, and presents implications for future research and applications. A new measurement instrument, the Interconnectedness Scale, measuring five aspects of connectedness (to self, others, nature and the universe, being part of all) may well prove to be of value in future studies in our areas of subtle energies, energy medicine, and consciousness.

In *Developing Tools of Subtle Medicine: Kaleidoscopes* Lesley Shearer brings us back to known theories of biophotons and electromagnetic effects. Attention is given to how these effects on living systems parallel 2000 year old Chinese philosophies of medicine.

By examining various aspects of Chinese medicine, it is evident that the ancients saw their world as a world of light and color and sound, using these diagnostically and perhaps therapeutically. Moving to subtle energy concepts, Shearer reminds us that subtle energetic interactions form the basis of the molecular structures of living systems.

Now, using her background knowledge, she and a small group of students with abilities to detect subtle energy directly are developing protocols for a new subtle energy tool, a kaleidoscope. Working to find the most effective design for the kaleidoscope, they have chosen to use the Fibonacci ratio to build it with similar proportions to the human body. They are seeking to find answers to what may be the best materials from which to build the scope, to experiment with different types of light, what colors, gems, etc. may work best, how individual are the kaleidoscopes for each person to be most effective, and many other questions. The use of the kaleidoscopes by the experimenters is proving rewarding, producing heightened awareness, feelings of well being, and they are in the process of applications research. It will be interesting to see what eventuates.

Also included in this issue is *A Response to Jon Cowan's Paper* by Larry Goldberg and Beverly Rubik, followed by a brief commentary on their response by John Cowan. Cowan's paper, entitled *Thought and Mind as the Projection of Mentaholomorphic Fields by the Brain*, appeared in the last issue of this journal. Rubik's and Goldberg's thoughtful ideas and Cowan's response initiate a dialog that we believe will be of interest to our readers. Everyone is invited to submit responses to Journal articles, including this one. We think it can be of value to promote thoughtful dialogs on various subjects that are now arising in our field, and look forward to opportunities for future exchanges.

On the cover of this issue appears the beautiful graphic, *Healing Man*, created by Dean Baker at John Reid's request. Baker mentions that, after learning about the spherical nature of sounds, he visualizes sound bubbles coming from people's mouths. Thinking in these ways does change our perspectives; I experience myself as surrounded by my spherical energy bodies, and how I extend

spherically into space, and adding sound spheres gives to me a strong sense of their interactions. At the end of the section concerning sonic propagation of electromagnetic energy components, Reid states that if this hypothesis is proven correct by experimentation, we could infer that all the data contained within outdoor sounds has been rushing through the Cosmos at the speed of light since the earth took form. Baker's luminous graphic depicts incoming energy bands representing healing sounds, which may interact with outgoing, expanding sound energies in yet to be determined ways.

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