

The Energy Perspective and Resistance to Change in Science

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Caution and thorough review is always justified in science. On the other hand, caution carried in science to the extreme of obstinance and denial blocks the opportunity for valuable progress to be made. Unfortunately, there is nothing new about resistance to change when it comes to the results of science. Under the hyper conservatism of the Inquisition in the 17th century, Galileo was lucky to end up only under long term house arrest as a consequence of his support for the Copernican view that the Sun rather than the Earth was the center of the universe. At the time, the Catholic Church, which controlled the dominant worldview of western society, held the absolute belief – based on the scriptures – that God created the Earth as the center of His universe. Galileo's experience is an early example of the power of belief to deny the facts generated by the application of the scientific method!

But when it comes to assertions about the nature of reality, religion is not held to the modern principles of science. And a fundamental principle in science is that because knowledge is forever cumulative, all theories and the paradigms on which they rest must be regarded as subject to change as new evidence emerges. Whether science abides by commitment to this principle of open mindedness is the subject of this essay. And as we will see, an entrenched scientific paradigm with its dependent supporting theories can be very resistant to change – especially if the change that would be required threatens primary paradigm assumptions.

Since Galileo, the dominant paradigm in science has assumed that reality is to be understood solely in terms of its material/physical components and their lawful interactions. This is the basis for the Standard Model in physics, and it applies from the galaxies of the cosmos to the particles of the atom. Directly associated with this material perspective is the commitment to the human rational faculty as the only legitimate and reliable human capability that can be employed to investigate the material nature of reality. Rationality is the exclusive mental mode of discovery, while intuition and inspiration are regarded as inherently unreliable. So, the consequent scientific paradigm is referred to as the rational-material paradigm.

This paradigm has been marvelously productive in most of the physical and natural sciences supporting spectacular technological developments that have resulted in both huge economic consequences for modern society and significant improvements in the standard of living for a great many humans. In

response, modern western society has largely committed to a secular-material perspective, which reverberates to strengthen the dominance of the rational-material paradigm itself.

At the same time that the rational-material orientation has become dominant in both science and society, the alternative, intuitive-immaterial perspective has been bundled with religion and relegated to the periphery. The worldwide fundamentalist movement within religions has arisen as one consequence of this situation.

The dominant rational-material perspective in science began with Galileo – standing in opposition to the view of religion, and it has mostly sustained that position to the present day. Accordingly, the view that there are systems in nature and the human body that cannot be explained in terms of material components has been painted as inherently false – a reflection of superstition or a consequence of fraud or chicanery.

Nevertheless, in spite of the entrenched rational-material perspective in science, over the 100+ years the basis for a major paradigm shift toward the importance of the immaterial-energy field perspective has been building. And significantly, much of this pressure has been coming from within the discipline of physics itself. The discovery of electricity – an entirely immaterial wave-field phenomenon – began this process. The huge range of very important applications of electricity have rendered this opening permanent. Moreover, this door became canyon sized with the discovery of the full electromagnetic energy spectrum and the knowledge that the whole of this spectrum participates in reality. The fact that humans cannot perceive 99.95% of this spectrum is a major reason 1) why humans mistakenly think reality is mainly a material phenomenon and 2) why the dominant scientific paradigm remains focused on the material part of reality.

But, much more support for the immaterial energy field perspective in science has emerged than what is represented by electricity and the electromagnetic spectrum. In the early 20th century, relativity theory revealed that mass and energy are transforms of one another and thereby constitute equally valid ways to see, describe and account for the same “things” in reality. Accordingly, the option arose to regard material “things” as organized concentrations of energy. In addition, physicists became aware that energy existed everywhere, all the time in a totally integrated and interconnected condition to the point of unification. With this realization, it became apparent that in the form of waves and fields this energy participated actively in reality at all scales. What was previously regarded as the “vacuum” of space and even the space between the

atoms in molecules was in fact filled with and could be expected to be affected by energy.

Given these collective discoveries, it should have been clear that the energy field perspective was just as important and valid as the standard material perspective. But there was yet more! Evidence arose from quantum mechanics that the fundamental discreteness assumption of the material paradigm – that non-physically connected material entities are independent and separate in space and time – was false: the phenomenon of entanglement demonstrated the continuing and active relationship of once connected “things” across any degree of separation in space. How is this phenomenon to be accounted for other than through an integrated energy field perspective? Finally, Big Bang theory in astrophysics and cosmology identified energy as primary and mass/matter as secondary in the origin of the universe with energy accounting for a vastly greater percentage of reality than mass/matter [even when “dark” matter is included].

All of these developments within physics itself should have caused a fundamental paradigm shift in science to pursue an understanding of all dimensions of reality from the energy field perspective. So, what was the overall response of science to these revelations? It ignored the main implications. And pushed by the industrially driven economy, it focused instead on the development of technological applications to exploit various energy field phenomena to vastly expand communications capabilities and to reveal and affect material phenomena: radio, television, wi-fi, cell phones, infrared and microwave telescopes, electron microscopes, satellite internet, microwave ovens, induction ranges, radar, lasers, lidar, ultrasound, x-ray, GPR, GPS, MRI, PET, etc.]. And the standard model continued with its pursuit of the material: building huge accelerators to reveal the micro particles that make up the atom – finally “locating” evidence for the higgs boson to bring mass to the otherwise embarrassingly massless particle realm. This, while it was clear to a great many physicists that these elementary “particles” were at least as well understood as tiny bundles of energy as they were as material phenomena.

These developments are significant and impressive, but they avoid the obvious – investigating the energy field as the organizational and interactive basis for organic life and reality at all scales. Why this avoidance? Because energy fields are not material, and there is fundamental resistance to recognizing anything completely immaterial as the basis for material reality, and especially for life or life functions. As a result, only at the periphery has western science explored the bioelectromagnetic dimension of life forms from the organic molecule, to the cell, to tissues, to organs, to bodily systems, to the whole of the

organism, to relations among organisms, and finally to the field interactive relationship of organisms with the ecological, planetary, solar, and galactic energy dimensions of reality. It is allowed for science and technology to make use of field energetic phenomena to communicate and to reveal and affect material reality, but science has been very reluctant to explore the energetic system that forms the basis of reality and life itself!

This discomfort and the consequent rejection and denial of the energy field perspective gets expressed vehemently in western material medicine with its exclusive focus on the biochemical, material body together with chemical [drugs] and surgical treatments. Indeed, suggesting the potential relevance of the energy field to understand how the human body forms and functions evokes the immediate attribution of pseudoscience, superstition or fraud.

Consider the following account of what resistance to science based research from the energy field perspective looks like in medical science – especially in the West. I quote this account by Paul J. Rosch, M.D. from his chapter “Is There an Electrical Circulatory System That Communicates Internally and Externally?” in Rosch’s major edited volume: Bioelectromagnetic and Subtle Energy Fields in Medicine, 2nd edition, 2015, pp. 79-81. The quote from Rosch [marked with “] begins with a quote [‘] from a 1986 cover article in Discover Magazine on the results of research work by the Swedish physician Bjorn Nordenstrom:

‘There is evidence of an electrical circulatory system in the [human] body that is reminiscent of ancient Chinese concepts of meridians that conduct *Qi* (ch’i) energy through prescribed pathways (meridians) in the body in an orderly fashion. In this analogy, the antagonistic and complementary components of yin and yang may be thought of as positive and negative [charge in] electricity. Similar energy communication conduits may help explain such well acknowledged but poorly understood phenomena as the placebo effect, the power of a strong faith in spontaneous remission of cancer, and energy fields that can emanate from chi gong masters and faith healers that [are manifested] as auras with Kirlian photography and other imaging techniques. Dr. Bjorn Nordenstrom claims to have found in the human body a heretofore unknown universe of electrical activity that’s the very foundation of the healing process and is as critical to well being as the flow of blood. If he is right, he has made the most profound biomedical discovery of the century.’

“So began the April 1986 cover story in Discover Magazine about Bjorn Nordenstrom’s amazing “cures” of patients with lung and breast tumors based on his theory of biologically closed electrical circuits. It went on to note that

some distinguished scientists and physicians believed that if his findings were confirmed by others they would prove to be as important as William Harvey's description of the circulatory system. Some compared Nordenstrom's 1983 book explaining his results and theories [Biologically Closed Electric Circuits: Clinical, Experimental and Theoretical Evidence for an Additional Circulatory System] to Harvey's 1628 treatise on how blood circulates through the body. Clinicians who tried to wade through Nordenstrom's massive tome often had difficulty deciphering the complex electrical schematics and equations that formed the underpinnings of his theory. Others failed to grasp its potential implications. However, the few who did appreciate this [work] as well as the thoroughness of his research were laudatory in their praise and tried to promote his efforts, as evidenced by the following unusual book review by Morton G. Glickman, MD, Professor of Diagnostic Radiology, Yale University School of Medicine, that appeared in Investigative Radiology (Vol. 19. Sept/Oct/No. 5, 1984):

'It has not been the policy of Investigative Radiology to publish book reviews. However, the work by Nordenstrom reviewed below presents such fundamental and far-reaching concepts that a review was deemed desirable in order to call this book to the attention of those who read Investigative Radiology. The importance of the concepts presented in Dr. Nordenstrom's book cannot be overemphasized. Those who are interested in fundamental biological observations will be fascinated by the logical progression of this most imaginative work: Biologically Closed Electric Circuits, Bjorn E. W. Nordenstrom, MD, 1983 (Nordic Medical Publications, Arsenalsgatan 4, S-111 47 Stockholm, Sweden).'

"This remarkable book introduces a new physiologic concept that could solve many long-standing biologic problems. This far-reaching concept evolved from a series of ingenious experiments that began with the author's search for the explanation of a curious pattern that he observed [in chest x-rays in the mid 1950s]. His investigations carried him well beyond the original problem and produced original insights into such fundamental processes as wound healing, organ development and differentiation, and extra-cellular fluid dynamics. The primary direction of the book is understanding the interaction of malignant tumors with their surrounding tissues. It leads on the one hand to a possible mechanism of carcinogenesis and on the other to a proposed new mode of therapy of malignancies. Dr. Nordenstrom has discovered a new circulatory system that is based on spontaneously occurring electrical potentials. Potential gradients have long been known to develop in normal organs as a result of metabolism and in injured or diseased tissue because of hemorrhage or necrosis. The investigations detailed in this book reveal that these potentials are more than just a source of error in bioelectric measurements; that, in fact, they drive electric current through what the author calls biologically closed electric

circuits (BCEC). According to Nordenstrom's theory, the body's electrical communication system can be compared to a battery in which the circuit is driven by separation of oppositely charged ions. Once the circuit is closed, long distance current flows through the conducting cables [insulating blood vessels], and within the battery, ions drift across the permeable barrier.

"This seminal work opens important new subjects for research and may ultimately explain many heretofore inexplicable biologic phenomena. However, it is more than a scholarly report of a massive research effort. It is an interesting, often exciting account of a brilliant mind in vigorous action. It leaves the reader exhilarated.

"[In 1984], a second article appeared in the American Journal of Roentgenology, probably the most prestigious journal in the field. It was a rewrite of one of Nordenstrom's lectures, again accompanied by a comment from the editor who similarly stated that its publication was unconventional and required the following explanation. The work was unique in that unlike the multi-authored papers that such a complex subject usually required, this represented the effort of just one individual, Bjorn Nordenstrom. "He alone is responsible for the original concepts, the experiments, the analysis, and the text. Although employing modern terms and instruments, his performance is in the tradition of the pioneer scientist: complete and isolated immersion in the research." While a final judgment on the merit of Nordenstrom's theory would be premature, the work was "imaginative, experimentally ingenious and provocative" and deserved serious examination by the medical community.

"Despite this and other accolades, Gary Taubes, the author of the lengthy Discover cover story was surprised to find during his extensive research that few cancer specialists and even radiologists knew anything about Nordenstrom's research or recognized who he was, [or] much less [were] interested in determining whether he was right or wrong. This, despite the fact that he had pioneered the development of the percutaneous "skinny needle" biopsy technique that all surgeons and interventional radiologists relied on. In addition, Nordenstrom was Chairman of the Department of Radiology at the prestigious Karolinska Institute and Chairman of the Nobel Assembly that selects the Nobel Laureate in Physiology or Medicine." [Here the quote from Rosch ends.]

While Nordenstrom's 40+ years of major contributions to biological and medical science were picked up by only a few within the western science world, not surprisingly in the last 20 years, many research scientists in Asian societies have engaged in a great deal of research stimulated by Nordenstrom's initial insights. In Eastern societies [especially Japan, China, Korea and Taiwan] the prevailing worldview accepts the immaterial realm in both biology and reality. As a result, while the rigorous research methodology of western science has been adopted, science in these Asian societies is less devoted to the exclusive

rational material perspective and more open to the immaterial energy field perspective that is at the root of Nordenstrom's work. As Asia emerges as a zone of world power politically and economically, its science is supporting greater interest and research into the nature of reality at all levels from the energy field perspective. Moreover, the research results from among Asian scientists is returning to encourage western medical scientists to take the energy perspective seriously. Nordenstrom's death in 2007 corresponds with what may be the signs of serious fracturing in the walls of the West's rational material scientific paradigm. At 664 pages, the 2015 second edition of Rosch's edited volume Bioelectromagnetic and Subtle Energy Fields suggests this potential outcome at least in the areas of physiology and medicine.

Nordenstrom's experience of having his research neglected in western medicine is matched by many other western scientists who adopted the energy field perspective to illuminate phenomena in their fields of investigation. One of the best examples comes from the social sciences where the entire field of parapsychology receives the denial treatment to the present day. This, in spite of over 100 years of research findings – much of it by scientists in the West – repeatedly confirming the existence of various paranormal phenomena – Psi [telepathy, clairvoyance, precognition, and psychokinesis]. When such capabilities are universally recognized in human societies worldwide, proof of Psi should come as no surprise. And again, it is the more spiritually oriented worldviews of Asian cultures that are more open to Psi as a standard component in human behavior, in part because of the outstanding manifestations of Psi that commonly occur in the context of the advanced practice of meditation.

Dean Radin, PhD., who is the chief scientist at the Institute of Noetic Sciences, has written various books over his career reviewing the scientific research on the paranormal. In these works he addresses all of the arguments of the hyper resistant skeptics and deniers, arguments which inevitably derive from a "hard line" commitment to the rational material paradigm. By contrast, when the immaterial energy field perspective is applied to the investigation of the human energy field, paranormal phenomena emerge not only as plausible, but as probable. See: Dean Radin, Supernormal: Science, Yoga, and the Evidence for Extraordinary Psychic Abilities, 2013.

Obstinance and its cousins Denial and Rejection are as detrimental in science as Gullibility and Absence of Caution.

Beware the Power of Paradigms!