

*Subtle Energy
Tiller*

Science and Human Transformation: Subtle Energies, Intentionality and Consciousness

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Introduction

This magnificent and monumental work by Bill Tiller is essential to anyone—researcher, devotee, spiritual seeker, or layman—who is seriously interested in the unification of our psychological, material, esoteric, and spiritual experience and existence. The book is so important, and such a threshold-setting achievement, that we will deviate from the usual type of book review in order to show its fundamental importance. First we will describe and characterize the book itself and the remarkable imprint of Tiller's heart and soul that the book conveys. Then we will try to forecast what kind of science this book will initiate as a direct follow-on in the future.

An Anecdote

First, an anecdotal experience. Tiller once made a profound and instant change in the direction of my own thinking, in a single instance in the past, which he may long since have forgotten. At the time, I was working with Frank Golden, and after some five years of struggle Golden finally produced a motor that clearly tested out at 167% efficiency, in his little laboratory near Nashville, Tennessee. We were part of Astron at the time, and Tiller was the Chief Scientist of the organization. However, when the motor was moved several hundred miles and then retested at the new location, to our consternation its performance dropped to about 80 to 90%, varying slightly from time to time. To us this event was unprecedented, stunning, and inexplicable.

When Tiller arrived, however, he simply smiled his quiet smile and explained something basic to us. Unknown to us, Frank's continual motor experiments in a single location had slowly built a local archetypal change in the potentials and structuring in the very ether itself. Tiller referred to it as *growing the archetype*. As we had operated the motor continually on site in Tennessee over the years, unwittingly we had slowly altered the local archetypal form, which then reacted back upon the motor to further improve its operational efficiency.

Tiller had met that same phenomenon in his own detector work at Stanford. There he had slowly increased the performance of his own special detector over a several year period, by just such *growing its archetypal form*.

That information was a thunderbolt to my entire *konzeptzia*, as the Russians are wont to say. In a single short comment Tiller annihilated my previous notion of the "fixed, clockwork universe" that most physical scientists are still so fondly attached to. Instead, I suddenly understood that *the universe itself is participatory, and it does react to our sustained actions*.

Suddenly there was new meaning to old phrases such as "Seek and ye shall find," "Ask and it shall be given." Physical reality took on a dramatic new meaning. It does not just sit quietly by like a flat material rock, waiting to be forcefully kicked and moved this way and that. It is not completely passive. It is active. It is adaptive. To this day I am still pursuing and refining that concept, speared on by a single quiet, quick word of deep insight from Bill Tiller many years ago.

A Summary of Subtle Energy

In the present book, what Tiller has produced can only be called a magnificent *executive summary* of the entire field of extended energy (subtle energy). Tiller takes up where ordinary classical electromagnetics, modern physics, and modern biology end, but after summarizing what one needs to know from those conventional science areas. Tiller is one of the world's leading scientific researchers in this "field that is not yet an accepted field." He is as knowledgeable in this area as any scientist anywhere is. What is so remarkable is that he has carefully and lovingly distilled the very essence of his lifetime of outstanding work and experience into a single book.

Here he has done the struggling subtle energy field an incomparable service. His mastery of modern physics and elec-

tromagnetics is apparent, and even more apparent is his masterful and succinct summarizing of all the basic science areas and disciplines necessary to understand the interfaces and union between *living science* and *metascience*.

As a science example, he distills an entire book on antennas and their workings, as well as another book on waves and their workings, into a few succinct and clear pages, in extremely useful format. In addition, the advanced physics is all in there: higher dimensions (hyperspace), particle physics, electromagnetics, some relativity, and the inflationary model of the universe, and so on. Every one of those subjects normally requires one or more books to just *describe* it. Tiller congeals each of them at a stroke. One is reminded of those oriental master artists who adapt *Zen* into their painting techniques. At a single stroke or two, the master of such ink-brush painting captures volumes, in perfect simplicity and clarity. That is exactly what Tiller has done in this book, by "instantly capturing volumes" of science and metascience subjects. *In only a few exact strokes he has captured and united the essences of them all.*

Summarizes Science

From biological and medical disciplines, Tiller presents the things one needs from biology, physiology, modern mind and brain studies, and a forefront knowledge of and view of consciousness and "deeper levels" of consciousness. Other disciplines that presently are struggling their way into accepted science—such as homeopathy, the electromagnetic aura, hidden variables and infolded electro-dynamics, bioenergetics, and psychoenergetics—are also there in succinct, highly usable form. *Everything you need as a solid, summary foundation to understand unified science and metascience is there, in a single book. And that book is readable.* You do not have to be have a Master of Science

degree to understand it. The usual scientific jargon is minimized, clarified, and dealt with in such unique and simple fashion that it can readily be absorbed. *There is simply nothing else like it out there anywhere.*

Summaries of Subtle Energy

Equally important, Bill has also summarized a remarkable group of disciplines, including yoga, Qigong, Feng Shui, and other ancient subtle energy disciplines from the East. He is as familiar with the Eastern chakras and meridians from the ancient Chinese texts as he is with modern physics. The gist of what one needs from all of these is there, summarized brilliantly as perhaps no other Western scientist today could do.

Nevertheless, that's still not all! Again, what one really needs from parapsychology and peripheral phenomena such as remote viewing, levitation, firewalking, radionics, materialization and dematerialization, healing, and dowsing is also included in this *tour de force*.

Experiments Summarized

The book is particularly important from an experimental point of view. For important subtle energy detectors and how they work, as well as simple, clear statements of what years of experimental investigations have revealed, Tiller's summary is unparalleled. To simply read the literature and try to compile the "bottom lines" for all these various disciplines, experiments, and studies would alone require years of arduous effort. Laymen and even most researchers can never afford the protracted time to laboriously dig out and congeal so much into such a clear overview and detailing. In short, Tiller has congealed not only his own lifetime of research, but also the lifetime research of many other experimenters and researchers as well.

Subtle Energy Modeled

Simple but brilliantly powerful insight into what subtle energy is, and how it enters into all our extended experience, is expressed by Tiller in a series of small "word equations" joined by double arrows. These must not be lightly passed over, but seriously contemplated until they sink deeply into one's innermost *gestalt*. Those simple diagrams powerfully enable one to sharply distinguish "the forest from the trees." They incorporate a fundamental grasp of this "unified science and metascience" as important to the new field as Feynman diagrams are to the study and understanding of virtual interactions.

Most of all, Tiller then puts everything together into a proposed model, *that fits it all*. Now anyway you cut it, that is a remarkable achievement in its own right. To properly correlate and fit all the diverse phenomena—scientific, spiritual, psychological, parapsychological, physical, and biophysical—in a single panoramic model is an achievement of the highest order. Again, if it's clear understanding you wish, *then Tiller has presented it to you and packaged it for you as no one else has ever done before.*

Tiller's Spirituality

Finally, the clear spirituality of the man shines through everything in the book. This is a loving work by a person of true and high spirituality, and possessing remarkable spiritual insight and development. The sheer goodness of the personality and soul of the author shows through on every page. Let me add that this is something that cannot be idly postured! It is clear and unequivocal. It comes from Tiller's lifetime of dedication, devotion, and steady enlightenment along his own spiritual path. It is not a *mentalistic* attribute as is so common in our times, but a far deeper, *spiritual* attribute. One is simply brought closer to one's own inner self by reading and studying this work. One is studying not only Tiller's scientific insight, but his very soul and heart. Just as Tiller covers the talisman effect in the book, the book itself is a *very special spiritual talisman* produced by a most remarkable and spiritual human being.

So my strong impression is that Tiller has written the definitive "foundations" book in the "new field." This is the required threshold that one must reach and understand, if one is to travel further along the path that Tiller has so nobly pioneered.

Tiller's Work Offends EM

Let me now point out some of the scientific advances that I think are going to be pursued and hung like suits of clothing on the solid body that Tiller has given us.

First, there is his clear exposition that subtle energy is associated with electromagnetic energy, but beyond it and more subtle (deeper) than our present EM model. Certainly he shows that many experiments demonstrate bursts of electromagnetic energy that are *created* when the deeper or "subtle" energy functions are operating. There is certainly an interaction between subtle energies and electromagnetics, and often a correlate between

them so that measuring the normal anomalously-produced EM indicates precisely the subtle energy dynamics.

In modern physics, the potentials—not the classical force fields—are the primary causes of all electromagnetic phenomena. Further, Stoney in 1897 and Whittaker in 1903 clearly showed that (1) the scalar potential is a multivector composite comprised of a harmonic set of bidirectional longitudinal EM wavepairs, (2) each wavepair is made of a hidden longitudinal EM wave and its time-reversed twin, or *anti-wave*, (3) the potential therefore has a much finer, subtle inner wave/antiwave couplet structure, and (4) since those inner waves are longitudinal, our transverse-wave detecting instruments normally cannot detect them individually. In other words, those hidden "subtle energy waves" and dynamics remain nondivergent, in the language of Poynting energy flow. Hence, they are not detected by normal detectors, which only detect that small divergent portion of the intercepted Poynting flow they succeed in intercepting.

Subtle Energy As Time Oscillations

There is a profound point here that has apparently been missed by physicists. When one has longitudinal waves, overtly one just has a fixed potential, with the longitudinal waves infolded. The "modulations" on those longitudinal waves are comparable to *velocity* modulations (or to phase modulations). The modulations are also comparable to modulation of the rate of flow of local time. The longitudinal EM wave velocity relative to 3-space is not limited to speed *c*. The longitudinal EM wave can affect the rate of flow of time as well as affect space. It also can affect mind, since mind is timelike, and that is the *realm* of the longitudinal EM wave. If one wishes, one can construct a model of the time domain and its rate of change, in terms of longitudinal waves. So when one deals with "subtle energy" in living systems, this is the domain being dealt with, even though unwittingly.

Here we see a striking analogy to—and perhaps a direct exposition of—Tiller's subtle energy. One readily sees how it is related to Tiller's deeper, subtler EM that comprises the normal EM. This deeper, subtler EM is in fact already in the hard science literature, but it was discovered decades after Maxwell's death, and a decade after Heaviside, Hertz, and Gibbs converted and seriously reduced Maxwell's electrodynamics to its present "mod-

ern" form. It was also mostly just ignored. So Tiller's "subtle infolded electro-dynamics" may have long been in the literature, but just ignored. Cornille, e.g., has actually shown that "sound makes light." In other words, that the infolded longitudinal EM waves create the normal EM waves physicists conventionally study.

I think that, in the future, we are going to see some unparalleled developmental work along those Stoney-Whittaker internal electro-dynamics lines, and along the extensions pioneered by researchers such as Cornille, Barrett, Ziolkowski, Debye, Bromwich, etc. That research will further elucidate the subtle energy concept so brilliantly shown by Tiller.

Subtle Energy Creates EM Energy

In 1904, Whittaker published a second paper, which showed that *any EM wave, field, or pattern—any of them whatsoever—can be created by the interference of two scalar potentials.* That process is effective even at a distance. Such "nonlocal" actions are absolutely required by quantum mechanics, and recent experiments have experimentally confirmed them. Whittaker's 1904 paper initiated something eventually called *superpotential* theory, with further contributions and extensions by leading scientists such as Nisbet, Bromwich, Debye, and others. Today we know (but still rather obscurely in the literature) that the scalar potential interferometry—shown by Whittaker to underlie all conventional electro-dynamics—is a special case of a more fundamental vector potential interferometry. We point out that *these are the very elements that Tiller has so brilliantly pointed out*, including the fundamental importance of the vector magnetic potential. We also have the *proof* of Tiller's assertion that the subtle energy is more elemental than ordinary electromagnetic energy, and it can even produce such ordinary EM energy, including at a distance. Personally this reviewer has felt for decades that the two cerebral hemispheres of the brain can act as a scalar potential interferometer. The internal potential structuring would allow direct forces and energy to arise in material lattices, e.g., at a distance—which precisely fits psychokinesis phenomena observed experimentally. In addition, because of the "half life" of the kindling process between virtual and observable states, a charging time and a discharging time for the phenomenon is demonstrated. Psychokinesis occurs when the operator "feels" his way into pro-

ducing sufficient internal structuring of the potentials to produce the effect at the required molecular and atomic levels. The Soviets have long opaquely referred to the "hidden subtle EM electro-dynamics" as the *information content of the field*, but kept the meaning vague because of Russian weaponization. Now we know that any EM field, potential, signal, or radiation can and does have an internal structure—an "internal information and dynamics," if you will. This is a concept that Tiller has long pointed out, and one which he himself has helped to pioneer.

Tiller Presages the Future

So I think you are going to see a lot of scientific work in this "superpotential interferometry" area in the future, directly in subtle energy—and especially along the lines indicated by Tiller.

Tiller has strongly pointed out the reality of the subtle energy flows in the body, the reality of the human aura, and the internal patterning and "hidden information" in such patterning. Here again he is profoundly prophetic. He has shown that at least some kinds of instruments have already been built and adapted to allow at least limited measurement in this area. I think we will see a lot more attention paid to developing new, more advanced subtle energy instruments and meters, with the meters themselves being validated and scientifically accepted.

Extension of Energy Concept

Let me briefly address just one of Tiller's subtle energy areas for biological systems—the subtle electromagnetic aura. By a strange and eerie twist of scientific fate, energy flow was discovered in electromagnetics—and indeed in physics itself—after Maxwell, the founder of modern electro-dynamics, was already dead. Poynting and Heaviside discovered energy flow concurrently and independently. Poynting got the credit, because he published in a prestigious journal while Heaviside published obscurely. Poynting got the direction of energy flow wrong in electrical circuits, erroneously limited the energy flow to a mere shadow of its total magnitude, and missed an entire term. Heaviside corrected the direction and added the missing term. He also pointed out that the amount of energy flow intercepted by our instruments and circuits is only a tiny fraction of the total energy flow unleashed by the sources and violently streaming along the outside of the circuits.

Today we use Heaviside's energy flow theory and erroneously call it the *Poynting flow*. And we continue to neglect Heaviside's admonition that our instruments only detect and measure a tiny, tiny amount of that overall enormous energy flow.

Specifically, in a nominal simple circuit, only about 10^{-13} of the actual Poynting energy current flowing through all space surrounding the conductors is intercepted by the circuit (or by the measuring instrument!) and diverted into the circuit to power it. All the rest of that vast Poynting energy flow simply roars on off into space at the speed of light and is wasted. Lorentz reasoned that, since that huge nondivergent energy flow component isn't intercepted and redirected into the circuit, it has no physical significance. So he came up with a mathematical closed surface integration trick that simply discarded all the rest of that tremendous energy flow that was not intercepted and not measured by our instruments! And electro-dynamicists to this day have just dutifully followed Lorentz's lead.

Subtle Energy Is Powerful—If You Catch It

The bottom line is that the energetic human aura actually involves a far more powerful energy flow than anyone has heretofore imagined! It is actually about 10^{13} times as large in magnitude as is the weak EM field components our instruments intercept from it (with their own 10^{-13} interaction cross section) and subsequently measure. It can be shown that the total nondivergent (and therefore *subtle*) EM energy flow from a single human body could power all the electrical loads on earth, if the energy could only be intercepted, collected, and dissipated in those loads.

So not only is the human aura real and electromagnetic, but it is stunningly enormous! However, it is almost completely composed of *nondiverging* fields, which therefore show no detection interaction with normal "single pass collection" instruments. In addition, this huge auric energy flow is dramatically and completely internally structured, by every physical, chemical, electromagnetic, and subtle energy action—even the thoughts and feelings—in the emitting human being. So does every bird, every fish, every bacterium, everything living also have its similar aura, with concomitant infolded subtle energy structuring and dynamics. For decades, Tiller has advanced just such a concept, and he is right! To conclude our commentary in this domain, a researcher

well-known to this reviewer has—in highly proprietary work—apparently discovered a way in which at least some individuals may be trained to acquire ability to utilize and control much more of this powerful longitudinal EM wave auric energy flow. The resulting vista is breathtaking. Tentatively it would appear that this suggests a more modern methodology for acquiring extreme paranormal abilities shown in rare cases by adepts in Qi Gong, aikido, yoga, etc.

Everything Intercommunicates

As Tiller points out, everything intercommunicates with everything else. The auric energy from every living and nonliving thing on earth, in the solar system, and the distant star systems continually bathes us. Interception and detection by our special "subtle energy" sensory systems seem to output only to the unconscious or at least to the deeper layers of consciousness. In return, our own aura extends out at the speed of light across the entire universe. Just as Tiller so eloquently advances, in the subtle energy domain everything shares everything with everything.

So I think we are going to see a lot of concentrated development in the future along the lines so brilliantly pointed out by Tiller. The subtle energy aura and its internal structuring—as well as the ubiquitous intermingling and interaction of the subtle energies of all living things—is going to come into its own, particularly as new and vastly improved subtle energy instruments are developed and become available. *Science is shaped by what it can measure!* In addition, as Tiller has pointed out, the instruments and the measurements for the new science are coming. Some are here already to a limited degree.

Unity In and Of Everything

Finally, let me address an almost overwhelming point eloquently made by Tiller, that of the union (in sufficiently high topology) of everything. This ultimately includes the union of opposites; e.g., where non-thing (space, geometry, and mind) and thing (matter and energy) interact. In general relativity, we already have the interaction of space and geometry (part of non-thing) with matter (part of thing) and vice versa. Energy plays the intermediary role; i.e., it alters both the geometry and the mass. Since in the new view the manipulation of subtle energy enables the manipulation and control of energy, then it enables the manipulation

of both thing and non-thing, universally. This is the direction in which physics has long been groping, without fully realizing the extent of its quantum field theoretic notion of the ubiquitous interaction of virtual (non-thing) and observable (thing). I think we are also going to see a rocket ignited and swiftly zoom up in this extended area—precisely as foreseen by Tiller. E.g., let us again examine the two Whittaker papers, W-1903 and W-1904, and what they foreshadow in Tiller's model.

Levels Within Levels of Energy

First, from W-1903 we can decompose any scalar potential into a series of longitudinal EM wavepairs. From W-1904 any EM wave or field pattern can be decomposed into—and simply replaced by—two such scalar potentials. However, we can now reduce *those* two potentials further, each into a set of longitudinal bidirectional EM waves. We have gone to a "first level subspace", so to speak, or to a higher dimension, whichever way one wishes to model it. *We have gone one step "deeper" into conventional EM. We have taken the first full step into the internal, subtle energies and dynamics that Tiller has pointed out so strongly. We are also progressing steadily along in step with Tiller's higher dimensional unified model.*

But now we can take every one of those hidden longitudinal waves—comprising those potentials, signals and fields—and further decompose it into two scalar potentials, by W-1904. In addition, each of *those* new potentials can then be further decomposed into a new, far subtler set of hidden bidirectional longitudinal EM waves. We have now gone to a "second level subspace," so to speak, or to a second higher dimension—to a second level of interested subtle electrodynamics. *We have gone a second step, deeper, into the internal, subtle energies that Tiller has pointed out so strongly.*

Further, these internal longitudinal EM waves are not limited to light speed, but are unlimited in the speed they can attain. They are analogous to pressure waves running longitudinally under the ocean, being velocity-modulated. As is well-known, the velocities of such internal pressure waves are not at all limited to the "transverse upheaval of water" wave velocities of the surface waves.

Energy is Recursive

All we have applied is two consecutive processes of EM decomposition, both of which are present in the hard physics literature.

But we still just have deeper, internested potentials and waves! So the decomposition processes can be applied to each such infolded potential and wave. The successive decomposition process is recursive and can be iterated without limit. *In this subtle energy domain, there thus exist unheard-of, ever-deeper, unendingly internested regions of fields, potentials, and waves within fields, potentials and waves.* Again, for decades Tiller has prophetically advanced just such a conclusion.

I think we are going to see a lot more development in these subtle, hyperspatial (or subspatial, depending on how one models it) infolded electromagnetic energies. We are going to see the increasing study of ever more subtle "energy fields, waves, and patterns," *along the path so strongly pointed out by Tiller.* Energy infolding and outfolding—i.e., use of the information content of the field—is going to become *the new wave of the future.* As better instruments are developed and comprehensive measurement of the subtle energy domain becomes possible, this kind of study with subsequent technology development is likely to skyrocket. We are likely to have *an upheaval and a true revolution in science itself.* Again, Tiller is the prophet and the pioneer opening the door and pointing out the pathway.

Mind and Matter Interaction

These are *not* just "material" models! Let us not forget that Tiller has unified mind and matter in his model. Just as he has blazed the trail, the above recursive infolding (Bohm's term, slightly different spelling) and outfolding of subtle energy—the "hidden information content of the field"—is going to come into its own. When that happens, then in a higher dimensional model such as the 10 dimensions favored by Tiller, we will not only "find" the mind and its operations, but also their direct engineering. In three decades or less, we are likely to see education accomplished by the direct insertion of the requisite "software." After all, we have the world's "greatest computer" between our ears; we just have not previously had direct access to the software and operating system. Tiller's subtle energy dynamics inside conventional EM points the way to the existence of mind and its operations, long term memory, thoughts and thought-words, personality, feelings, and perceptions. It also points the way toward direct manipulation (for only good, we fervently pray!) of those areas.

Further, Tiller has strongly incorporated de Broglie's *pilot wave* and Bohm's hidden-variable *infolding*. Bohm's quantum potential and its implied multiply-connected space-time follow directly. A quantum potential just *appears*; its "speed" is infinite, so it instantly is everywhere it will be, all at once. However, it is still a *potential*. As such, it can be internally structured, per Whittaker 1903, with subtle (infolded) energy patterns along the lines pointed out by Tiller. My own postulate—strongly influenced by the work of Tiller and Bohm—is that the living being can be modeled as a quantum potential joining every atomic nuclear potential, and permeating the entire body. The mind, both conscious (serial processor) and unconscious (massively parallel processor) can be postulated to operate as dynamic structural functioning inside this quantum potential—in short, by Bohm's hidden variable dynamics and by Tiller's deeper, subtler EM energy. But since all potentials superpose, then all "normal" potentials of the body are "connected into" this quantum potential. Put another way, there is a multiplex of potentials, all connected to—and superposed upon—the master quantum potential of the body.

With this conjecture, one can directly uncover the workings of the mind, personality, memory, emotions, etc. inside that complex of superposing and structured potentials. *And it will all fit nicely into the dimensional framework proposed by Tiller.*

Interconnection of All Living Things

Tiller has also pointed out the interconnection of all living things. In my view, he is completely correct, in the fullest. It would seem to be only a matter of time until the new developments fully establish the truth of Tiller's statement. As one goes ever deeper into these recursive potentials and bidirectional waves within potentials, waves, and fields, one reaches a sort of "ethnic group consciousness level," then a sort of "national consciousness level," then a "total humanity" conscious level that corresponds directly to Jung's collective unconscious mind. The next deeper level in Tiller's subtle energies and deeper consciousness includes all species collective unconscious minds and yields the biospheric unconscious—in short, *Gaia*.

As can be seen, there is no limit to the process of ever deeper subtle energies and iterative infolding, by applying W-1903 and W-1904 iteratively. In my view (and

I think Tiller's also), Tiller's model leads to a reality wherein life and mind and spirit are everywhere, in the subtle energy domain. That we are just short of developing the necessary instruments to deal with this domain, is only a limitation of our present still-embryonic science. *It is not a limitation of the Creator or of total being.* Here again, Tiller has blazed the way into a living universe and a living universal spirit or being.

Conclusion and Summary

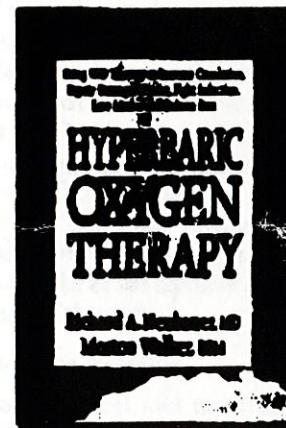
In summary, this is what the true importance of this epochal work by Tiller is: *He has established the definitive threshold.* He has irrevocably moved human science—though perhaps kicking and dragging its feet all the way—through a one-way door. He has blazed a clear trail to a new vision of a unified, humanized science that is not materialistic alone, but produces a harmony of mind, matter, energy, subtle energy, and spirit.

In this epochal book Tiller has pointed the way for succeeding generations of scientists to follow. The world has irrevocably changed as a result of Tiller's profound threshold statement. It will quite literally never be the same again. ♦

ANNOUNCING: THE LONG-AWAITED BOOK

HBO: The Benefits of Hyperbaric Oxygen Therapy

by Morton Walker, D.P.M., Medical Journalist
in Consultation with Richard A. Neubauer, M.D., Hyperbaricist
Foreword by Edward A. Teller, Ph.D. Hydrogen Bomb Developer



At long last the book is available that explains all you wanted to know about the use of pressurized oxygen as therapy for strokes, head and spine injuries, multiple sclerosis and many other life threatening illnesses. This 375 page book, **HBO: The Benefits of Hyperbaric Oxygen Therapy**, has been published by Avery Publishing Group, Inc. under its imprint "A Dr. Morton Walker Health Book" and can be purchased for \$16.95, plus \$3.05 postage & handling = US\$20.00. Please see review on page 76 of this issue.

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Book Review

SCIENCE AND HUMAN TRANSFORMATION (SUBTLE ENERGIES, INTENTIONALITY AND CONSCIOUSNESS)

William A. Tiller • Pavior • 1997

The book *Science and Human Transformation* by William A. Tiller, Ph.D. is a monumental work in concept, if not in size. It is a brilliant work in the tradition of such other great works of synthesis as Kepler's *Mysterium Cosmographicum*.

William A. Tiller, a leading scientist, now retired, taught and studied the structure of matter at Stanford where he was a professor for over 30 years at the Department of Materials Science. Dr. Tiller presents us with no less than his grand unified Theory of Everything. Unlike most other Theories of Everything, which are actually quite restrictive in that they assume that everything can be derived from some limited set of physical principles, but the actual details are left for future generations to elucidate, Dr. Tiller actually delivers the goods.

Dr. Tiller tackles an amazingly broad range of phenomena from the outset. Like Kepler who unified an incredible amount of seemingly chaotic and unrelated data into a number of simple but beautiful and powerful principles, Dr. Tiller also brings an aesthetic harmonious sense of wholeness and simplification, but not trivialization, to a vast array of seemingly disparate facts. If Dr. Tiller has not yet mapped the unknown terrain, he has provided us with some new navigational principles in the form of a number of startlingly innovative models and an elegant mathematical transform which may guide us on our journey into the unknown. From antennas to acupuncture, psychic phenomena to dowsing, the heart to holographic theory, subtle energies to energy medicine, Tiller dives deep beneath superficial differences and finds unity in diverse phenomena.

Dr. Tiller writes clearly, in the style of an experienced and confident teacher who has great patience and affection for his students. But in spite of Dr. Tiller's assurances to the contrary, this book is not an easy book in the sense that the reader would have to have an unusually broad scientific education to grasp this work in its entirety. But like those new pictures from the Hubble telescope in which even small dark areas of the universe explode into complexity when examined in detail, readers will come away vastly enriched, even if they focus on only a small part of Tiller's theory at each reading.

At the heart of *Science and Human Transformation* is an astonishingly beautiful new mathematical transform which although unnamed by the author may someday be known as the Tiller Transform. It is unusual in its clarity and universal applicability, and it is a rarity in that it immediately suggests many practical experiments by which Tiller's theories can either be proven or disproven. It could be that the Tiller Transform may some day allow for the conceptual unification of vast areas of subtle and physical phenomena. But his transform can also be applied to far less ambitious problems today, and the first verifications may not be that far in the future. The Tiller Transform is a synthesis of at least two very important scientific ideas. First it is an evolution of a type of transform originated by Fourier and used by every physicist and engineer today. Second it incorporates a program started by Riemann and Einstein and continued to this day by those working on 20 dimensional String Theory. This involves the addition of new mathematical dimensions to successfully model the universe. But through an elegant mathematical sleight of hand, Dr. Tiller has put the brakes on runaway dimensional inflation and an important subset of his model can be expressed in just 4 conjugate dimensions.

When Descartes assigned pairs of numbers to a 2 dimensional grid, he unified algebra and geometry, which were until that time seen as completely unrelated. Dr. Tiller accomplishes something similar by postulating an n-dimensional mathematical lattice in which correspondences between subtle energy and physical phenomena may be seen for the first time. And this is really what sets this work apart from so many other Theories of Everything. No matter how wild some of Dr. Tiller's speculations may seem, he has constructed his fantastic edifice upon the most solid of foundations, that being basic theories of matter and electrodynamics, expressed in a relatively simple mathematical language. If we follow the train of Tiller's thinking, then we are inescapably led to seriously consider his conclusions.

The title *Science and Human Transformation* reveals from the outset Dr. Tiller's broader agenda. He doesn't simply want less than a science with Heart. He seems to be saying that without incorporating the spiritual dimension into scientific practice, then our models will forever remain sterile and only able to account for the most mundane and materialistic aspects of existence. And then he shows us how to do it. Dr. Tiller builds upon the growing realization in physics that we cannot escape the implications of quantum physics. The old "objectivity" which sought to keep the experimenter and his experiment separate is seen now as a fundamental misunderstanding of how the universe works. But Tiller shows for the first time how to mathematically incorporate consciousness from the start. This may be the breakthrough which we have all been waiting for.

It is impossible to convey the true scope of this work in a short review. Suffice it to say that by the end of *Science and Human Transformation*, we have not only encountered a set of new and exciting models and tools, but we have also met an extraordinary mind. We come away greatly enriched by both.

• • •

Reviewed by David Joffe, 5589 Arapahoe Rd., Boulder, CO 80303.

Book Review

SCIENCE AND HUMAN TRANSFORMATION (SUBTLE ENERGIES, INTENTIONALITY AND CONSCIOUSNESS)

William A. Tiller • Pavior • 1997

The book *Science and Human Transformation* by William A. Tiller, Ph.D. is a monumental work in concept, if not in size. It is a brilliant work in the tradition of such other great works of synthesis as Kepler's *Mysterium Cosmographicum*.

William A. Tiller, a leading scientist, now retired, taught and studied the structure of matter at Stanford where he was a professor for over 30 years at the Department of Materials Science. Dr. Tiller presents us with no less than his grand unified Theory of Everything. Unlike most other Theories of Everything, which are actually quite restrictive in that they assume that everything can be derived from some limited set of physical principles, but the actual details are left for future generations to elucidate, Dr. Tiller actually delivers the goods.

Dr. Tiller tackles an amazingly broad range of phenomena from the outset. Like Kepler who unified an incredible amount of seemingly chaotic and unrelated data into a number of simple but beautiful and powerful principles, Dr. Tiller also brings an aesthetic harmonious sense of wholeness and simplification, but not trivialization, to a vast array of seemingly disparate facts. If Dr. Tiller has not yet mapped the unknown terrain, he has provided us with some new navigational principles in the form of a number of startlingly innovative models and an elegant mathematical transform which may guide us on our journey into the unknown. From antennas to acupuncture, psychic phenomena to dowsing, the heart to holographic theory, subtle energies to energy medicine, Tiller dives deep beneath superficial differences and finds unity in diverse phenomena.

Dr. Tiller writes clearly, in the style of an experienced and confident teacher who has great patience and affection for his students. But in spite of Dr. Tiller's assurances to the contrary, this book is not an easy book in the sense that the reader would have to have an unusually broad scientific education to grasp this work in its entirety. But like those new pictures from the Hubble telescope in which even small dark areas of the universe explode into complexity when examined in detail, readers will come away vastly enriched, even if they focus on only a small part of Tiller's theory at each reading.

At the heart of *Science and Human Transformation* is an astonishingly beautiful new mathematical transform which although unnamed by the author may someday be known as the Tiller Transform. It is unusual in its clarity and universal applicability, and it is a rarity in that it immediately suggests many practical experiments by which Tiller's theories can either be proven or disproven. It could be that the Tiller Transform may some day allow for the conceptual unification of vast areas of subtle and physical phenomena. But his transform can also be applied to far less ambitious problems today, and the first verifications may not be that far in the future. The Tiller Transform is a synthesis of at least two very important scientific ideas. First it is an evolution of a type of transform originated by Fourier and used by every physicist and engineer today. Second it incorporates a program started by Riemann and Einstein and continued to this day by those working on 20 dimensional String Theory. This involves the addition of new mathematical dimensions to successfully model the universe. But through an elegant mathematical sleight of hand, Dr. Tiller has put the brakes on runaway dimensional inflation and an important subset of his model can be expressed in just 4 conjugate dimensions.

When Descartes assigned pairs of numbers to a 2 dimensional grid, he unified algebra and geometry, which were until that time seen as completely unrelated. Dr. Tiller accomplishes something similar by postulating an n-dimensional mathematical lattice in which correspondences between subtle energy and physical phenomena may be seen for the first time. And this is really what sets this work apart from so many other Theories of Everything. No matter how wild some of Dr. Tiller's speculations may seem, he has constructed his fantastic edifice upon the most solid of foundations, that being basic theories of matter and electrodynamics, expressed in a relatively simple mathematical language. If we follow the train of Tiller's thinking, then we are inescapably led to seriously consider his conclusions.

The title *Science and Human Transformation* reveals from the outset Dr. Tiller's broader agenda. He doesn't simply want less than a science with Heart. He seems to be saying that without incorporating the spiritual dimension into scientific practice, then our models will forever remain sterile and only able to account for the most mundane and materialistic aspects of existence. And then he shows us how to do it. Dr. Tiller builds upon the growing realization in physics that we cannot escape the implications of quantum physics. The old "objectivity" which sought to keep the experimenter and his experiment separate is seen now as a fundamental misunderstanding of how the universe works. But Tiller shows for the first time how to mathematically incorporate consciousness from the start. This may be the breakthrough which we have all been waiting for.

It is impossible to convey the true scope of this work in a short review. Suffice it to say that by the end of *Science and Human Transformation*, we have not only encountered a set of new and exciting models and tools, but we have also met an extraordinary mind. We come away greatly enriched by both.

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