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Towards a New Science of Consciousness

Experiments show that human intention can mysteriously alter the material world—demanding an entirely new view of physics. The research comes from competent scientists representing a wide range of disciplines. In this time of quickening, new fields are forming and growing so rapidly the present will soon seem to be a distant past.

My dualistic definition of consciousness involves a two-step process. The first is our intention to create something new in the universe. The second is how much the universe aligns with that intention. The degree there is alignment is the degree to which the miracles of consciousness can operate. Consciousness represents the most general case of the cosmic dance of cause and effect. It can either transcend or stimulate the four forces known to the old physics—electromagnetics, gravity, weak nuclear and strong nuclear. It can reach into dimensions beyond time and space. Consciousness can unite the universe or pieces of it instantaneously and even across time. Its medium of action appears to come from an invisible potential field embedded in the fabric of time and space.

The next five sections describe different types of experiments in zero point field research, quantum physics, parapsychology, materials science and cosmology. When combined with healing and the big picture of our greater nature, these could

lead to a whole new future for humanity. The many repeated successes coming from these disparate approaches assure us that the new science of consciousness is not only promising; it is inevitable.

Experiments on the Zero-Point Field: Extracting Energy from the Vacuum Numerous experiments show that energy can come from empty space. The condition required is that we accelerate an electromagnetic charge in the presence of the “zero-point field” (ZPF), called such because it still exists at a temperature of absolute zero, when all molecular motion ceases. We might also describe the ZPF as physicist David Bohm’s “implicate order”, which is the unmanifest state of matter and energy before it becomes visible. The ZPF might be an updated version of the nineteenth century physicists’ dynamic ether—that invisible, ineffable medium through which matter and energy can be created or destroyed.

As examples of accelerating charges in the ZPF, physicists Bruce DePalma, Shiuji Inomata, Paramahansa Tewari, Troy Reed and other investigators have measured excess output energies of rapidly rotating disks containing permanent magnets.(3) These scientists found that the power from these machines goes up as we increase the rotational speed, diameter and magnetic field strength. In principle, we might be able to rev up such a motor until over-unity power is obtained. At that time, we can unplug the machine so that it becomes a free-running generator of electricity. We will have tapped the zero-point field in much the same way as a paddle wheel dipped into running water produces usable energy.

The excess energy comes evidently from a stream of electrons jumping out of the void. When we think of the vacuum of space as a plenum of potential energy and charge, we see that energy is conserved in the larger sense. This answers the sceptics’ accusations that “there is no such thing as perpetual motion.”

The explanation offered by physicists Bernhard Haisch, Alfonso Rueda and Harold Puthoff, as reported in the peer-reviewed literature, has caused quite a stir in the scientific community. “The physical universe,” they wrote, “is made up of massless electric charges immersed in a vast, energetic all-pervasive electromagnetic field. It is the interaction of those charges with the electromagnetic field that creates the appearance of mass.”(5) In other words, matter may not be what we think it is.

They went on to describe the nature of this ZPF, which we have also seen to be the source of free energy. In his earlier presentations, Puthoff had frequently referred to the existence of this field from both experimental and theoretical perspectives.

“The amount of energy making up the ZPF is enormous”, the three authors said. “That energy, in the conventional view, is simply forced into existence by the laws of quantum mechanics... The existence of a real ZPF is as fundamental as the existence of the universe itself. “

“ The idea that space could be filled with a vast sea of energy does seem to contradict everyday experience. The answer to the question lies in the utter uniformity (the same everywhere) and isotropy (same in all directions) of the field. There is no way to sense something that is absolutely the same everywhere, outside and inside everything. To put the matter in everyday terms, if you lie perfectly still in a tub of water at body temperature, you cannot feel the heat of the water.” (5) What can you measure or detect from what?

I now quote from *Miracle in the Void* (Ref. 3, p. 179): “The field becomes detectable only when a charge is accelerated through space. When that happens, the charge experiences an electromagnetic force as a resistance to the acceleration. Instead of the Newton-ian concept of mass as a fundamental property of nature, it dissolves into being a force exerted on an accelerating charge. Collectively, these forces comprise energetic fluctuations that can be detected experimentally, for example through the widely reported Casimir effect. The forces are like a superposition over the seemingly featureless void of the ZPF.”

“What does this mean? First, we can tap the zero-point energy by accelerating charges-for example, with a rotating magnetic disk or a specially conditioned magnet or crystal, or perhaps a cold fusion device or hydrogen gas cell. Secondly, since mass is really only an electromagnetic force, then gravity itself must also be an electromagnetic force acting on it; otherwise things wouldn't fall. Therefore anti-gravity propulsion becomes possible. To reinterpret Einstein's equation $E=mc^2$, Haisch et al write, ‘we would say that mass is not equivalent to energy. Mass is energy.’ “

This also implies that we can begin to truly unify the forces of nature without having to resort to such mathematically cumbersome formulations as string theory and gauge theory. I wrote: “Does this mean that consciousness itself is also an electromagnetic force, in order for it to be able to interact with the ZPF? I believe that may be so.” (Ref.3, p.180).

If we pursue free energy from an old paradigm point of view and we keep living in isolation and suppression, we may continue to get sporadic results in new energy experiments. If we adopt a hypothesis that free energy is consciousness,

the devices may then become a tool to fine-tune and augment the intentions of that consciousness. I know of several cases of free energy researchers who are apparently influencing their results through their intention. (3).

These heretical yet well-founded ideas coming from physicists provide the most elegant theoretical framework for understanding free energy, gravity, and perhaps consciousness itself. To further understand this relationship between the ZPF and consciousness, we next look in depth at experiments and phenomena within the fields of quantum physics, parapsychology, materials science and cosmology.

Quantum physics inevitably leads to consciousness

During the early 1900s a number of physicists became baffled when they tried to subdivide the atom into more elementary particles. First they found that the energy states of one class of particle, the electrons, were discrete rather than a smooth continuum, and that the changes in energy from one level to another were sudden. Then they discovered that it was impossible to determine where a particle was going if they knew where it was; and just as impossible to determine where it was if they knew where it was going (named the uncertainty principle after Werner Heisenberg). Subatomic particles seemed to “flicker into and out of existence”, as Haisch, Puthoff and Rueda recently described it. (6)

The physicists’ confusion grew even greater when they found that the characteristics of the “particle” itself seemed to change simply by the act of observation. And more recent experiments showed that the particle is only a particle *when* it is observed; otherwise it exists only as a possibility, expressed as a mathematical probability in the form of a wave.

The most sensible, and perhaps only, explanation for this unexpected behaviour is the observer effect, or our consciousness. In other words, we can change the physical properties of the observed, as in a mysterious dance of interaction. Suddenly gone is the Cartesian/Newtonian model of objective materialism, where the universe behaves like a gigantic mechanical clock whose properties can be understood by a dispassionate experimenter separated from the rest of nature. Gone is the notion that this clock is deterministically unwinding from an initial causal event about fifteen billion years ago called the Big Bang as the entire basis of our contemporary and future physical reality. Gone is the idea that all matter can be reduced

to tiny inert billiard ball particles that zing around in time and space (sometimes called reductionism). And gone might be the “law” that the universe is gradually decaying in energy because of the thermodynamic requirement of entropy. Instead we see a new kind of unifying and creative force between the observer and the observed. This is sometimes called idealistic monism, the perennial philosophy, the primordial tradition, the oneness, the alpha-and-omega, wholeness science, post-quantum theory, consciousness, mind, and, for some of us, God.

University of Oregon physics professor Amit Goswami has recently described the essence of the quantum mechanics, which seems to fly in the face of objective materialism. (7) The experimental evidence points to three features endemic to idealistic monism: no locality, quantum leaps, and downward causation.

No locality means that particles once together can still track each other’s behaviour out to great distances. Quantum leaps constitute the ability for particles to transfer information and energy at virtually infinite speeds-faster than the speed of light. Downward causation suggests that “consciousness is the ground of all being”, in Goswami’s words. Consciousness becomes much more than an anomalous departure from a basic belief in pure objective materialism, reductionism and determinism. “The fundamental tenets of material realism simply do not hold up”, said Goswami. “In place of causal determinism, locality, strong objectivity, and epiphenomenalism, quantum mechanics offers probability and uncertainty, wave-particle complementarity’s, no locality and mixing of subjects and objects.” Goswami concludes that all this adds up to the influence of consciousness.

If science itself could accept consciousness as the most general case of reality instead of trying to understand the universe in terms of its component parts in a clockwork universe, then some big changes are ahead. Reductionism and materialism then become but limiting cases of reality for those times when consciousness does not apply to any significant degree. In spite of the conservative biases of many physicists, the overall outlook is becoming more favourable towards basing reality on consciousness. “At a recent (American) Physical Society meeting”, wrote Goswami, “one physicist was overheard to say to another: ‘Anybody who is not bothered by Bell’s theorem (a well-established principle of physics, based on experiments showing no locality) has to have rocks in his head.’ Even more heartening, a poll of physicists at a conference revealed that a full 39 percent of the physicists assembled were indeed bothered by Bell’s theorem. Since such a high percentage of physicists are bothered, we might well expect the idealist paradigm of physics to get a fair hearing.”

Upward causation means that the essence of the physical universe can be understood by studying the most fundamental particles that make up atoms which make up molecules which make up cells which make up bodies, etc. Most physicists believe that each smaller part represents a more basic level of causation. This view still dominates the Western scientific paradigm and can be convenient at times, but seems to have reached a plateau of usefulness. On the other hand, causation spreading downward from consciousness has dominated Eastern thought. The new science, which seems to be emerging, is a science of consciousness, more in line with the major spiritual practices and religious beliefs of the world.

“Material realism cannot be saved”, asserted Goswami. “...With idealist science, we have arrived at a science that has no entrance requirement, that excludes neither the subjective nor the objective, neither spirit nor matter, and thus is able to integrate the deep dichotomies of our thought.”

Ironically, it has been the drive to find the fundamental and seemingly immutable particle that has led the Western approach to embrace the East. Rather than the whole as being a mechanical assemblage of parts with the dichotomy of object-subject, the whole *are* the parts. Particles are no longer the irreducible building blocks of nature, they are mysteriously flashing in and out of our reality, dancing with the observer, constituting a creative whole we call consciousness.

Many physicists are not aware of the importance of these results and instead turn toward the convenient technologies that emanate from adopting quantum theory. But nagging discrepancies remain: the wave/particle duality, the observer effect, no locality and spontaneous quantum leaps. The quantum paradoxes begin to disappear when we consider consciousness as the primary cause of the material world. Indeed, Goswami and some others of us trained in physics believe that *consciousness literally creates the material world*.

Our daily existence may be just another dream, the collapse of a wave of possibility into what looks and feels like concrete reality “out there”. That reality seems to keep repeating because of our expectations of its manifestation. The discrepancies remain. These habitual patterns appear to come from a deep-seated but erroneous belief in the primacy of an objective, material universe, which we cannot change except, by the brute forces of gravity, traditional electromagnetic, nuclear repulsion and atomic decay.

During his later years, Einstein attempted in vain to come up with a unified field theory, which would combine the four forces. He was also troubled with the paradoxes of quantum mechanics, but could never arrive at reconciliation. If physics were to honestly address all valid observations, it would have to become more all-inclusive. In other words, the currently accepted theories of physics fall far short of explaining the growing experimental anomalies.

Goswami is not the only theoretical physicist who is convinced consciousness must be brought into a faltering physics. Cyberphysicist Dr. Jack Sarfatti, a unique contemporary of mine, blazes new theories in large daily morsels on the internet. (8) He is proposing a post-quantum theory, based on his attempt to merge the apparent contradictions of current quantum models. He also draws on the results of Dr. Thomas Phipps, who has modified relativity theory to fit in with quantum mechanics. Sarfatti presents a model of consciousness in which not only does mind act on matter but also matter reacts back onto mind. He uses this to explain the observer effect in quantum physics and psychic effects as well. In a more formal way, he underscores my definition of consciousness, which is the result of the degree of alignment between our intention and the intention of that being acted upon.

There are many more physical theories of consciousness, too numerous to mention here. It is unfortunate that not only is currently accepted physics riddled with contradictions, but both old and new concepts themselves are often difficult for the lay person to understand, because the terminology, mathematics and models are complex. Even with all my physics background, I need to take out a lot of time to begin to grasp the subtleties of the theories. It is easy for some of us to want to give up, to walk away from all this intellectual rigor.

Yet physics is still a very powerful tool, no doubt about it. Existing theories do explain a variety of phenomena and predict future events. They give us confidence to understand how nature behaves, how we can interact with it, and how we can create everything ranging from microelectronics to lasers to computers to communications to aircraft and space vehicles. But the emerging theories which seek to explain the anomalies of consciousness, added to accepted results, will no doubt spell out a future that would make even the postulates of an Einstein, Planck, Heisenberg, Bohr, Fermi, Dirac, Bohm or Schrodinger appear mundane. Such is the cutting edge nature of science.

Many other scientists outside of physics are also uncovering additional evidence for the influence of the observer on the material world, beyond the ZPF and quantum

experiments. A third area, which is growing rapidly in credibility, consists of observations of parapsychologists and other academic researchers of the paranormal. These anomalous happenings violate the laws of physics, as we know them. They open ever wider a Pandora's box leading inevitably toward the primacy of consciousness in understanding the physical universe.

Parapsychology experiments and experiences also prove consciousness

While quantum mechanics and zero-point energy extraction reveal a bizarre behaviour of "matter" at the microscopic level, the observer effect also applies to the macroscopic (visible) world. These results come from a series of alarming investigations into mind over matter (psychokinesis), remote viewing, precognition, near-death experience and other phenomena clearly foreign to the materialist yet very real. Human operators interacting with machines through their intention can often create, destroy or move electrons in repeatable trials, just like the observations of the quantum physicists and zero-point field researchers.

I described in my book *The Second Coming of Science* the important experiments carried out by Princeton University scientists Robert Jahn and Brenda Dunne. (2,9) They have devised an experimental protocol, which can measure the psychokinetic effects of human operators on random event generators (REGs) of binary numbers. These are black boxes which, in the absence of any operator intention, produce a random stream of zeros and ones at the rate of two hundred numbers per second. By integrating results over several hours, they have found for most operators a statistically significant and moderately repeatable "psychic" effect both in and opposite the direction of intention, with a preponderance of results towards intention. Typically, operators have produced non-random effects of a few parts per thousand. One doesn't need to be a gifted psychic to produce results. Statistically we are all psychics.

Once I may have created in my own mind erroneous positive results in an experiment I had performed. (2) As an enthusiastic astronomy graduate student at the University of California at Berkeley, I had sought an optical effect coming from the planet Venus that could reveal the presence of hexagonal water ice crystals in its cloud tops. Indeed I found something. But three years later, when I was an assistant professor of astronomy at Cornell University, a graduate student and I didn't find it. As a cautious scientist, I fortunately hadn't come to any positive conclusions about

the presence of ice the first time and awaited verification. From both sets of observations we set an upper limit to the content of hexagonal ice crystals in the Venus doudtops. Soon, another scientist discovered sulphuric acid droplets there instead. Caution in science is wise in cases like these; I object strongly only when scientists pretend to know everything and debunk new fields unfamiliar to them.

What happened to the ice in the Venus clouds? I believe I influenced the electronics of my photometer at the telescope to respond to my intention. These anomalies came up in many other experiments, as we shall see. All this forces the question, how many wish-fulfilled results come from our own consciousness rather than physical reality "out there"? Lacking the objectivity demanded by one scientist can become grist for the mill for another.

Subsequent experiments at the Princeton Engineering Anomalies Laboratory have shown ways of amplifying psychokinetic action. Brenda Dunne has reported some preliminary results indicating psychokinetic effects approximately six times greater for bonded couples. More recently, Roger Nelson, also at Princeton, and Dean Radin at the University of Nevada Las Vegas, have confirmed that even greater order can be produced from focusing group energy in the presence of an REG. (10,11)

These new results come from two teams of experienced experimenters in a cautious academic settings with peer review. By placing "field" REGs in various group settings, both experimental teams found repeatable patterns of extrasensory group coherence, particularly during moments of strong spirit, or bonding. The coherence was greatest when humour, ritual, inspiration, or large television audiences were involved. On the other hand, a routine scientific board (bored?) meeting yielded continuing randomness. Interestingly, the groups did not have to focus on the REG itself; the object of focus could be something else. The prospect of using field REGs as group monitoring feedback devices suggests that we can find the best conditions to "pump up" group energy into a highly coherent state, perhaps even into a "free energy" domain. If you would like to learn more about possible quantitative relationships between amplifying consciousness and zero-point energy extraction, I refer you to a short technical treatise in Appendix IV.

Some of us have difficulty understanding these complex scientific results coming from black boxes, and so would prefer seeing or experiencing dramatic demonstrations of psychic action. Both approaches verify the reality of consciousness.

Besides observing gifted psychics, I have also taken up spoon bending. Through various aikido and breathing exercises, I have taught this during the culmination of workshops at the Esalen Institute in California, the Findhorn Foundation in Scotland, and elsewhere. In a two-to-three hour session, about eighty to ninety per cent of my students are able to bend a spoon, where they are clearly convinced it was primarily done with the power of their minds, rather than physical force. Interestingly, the middle-aged intellectual men performed most poorly, a credential role reversal. (2) Firewalking represents another valid and personally more challenging confrontation with consciousness.

Diehard materialists nevertheless question all this. Dean Radin's recent book *The Conscious Universe* should lay to rest those doubts once and for all. (11) I highly recommend this brilliant and understandable book. In it, he synthesizes thousands of disparate experiments in parapsychology which not only prove the reality of consciousness existing beyond time and space, but also lead to certain attributes that will impact any emerging theory of consciousness.

Radin's confidence can be bolstered by the statistics of large numbers in hundreds to thousands of experiments, as reflected in a "meta-analysis". "In a given experiment", he writes, "the raw data points are typically the participants' individual responses. In meta-analysis, the raw data points are the results of separate *experiment... J Today* meta-analyses have exploded in popularity because the behavioural, social and medical sciences were all in the same boat: they needed a method of formally determining whether the highly variable effects measured in their experiments were replicable." (p.53)

For example, Radin's look at thousands of studies on telepathy and perception at a distance show significant "hit rates". The studies also reveal that about one per cent of the population have an innate psychic talent, and no amount of training seems to help the others much. Regardless of psychic ability, the analyses indicate that there is greater performance when operators remotely view objects and events by free choice rather than by constrained choices, such as concealed cards. Hypnosis can further enhance the effects. These findings are consistent with my own experience and with experiments I did with polygraph scientist Cleve Backster. (1) In one set of trials, the electrical activity of my at-a-distance white blood cells time-correlated well with my experienced and recorded emotions.

Even more mind-boggling are Radin's results of perception over time. Several independent experiments clearly show the abilities of many people to predict and

perhaps even influence events in the future. Through measuring their electrodermal activity, Dr. Dick Bierman found that many subjects were able to anticipate an emotionally charged image seconds before it was actually presented. (11)

An extreme example of precognition comes from Ted Owens, the late American psychic. He was able to predict-and sometimes even claimed to produce-freak thunderstorms, lightning strikes, hurricanes and sporting event results. (12) While Owens was for the most part considerate of others, there were times he followed through on reprisals against those whom he didn't like. This leads to a serious issue. Our potential to play God serves to remind us of the double-edged sword regarding ethics in the twenty-first century. To re-inherit the Earth, we are going to need to follow the authentic Golden Rule in all scientific inquiry: Do unto others, as you would have them do to you.

These very significant results coming from parapsychology must be included in a theory of consciousness, whose actions can spread over both space and time following natural laws that far transcend what we now know in science. "At the turn of the twentieth century", Radin writes, "imaginative scientists were slowly becoming aware of radical new theories on the horizon about space, time, matter, and energy. Some sensed, correctly, that developments such as relativity and quantum theory would radically alter our understanding of reality itself. Almost a century later, the impact of these discoveries is still reverberating throughout science, technology, and society. As the twenty-first century dawns, astounding new visions of reality are stirring." (Ref. 11, p.303)

The influence of human intention on water and living matter: One man's amazing synthesis

One of the brightest and most articulate experimenter-theorists in consciousness is professor emeritus William Tiller of Stanford University. This gentle man whom I've recently had the pleasure of meeting, has provided convincing data on the influence of human intention on the physical and chemical properties of water and living matter. Even more remarkable, Tiller and his colleagues were able to delay the transmission of the intention through the mediation of a simple electronic device. (13) They used experienced mediators to implant their conscious signal into the device, which recorded their intention. They later transmitted that signal into water, for example, to alter its degree of acid or alkaline content. Some

repeated trials yielded 1.0 pH unit, or ten times change in the acidity of the water coming from the relayed intention of the mediators.

Tiller has presented a model for consciousness I find to be both brilliant and useful. (14) I often prefer models to formal theories, especially at this early stage in the development of consciousness science. While both have powerful predictive qualities, physical theories usually build on existing theories, and often demand a rigorous understanding of mathematical physics. Models, on the other hand, are attempts to build a generalization that is consistent with all the relevant data. Models are the simulation of a universe that shares all its observed properties, not your pet theory. True, the theoretical physicists can have important insights leading to later developments, but the systems engineers can often build models beyond the purview of the physicist before the physics becomes more developed. Systems engineers got us to the Moon, based primarily on physical theories advanced by Isaac Newton 300 years ago.

Systems engineers are often the first people to point to trends for the future. This kind of thinking came from the Club of Rome's prophetic 1968 book *The Limits to Growth*. This study looked at five key parameters in modelling humanity's future with respect to the resources of the Earth: food, raw materials, energy, pollution and population. They correctly predicted an environmental crunch that is obviously upon us now. This important work also helped to create the environmental movement of the 1970s. Systems engineering will undoubtedly help us design a positive and sustainable future.

In a sense, the new Apollo program has already begun. Thomas Bearden and Moray King are systems engineers who have provided fresh insight into the characteristics of zero-point energy. (2,3) The visionaries Werner von Braun, Sir Arthur C. Clarke, Gerard O'Neill, Buckminster Fuller, Barbara Hubbard, and Willis Harman have published works in the finest tradition of systems engineering. Their ideas deserve a new look. Tiller's own background is an eclectic blend of engineering, materials science and holistic medicine, so he is a natural candidate to address the broad question of consciousness systems modelling.

In his model Tiller begins with the familiar physical realm that includes the three dimensions of space and one dimension of time. But in order to explain the actions of the mind on matter he proposes a second, unseen domain that has certain general properties that can be deduced from the data of many classes of interactions: quantum experiments, parapsychology, zero-point energy research, holography,

chemistry, biology and healing science, to mention a few. (14) The two other realms he suggests are more spiritual in nature.

Tiller calls our familiar space-time domain direct or D-space and the unseen inverse space-time (frequency) domain as reciprocal, or R-space. The mirrored reciprocal space doesn't only involve inverse space and frequency. Some other features of R-space are negative mass, energy, entropy and temperature; velocities greater than light; levitation as opposed to gravitation; homeopathic versus allopathic medicine; and right versus left-brain.

The model uses the familiar Fourier transform of mathematical information and action back and forth between the two domains. Space-time becomes converted to inverse space-frequency and vice versa. This also follows the holographic model of the universe first proposed by the late physicist David Bohm, and expanded by the late Michel Talbot (15) and astronaut Edgar Mitchell, founder of the Institute of Noetic Sciences. (16) This general approach can also explain how many of the phenomena that seem to act outside of space and time can impinge on the moment. The unseen realm is resonating with the seen to create the observed reality in this moment at this place.

Tiller's model is also consistent with one proposed by the late Japanese engineer Dr. Shiuji Inomata, president of the Japan Psychotronics Institute and for thirty-five years an employee of the Japanese Government at the Electrotechnical Laboratories near the Tsukuba space city facility. He was host of two Tokyo conferences on Consciousness, New Energy and New Medicine in 1996 and 1998. Dr. Inomata has presented a triad between mass, energy and consciousness as a three-way interaction. (3) He suggested that existing science has concerned itself only in the relationship between mass and energy. But if we add consciousness as a third factor, we find physical equivalences between consciousness and both mass and energy analogous to the famous Einstein mass-energy equation, $E=mc^2$.

Tiller explains a wide range of observed data with some understanding to the informed layperson. He also provides sometimes-poetic descriptions of many demonstrations of paranormal phenomena. Regarding materialization, he writes, "Imagine a pond surface on which little 'skimmerbugs' are moving about on the surface. They have a small body and many long legs, and resemble Abbot's Flatlanders in that they perceive only two dimensions. Suppose you have a skimmerbug skimming across the pond near you and you put your leg in the pond. To the skimmerbug, that is a materialization event. You then take your leg out of the pond and,

to the skimmerbug, which is a dematerialization event. If you think of the number of ways in which your three-dimensional phenomenon can penetrate its two-dimensional perception frame, you can begin to appreciate how difficult it will ever be for the science of skimmerbugdom to be able to produce a proper scientific explanation of the phenomenon. We see here that one's scientific prowess is limited largely to the level of the society's operational perception."(15)

I highly recommend Tiller's model to serious students of consciousness science. "The break with the past will come", he writes, "in part, by accepting that, like light and sound, our present band of cognition gives us a window on only a very small portion of Nature's total modes of expression...Becoming aware of these larger aspects of general nature of ourselves is a major step towards full self-empowerment, where we have grown in consciousness enough to meaningfully influence the properties of matter around us. By then, we will know what true balance means and can set about restoring it in the world."

We give thanks to William Tiller's important contributions, which provide an excellent formulation for a new science of consciousness. Perhaps the most powerful results will next come from combining the new models of the engineers with the theories of open physicists such as Amit Goswami.

The cosmology of consciousness

Some of these amazing experiments in consciousness can lead us to re-examine the universe in profoundly new ways. For example, we have Einstein's theory of Special Relativity. One prediction of this theory, which has been experimentally verified, is that the passage of time converges to zero when one approaches the speed of light. This phenomenon of time dilation gives rise to the famous "dock paradox" in which hypothetical travellers on a round trip from Earth into space at nearly the speed of light could return being younger than their own children. Decades may have passed on Earth while perhaps only months were clocked on board the spacecraft.

Based on this principle, author-scientist Peter Russell presented the following thought exercise in his recent book *A White Hole in Time*. (17) We all know, he said, that it takes nine minutes for us to receive light from the Sun because of the measured finite speed of light ($c=300$ million kilometres per second). But Russell

poses an intriguing and inevitable consequence of relativity when we change our perspective to that of light itself.

“As far as light is concerned,” he writes, “the moment it left the Sun is the same moment it arrived at my eye. From its perspective there is no time interval. This coincides exactly with my experience. The realm of consciousness and the realm of light would seem to share the same experience of now.”

In other words, if you are light, you are everywhere at once. As a particle of light you can travel from the Sun and instantaneously move through an Einsteinian curved universe to all locations like a ball of string. Any meaning to the idea of both time and space disappears, because the sunlight floods every point in the universe at the same time (from its point of view). The same is true of all light in the universe. As light, we have entered a new domain of reality.

Could the collective light of the sun and other energetic sources in our universe also be at every point in space at all times? Is this possibly related to the zero-point field? Could it be, the field itself is that light which is everywhere at once? Do we inhabit two realms simultaneously—the familiar space-time domain, and the less familiar one of consciousness and light? Or shall we call it a new dimension? Tiller’s model helps make all this magic more understandable.

My own hunch about the new directions of physics will include a good look at the heretofore-elusive zero-point field and its interaction with consciousness. Also we will need to further develop post-quantum theory, which deals with reconciling the observer effect, mind over matter, and relativity. As the concepts begin to fuse, they could possibly become the breeding ground for new technologies that might solve our most pressing problems of the environment.

Consciousness reaches across the board in the academic disciplines

In recent years academic philosophers and theologians, prodded on by the amazing results of quantum physics, have also taken a new look at consciousness. In a groundbreaking book *The Conscious Mind*, David Chalmers, a philosophy professor at the University of California Santa Cruz, argued cogently that the mystery of subjective self-awareness cannot be explained in its entirety by objective materialism. Consciousness, he says, needs to be reinserted into the practice of science and

philosophy. "It seems to me", he wrote, "that to ignore the problems of consciousness would be antiscientific... Materialism is a beautiful and compelling view of the world, but to account for consciousness, we have to go beyond the resources it provides."(18)

Chalmers opened his book with these key perceptions: "Consciousness is the biggest mystery. It may be the largest outstanding obstacle in our quest for a scientific understanding of the universe. The science of physics is not yet complete..." I would add to his remarks that the obstacle of consciousness perceived by the materialists can become an opportunity when we look at the impressive data coming in from the consciousness sciences I have mentioned in this chapter. Sometimes, mainstream scientists and philosophers can accept that only the well-established principles of quantum physics can lead to consciousness. This is because quantum physics has slowly gained general respect in academic circles, whereas parapsychology, the zero-point field, the Tiller results and other anomalous experiments are very young yet in the Western mind. But I am convinced that we shall see changes very soon, as the paradigm unfurls.

Chalmers is not alone in the conviction that consciousness deserves a closer look. Hundreds of scientists, theologians and philosophers gather each year in Tucson, Arizona, to discuss and debate consciousness. They have set up an interdisciplinary team to establish the *Journal of Consciousness Studies: Controversies in Science and the Humanities*. Contributors include the Nobel laureate Francis Crick, astrophysicist Roger Penrose, philosopher Ivan Illich and the late Willis Harman, former president of the Institute of Noetic Sciences. Many of the articles and papers reflect a materialistic bias, but we can see progress coming from many fronts.

I recently spoke at the International Conferences on Science and Consciousness in Albuquerque, New Mexico in April 1999 and April 2000. Other speakers included Peter Russell, Dean Radin, Jahn Hagelin, Brian Swimme, Edgar Mitchell, William Tiller, Stanley Krippner, Jeffrey Mishlove, Elisabet Sahtouris, Larry Dossey and many others. Over 500 people attended each conference.

We also have the philosophical field of metaphysics, with many pioneers appearing on the scene outside of mainstream academic circles. For more than a century, Alice Bailey, Manly Hall, Charles and Myrtle Filmore, Mary Baker Eddy, Ernest Holmes and many others have established what later became large organizations dedicated to the study and practice of consciousness and the healing power of prayer. Included are the Philosophical Research Society, the Theosophical Society, Unity Churches, Churches of Religious Science, the International Institute of Inte-

gral Human Sciences, the California Institute of Integral Studies, and the Sivananda yoga ashrams. Several academic philosophers are also involved in the new sciences, including Stanley McDaniel, Michael Zimmerman and Michael Grosso. Eastern philosophers, mystics, yogis and shamans have known about consciousness for a very long time. Perhaps the most significant contributions have come during the early twentieth century by the Indian philosopher Sri Aurobindo.

Since the time of Carl Jung, consciousness has also been the cornerstone of many innovators coming from the discipline of psychology: J.B. Rhine, Stanley Krippner, Stanley Grof, Ram Das, Russell Targ, William Roll, Bernard Grad, Robert Morris, Erlandur Hearaldsson, Lee Pulos, Charles Tart, Jeffrey Mishlove, Brenda Dunne, Ken Ring, Dick Bierman and Dean Radin, to mention just a few, whose work is reported widely here and elsewhere. Consciousness has become a cornerstone for psychiatrists John Mack, Brian Weiss, and the late Timothy Leary.

Towards a new science of consciousness

A number of organizations of new scientist ^ have emerged over the past two decades to focus on consciousness as their central theme: the Institute of Noetic Sciences, the International Association for New Science, the American and Japanese Psychotronics Institutes, the Society for Scientific Exploration, the Scientific and Medical Network in Europe, and many others. Several outstanding publications have come out of these organizations. Probably the most prominent is the peer-reviewed *Journal of Scientific Exploration*, which has published many of the results described in this chapter.

Several other experiments also point to the reality of consciousness. We have seen that healing with the mind, communicating with the dead and other beings, past-lifetime recall, near-death experience and UFO studies give clear indications that the energy fields of consciousness are very real and are not necessarily respecters of space and time. Consciousness is also an important factor in all living systems. For example, we have Cleve Backster's astounding data on telepathy and bio-communications (1); Rupert Sheldrake's experiments on various species showing interspecies communications that cannot be explained entirely by heredity and the environment (19); and the miraculous healings many individuals have reported widely in the literature. All of life seems to possess energy fields of consciousness that transcend time and space.

The recent stunning developments in defining the human genome reveal a mysterious complexity in the molecular structure of all life. The human bodybuilding genetic code comprises only about one per cent of the total. At a molecular level, there seems to be nothing special about being human: even the chromosomes for pigs, plants and yeast are almost as complex as ours. This result is very humbling for our anthropocentric selves, and is consistent with Backster's experiments that plants and yeast and humans alike show electrical activity in response to human intention.

The DNA molecule itself might act as a transducer for consciousness (3, 20), perhaps explaining some of the unknown function of the genetic code. Also some of the DNA strands include signs of mutations within ancestors. Many portions of the genome have unknown origins, which could conceivably include historical mutations from genetic manipulations by extraterrestrial beings. We might be able to test the hypothesis that alien visitors have occasionally been crossbreeding with humans. Perhaps we may have descended from more than apes, a vexing thought for mainstream geneticists already puzzled with the genome results.

The paradigm shift towards an age of consciousness doesn't end with physics and biology. Chemistry is also in for an overhaul, with the revising of the ancient art of alchemy. Cold-fusion technology might be used to transmute elements at room temperature. This will enable us to remedied radioactive and other toxic wastes. Nine American patents have already been granted to inventor James Patterson to begin the task of detoxifying our chemical environment.

Earth science could also be in for a big change. We are beginning to understand that the Earth might behave as a super organism, who's unified complexity, intelligence, and level of self-organizing cooperation rivals those of the human body itself. (1,21) This new paradigm of a living, conscious planet might help us decipher the enigma of global warming and climate change, diagnosed perhaps as a worldwide fever. The tools of consciousness could be at the forefront of our goal of moving towards a sustainable environment. "The idea of the world as an organism has been called the Gaia hypothesis", writes Radin, "named after the mythical Greek goddess of the earth. Do field-consciousness effects suggest that there may be a mind of Gaia?"

"...under exceptional circumstances-during worldwide, live television broadcasts, for instance-when many minds are focussed on the same object, unbeknownst to us a grand alignment occurs. During these brief, shining moments, the billions

of individually glittering minds reassemble into a whole, and the unity of Gaia's mind becomes brilliantly manifest. At such uncommon times (but becoming more common every day), Gaia in effect awakens, and we see this reflected in our random systems because they suddenly start behaving in statistically unexpected ways."(II) Our coming together as newly enlightened beings could lead to planetary healings. After all, our connected consciousness makes us one and the same.

The coining consciousness revolution

I am convinced that consciousness science will allow us to solve our deepest environmental challenges in elegant new ways. For example, we might be able to clean up our waterways through our intention. Our work has barely begun, but a direction is there. We may soon be able to examine the symbiotic relationship between energy coming from the zero point field, consciousness and group intention. I invite you and interested colleagues to contribute your insights into these most important experiments as the vision of a new science of consciousness unfolds. One great advantage of proceeding this way is that we don't need to build multibillion-dollar particle accelerators, space probes, guided missiles, atomic warheads and power plants, orbiting telescopes or fusion reactors to do consciousness science. Many of the experiments and concepts are simple enough for an informed layperson to address.

Acknowledging and studying the zero-point field, quantum and psychic interactions-which may be the source for understanding the genesis of free energy, gravity and consciousness-is an action akin to placing the sun in the center of the solar system. The epicycles (the analogue to materialism) begin to disappear. They vanished entirely when later refinements such as Kepler's and Newton's Laws were brought forward.

Likewise, the current discoveries inevitably lead to a revolution in the sciences that will spread quickly. Combining these fresh ideas along with some others now budding can bring us into the new scientific paradigm of consciousness and the ZPF . Perhaps this is the Consciousness Revolution. So here is the next step to re-inherit the Earth: *Create and support a new science of consciousness.*

The miracles of today will become the commonplace science of tomorrow. Maybe we can all become empowered to extract energy and matter from the void. These

activities could bring us into a transcendent dimension which only awaits our acknowledgement and exploration. We may then be able to learn to resurrect ourselves from a mortal and finite existence. Then we will become more fully conscious of our place in a universe made alive and connected with who we are, and in the process, learn how special all life on Earth is. This is what the new paradigm is about-transcending our self-imposed imprisonment by materialism, determinism and reductionism. We need to look at all this in light of the challenges of the twenty-first century.

I said in the conclusion of *Miracle in the Void*, “the current discoveries inevitably lead to a revolution in the sciences which will spread quickly. Combining these new ideas along with some others now budding, is bringing us into the new paradigm, into refining our understanding of consciousness and the ZPF. Perhaps this is the Consciousness Revolution....”

“The miracle in the void is that we can all empower ourselves to create beautiful new worlds, magnificent new universes. When we begin to resonate with the majestic and ubiquitous reservoir of pre-energy and pre-matter in the zero-point field, we will all become healers, clairvoyants and magicians. We can at least have peace, harmony, love and joy. Science is telling us that clearly, based on irrefutable experimental, theoretical and personal evidence. I invite you to trust the process and to walk with me through the visible into the invisible.” (3)

Perhaps we can now envision a sustainable future in which a blend of consciousness and common sense is creating powerful and benign new technologies whose time has come. But we are going to have to support the science of consciousness, hopefully through public participation. This field is now in its infancy, but may we hope it will grow rapidly once the research moves ahead. We don't only need a Los Alamos for new energy, we shall need to create a new Apollo program for consciousness science.

The successes of consciousness medicine set an example as the first multibillion-dollar industry using the tools of consciousness. Great strides have been made in remote healing that is not only paying off; they provide the perfect role model for healing the Earth. It would not be out of the question that we could end pollution and ensure a sustainable future simply through the focussed intentions of groups of people.

We are in a global spiritual crisis, which demands that we remove our veils of denial and enter a new science of consciousness, exploring our potential to heal, our eternal nature, and our membership in a cosmic community of sentient beings.

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