



## **DANCE OF THE CELLS: PARADIGMS AND QUANTUM SHIFTS**

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### **ABSTRACT**

I introduce a paradigm shift for scientific self-awareness, and take a radically different perspective on the cell - one that recognizes the inter-penetration of physical and metaphysical properties. The flaws in our present paradigm are exposed, as it has its basis in separation. I appeal to the authority of the Diamond Sutra, where the Buddha mapped reality as a paradigm of interconnectedness, of Interbeing – not of separation. These understandings are applied to the cellular dance. Physical and metaphysical properties are enfolded in a more inclusive medical model than is presently accepted by medical science. This is applied to the activity of retroviruses in the cell, and to the key provided by meditation to raise the vibrational frequency of cellular templates and boost the immune system. These considerations have a place in current medical research on AIDS, provided that medical scientists can step into an inclusive paradigm – one that has physical and metaphysical components.

### **Paradigms, Distortion and Awareness**

I discuss the limitations and constraints of modern science, to set the stage for the study of the inter-penetration of physical and metaphysical properties of matter. This understanding is applied to a radically different perspective on the cell, so that we may understand our consciousness from the standpoint of a different paradigm. Throughout the discussion there is an emphasis on meditation practice to encourage scientific endeavor to shift into a more comprehensive level of understanding.

Paradigms are slippery concepts because at one and the same time they provide a blueprint for knowledge, yet limit our perceptions of anything that may fall outside of that blueprint. In examining any reality a scientist deletes from, or adds to, that reality depending on bias produced by particular cultural conditioning and education. Different levels of distortion are added to the scientist's perceptual field, making it necessary for methodology to provide controls and checks. Yet much of the methodology employed in

science is a collectively agreed upon set of biases that are considered acceptable to the scientific community. Thus scientific investigation proceeds on the basis of agreements about what science is to do, who it serves, and what is to be done with the results. There are vested interests that seek to define scientific endeavor within a framework that has very little to do with a search for truth, or an examination of reality as it is. Part of the scientific community then proceeds on the basis of agreements that stem from the control evoked by powerful vested interests, which is why so many scientists are prevented from telling the truth, as they are in thrall of the governments and corporations that employ them. These agreements provide obstacles to knowing reality as it is, yet sooner or later these shibboleths disintegrate because science as constituted, cannot explain the increasing number of events that are conveniently labeled as anomalous (Young and Goulet 1994). As Kuhn points out (1970), this sets the stage for a scientific revolution that will be severely resisted by the "established," yet unsatisfactory code of knowledge presently in place. The business of paradigm shift is a messy process and I intend to stir these waters by putting scientific and contemplative traditions together, in order to arrive at a more conceptually accurate level of explanation.

New ideas involve change, creating uncertainty and disruption. It comes as no surprise that they are usually considered as dangerous, and are strenuously resisted. The classic example comes from the Middle Ages, when church and state were so antagonized by Galileo's ideas that he was threatened with torture and imprisonment. He was forced to publicly retract his views, based on meticulous observations, that it was the sun, not the earth that was the center of planetary movements. Church and state authorities at that time held to a different paradigm about the earth's primacy, and were powerful enough to force Galileo to recant. They operated with a particular set of rules and regulations about acceptable knowledge. Galileo's views lay beyond their conceptual and empirical boundaries, so he had to be suppressed, otherwise church and state authority would be undermined.

Paradigms influence how we see and understand the world because they act as filters, screening the data that comes into our minds. New paradigms are fiercely resisted in order that pre-existing power structures can be maintained. This is as much the case

with modern science as it was for the medieval church and state. In science, data that agrees with the scientist's paradigm is easily accepted, but data that does not fit the dominant paradigm, derived from state or corporate ideology, is often overlooked or rejected. Paradigms dramatically and powerfully affect our judgments, because they influence and distort our perceptions. We see what we are supposed to see. Paradigms are common facts of life in science and religion, indeed in life in general. They are a useful focus for attention, but when alternatives are rejected out of hand and a paradigm becomes THE PARADIGM, we enter the terminal disease of certainty. What then arises is a form of paradigm paralysis that supports the emergence of the Hitlers of this world, with variations of the paradigm of Aryan superiority. Heisenberg warned against this in the 1920's with his "Principle of Uncertainty".

Thomas Kuhn noted that the people who create new paradigms are often outsiders, not part of the paradigm community, therefore they have nothing to lose - new rules are almost always written at the edge. When paradigm paralysis becomes terminal, that is a sign that one can choose to change the rules and regulations and see the world anew, and exercise the option of breaking down perceptual screens by expanding awareness. Once this happens, and a paradigm shifts, different questions are asked and different solutions to problems are created. This is happening in a dramatic way in quantum physics, where the current research on subatomic particles is promoting a worldview that is closely related to the views of mystics of all ages and traditions (Capra 1979; 1983). This has become known as the new physics.

*The fact that all particles can be transformed into other particles shows us very vividly that the constituents of matter do not exist as isolated entities but as integral parts of an inseparable network of interactions. The whole universe is thus engaged in endless motion and activity - in a rhythmic dance of creation and destruction .....*

*The eastern mystics have a dynamic view of the universe similar to that of modern physics, and consequently it is not surprising that they, too, have used the image of the dance to convey their intuition of nature. The metaphor of the cosmic dance has found, perhaps, its most beautiful expression in Hinduism in the image of the Dancing God Shiva. According to Hindu belief all life is part of a great rhythmic process of creation and destruction, of death and rebirth, and Shiva's dance symbolizes this eternal life-death rhythm which goes on in endless cycles.*

*For the modern physicist, the dance of Shiva is the dance of subatomic matter. As in Hindu mythology, it is a continual dance of creation and destruction involving the whole cosmos; the basis of all existence and of all natural phenomena. (Capra 1979:65)*

Despite what is going on in the new physics, the overarching conception of science does not recognize that our perceptions and cognitions are intricately intertwined with a consciousness that includes ourselves, the planet, and the universe. The perspective I take favors a rethinking about the nature of these multiple realities, and regards human consciousness as the connecting link between levels of correspondence that are presently kept separate in our minds and conceptions. Science is actually a beautiful creative choreography, if we can only begin to understand and appreciate it from a different point of view

### **New and Old Science**

My discussion of science is from the perspective of paradigm shift, of expanding awareness to the extent that bias and distortion can be radically reduced. This involves a transgression across established boundaries, and I do this to emphasize the importance of a metaphysical component in general, and to focus on meditation practice in particular. We must be prepared to continually re-examine and expand conceptual boundaries. This entails breaking down the perceptual screens that conditioning, education and training have put in place, as the major way to overcome distortion is to expand awareness, and one way we can do that is through meditation. I talk about science from this perspective, then talk about the dance of the cells to support my contentions.

Science is an engagement in a conceptual dance, whereby the observer's perceptions continually evolve and are re-sculpted as her level of awareness begins to expand. When the subject-observer begins to recognize the importance of self-awareness in the journey toward scientific and conceptual discovery, the groundwork is laid for a quantum leap into a new foundation from which science and civilization may then progress. The present scientific paradigm inherited from Descartes, refined through Newton and implemented through the Vienna school of positivism, often abandons the

relevance of the interactive nature of the subject-object relationship (Prattis 1997). This oversight was pointed out long ago in 1938, when the atomic physicist Niels Bohr addressed the International Congress of Anthropological Sciences at Elsinore, Denmark. In the setting for Shakespeare's *Hamlet* he raised the question of what kind of knowledge we produce when our descriptions of atoms, nature and social behavior are connected to the biases, conditioning and perceptual blinkers of the observer, and the measuring instruments used by that blinkered observer.

The new conceptual cutting edges explored by Bohm (astronomy), Wheeler and Zurek (physics), Sheldrake (biology) and Capra (new science) – have in common the notion that science cannot evolve until scientists have the capacity to be reflexive, self-aware and recognize the part played by their consciousness in the scientific endeavor. In a fascinating discourse on Swedenborg's scientific views, Ursula Groll (2000) relates his scientific thought to the contemporary inquiry into the interface between science and spirituality. Swedenborg anticipates much of the debate in current new paradigm thought, particularly with reference to what I call levels of correspondence, and the role of human consciousness as the mirror and connector of levels.

In contrast, the logic and ethics of the current positivist paradigm, that underlies global civilization, has its basis in separation of mind from body, spirit and other phenomena. This paradigm examines realities as though they are discrete, independent and separate, encouraging a world view that is totally compartmentalized. This paradigm is deeply flawed and must be replaced. A glance at our global ecosystem demonstrates that the reality of interconnectedness is the pervading paradigm, no matter how much the logic of the positivist paradigm may deny it. The positivist paradigm rests on an impossible logic, which was exposed with great vigor in the 1930's when scholars such as Godel (1931), Turing (1937) and Tarski (1956) demonstrated the incompleteness of the mathematical axiomatic model, which is the schematic basis for the entire positivist philosophy of understanding reality. They demonstrated that mathematics and numbers are a language system with tendencies of ambiguity, and concluded that there cannot be an account of reality in a closed and separate system or language. They were talking about the axiom of Interbeing, although their treatises did not use that term.

In science the endeavors of these intellectual giants have been ignored, perhaps because they so dramatically exposed the flaws of our current paradigm. The result has been the production of generations of students who have been kept in ignorance about the nature of the paradigm they now perpetuate, simply because their teachers were unaware. The current generation of scientists maintains an uneasy separation between the science that they practice and the realities of the world around them. The issues raised by this ignorance include the implications for clarity and truth within perceptual accuracy, and the level of self-awareness of the observer in the scientific process of investigation. The Buddha proposed an alternative paradigm twenty six hundred years ago. In the Diamond Sutra he carefully mapped the reality of interconnectedness, and the impossibility of a separate sense of self. Thay Nhat Hanh refers to this as Interbeing. This is the necessary connection between science and consciousness, and will be further elaborated upon later in this essay.

Observation is an interactive engagement that influences the feedback loop between subject and object, self and other. The relationship created links the observer to the observed, and co-determines the "reality" that emerges from their engagement. One requires clarity about what constitutes Truth in perception. Lack of clarity produces constraints on perception, which become further compounded when projected out and placed upon the object of study. Scientists must be clear in recognizing the influence of their own culture, ideology and discipline before too much can be said of that which is observed, as the scientist's personal level of self-awareness, personal history and conditioning underlie the foundation for how science is conducted (Prattis 1997).

The separation between subject and object is an extension and projection of the separation that exists within the scientist. Such separation is encouraged by the Cartesian paradigm that separates body, mind and spirit, while emphasizing and defining mechanistic priorities of investigation for all levels of natural phenomena. The paradigm of separation places limitations on scientific investigation, and needs to be enhanced by the conceptual re-integration of body, mind and spirit through an emphasis on the reflective self-awareness of the subject, as a starting point in scientific inquiry. It is necessary for scientists to

recognize and resolve personal internal patterns of separation so that science in general may take a quantum leap into a more conceptually accurate foundation of inquiry.

Separation between the scientific and reflective domains is relatively new in the history of humankind. Several thousand years ago it was assumed that the physical and metaphysical interpenetrated at many different levels, and it was impossible to understand one without the other (Campbell 1986). The positivist revolution in rationality vigorously separated these domains of comprehension, producing an incomplete understanding of science on the one hand, and a total denigration of all that a contemplative tradition had to offer on the other. This was illusory, for the domains of science and contemplation are complementary, particularly as the latter induces detachment from observation in order that reflexivity enters inquiry as self-awareness.

This is the major shortcoming of science at present, as the perceptual mind-state of the observer in science is a random variable in the conduct of inquiry. Many scientists do not realize that the subject-object disjunction, that underlies their methods of inquiry, precisely describes their state of awareness. Thus the instrument of observing, mapping and reporting is highly random in an enterprise that prides itself on rigor. The rigor of the contemplative tradition assumes that through the discipline of meditation, the perceptual-cognitive apparatus of the observer evolves to an awareness of multiple dimensions of reality, and that phenomena and events exist as interconnected levels of correspondence. As the individual evolves through different levels of awareness, pattern, order and connection change, simply because the apparatus doing the perceiving, the human mind, has also changed in moving to a higher level of consciousness (Iyengar 1966; Borysenko 1994). Modern science is by and large on the bottom rung of this ladder of reflective self-awareness, whereas individuals who are disciplined in a contemplative tradition are sitting on the top of the ladder with a clear view of all the preceding rungs and steps. They await the appearance of the next ladder, at which time their present awareness will constitute the bottom most rung.

In the contemplative traditions this is what meditation techniques are designed to do, in a rigorous and progressive manner. The particular steps, techniques and sequences of meditation provide one's awareness with a boost up the ladder of perceptual accuracy, so

that current levels of conscious awareness are transcended and one comes closer to perceiving reality as it ultimately is. The major stumbling blocks to this progression are the biases, distortions, and perceptual barriers to our understanding the multidimensional and interconnected nature of reality. To overcome this obstacle requires the recognition of internal barriers to one's own perceptual clarity, so that one may more readily see things as they are. An analogy with superconductors in physics may be useful. When there is no resistance in the conduction of information or energy, a quantum leap in the quality and quantity of what is being communicated takes place. This analogy implies that the next step in human and scientific evolution requires the removal of internal resistance, so that higher levels of conscious awareness and perceptual clarity may be achieved, both within oneself and science. As one experiences and integrates higher levels of conscious awareness, radically different kinds of perceptions and understandings are possible. This direction for the nature of research has the potential to move one's reflexive self-awareness through to a resistance-free communication system with others, all within the domain of a higher order of knowledge. However, one must be aware of first steps. How does one remove these internal barriers?

### **Breath, Focus and Meditation**

The first step is through concentration on breath, with focus and visualization, in meditation. Meditation is often described as the space between thoughts, yet there is much more to it than that. Associated with meditation is a focus on form, color, sound, movement or symbol, which precisely keys in to an individual's level of awareness. In this way the tools associated with meditation can be applied to taking the next step up the ladder of consciousness. The form and structure of meditation varies according to particular personality preferences, cultural prescriptions and individual levels of awareness, yet the process of movement from one level of awareness to a yet higher level is universal. The propelling vehicle for movement is meditation in its many forms, for through this diversity a unitary process emerges, a common human experience of stillness.

Throughout one's journey to stillness there is an important constant of focus. It is the *conscious* focus through breath to integrate mind, body and soul, and this can be

visualized in many different ways. At different stages the focus is on particular meditation sequences, at yet other stages it may well be upon symbols, chants, mantra, mandalas, visualizations or sacred dance. The symbolic forms and sequences are designed to cut through one's mental clutter and bodily agitation, in order that the meditative focus penetrates to deeper and more integrative levels of consciousness. As thought, phenomena and other distractions arise in meditation one simply returns to the symbolic focus of the meditation, to once more cut through mental clutter and bodily agitation. Without a focus, through conscious breathing, there is a fragmentation of experience. So one emerges through form and structure in meditation - variously expressed in different traditions - to integration through breath.

### **Synchronicity and Levels of Correspondence**

In the scientist's struggle to understand general laws and principles it is often paradoxical to find that the bigger picture, once it is revealed, turns out to be a simple and straightforward equation. The bigger picture includes everything - the Universe, the earth, humankind, animals, plants and the cell - and connects each of these elements into one interrelated system. The procedure to study the interconnectedness of each component is not by starting with the object of study, but by starting with the subject doing the studying. As scientific method moves to include the scientist's self-awareness as an integral part of inquiry, the implications for an exponential leap in discovery are elicited and revealed, together with a higher understanding of both subject and object. The exponential rate of discovery is balanced out as the object of study, and the subject doing the study, move toward a different order of inquiry into both subject and object. It is those scientists who are involved in the practice of internal discovery who will extend the foundations of scientific inquiry beyond present parameters. Indeed, the procedure to study the interconnectedness of all phenomena starts with individual responsibility for self-awareness, and continues with what that awareness leads to. The enormous exponential power of this consideration has wider implications. It is that individuals in their own right can make a difference to science, civilization, the planet and human evolution by simply taking responsibility for their own internal journey.

The implications of science as synchronicity are astonishing. First, there is a fundamental axiom about the necessary conjointness of the metaphysical with the physical. Secondly, this conjointness is expressed holographically on multiple levels that are interconnected. "Holographic" refers to the communication of a total energy event, whereby each part of the event is encoded within the structure of the whole (Grof 1993; Wilber 1985). An identical structure is found on corresponding levels - the Universe, the planet, the human brain, body, cell and subatomic particles. The task for science is the exploration of the intricate systems of connection that enfold these multiple levels of correspondence into one comprehensible system. This is why science must be aware of the largest possible set of correspondences, rather than reduce the material of study to the smallest set of elements. This is the implicate order of explicate phenomena (Bohm 1980).

This approach may enable the human brain, which currently operates in fragmentation within the limits of specialization, to be entrained to function as a whole holographic energy event, placing all levels of phenomena within one synchronistic system (Wilber 1985). Thus the physical and metaphysical may be seen as mirrors for one another, in that they have identical structures with different manifestations. The holographic paradigm that entertains this perspective does not have correlates within standard notions of time and space. Thus mythology is invited onto the center stage of inquiry, as it is not restricted to time and space constraints (Campbell 1968; Noel 1990). The microcosm-macrocosm series of linkages from cell to body, body to planet, planet to cosmos is programmed into countless mythologies, that view the Universe as a living body fashioned from cellular structure. As an industrialized civilization imbued with a particular scientific paradigm, we are dimly aware of this documentation encoding synchronicity with mythology. The current scientific worldview is unrelated to any sense of mythology - personal or collective. It is based on the conditioned brain reproducing specialization and separation. The essence of being human calls for something different, so that science does not lose sight of the quest for the harmony enfolding multiple levels of correspondence.

This is what science as synchronicity is all about. The creative spiral of the intuitive leap and disciplined research process, brings unity into practices that currently remain separate - the mystical and the scientific. They are in fact complementary, for they

investigate the same material - the fundamental properties of matter. The connecting intricacies between levels of correspondence may be unraveled in the stillness experienced in meditation. This discipline is inescapable, and is part of an unfolding implicate order that could lead the sage and the scientist to similar conclusions (Weber 1985).

The basic structure of matter unfolds through the connections instituted by conscious breath. The investigation of meditation is into the deepening relationship between one's awareness and one's inner consciousness, and connecting this to the bigger Universal picture. This is the fundamental relationship of matter, and as this understanding changes and evolves, then so does one's understanding of cellular material and interplanetary structure. The deepening knowledge of how energy works with breath in meditation, and how it connects to cellular information, reveals the template of the fundamental relationships of matter that are replicated in multiple dimensions. The primary investigation is an internal one and the premise of investigation is very simple - physical and metaphysical, internal and external, are levels of correspondence that reflect one another.

### **The Cellular Dance**

I think of cellular activity as a dance, with a master choreographer at the center - the cellular nucleus. The cellular nucleus orchestrates how all the parts contribute to the whole. The purpose of this dance is to provide the body with a continual source of energy for cell regeneration and reproduction, so that the body remains healthy and vital. In the process of the cellular dance, genetic information is released and new cellular form takes shape. The dimensions of this cellular form are best understood as having both physical and metaphysical properties.

"The mind in the cell" and "the soul in the cell". These phrases appear in much contemporary literature on religious philosophy (Chopra 1991; Dossey 1992). What do they mean? A metaphysical explanation views the cell as having more than just physical properties. Intrinsic within each of us lies the capacity and potential to draw from inner consciousness an innate wisdom and knowledge that may guide us throughout life. The cell may be seen as the holder of the knowledge and wisdom, deep within, that serves one's

mind - i.e. cellular memory. Furthermore, it is the source through which the soul may guide us toward fulfilling our unique potential as one learns to "listen" to what one's body is saying through the cell - body - mind communication system.

Our cells remember everything – our history, life experiences, disasters and joys, in addition to remembering the entire evolution of our species. All of this information is replicated within our physical bodies. Our cells are intelligent and highly self-sufficient in their ability to repair and renew themselves, but we load them with toxic nutriment, permit environmental and other damage to our DNA, so that the process of cell renewal becomes short-circuited. If we realize that all this information is replicated at cell division, we have to think seriously about taking better care of our cells. Cleansing cellular memories is an important process of renewal, and meditation provides a different mental impulse to the program of renovating cellular memory, one that enables us to deal in the present with the negativity and damage we have loaded into our cells in the past. A quantum leap in consciousness is required for this, and the movement from ego-attachment to heart consciousness is the primary catalyst.

Our mind exerts a very significant influence on all bodily processes, and if we wish to bring our mind into a state of balance to create better health, we have to turn inwards and address the state of our consciousness. Meditation and silence are the key. Deepak Chopra provides a wonderful exposition of the cellular dance and its relationship to health and aging in his book *Ageless Body, Timeless Mind*. He shows how very efficient the cell is at self-repair. Yet at the same time we cause more damage to it than is repairable, with all the garbage we download into it, and also with the suffering we retain from our ancestors. It is not possible to separate considerations of the cell from considerations of consciousness. The way in which we think and feel – in other words how we exercise our consciousness – directly impacts the cell. It is evident that we have altered the make up of our cells through generations in a very negative way. Can we alter it in a positive way? I believe we can.

We must first realize that there is precision and orderliness within the cell that directly responds to our state of consciousness, and it is this latter intelligence that talks to itself in the cell. Dr. Candace Pert discovered in 1972 an information network of peptides in the body, which connect to specific receptors located on the surface of cells. The release

of peptides is triggered by emotions and attitudes that place cellular activity in a state of imbalance, which often brings about illness. She explores this in her book *Molecules of Emotion* published in 1997. Her focus is on what the mind can do for health. Further research at the University of Massachusetts Medical School demonstrates that post-operative recovery and healing were greatly enhanced for patients who meditated. These results may be found in the 1998 *Journal of Psychosomatic Medicine*. The quality of our consciousness affects everything, from our fertility to our predisposition to come down with different kinds of diseases. Scores of recent studies over the past decade show that there is a common denominator in terms of balance and health. People who have an internal focus through meditation cause less damage to their cells, enable cell rejuvenation to accelerate and enjoy greater health through their attention to their state of consciousness. This is no longer a dubious spiritual claim for health, as recent editions of *Lancet*, *The Journal of the American Medical Association*, and many other publications attest to the scientific credibility of these claims.

When stress is reduced through a process of calming the mind and the body through meditative practice, our perceptions and consciousness shift, with the result that the RNA in our cells produce fewer stress hormones (Chopra 1993, 224). It would seem that a remarkably simple solution exists – if you increase your inner awareness then you change your attitudes and emotions, thereby sending a different message to your cells, one that supports cell regeneration and removes toxic cellular memories. Thus we are enabled to feel nourished from within because we have taken steps to tackle malnutrition, both physical and spiritual, at the cellular level. Meditation, pranayama, yoga and qi-gong exercises, to mention only a few practices, produce calm throughout the body and mind. This nurtures our cells' capacities to renew and regenerate, as cellular energy is not expended on dealing with the activation of stress hormones. When I talk about the cells of our body, I am also talking about the cells of our consciousness. Everything is within us, and we can deal with all that afflicts us in our body and in our soul, by travelling deep within and taking care of ourselves. We can do this through meditation, which enables us to deeply heal ourselves. We have it all within - including the tools to deal with whatever

damages us. We just have to remove our ignorance about this reality and follow Thay Nhat Hanh's advice:

*Light up the lamp of mindfulness and the light will shine out and the darkness will cease, will dissipate.*

We have also transmitted to our cellular memory, through our evolutionary history, the wisdom of awakened understanding, only we have forgotten all about this power that also resides within us. This is the lamp we must learn to light up.

It is necessary to consider the physical properties of the cell, to see how the metaphysical and physical aspects work together as one integrated system. We need to understand how energy moves proteins, enzymes and molecules from one part of the cell to another. This is an essential component in comprehending the working of the bigger integrative system - physical and metaphysical. To fully appreciate the cellular dance of evolution our perspective on the cell must change so that different answers can emerge to questions about cellular activity. Questions like "How does the mind influence the body's cellular activity?" "How is cellular activity either mobilized or exhausted?" "What triggers protein activity to move information bearing molecules from one part of the cell to another?" and "What activates the genetic information that puts enzymes to work repairing cellular damage?"

A first step toward answering these questions is to consider the cell's activity from a different perspective - that of the molecular level. Instead of seeing the cell as a minute part of the physical organism, the molecule's eye-view would be that of a vast array of different cross cutting transport systems, that operate independently of one another. The cell would appear to be like a modern city with bus, railway, rapid transit and underground systems. Taxis, trucks, skytrains, helicopters, escalators, hovercrafts, boats and even hot air balloons complete the analogy. All of these transport systems are there to move energy around this vast city, from one part of the cell to another. However, in the cellular city things are highly discrete. Not all of the transport systems are available to take all molecules and enzymes from one part of the cell to another. Different systems of connection come into operation only when particular proteins are ignited to provide both the vehicle, and the commuter pathway, for particular information bearing molecular

passengers to get on board. In other words, particular types of transport system are only appropriate for particular types of molecules. There is a series of transport systems in the cellular city that lie dormant. This implies that there are many molecules that are not transported from one part of the cell to other parts. Specific areas of the cell are underused, and information is not moved to where it may otherwise activate cellular templates. A.T.P. (adenosine triphosphate) is the super unleaded gas of the cell, and it too must be activated and burned off to provide the high grade fuel to set hundreds of different transport systems into motion.

The transport analogy goes only so far in helping to map the nature of cellular activity. This initial understanding is a stepping stone to seeing the cell as a multidimensional series of transport systems, activated by proteins and enzymes so that information is moved from one part of the cell to another. Everything is connected to a central nucleus. The cellular nucleus co-ordinates and directs the cellular dance within the body. It has the job of organizing genetic information so that proper reproduction takes place. It organizes a highly complex internal energy system and also responds to externally introduced energy. However, this central conductor does not always have a full orchestra to play with, as particular transport systems and connections are not wired in to commands that permit the cell to operate at its maximum potential. It is as though half the violin section is missing and the trombones do not come in on time.

So there are great puzzles to unravel about the remarkable activity that takes place within the cell. This is particularly apparent in the way the cellular nucleus organizes repair work to damaged D.N.A. (Fiess 1989) (D.N.A. - deoxyribonucleic acid is the molecular basis of heredity and evolution. At cell division the double helix of D.N.A. opens up with half of the helix going to each new cell, so that the stored genetic information is transmitted to the next generation of cells). Environmental hazards such as ultraviolet light and radiation damage D.N.A. Yet at the same time a response is triggered from the cellular nucleus to repair the damage in complex and highly efficient ways. (Fiess 1989) Certain enzymes become activated and remove damaged sections of D.N.A. for repair, while other enzymes knit the D.N.A. structure back together. There are genes that regulate the repair functions of D.N.A., and the genetic repair instructions are activated by

environmental damage. Unrepaired damage to D.N.A. interferes with the proper reproduction and release of genetic information, and results in malfunctioning and mutant cells that are instigators of disease. In some individuals the cellular nucleus is unable to activate the repair enzymes, and mutant information is passed on to the next cell generation. This leads to a number of questions. "How is it that cellular repair is activated in some individuals and not others?" "Why are there latent, inactive parts of the cell?" "Can enzymes that repair D.N.A. damage be activated through externally introduced energy?"

The answer to these questions, and questions like them, cannot be fully addressed from the physical level of biology alone, so a metaphysical level must be entertained. The dimension that I think is most pertinent is the conscious use of breath, visualization and symbolic focus in meditation. One effect of conscious breathing is to accelerate the natural functions of the cell and boost the movement of molecules aboard proteins - this enhances what already takes place. The multidimensional levels involved place the cellular nucleus at the core of this synchronistic connection. Synchronicity implies that the structure of the Universe is replicated in many domains - on the planet, in the body, in mythology as it emerges as stories from our unconscious, and finally as a structure imprinted at the cellular level. The question then arises as to how one may access these different information systems connected in multiple layers around the cellular nucleus. Herein enters the passage of mind, i.e. human awareness. Balanced synchronicity between levels occurs when the soul in the cell, the entire Universal structure encased at the cellular level, meets one's mind. We become aware of the connection, and this is facilitated through the experience of stillness in meditation. The mind in the cell and the soul in the cell is a meeting place that each one of us is uniquely ordained to enjoy, yet there is so much blocking this appointment that the meeting is often permanently postponed.

The integration with one's soul in the cell takes one to deeper levels of awareness of cellular knowledge, for herein dwells the inner consciousness I have referred to. Passage to this boundless reality of being is, however, cluttered with debris from genetic heritage, conditioning and karma. These dimensions are real, they have vibrational frequencies of

energy that structure molecular strands within the cell so they are responsive to the energy of afflictive emotions such as anger, fear and desire. It is all laid out in the cell:

- (1) the molecular patterns that take energy towards entropy and
- (2) the connector highways that allow afflictive emotions to activate these same patterns.

When these patterns and connections are put together, roadblocks are created that deny the passage of one's awareness to inner consciousness. The purpose of meditation and the cultivation of a clear mind are to remove the blocks and cellular strands of information, that pertain to the creation of entropy, negativity and chaos. Different forms of focus within meditation are tonal designs, or vibrational frequencies, that correspond to a "deconstruct" program, which attacks the tonal designs of entropic molecular strands built into the cell. The delicate surgery of removal and reversal of debris requires precision, for the vibrational frequencies inherent in a particular symbolic sequence can only go to work on particular molecular strands. The key is conscious breath and visualization as the means to deliver tonal chords to the cell in order to deconstruct particular molecular patterns that are embedded there. The attention to detail within the meditational sequence is important. Even more important is the foundation of stillness that allows the surgery of deconstruction to take place. What is involved here is a paradigm shift to a more inclusive medical model than is presently accepted by medical science. (Lerner 1994; Dossey 1995; Chopra 1993; Moyers 1995; Rossi 1986)

My argument about the conjunction between the cell's physical and metaphysical properties may become clear through examining the effects of viruses on the cell, particularly the activities of retroviruses. Retroviruses have the ability to convert their R.N.A. to D.N.A. in cells they have entered, and place the manufactured D.N.A. into a chromosome of the host cell and then direct the synthesis and reproduction of viral proteins (Verma 1990; Scott 1987). These properties of genetic adaptability and conversion need to be understood, so that one may formulate a solution that prevents viral information being introduced to the human cell; otherwise this information is reproduced at cell division and multiplies throughout the body. The retrovirus gains entry to the human cell by keying on to a protein on the coat of the human cell, and delivers viral information to the host cell's cytoplasm. This information is embodied in a strand of the virus's R.N.A. whereas the host

cell's genetic instructions are carried in D.N.A. Viral enzymes known as reverse transcriptase convert the viral R.N.A. to a strand of D.N.A., and help to fit that D.N.A. into the genome of the host cell. With this integration the retroviral D.N.A. is copied by enzymes in the host cell's nucleus, and the retroviral D.N.A. then directs the synthesis of viral proteins and sends them out as messenger R.N.A.'s to penetrate new cells. The host cell's protein synthesizing capacity has been taken over by the viral messenger R.N.A.s (Verma 1990). Viral genetic material remains in the host cells until it is stimulated by one of a vast variety of triggers. At the point of stimulation the retrovirus starts to replicate itself throughout the body, with often fatal results.

The host cell receives the retrovirus because it assumes the entry signal from the retrovirus is legitimate. The retrovirus is an information bearing structure made up of a set of energy frequencies or tones. Inside the human cell is a vast unheard symphony of tones and frequencies. The manner in which the human cell can resist these intrusive and uninvited guests is to raise the vibrational frequency of the cell, so that the virus encounters a tonal set of frequencies that does one, or both, of two things. The first is that entry into the human cell is denied. The viral "keys" that unlock the protein gateways to the cell are not allowed to fit, as the lock to the cellular door has been changed. Secondly, the altered tone of human cellular frequency causes the component structure of the virus to disintegrate, as it becomes confused as an information structured organism. The virus has the genetic adaptability and information to enter the human cell and copy human D.N.A. structure. When this viral information encounters a cell vibrating with frequencies that deny access and replication, the viral information structure goes into a "Does not compute" mode and self-destructs. This self-destruct program is initiated by the raised tonal frequency of the human cell, which causes the base connections of the viral D.N.A. structure to pull apart and destroy its replicative functions.

The solution to viral diseases that are species threatening does not entirely lie within pharmacology, drug or other allopathic therapies. These address and often alleviate symptoms, but do not fully deal with the cause of viral intrusion into the human cell. The overall solution lies with changing the tone, frequencies and connections of cellular templates, and developing the vaccines and procedures that facilitate this. One procedure

that rarely commands scientific attention is the key provided by breath, meditation and symbolic focus. This works as a cathartic boost to the cellular activity of the body's immune system. Whenever a virus infects the human cell the body naturally launches an immediate counter attack of antibodies, made up of proteins which target the virus for demolition. When one adds the conscious use of breath to the counter attack, this promotes the activation of dormant frequencies and transport structures within the cell, which then greatly enhance the body's natural response through its immune system. So the act of changing the vibrational frequency of the cell, through conscious breathing, will lead to a more vigorous attack on the information strands being introduced to the human cell, first as viral R.N.A., then D.N.A., and finally as integrated messenger R.N.A.

Vibrational frequencies in the cell can be thought of as tones, much as a musical scale is composed of a sequence of tones. From this point of view it is possible to view the genome as a multidimensional set of tones. Each set of connections on the D.N.A. strand is held together by base pairs being pulled together by the frequency of energy that connects them. At cell division this frequency changes, so that the D.N.A. strands separate and go their different ways into new cells. Each gene on the genome carries instructions for a single protein; the discrete vibrational frequency or tone for each protein catalyses hundreds of energy impulses. Conceptualizing tone and vibrational frequency as fundamental to the sequence and pattern of genetic structure is one step. The next step is to consider the effects of conscious breath and visualization in meditation on cellular frequencies. There are a number of implications to examine.

Given that much cellular material is dormant, one process that activates, regenerates and connects latent cellular templates with active ones, is meditation, which then communicates discrete energy pulses to particular locations throughout the body. This serves to mobilize and connect the previously unused, latent parts of the cell and provide one with more players in the orchestra of the cellular dance. An array of tones is introduced to the cell through meditation that activates dormant cellular structures. The implication here is that one effect of conscious breath and focus in meditation is to raise the vibrational frequency of the cell, so that it performs with a full orchestra. An exhaustive supply of tones and frequencies are available to deconstruct viral intruders that seek to

emulate human D.N.A. structure and invade the cell. The cellular nucleus is now armed with a vast array of detector devices and "destroyer" tones, to be deployed automatically when viral information is introduced to the cell.

A common practice in meditation is to visualize breath coming in through the heart center which is then directed by thought to different parts of the body, connecting to other energy centers. What takes place at the cellular level during this process is that a particular set of tonal frequencies is brought into the body by thought and experienced physically, as the vibration of the meditation sequence matches up with a corresponding tonal frequency within the cell. The emphasis on different symbolic sequences, at particular stages of meditation, may amplify a particular molecular frequency that already exists in the cell or activate a protein-ignited transport system that has been dormant. At other stages of meditation the consequence of conscious breath and visualization brings a tonal set into the cell so that it can deconstruct entropic cellular strands, which would otherwise diminish the body's potential as an efficient cellular transport vehicle. Thus the use of conscious breath and visualization has far ranging effects on cellular activity - it amplifies and boosts existing structures, plugs in latent transport systems, and deconstructs entropic cellular strands of information.

As one continues the discipline of meditation, using different forms of symbolic focus, the tonal frequency of the entire cell is raised. So when a retrovirus attempts to gain entry into a healthy cell, it is met by a heightened energy system that no longer allows it to key into surface protein entry points. The information that the virus tries to pass on is now rejected and the virus can no longer perform its designed function. This results in the confusion of the viral informational structure and it is unable to persist in its present form; so the virus deconstructs. An understanding of the effects of conscious breath and visualization on cellular activity has tremendous implications in the areas of molecular biology and energetics.

When the conscious use of breath and symbolic focus in meditation is further accepted as a legitimate source of health promotion by western scientific communities, a whole new arena for scientific investigation may find the answers to otherwise fatal diseases. In other words, if we shift our present medical paradigm we then ask different

questions. The present pharmaceutical and medical research, which develops drugs to interfere with different phases of a retrovirus's activity, is essential. This research, however, treats only the physical properties of cellular activity and ignores important axioms about synchronicity and science - between the Universe, mind, body and cell - and totally ignores the role of human awareness and consciousness. As one adopts the meditative discipline of conscious breath, visualization and symbolic focus, a physical and metaphysical synchronistic connection becomes evident, because multidimensional feedback levels of cellular activity are mobilized. What is introduced into the body through meditation is a set of tones, which enhance the cellular transport system, which then has further implications for the effectiveness of the bio-immune system and other still uncharted areas for medical science to research.

This assertion about synchronicity is not contradictory to present medical research into the development of vaccines that either repel the virus from the cell, or interfere with the developmental stages of the virus once it is in the cell. This arm of medical science is essential; it just needs to be stretched beyond its present boundaries. I am extending this medical model to consider the increase in the body's efficiency caused by raising the vibrational frequency of one's cellular tones through the use of conscious breath. This boosts the immune system's capacity to recognize viral intruders, and rapidly triggers an attack on them by mobilizing the antibodies already present in the body.

It is as though tidal waves of undiminishing energy are taken through the body by conscious breath and visualization, to enhance the natural functions of the cell and furthermore remove debris. Tidal waves are more than a useful analogy. They are a phenomenon in nature that has recently acquired scientific respectability as a worthy object of study. The tidal wave is known in science as a "Soliton", as it has properties that operate both as particle and wave, and therefore a kinship with elementary particles like the photon and electron. In biology, scientists have begun to suspect that microscopic solitons move energy to and within the cell.

A protein molecule is composed of a central group of atoms - carbon, hydrogen, nitrogen and oxygen - and it vibrates in accordance with the bonding energy between atoms of carbon and oxygen. In addition there are hundreds of clumps of other atoms linked to

the protein core. The total configuration provides each protein with a distinctive vibration. The energy of a single protein, once it is activated, generates countless reactions and processes in the cell and does not dissipate in intensity as one would expect. This kind of behavior is usually attributed to tidal wave phenomena. These protein waves of undiminishing energy pulses may well be the force that breaks the double helix apart, both at cell division, and whenever parts of the genetic code need to be replaced or replicated. These solitons in the cell also have the power to deconstruct retroviruses, and I would argue that they become activated through the meditative process.

These activated solitons travel through the cell and trigger once dormant frequencies into action, which then attack those genetic structures programmed to take energy towards entropy. It is akin to an express train that encounters debris on its tracks yet it passes through without pause and the debris transforms. Nothing then can block the movement of important information from one part of the cell to another. The principle of the soliton is a Universal principle, and therefore must exist at all levels; in the oceans, in fiber optic cables, in the Universal formation of quasars, and in the cell. With the characteristics of wave and particle, the soliton as energy pulse transforms debris and continues in undiminished form, seemingly unaffected by the laws governing entropy. At the cellular level this is facilitated through conscious breath and symbolic visualization. All that is necessary is the entry of the clear mind into the cell.

This is what is at stake when one contemplates the mind and the soul in the cell. It is necessary that the mind - human awareness - enters the equation in a totally conscious way, so that one's birthright of connecting the mind and the soul in the cell takes place and one keeps the preordained appointment. The first step toward fulfilling that appointment is to recognize that the entire structure of the Universe is present at the level of the cell. The conscious focus of one's mind directs awareness toward accessing one's inner consciousness, the soul in the cell. This is the meeting place of the clear mind with the soul in the cell. The meditation structure one uses, directly corresponds to a particular vibration which is then introduced into one's cells. The purpose of this is to engage with one's inner consciousness at yet deeper levels. The stillness of one's mind in meditation facilitates this as one reaches further within, touching yet deeper levels of what is commonly referred to as

Godself, Krishna consciousness, the Buddahood within All, or other metaphors denoting the same cellular frequency and level of consciousness. They all refer to inner movement in the same direction. With practice, one learns to recognize the specific tone associated with particular meditation structures. The cell, with its vast panorama of tonal sets, has only a portion of them activated at any one time. Meditation is a process that helps to bring these dormant tones of the cell into song, so that the master choreographer at the core of our physical being - the cellular nucleus - has a full scale of tones to play with.

A further thought - if much of the cell is asleep, this implies that the evolutionary potential of our species lies dormant. Focused breath and symbolic visualizations are the catalysts to make manifest that which is latent, to bring potential into form. This energy is transformative, as information of a different quality and quantity is now available to be released and experienced within one's own life. As cellular transport systems are continually opened up and made available, information that once was dormant can now be engaged with cognitively. The entire cellular structure, now operating at a higher vibration, is able to choreograph a cellular dance that facilitates our evolutionary potential, which I feel is not so much in the area of physical change, but lies in the enhancement and change of our consciousness.

The biology and physics of the cell is a fascinating area of study in its own right, yet it alone can only take one so far (Thomas 1974). The cell becomes an even more remarkable area of study when the necessary metaphysical perspective is considered. Through symbolic focus, one draws on constructs and metaphors that allow energy to go from symbolic frequency to bodily vibration, to cellular impulse. The body, responding to the cells, provides one with an internal information source that is precise. This is why it is very important to "listen" carefully to one's body while in a meditative state of stillness. To come back to my opening remarks on the cell - the soul is in the cell. The mind has to get there, and then it meets itself in the soul. There is ultimately no difference between the phrases, "the soul in the cell" and "the mind in the cell". This is where one ultimately moves to in meditation.

The cellular arena is quite extraordinary (Watson 1989). There is so much taking place that has both physical and metaphysical correlates. For instance, the approach to

species threatening viruses is clear: change the vibrational frequency of the cell. Enhance the process through meditative discipline from a place of stillness and emptiness. Cellular destructive diseases have been reversed through a process of meditation that defies scientific explanation, yet they can be understood if we include a metaphysical perspective on the cell. The "miracles" within medical history are not a mystical illusion. They are an indication of what is possible when we put metaphysics and physics together, and look at the cell with new eyes, with a different perspective. In other words, we entertain a new paradigm.

### **Conclusion**

The discussion of paradigms and science has been taken into a different discourse in my discussion of the cellular dance. I have introduced new concepts and perspectives that reduce distortion in perception and enhance our understanding of reality as it is.

The understanding that comes with increasing self-awareness often does not appeal to the logic of intellect or to the linear form of reasoning that is the *modus operandi* of our present global civilization. Logic, intellect and linear reasoning do have their place, but it is within a different level of understanding. This level examines interconnections between different levels of correspondence, and seeks to understand the significance of those connections, by listening in stillness for inspiration and insight. With the overall context of understanding placed in this domain, then the logic of intellect and linear reasoning become essential mapping devices for connections to be organized, and ordered, through what one's mind and intelligence can do. With that awareness, insights are revealed that are astonishing. Great scientists and thinkers have always operated thus, but rarely made it public as their audience and system of support would not hear of it. Yet not a single scientist, musician, politician or public figure who has made radical interconnection a point of transformation, has done so without insight from higher intelligence.

A progression of consciousness is required to entertain all that has been presented in this essay. The conceptual dance of science is to the choreography of synchronicity that treats internal and external, physical and metaphysical as levels of correspondence reflecting a common unifying structure. The false separation between scientific and

reflective domains is unsatisfactory, and leads me to suggest an alternative emphasis provided by the inner journey of meditation. This leads to the idea that the fundamental nature of reality is a synchronistic structure of formations derived from connecting self-awareness to inner consciousness, and brings attention to the power of conscious breath and symbolic focus in meditation. This is the paradigm shift this essay explicates.

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