

THE WISDOM OF YOUR CELLS

The Wisdom of Your Cells is a new biology that will profoundly change civilization and the world we live in. This new biology takes us from the belief that we are victims of our genes, that we are biochemical machines, that life is out of our control, into another reality, a reality where our thoughts, beliefs and mind control our genes, our behavior and the life we experience. This biology is based on current, modern science with some new perceptions added.

The new science takes us from victim to creator; we are very powerful in creating and unfolding the lives that we lead. This is actually knowledge of self and if we understand the old axiom, "Knowledge is power," then what we are really beginning to understand is the knowledge of self-power. This is what I think we will get from understanding the new biology.

Flying Into Inner Space

My first introduction to biology was in second grade. The teacher brought in a microscope to show us cells and I remember how exciting it was. At the university I graduated from conventional microscopes into electron microscopy and had a further opportunity to look into the lives of cells. The lessons I learned profoundly changed my life and gave me insights about the world we live in that I would like to share with you.

Using electron microscopy, not only did I see the cells from the outside but I was able to go through the cell's anatomy and understand the nature of its organization, its structures and its functions. As much as people talk about flying into outer space, I was flying into inner space and seeing new vistas, starting to have greater appreciation of the nature of life, the nature of cells and our involvement with our own cells.

At this time I also started training in cell culturing. In about 1968 I started cloning stem cells, doing my first cloning experiments under the guidance of Dr. Irv Konigsberg, a brilliant scientist who created the first stem cell cultures. The stem cells I was working with were called myoblasts. Myo means muscle; blast means progenitor. When I put my cells in the culture dishes with the conditions that support muscle growth, the muscle cells evolved and I would end up with giant contractile muscles. However, if I changed the environmental situation, the fate of the cells would be altered. I would start off with my same muscle precursors but in an altered environment they would actually start to form bone cells. If I further altered the conditions, those cells became adipose or fat cells. The results of these experiments were very exciting because while every one of the cells was genetically identical, the fate of the cells was controlled by the environment in which I placed them.

While I was doing these experiments I also started teaching students at the University of Wisconsin School of Medicine the conventional understanding that genes controlled the fate of cells. Yet in my experiments it was clearly revealed that the fate of cells was more or less controlled by the environment. My colleagues, of course, were upset with my work. Everyone was

then on the bandwagon for the human genome project and in support of the "genes-control-life" story. When my work revealed how the environment would alter the cells, they talked about it as an exception to the rule.

You Are a Community of 50 Trillion Living Cells

Now I have a completely new understanding of life and that has led to a new way to teach people about cells. When you look at yourself you see an individual person. But if you understand the nature of who you are, you realize that you are actually a community of about 50 trillion living cells. Each cell is a living individual, a sentient being that has its own life and functions but interacts with other cells in the nature of a community. If I could reduce you to the size of a cell and drop you inside your own body, you would see a very busy metropolis of trillions of individuals living within one skin. This becomes relevant when we understand that health is when there is harmony in the community and dis-ease is when there is a disharmony that tends to fracture the community relationships. So, number one, we are a community.

Fact number two: There is not one function in the human body that is not already present in every single cell. For example, you have various systems: digestive, respiratory, excretory, musculoskeletal, endocrine, reproductive, a nervous system and an immune system but every one of those functions exists in every one of your cells. In fact we are made in the image of a cell. This is very helpful for biologists because we can do research on cells and then apply that information to understanding the nature of the human body.

I was teaching what is called the medical model, the perception that human biology represents a biological machine comprised of biochemicals and controlled by genes. Therefore when a patient comes in to see a doctor, the belief system is that the patient has something wrong with their biochemistry or genes, which can be adjusted and can lead them to health. At some point I realized that I had to leave the university because I found great conflict in teaching the students about what controls the cell and yet getting a completely different understanding from the cells in my cultures.

A New Understanding of Science

When I was outside the university I had a chance to read into physics. Again I found information that did not conform to the science I had been teaching. In the world of new physics, quantum physics, the mechanisms that are described completely collide with the mechanisms we were teaching, which were based on the old Newtonian physics. The new physics currently is still not introduced in medical schools. Before conventional science, science was the province of the church. It was called natural theology and was infused with the spiritual domain, teaching that God's hand was directly involved in the unfoldment and maintenance of the world, that God's image was expressed through the nature we live in. Natural theology had a mission statement: to understand the nature of the environment so we could learn to live in harmony with it. Basically this meant learning how to live in harmony with God, considering that nature and God were so well connected.

However, through the abuses of the church, their insistence on absolute knowledge and their efforts of suppressing new knowledge, there was what is called the Reformation. The Reformation, precipitated by Martin Luther, was a challenge to the church's authority. After the Reformation,

when there was an opportunity to question beliefs about the universe, science became what was called modern science. Isaac Newton, the physicist whose primary studies were on the nature of gravity and the movement of the planets, provided the foundation for modern science. He invented a new mathematics called differential calculus in order to create an equation to predict the movements of the solar system. Science identified truths as things that were predictable. Newtonian physics perceives the universe as a machine made out of matter; it says that if you can understand the nature of the matter that comprises the machine, then you will understand nature itself. Therefore the mission of science was to control and dominate nature, which was completely different than the former mission of science under natural theology, which was to live in harmony with nature.

The issue of control in regard to biology becomes a very important point. What is it that controls the traits that we express? According to Newtonian physics life forms represent machines made out of matter and if you want to understand those machines you take them apart, a process called reductionism. You study the individual pieces and see how they work and when you put all the pieces together again, you have an understanding of the whole. Charles Darwin said that the traits an individual expresses are connected to the parents. The sperm and egg that come together and result in the formation of a new individual must be carrying something that controls the traits in the offspring. Studies of dividing cells began in the early 1900s and they saw string-like structures that were present in cells that were beginning to divide. These string-like structures were called chromosomes.

Interestingly enough, while chromosomes were identified around 1900, it was only in 1944 that we actually identified which of their components carried the genetic traits. The world got very excited. They said, oh, my goodness, after all these years we finally have gotten down to identifying the genetically controlling material; it appears to be the DNA. In 1953 the work of James Watson and Francis Crick revealed that each strand of DNA contained a sequence of genes. The genes are the blueprints for each of the over 100,000 different kinds of proteins that are the building blocks for making a human body. A headline announcing Watson and Crick's discovery appeared in a New York paper: "Secret of Life Discovered" and from that point on biology has been wrapped up in the genes. Scientists saw that by understanding the genetic code we could change the characters of organisms and therefore there was a big, headlong rush into the human genome project to try to understand the nature of the genes.

At first they thought these genes only controlled the physical form, but the more they started to manipulate genes, they saw that there were also influences on behavior and emotion. Suddenly, the genes took on more profound meaning because all the characters and traits of a human were apparently controlled by these genes.

Are We Victims of Heredity?

Yet there was one last question: what is it that controls the DNA? That would be going up the last rung of the ladder to find out what is ultimately in control. They did an experiment and it revealed that DNA was responsible for copying itself! DNA controls the protein and the protein represents our bodies. Basically it says that life is controlled by DNA. That is the Central Dogma. It supports a concept called "the primacy of DNA" that says who and what we are and the fate of the lives we lead are already preprogrammed in the DNA that we received at conception. What is the consequence of this? That the character and fate of your life reflects the heredity you were born into; you are actually a victim of heredity.

For example, scientists looked at a group of people, scored them on the basis of happiness and tried to find out whether there was a gene that was associated with happy people that was not active in unhappy people. Sure enough, they found a particular gene that seems to be more active in happy people. Then they immediately put out a big media blip on "gene for happiness discovered." You could say, "Well, wait a minute. If I got a sucky happy gene, then my whole life is going to be predetermined. I'm a victim of my heredity." This is exactly what we teach in school and this is what I had also been teaching-that people are powerless over their own lives because they can't change their genes. But when people recognize the nature of being powerless, they also start to become irresponsible. "Well, look, Boss, you're calling me lazy but I just want you to know my father was lazy. What can you expect from me? I mean, my genes made me lazy. I can't do anything about it." Recently in Newsweek they wrote about how fat cells are waging war on our health. It's interesting because in an epidemic of obesity science stands back and says: it's your fat cells that are waging war in your life.

The Human Genome Project

To come and save us, the human genome project entered our world. The idea of the project was to identify all the genes that make up a human. It would offer the future opportunity of genetic engineering to correct the ills and problems that face humans in this world. I thought the project was a humanitarian effort but it was interesting later to find out from Paul Silverman, one of the principal architects of the human genome project, what it was actually about. It was simply this: It was estimated that there were going to be over 100,000 genes in the human genome because there are over 100,000 different proteins in our bodies; plus there were also genes that didn't make proteins but controlled the other genes. The project was actually designed by venture capitalists; they figured that since there were over 100,000 genes, by identifying these genes and then patenting the gene sequences, they could sell the gene patents to the drug industry and the drug industry would use the genes in creating health products. In fact, the program was not actually for advancing the human state as much as it was for making a lot of money.

Here is the fun part. Scientists knew that as you go up the evolutionary scale, simple organisms have less DNA and when you get to the level of humans, with the complexity of our physiology and our behavior, we have a lot more DNA. They thought that primitive organisms would have maybe a few thousand genes but humans were going to have approximately 150,000 genes, which meant 150,000 new drugs. The project began in 1987 and just showed again that when humans really put their heads together they can create miracles. In only about fourteen years we actually had the results of the human genome. It also was what I call a cosmic joke.

To begin the human genome project they first studied a primitive organism, a miniature worm that is barely visible with your eye. These worms had been an experimental animal for geneticists because they reproduce very quickly and in very large numbers and thereby express traits that you can study. They found that this small animal had a genome of about 24,000 genes. Then they decided to do one more genetic model before doing the human and that was with the fruit fly because of the large amount of information already available on the genetics and behavior of fruit flies. The fruit fly genome turned out to have only about 18,000 genes. The primitive worm had 24,000 genes and this flying machine had only 18,000 genes! They didn't understand what that meant but put it on the back burner and started the work on the human genome project.

The results came in 2001 and were a major shock: in the human genome there are only about

25,000 genes; they expected nearly 150,000 genes and there were only about 25,000! It was such a shock that people actually didn't talk about it. While there was a lot of hoopla about completing the human genome project, no one talked about the 100,000 missing genes. There was complete lack of discussion in the scientific journals about it. When they realized there were not enough genes to account for human complexity, it shook the foundation of biology

Why is it so important? If a science is based on the way life really works, that science would be good for use in medical practice. But if you base your science on wrong information, then that science could be detrimental to medical practice. It is now a recognized fact that conventional allopathic medicine, the primary medicine we use in Western civilization, is a leading cause of death in the United States. It is also responsible for one out of five deaths in Australia. In the Journal of the American Medical Association Dr. Barbara Starfield wrote an article revealing that from conservative estimates, the practice of medicine is the third leading cause of death in the United States. However, there is a more recent study by Gary Null (see Death by Medicine at: www.garynull.com). He found that rather than being the third leading cause of death, it is the first leading cause with over three-quarters of a million people dying from medical treatment each year. If medicine actually knew what it was doing, it wouldn't be that lethal.

I left the university in 1980, seven years before the human genome project was started because I already was aware that genes didn't control life. I was aware that the environment was influential but my colleagues looked at me as not just being a radical but a heretic because I was conflicting with the dogma; therefore this became a religious argument. At some point the religiosity of where I was led me to resign my position. That's when I started to advance into understanding about brain function and neuroscience. What I was really trying to find out is if it's not the DNA that controls cells, then where is the "brain" of the cell?

The Computer Within

The new biology revealed that the brain of the cell is its skin, the membrane, the interface of the interior of the cell and the ever-changing world we live in. It is the functional element that controls life. This is important because understanding its function reveals that we are not victims of our genes. Through the action of the cell membrane we can actually control our genes, our biology and our life and we have been doing it all along although we have been laboring under the belief that we are victims.

I started to realize that the cell was a chip and that the nucleus was a hard disk with programs. The genes were programs. As I was typing this on my computer one day I realized that my computer was like a cell. It had programs built into it but what was expressed by the computer was not determined by the programs. It was determined by the information that I, as the environment, was typing onto the keyboard. Suddenly all the pieces fell into place: the cell membrane is actually an information-processing computer chip. The cell's genes are the hard drive with all the potentials. That is why every cell in your body can form any kind of cell because every nucleus has all the genes that make up a human. But why should one cell be skin and another cell be bone or eye?

The answer is not because of the gene programs but because of the feedback of information from the environment. All of a sudden the bigger thing hit me: what makes us different from each other is the presence of a set of unique identifying protein keys (receptors) comprising the keyboard on

the surface of our cells. The identity keys on the cell membrane respond to environmental information. The biggest "Aha!" was this: that our identity is actually an environmental signal that is playing through the keyboard on the surface of our cells and engaging our genetic programs; you are not inside your cell, you are playing through your cell using the keyboard as an interface. You are an identity derived from the environment.

In my younger days, I didn't see that religion was offering me truth. I went away from spirit and ended up in science. Realizing that my identity was something from the environment playing through my cells was the greatest shock to my world because I was completely thrown from a non-spiritual reality into the requirement of a spiritual existence. My cells were like little television sets with antennas and I was the broadcast that controlled the readout of the genes. I was actually programming my cells.

I realized that if the cell died, it did not necessarily mean the loss of the broadcast-that the broadcast is out there whether the cell is here or not. All of a sudden it hit me with such profound awe. What I realized was that survival was not that important because of my eternal character was derived from some broadcast in the field. The fear of mortality disappeared. That was about twenty-five years ago and it was one of the most wonderful, liberating experiences I ever had.

Perception: The Power of the New Biology

We perceive the environment and adjust our biology, but not all of our perceptions are accurate. If we are laboring under misperceptions, then those misperceptions provide for a mis-adjustment of our biology. When our perceptions are inaccurate we can actually destroy our biology. When we understand that genes are just respondents to the environment from the perceptions handled by the cell membrane, then we can realize that if life isn't going well, what we have to do is not change our genes but change our perceptions. That is much easier to do than physically altering the body. In fact, this is the power of the new biology: we can control our lives by controlling our perceptions.

We are holding "truths" about science that are actually untruth, they are actually "assumptions," and false assumptions at that. Until we correct them, we are misunderstanding our relationship to the planet, to nature and the environment. As a result we are destroying that which has provided us life, the environment.

False assumption number one is that the universe is made of matter and its understanding can be attained by studying matter. Our perception of a material-only biology and environment is no longer scientifically accurate. Another assumption is that genes control life. It is actually our perceptions that control life and by changing our perceptions we can get control over our lives. I will discuss more about this later. Assumption number three is a very dangerous assumption: that we arrived at this point in our evolution using the mechanisms of Darwinian theory, which may be summed up as "the survival of the fittest in the struggle for existence." It turns out in the new biology that evolution is based on cooperation. Until we understand that, we keep competing with each other, struggling and destroying the planet without recognizing that our survival is in cooperation and that our continued competition is the death knell of human civilization.

The Future of Medicine

Everything in the universe is now understood to be made out of energy; to our perception it

appears physical and solid, yet in reality it is all energy and energies interact. When you interact in your environment you are both absorbing and sending energy at the same time. You are probably more familiar with terms such as "good vibes" and "bad vibes." Those are the waves at which we are all vibrating. We are all energy. The energy in your body is reflecting the energy around you because the atoms in your body are not only giving off energy, they are absorbing energy. Every living organism communicates with these vibrations. Animals communicate with plants; they communicate with other animals. Shamans talk to plants with vibrations. If you are sensitive to the differences between "good" and "bad" vibrations, you would always be leading yourself to places that would encourage your survival, your growth, your love, et cetera, and staying away from situations and places that would take advantage of you or cancel who you are.

When we are not paying attention to our vibrational energies, we are missing the most important readouts from our environment. Understanding of the new physics says that all energies are entangled and interact with each other. Therefore, you must pay attention to these invisible forces that are involved with what's going on in your life. While medicine does not train its doctors to recognize that energy is part of the system, they very easily adapted to using the new scan systems to determine what is going on inside the body. It is humorous that they read their scans as "maps," but do not have the fundamental understanding that their maps are direct readouts of the energy present in the body.

For example, in a mammogram revealing a cancer, one is you are visualizing a characteristic emission of energy distinctive of a cancer. Rather than cutting out the cancer, what if you applied an energy that, through interference patterns, would change the energy of those cancer cells and bring them back to a normal energy? Presumably you would get a healing effect. This would make sense out of thousands of years of what is called "hands-on healing." The recipient is getting an energy that is interacting with their body through interference and through that interference, changing the character of the energy reflected in the physical matter because the matter is the energy. This is the future of medicine although we are not there with it right now.

Quantum physicists reveal that underneath apparent physical structure there is nothing more than energy, that we are energy beings. That means that we interact with everything in the field. This has an important impact on health care. Quantum physics reveals that energies are always entangled with each other. In an energy universe, waves are always flowing through and interacting with all other waves. We can never separate someone fully from the environment they live in. Quantum physics says the invisible energy is one hundred times more efficient in conveying information than are material signals (e.g., drugs). What we are beginning to recognize is that there is an invisible world that we have not dealt with in regard to understanding the nature of our health.

In other words, rather than focusing on matter, in a quantum world we focus on energy. In the mechanical world we said we can understand everything by reductionism. But in the newer quantum understanding of the universe we have to understand holism: you cannot separate one energy vibration from another energy vibration. We have to recognize that in the world we live in we are entangled in an unfathomable number of energy vibrations and we are connected to all of them!

Here is my definition of the environment: it is everything from the core of your being to the edge of the universe. It includes everything in close proximity to you as well as the planets and the sun and what is going on in the entire solar system. We are part of this entire field. To summarize the

significance of this let me give you a quote from Albert Einstein: "The field is the sole governing agency of the particle." What he says is this: the field, the invisible energy, is the sole governing agency of the physical reality

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