

CELLS AND THE SACRED



Sondra Barrett

What if you were given a laboratory and told to discover the coding for normal cells and malignant cells? Where would you start? What strategies could you learn to quiet your racing mind to listen to other ways of knowing? And how in the world do you leap into the great unknown with only a microscope in hand?

My decoding prowess began as I looked at human white blood cells with a microscope seeking clues to growth patterns, normal, and not so normal. Trained in observation I reacted to that first blip into my consciousness - normal cells revealed predictable patterns of form while abnormal leukemic cells showed chaotic shapes. My mind tried to make sense of this, concluding that form followed function - abnormal cells functioning in an unpredictable fashion looked misshapen and disorganized compared to healthy normal functioning cells.

To quiet and soothe my ever-questioning mind I studied a variety of traditions - shamanism and aikido, qigong and Buddhism, astrology and creative expression. One concept began emerging from my mental and metaphysical meanderings with the microscope; our cells can be guides in living well while our molecules hold clues to their divine design. A short discourse into the wonders of the invisible will provide the awesome possibility that messages from our cells far surpass messages in simple water.

Carl Jung and Joseph Campbell educated us in the last century on the universal power of symbols and consciousness. They saw these symbols present everywhere and Jung posited that these images structured our imagination, shaped matter and mind. He called these elemental patterns "archetypes."

I posit that the architecture of our cells and the structure of our molecules are also archetypes; that they served as templates for essential teachings throughout the ages. They can be discovered by looking at sacred and indigenous art. Does form inform spiritual intelligence? Can cells show us the Way?

Here we'll close the gap between science and spirituality by taking a peek into the essence and archetypes of the cellular universe. Our oldest living ancestors, our cells, have much to tell us of the evolutionary journey from cell to SELF. Each of us is a community of trillions of cells, microscopic individuals merged to create sanctuary for one human soul. Within and **beyond** the scientific paradigm, the microscopic universe reveals an invisible world that carries meaning beyond physical form. I promise this fascinating exploration into our inner nature will transform your experience of science, art, and your own divinity.

Blending science, art and spirituality, ten lessons from our cells offer a practical understanding of the wonders of our sacred cellular nature. To unearth their story, perhaps a brief glimpse into its author will help you appreciate more the adventure.

As teller of this tale, I call myself Sondra Barrett "cellular archaeologist and code finder," though in real life I was trained as a biochemist exploring the nature of human disease. While still a faculty member and research scientist at the University of California Medical School, my curiosity also had me exploring the non-traditional medicine of the shaman, Asian energy practices and graphic arts. My penchant for connecting disparate points of view soon had me seeing Native American pictographs as cells, and interpreting cells and molecules as mystical.

In this tale that celebrates our cells as sacred we start with creation. In order for life to survive, it needs a place. Over eons, molecules formed, became more complex and eventually merged to shape the sanctuary for life. That sanctuary, with poetic license omitting all the evolutionary permutations it took to arrive at a human cell, was created by the embrace of molecules. Imagine that! The great Jesuit theologian Teilhard de Chardin wrote that because of the ability for molecules to connect, we connect with each other; that love exists.

*If there were no internal propensity to unite... in the molecule itself
it would be physically impossible for love to appear higher up, with us.
By rights... we should assume its presence... in everything that is.*^[1]

Atoms touch and share electrons. And so we have the first lesson from our cells, the essentials to life - embrace. New molecules cannot form without uniting with another, Newborn babies will not survive without being touched and embraced by another. We thrive when we embrace love. A question that our cells may ask us - what else do you embrace? What touches you? What is important for your life; what gives you meaning?

As the cellular scientist, searching for how cells grew and matured, what made them choose life or death, maturity, or the same old repetitive pattern, answers came again in the hidden structures of the cell.

Inside our cellular sanctuary is a vast shimmering fabric constructed of gossamer strings, long tubes and thin filaments. The fabric, named the cytoskeleton, may, in fact be the seat of consciousness and the actual intelligence of the cell. Dr Donald Ingber^[2] at Harvard Medical School discovered that the tension placed on this cellular webbing influenced whether the cell made carbon copies of itself, changed the program and matured, or switched to the ultimate recycle and died a gentle death. Pulling on the tension of the cell changed its genetic expression. Taut and stretched out, attached to a surface, the cell repeated its genetic program, making more of the same self. Yet when the cell lets go of some of those attachments, it shifted to a pattern of maturity. Letting go of attachments allowed maturity to develop? Sounds like a Buddhist teaching to me. And when the cell fully let go, it was time to surrender into the great unknown. Often the trigger for fully letting go was the "altruistic" need for limited resources is made available to the younger cells.

A few lessons come from our cells - what do I attach myself to, what do I need to let go of, and what permits my maturity? Ingber^[3] showed that our cells can be regulated mechanically. Thus, along with mind or consciousness-altering messages of the cell, bodymind practices may enhance our experience. When we stretch in yoga we shift our cells' tensions. Physical exercises handed down from ancient Mexican sorcerers and taught by Carlos Castaneda were said to change consciousness and help a person shape-shift to another form. Castaneda called these tensegrity practices. Interestingly, from the architect and biologist's points of view, changing tension on a structure to maintain its integrity is called, you guessed it, tensegrity.

This very basic property of our cells to change their state through mechanical forces and movement is mirrored in many physical and spiritual healing practices like yoga and shamanic dance. Scientists have learned even more about the shimmering cytoskeleton; its strings and strands vibrate in order to change shape, its structures can respond to sound and energy. The centriole, one unique tubular construction within the cell, guides cell division. It also 'reads' infrared energy and according to scientists Roger Penrose^[4] and Stuart Hameroff^[5], moves electrons and is the seat of human consciousness.

Our cellular wisdom tells us to create sanctuary, embrace and attend to what we attach to, letting go of whatever prevents our maturity. We do this from our molecules on up.

Another set of properties of our cells is their ability to recognize self and other, to communicate. And of course, the cell asks us how do we recognize our self and communicate with others.

The final cellular or universal law I'd like to discuss here is the law of three. Our basic genetic code is built from a threesome of the four nucleic acid bases, nicknamed ATCG. A genetic codon is something like ATA, CCC, CAT. Threesomes are everywhere in biology. Three embryonic layers form once the egg is fertilized egg. These layers, the ectoderm, mesoderm and endoderm, give rise to a living being. We have a triune brain - the reptilian brain stem, the emotional limbic brain, and the thinking cerebral cortex. At a human level, threes are also very popular - maiden, wife, crone; father, mother, child; beginning, middle end. And let's not forget the threesomes in spiritual traditions; the Christian Father, Son, and Holy Spirit; Jesus, Mary, and Joseph. In Hebrew, we have the three mother sounds SH, MM, AH of the most sacred prayer, and the three forms of God - Yahveh, Shekinah, Ruach. The Hindus have their triad - Brahma, Shiva and Vishnu. And so it goes on and on. Does the ever-present philosophical threesomes have their roots in our biology, in our molecular codes for life and consciousness?

And to make this information practical, think where we enjoy threesomes in everyday life - ready, set, go. We can put the threesome into action. Imagine attaching your attention to an intention, moving and stretching with it, and letting it go into the action or goal you want manifested. Simple as one, two, three.

There's a lot more to say about the sacred messages from our cells and the exquisite beauty of our molecules and their metaphysical stories^[6].

Finally, though modern scientists discovered the functioning of our cellular domains, perhaps the ancient artist and seeker saw them and made them holy. This idea is not unprecedented. Leonard Shlain in *Art and Physics*^[7] offers a convincing story that the artist's work preceded the physicist's discoveries. To me, it is compelling to interpret our cells as divinely inspired, that their teachings and designs have been carried through the ages. I will end with three final impressions for you. A few visuals may help clinch these ideas. The **ten lessons or messages** our cells offer us may help us sustain a fulfilling life. Ancient cave paintings hold some of those mysteries. Take a look at this ninth century **Medicine Wheel**. It convinced me that the ancients saw inside, and it was good.



Fig 1 Cave drawings

Compare it to my drawing of a cell. Maybe this wheel of life stood for the essence of our lives - the cell as well as the universe. And just maybe its image originated in the inner vision of the ancient peoples.

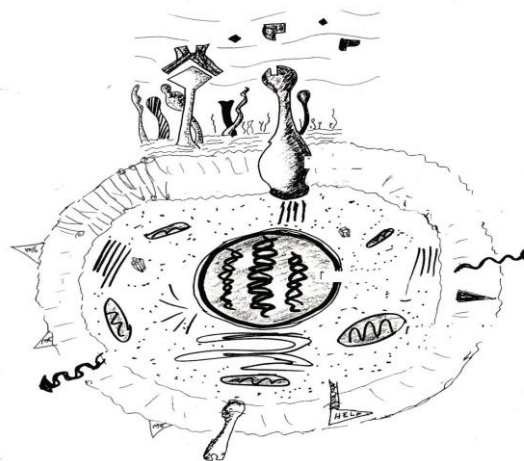


Fig 2. Cell drawing

A Tibetan mandala?

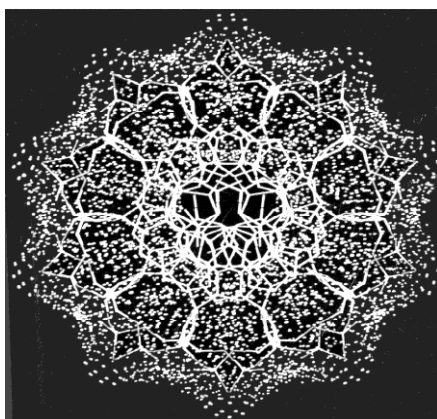


Fig. 3 Computer graphic of DNA

Take a look at this mandala of DNA as well as what I interpret as strands of **DNA** on that same cave wall as the medicine wheel (on the opposite page) that was painted a thousand years ago.

LESSONS FROM OUR CELLS

Embrace
Recognize
Respond
Move
Communicate
Create
Repair, Recycle, Rest
Energize
Remember
Purpose

Molecules awoke one morning to find that atoms were inside them, enfolded in their very being. Cells awoke one morning to find that molecules were actually inside them, as part of their being. And you might awake one morning and find that nature is a part of you, literally internal to your being.

Ken Wilber ^[8]

Acknowledgements

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References:

1. Teilhard de Chardin, Pierre (1961) *The Phenomenon of Man*. Harper Torchbook edition
2. Ingber, DE. (1998) The Architecture of Life. *Scientific American* Jan. 278: 48-57.
3. Ingber, Donald (2004) The Mechanical Cell. *Dream, the Magazine of Possibilities*.
4. Penrose, Roger (1994) *Shadows of the Mind*. New York: Oxford University Press.
5. Hameroff, Stuart & Penrose, R. (1996) Consciousness, the Brain, & Spacetime Geometry. *J. Consciousness Studies* 2:36-53 .
6. Barrett, Sondra *Cells and the Sacred: from cell to Soul*. www.SondraBarrett.com
7. Shlain, Leonard.(1993) *Art & Physics. Parallel Visions in Space, Time & Light*. William Morrow
8. Wilber, Ken (1996) *Brief History of Everything Shambhala*, Boston

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