Spirituality and Cybernetics
A Conversation with Rev. Deborah L. Johnson
By Barbara Vogl

B: When I first heard you speak at a public forum on the health care system I was impressed with the way you were able to cut through the complexities of the problem. You moved the quality of the discussion to include the ethics of the situation, not just the morality of the issues in a way that would have made Heinz von Foerster smile. In other words, you moved it from the level of what we should do to a question of what it is to be human beings.

That led me to read your two books, The Sacred Yes and Your Deepest Intent, both parts of the “Letters from the Infinite” series. What brought you to write the books and could you talk a bit about your life that led up to this?

D: Sure. My personal view of the world is extremely holistic. I see patterns. I think systemically which is not to be confused with linearly. All systems aren’t linear. There is an interconnectedness and interdependence. I really do believe that ultimately everything is about consciousness. Most of us tend to deal with the world at the level of the outer form or its outer effect. I like to concern myself at the level of causation because that’s where I think real change happens.

The idea of a paradigm is near and dear to my heart. What a paradigm means to me is that it is the construct that connects the different pieces. And I think what happens to so many of us is that we are trying to solve problems or issues but within the same paradigm that created it. I think Einstein said, “You can’t solve problems with the same consciousness that created it.”

I really believe in the idea of the Oneness. To me this is not just a theoretical concept. To me it is the absolute reality. And if you start with that, then you will get a completely different view of what’s going on. Someone will say to me, “Well, how do you know that’s the ultimate reality?” and it becomes a bit of a challenge. It reminds me of mathematics, for example. You have all sorts of axioms and postulates and theorems. If you accept that 1+1=2 there is nothing you cannot do in terms of mathematics. But we cannot prove that 1+1=2. It is a starting assumption that we have to make. Furthermore it must be absolutely unavowable. If there is anyplace where 1+1 does not = 2 then the whole thing is going to fall down.

So what I specialize in is discerning where in our lives have we really believed that 1+1=2? And have we gotten so entrenched in that perspective it prohibits us from looking at or getting a wider view? We’ve made a lot of things 1+1=2 that really aren’t.

B: That seems a very linear concept that binds us to a kind of quantitative truth.

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posed upon life as a classifying and ordering schematic. She writes; “It is a norm employed as a tool to control for uncertainty and irregularity and so to preserve the status quo. In my view, we find ourselves lost in the thick of dynamic complexity because we adhere to such an outlived linear and dualistic cosmology.”

Today the “new sciences” are questioning so-called “natural law,” recognizing, as the semanticist Alfred Korzybski pointed out, that our map is not the territory we are inhabiting. The electronic technology has radically changed our environment. We realize how much it is a part of our lives, giving rise to an increasing number of people who are turning to each other for help in creating a new map that makes sense to them. Worldwide, some are turning to traditional competing religious beliefs in a desperate attempt to retain the ideas of past certainties while others are discovering new relationships, more fluid and wholistic, some of which we define as “spiritual.”

Kauffmann points out that we are caught up in a game of what Gregory Bateson might call, “schismogenesis,” where the mutually promoting actions of religious fundamentalism, personal spiritual questing and scientific agnosticism are “essentially dissimilar but mutually appropriate.” To those involved in the new science of systemics, this phenomenon is related to deviation-amplification processes in populations and is considered a factor of evolution.

In 1859 the publication of Darwin’s Origin of Species was a scientific revelation that changed how we saw ourselves, life, and God’s role in the biology of life. The history of science shows us that some breakthrough ideas arrive through simultaneous interpreters as if born in some transcendental field of inquiry. This was the case with the mechanism of natural selection which Charles Darwin and Alfred R. Wallace arrived at about the same time by different routes.

Gregory Bateson has noted that if Wallace’s interpretation of data had been socially accepted, rather than Darwin’s which fit better with the current po-

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D: Yes, it’s a very linear concept. I’ve always been a seeker and I’ve always really wanted to truly know. I’ve wanted to know the truth at the level of the absolute. In my view if it is really true, it can’t be conditional; it can’t be circumstantial; it cannot be culturally based. If it’s something that is really fundamentally true it has to be true everywhere, at all points in time and most especially something simple enough that the most uneducated mind, in the most remote corner of the earth, in the most primitive point in time, could have figured it out. If it is really true, it has to be that true.

Therefore, truth can’t be patented; no one can own it. No one can create it; no one can hoard it. It can’t be kept a secret; it’s just available.

B: And it’s not a concept, it’s a knowing?

D: Yes, exactly. It’s a knowing that’s available to be known. So these letters really come out of a deep search of mine to say what is available to be known, that is, in fact, ancient and timeless. The series of letters, however, takes those concepts and utilizes them in very practical ways according to today’s context. That blend is usually difficult to get. Many times you have very ancient wisdom but it’s still at an abstract, ethereal level. It’s not talking about its practical application to today’s social issues and problems. Or you have lots of analysis about today’s social issues and problems that are starting from the premise that those issues and problems somehow created themselves and exist in self-perpetuity. There’s no sense of, “What’s behind that?” It’s like the given, the constant, in an algebraic equation.

B: I noticed one part in particular in your book that gets to what made me realize that you were talking about the deeper aspects of what we call Spirituality, or Religion, or whatever we call it. And also, what struck me, was that you were thinking Cybernetically.

Using that word, “Cybernetics” brings up the difficulty we get into when we have to use language to communicate. It often gets in our way but I know that when I started understanding “Cybernetics” I thought to myself, “This is spiritual.” So I’m interested in looking for the connections between what we call “Science” and what we call “Spirituality.” One of the things that particularly brought this to my attention was the quote in the book, “Your Deepest Intent.”

“Very few people believe that they are life. They keep searching for life, more life, for life everlasting, for more stimuli, for more wisdom. Yet what you are looking for you are looking with.”

That is a very provocative recognition of what Heinz von Foerster speaks of when he developed the concept of Second Order Cybernetics in which the main question is, “How do we use the mind to understand the mind?” In fact the symbol for Cybernetics is the medieval symbol of the Uroborous, the snake eating its tail. Somehow, to me, that is getting to the core of what it is to be “spiritual” human beings. For example, being connected with ourselves and, as you said, not thinking that the world is “out there” to be analyzed as separate from ourselves.

I wonder if you could explain that view as seeming to be central to what you’re describing?

D: It’s at the core of the issue. There is only Oneness whether we say “God is all there is” or that “everything is energy” or “there’s just one creative essence in the world.” However we say that, it boils down to the same thing. There’s just this unitary oneness and everything comes out of that, including us. So, for too many of us, we believe that we have a life but we’re not perceiving ourselves as life.

There’s an analogy that I like of a drop of ocean to the sea. You go out to the ocean and you scoop up a bucket of water. That bucket of water is not all of the ocean but there’s nothing in that bucket that is not pure sea. And that’s how we are as human beings. We are not the whole totality of all of life but there’s nothing about us that is not pure life. What we call the spiritual building blocks of the Universe is our DNA. We tend to think of ourselves as having just 46 chromosomes that we get from our parents, and yet we know that from
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a biological standpoint we cannot be anything that we did not get genetically from that which birthed us.

Spiritually speaking it's the same way. We can't be anything other than that. There's a letter in the book, The Sacred Yes, that speaks to this well. It talks about the concept of Jesus as the only "begotten" son. The revelation in this letter was just astounding to me and I think it speaks to this perspective as well. There's a difference between Jesus and Christ Consciousness. Jesus is a man and Christ Consciousness is just that, it's a consciousness that's available to everyone.

The spirit letter said that; "It isn't that I created one person and would never do it again." And that word interpreted as "son" in Greek is huios which doesn't mean a genetic offspring, it means likeness in character. And the spirit voice is saying, "And that's the only thing I can beget. I can't create anything that doesn't have me. That would be like a mother trying to birth a child and the child has something other than the mother's DNA pattern. But you can't do that. Not that I did it once, I am always begetting my only begotten, because myself is all I can beget."

It's that point. If more of us could understand the fact that, first and foremost, we are spiritual beings and have that as our primary identity, it would completely shift and alter our perception of the world.

B: It seems that is what makes us different from nature and yet a part of nature. It's a paradox like what I feel is being mind and using mind in order to be able to understand mind. It's that circularity that is basic to Cybernetics.

D: It is and there's a fine line between being one with it and feeling like it is something outside of you that you can use. It's one thing to say, "OK. I'm a human being and I'm going to use mind like a magnet tool; if there's something out there, I can attract it. That's very different than perceiving myself as a place and a space in the universe that activity is happening through. When I use mind, I'm not using my mind but I am thinking with the mind.

When I am loving, the love's not coming out of my love, I'm in the heart of love. When I'm making music, I'm not really making music. There is music and I'm allowing myself to be a place through which the music is coming. It's a very different identity which keeps us from being THE creator of things, but us just being a part in a co-creative process; a place where things go from the invisible to the visible. We are medium. We set things into motion but we're not the end all, be all, do all. We walk around thinking that we are entities that life is happening to, but we're not. Life is happening through us not to us.

B: We see ourselves as what we "Do," just not what we "Be's." This is what I think is encouraged by the way we educate our children. We take all of the "being" out of the individual to teach them to see themselves as only what they "do." I think the destructiveness of our social systems that bring us to think in this disconnected way is beginning to come to the surface of our consciousness. You hear people talking about being all connected but to be able to actually feel that sense of wholism/holism requires a deeper understanding. In all of your insights you are able to communicate this so well that I'm beginning to realize that you have to really be it in order to communicate it.

D: Oh yes. It can't be the object of your life, it must be the subject of your life to be able to really grasp it at this deep level. The point that you're raising, of getting a sense of a our definition of ourselves by what we do, gets more and more complicated the more layers that you put on that. We not only allow what we do to define us but we allow what we do to establish value for ourselves. We put everything about ourselves on a marketing block of how much is someone else willing to pay for what it is that I can do. And that becomes the measure of value. There's nothing intrinsic in it. Yet, it becomes a merchant exchange system of value. Unfortunately, that creates tremendous hierarchies in our social systems, infrastructures, inequities in pay and wealth distribution, and on and on.

From the Editor: (continued)

litico-economic orientation, we would have developed what is now seen as a cybernetic perspective, a deviation from our traditional linear, dualistic view, much earlier in our Western history.

It is also of interest that in 1857, two years before the Origin of Species, a French Scientist, writing under the name of Allan Kardec, introduced the Spiritist Doctrine which offered a framework to explain humanity's purpose and destiny based on the same scientific concept of evolution.

The Spiritist Doctrine was the spearhead of another revolution. According to the English translation of the Introduction to the Spiritist Philosophy, "It brought God out of the churches and into the fields, oceans, and cities where the human soul works, learns, and grows. The spiritist doctrine also maintains that the truth is revealed equally in the Hebrew Bible, the Gospels, the Quran, the Bhagavad-Gita, Tao Te Ching and is revealed continuously in the discoveries of science, in the geniality of art and poetry, and in the courageous achievements of love." This philosophy is based on how we live and what we apply our lives to that count for fulfillment of our divine purpose in the Universe.

Kardec was a disciple, and later a colleague, of the educator, Pestalozzi. He was also a researcher and professor of Chemistry, Physics and Comparative Anatomy who became interested in paranormal research in the 1850's, conducting extensive investigations in the phenomena and publishing The Spirit's Book. Since then, over 100 million copies have been printed in more than 30 languages. Kardec was committed to the development of a spiritual and religious philosophy based on the logic and principles of modern science.

Looking for patterns we have a conversation with the Reverend Deborah L.
Johnston, the founding minister of Inner Light Ministries, a metaphysical spiritual community in Santa Cruz, California. She is also the founder and president of the Motivational Institute, an organizational development consulting firm specializing in cultural diversity. Her

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clients range from Fortune 500 companies to community-based organizations. Rev. Deborah was inducted into the Board of Preachers of the Martin Luther King, Jr. Chapel at Morehouse College, which honors clergy for their lifetime work in social justice. She is the author of Your Deepest Intent and The Sacred Yes, of the Letters from the Infinite series, published by Sounds True. www.soundstrue.com

It is interesting to note that our traditional Western scientific orientation, based on empirical observation of the material world, has progressed so far that the technical tools developed now allow us to be comfortable within the unseen world; that world previously considered “spiritual.”

Scanning the Internet, literally, blows my mind. It’s almost impossible to grasp the incredible activity in the technological field. The ARS TECHNO website http://arstechnica.com has an item by John Timmer (December 14, 2007) describing the work of J. Craig Venter, “famous within the biological community for both his development of the “shotgun” method of genome sequencing and behavior that some view as egomaniacal. In a number of cases, Venter has partially sequenced his own genome (or his pet’s); declared victory over public sequencing efforts; and moved on to other projects, leaving others to finish off the work.”

Timmer notes that “In recent years, his focus has shifted to synthetic life—cells directed by simplified genomes engineered to perform useful tasks such as fuel production or drug synthesis.” Another website, WIRED SCIENCE, carried an interview with Craig Venter, parts of which I couldn’t resist sharing here. (see p. 8) http://www.pbs.org/kcet/wiredscience/video/289/craig_venter.html

The February 4th, 2008 issue of Time magazine carries an article titled, Man Makes Life, by Alice Park where you can sense the excitement created by this historical breakthrough. Speaking of Venter, she writes; “According to a just released paper in the journal “Science,” he has gone beyond merely

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D: But we are demonstrating the exact same thing and what’s making it so difficult is that we’re not owning it and are claiming to be doing the opposite; claiming to be a Democracy by over-throwing countries so that we can give them democracy. I bring it up from a spiritual standpoint, not so much a comment about politics. It is to say that the end result is contained within the means itself. It gets back to that Oneness thing. You can’t arrive at one place by using methodologies, tools, energy patterns, that are contradictory to where it is you say you want to go.

B: It strikes me that it all boils down to being able to think in a circular way rather than a linear way. Because it is that pattern of being able to reflect back on ourselves and to recognize that we are a part of that whole. Waking up to our ecological crisis is helping us be more aware.

D: If you were to look at it even just in an agrarian sense it’s so simple. It’s not rocket science. It’s like carrots come from carrot seeds. When I was a little bitty kid there was a 78 RPM record about the carrot seed. And it’s this wonderful little story and the chorus keeps coming up where this kid keeps saying, “I watered it, I pulled the weeds. Carrots grow from carrot seeds.”

It may be overly simplistic but it’s just like that. Every idea is like a seed and our mind is like soil. You will get the fruit from the seeds that you sow. So there’s this fallacious-ness that’s going about in the world by thinking that we can get fruit from seeds we never planted.

B: How would you connect it with your realization concerning the emphasis on being “begotten”?

D: To me it’s about the starting point. What is the beginning? If I were to talk about it like an algebraic equation, you can’t solve an equation with all variables. There must be a constant in there somewhere. People who are walking around in the world as though all of life were an algebraic equation with all variables feel very dismayed and very confused. They can’t anchor. They’re going around asking themselves, “What is in life that I can anchor in to give my life some meaning and purpose?”

The difficulty here is that too many of us have anchored in the temporal. We’ve anchored in people, places and things that are always shifting. So when we make the temporary the constant in the equation, then there’s a tendency to think of spirituality as the variable. In this, my problem is the given, spirituality is the variable, and I’m trying to figure out spirituality through the constant of my problem. It has to completely switch around. The variable in the equation is the circumstance and the condition. The constant is spirituality. The constant is the Oneness.

B: And it is within you?

D: It is in the inner and the outer. I think it is a problem when humanity keeps talking about “it’s within me.” Because it makes it seem like I am the constant. NO! My life exists within a broader context. God is not in me. I live and have my being in something that’s bigger than I am.

B: And that’s the wonderful complexity in the simplicity.

D: Yes

B: What strikes me in our present trend toward fundamentalism in religion is that it is like the opposite of what you are talking about.

D: Well, everybody’s looking for the constant in their equation of life. Every religion is born out of a cultural context. What the religion does is to apply spiritual values and principles within the context of that culture. So in that vein, religions are very ethnocentric where they have their own worldview at the center of the universe. With that, religion then has the tendency to make its worldview the only; the absolute and the only!

From the Editor: (continued)

sequencing a genome and has designed and built one. In other words, he may have created life.”

We note briefly the thinking of cellular biologist Bruce H. Lipton, Ph.D., former Associate Professor at the University of Wisconsin’s School of Medicine. His pioneering research on cloned stem cells at Wisconsin presaged the revolutionary field of epigenetics, the new science of how environment and perception control genes. His later research at Stanford University’s School of Medicine revealed the nature of the biochemical pathways that bridge the mind-body duality. He is the author of the book, _The Biology of Belief: Unleashing the Power of Consciousness Matter and Miracles_, which won Best Science Book of the Year award by USA Book News in 2006. (www.brucelippton.com)

We also offer a New Year’s gift in the form of a Book Review by Frank Galuszka, Painter, Professor of Art at University of California, Santa Cruz and a past president of the American Society for Cybernetics. He presents the book, _Portrait of Her_, by Ellen P. Bloomenstein as “an ambitious novel of craziness lived in crazy times; it portrays the craziness and the times as integrated.” That’s beginning to sound familiar.

PATTERNS is the newsletter for the American Society for Cybernetics, providing all members the latest announcements from the ASC Executive Committee, including information on up-coming Conferences, Publications and other news.

In this issue Ranulph Glanville, Vice President, brings us up-to-date on the creation of the “Cybernetic Coalition,” which he describes as “a small, informal, modest network of friendly societies which each have their own interest in cybernetics but which are open to being open.”

Past issues of PATTERNS can be found at http://www.asc-cybernetics.org/newsletter.htm

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Since so many people who don’t feel connected to their sense of the divine get their sense of safety out of connectedness to the familiar things that are around them, then there’s a way in which the Religion begins to play the role of God. Our spirituality comes not from our connection to God but from our connection to the religious institution. So, instead of people having a religion, the religion has people. In any fundamentalism, religious or otherwise, there’s an intolerance that happens from the deep ethnocentrism and goes back to the isn’t’s concept where we’re the best; we’re right; we’re superior. There is no other way and everything needs to be sacrificed to this way.

B: Back to the racism you spoke of as being the cause of war?

D: The otherness of racism helps to justify war. This is true of any ism, anything that has a superior/inferior; anything that has people not being considered of equal value; that has a differential in the ways that we are treated. The greater those differentials are, the more we go into de-humanization and with dehumanization people become targets for all sorts of violence. No matter how you slice it, it keeps coming back to this primary world view. Is there Oneness? Is there just One? This idea, is it in me? Am I in it? Is it fruitless?

The way that I look at it is as simple as the air. In my body there is air in my lungs and the only reason there’s air in my lungs is that I’m walking around in air.

B: It’s that circularity right there.

D: Yes. The only reason why I have a mind is because I’m in mind. The only reason why I can love is because I’m in the energy and the vibration of love. If we begin to see ourselves more as instruments we see that we’re not the end all, we’re not the be all. There’s music all over the place. You can pick up a guitar and strum the strings and make music. Music will appear to come through the guitar but the music didn’t start with the guitar. The music isn’t going to stop with that guitar. The guitar just gets to the joy of being one more place in the universe through which music can express. It doesn’t end or begin with the guitar.

B: Yes. The guitar does not cause the music. Music is not the effect of the guitar. This reminds me of when you first talked of causality. You spoke of cause and effect and I was struck by the fact that in our culture, we are taught this concept in a very simple, linear way. Yet, for instance, in the Buddhist tradition there is a sense of circularity, a multiple causality. Joanna Macy’s work is interesting because I feel she’s able to show how systemic thinking and the Buddhist thinking comes together in a basic sense of circularity. When we think about what you are talking about I hear that sense of circularity is basic in allowing us to recognize that we are embedded in, not separate from the one.

D: There’s an invisible world and all the spiritual qualities exist in the world of the invisible and then they take shape and form in the manifest world. It would be like music is invisible but when it takes shape it becomes a song. It’s like that drop of sea in the ocean. There’s nothing in the song that isn’t pure music but that song is not all of music. The finite can be contained within the infinite but you can never squash the infinite into the finite.

B: No, but it is a process through us. Our languaging makes the infinite an “it”.

D: God is expressing in, through and as us. And it is the “as” part that is the rich beauty to me because when energy or spirit manifests it never manifests exactly the same way twice. So there is this unique authenticity, this place of individualized expression, The creative wants to express in, through, and as each of us because each of us has a contribution that we can make.

That gets back to our opening comments that few of us see ourselves as life. It isn’t just that God is living in us, we’re living for, through and as God. The “doing” that we’re always doing is not asked for. When I put it in the reverse, when I take away the empha-
sis on little ole me and perceive everything merging into the infinite there are endless possibilities.

B: And that is the circularity in the cybernetic perspective that seems so natural to me. I realize why I was intuitively attracted to the Cybernetic view of the world as a scientific way of understanding our place in the world. It feels like that motion, that vitality of the eternal return.

D: I agree. But the piece that I’m emphasizing is the sort of evolutionary idea of consciousness. If you take a cycle for example, let’s just say you have a seed. Seed is planted, seed breaks open. The roots go down, something sprouts up, turns to fruit and then seed again. Seed is re-planted. But it’s a circle with a pattern. My point is that we have to understand the pattern. For most of us with this idea of who’s becoming what, there are many of us who are like those seeds. Our shells are breaking open but rather than grow the roots we need to grow, we’re trying to jump back into that seed husk that’s familiar to us. And we say, “No” to the forward evolution. The pattern is looping around but it’s going in a certain direction and you go back. You can’t reverse that cycle. It’s going to go all the way...shoomm...

B: In the Cybernetic perspective there’s a term for that. It’s called “Autopoiesis,” which I feel is expressing somewhat the same thing in a scientific way. “Self-organization” of ourselves is the recognition that each of us have our own DNA, and our own life experiences, and a certain free will. That provides the diversity we see in life, within the constant One which is life.

It is really interesting how this conversation brings me to thinking with my inner rhythm that, for me, is sort of a new way of thinking, an embodied thinking. I feel the connecting dance of what you are saying.

D: It’s trusting. This is where trust comes in. It is an understanding that there are these processes. Things don’t just spin out of control. Nothing is lost in the others. Everything wraps around and reconnects and this is the piece that is quite often challenging for people on their spiritual journey. To trust this order and not try to micro-manage everything going on in your life is a real challenge.

B: I can appreciate that and I thank you for your insights and the work you are doing.

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Triviality leaks in. For all its cleverness, Stanislaw Lem’s self-conscious Cybertiad is less elegant than anything by Dick, as if it lacks sufficient unconscious, while some of Lem’s other novels like The Investigation and Solaris, achieve vast openings of imagination following their creaky opening chapters.

There are some people in the cybernetics community who involve themselves with writing fiction, myself included. Kathleen Forsythe, long a poet, for the last decade or so a novelist, works toward interbraiding interferences with vitality, candor and accessibility. Pille Bunnell is writing a cybernetic novel as well, though I have read none of it. Ellen Bloomstein’s Portrait of Her, is a novel of complexity laid bare, with New York City as the matrix of cultures, spaces, discourses, competing interests, and jam-packed with idiosyncratic personal relationships to parents, friends, lovers, co-workers and random acquaintances. Bloomstein’s Her seeks to maintain a stable reality by alternately indulging in and withdrawing from her manic environment.

The unnamed heroine of Ellen Bloomstein’s Portrait of Her attempts suicide in the first chapter, and her life goes downhill from there. As downbeat as this premise seems, Bloomstein’s novel is a delight, written with intelligence, wit and high-end sarcasm on one hand, and with profound sympathy for convincing characters on the other. Portrait of Her takes place in Manhattan in a time period that feels like the late 80’s and early 90’s. Critical theory is hot among undergraduate students and artists, graphic design is being overtaken by computers, people wear black, and feminism is losing traction. The unnamed heroine is an Everywoman somewhere in her late 20’s, negotiating a world populated by young, talented, smart, opportunistic and lost characters, prisoners of the city and its expectations, living in a world of runaway postmodernism. In early chapters the “she” of Her who we may call Ms L, lies to the reader several times about her origins and childhood, and the reader falls

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Science Creating Artificial Life?

Excerpts from an interview with J. Craig Venter by Chris Hardwick, December 12, 2007
http://www.pbs.org/kcet/wiredscience

From 2004 to 2006 maverick geneticist Craig Venter circled the globe on board his 100 ft sloop, The Sorcerer 2. Every 200 miles the boat stopped to sample microbial life. They have identified millions of new genes and greatly expanded our understanding of the earth’s biodiversity.

Craig Venter invited us on his yacht when it was anchored in San Diego.

Chris: What actually goes on in your daily operations on the Sorcerer2 when you do your research?

Venter: On the expedition we sample roughly once a day because the sailboat can cover about 200-250 miles a day. We get to sleep and do work and then we stop for sampling; then we work with the microscope and keep sailing on. All the DNA analysis happens when we get the samples back to Roscoe, Maryland. We have a 60,000 square foot lab with all the sequencing machines and all the computers there.

C: What is it that you’re specifically collecting and analyzing?

V: Well we’re filtering the microbes out of the waters. We have different size filters. Everything that goes through that mostly we consider sterile water but that’s where we get roughly the ten million viruses per millimeter. We collect those with a smaller filtration.

C: Then out of those, how many are sequences that you have actually discovered?

V: From the first third of the expedition we got about 6 million new genes that had never been seen before. Some of those were variants of other families but we literally discovered thousands of new gene families that had never been discovered before. So instead of most biology being known as most people thought, we have well less than one percent of the biology world of the planet.

C: How would you define the significance of genomics?

V: It’s like any new advance in science. For example, with a new telescope it allows you to see further in space. We’re going the other way in terms of inner space. We can see the ultimate. We can see the genetic code; we can understand the basic wiring of organisms, the operating system. In fact we can transfer that chromosome from one species to another and totally change the species. And so it’s the essence of life. You can’t understand life without understanding genomes.

C: Why do you think people raise questions when it comes to fooling around with genes?

V: We’ve had so many different concepts of life from people who are deeply religious and see a divine creator who says “pooof” and there it is. To other people who are trying to understand their own lives and the complexity of it, the notion that someone can sit down at the computer and design it; know the chromosome and get a living cell out of it; is a concept that probably didn’t seem very likely to most people.

C: So you map your own genes?

V: Well we had to sequence somebody’s genome and when we started this work back at Celera it was a stage where everybody was very much afraid of the genetic code. People were worried that insurance companies would cancel their insurance if we could tell them that they were at risk for diseases. That was, in part, because some of the early discoveries in genetics related one gene to a disease; things like Huntington’s Disease or Cystic Fibrosis. So there was a lot of fear being driven by it and I thought that, instead of asking someone else to lead the troops through the minefield, the proper leadership was to do it yourself and show that you believe in it. Also I can’t imagine a scientist working in a field and not having that ultimate curiosity at the same time.
C: …and you literally know yourself better than anyone else knows you. (laughs)

V: Well, I’ve seen a different view of myself. We’re still trying to interpret it and that’s what I want to do with my autobiography. I want to look at the genetic code, look at my life, and try and see if they can be interpreted.

C: So, you mention your book, My life Decoded. There were scenes that seemed to me to recur, I saw Risk, a lot of risk-taking... and I saw survival.

V: What’s risk to one person is not risk to another. A lot of people think sailing around the world on a small boat is very risky but if you know what you’re doing and you have a good boat and a good crew it’s not so risky.

Risk is a relative thing but survivability, I think, is the key trait that is probably one of the genetic traits that people have. It’s like being an optimist versus being a pessimist. Optimists are much more survivable than pessimists.

C: It seems that every time you hit a roadblock or a potential roadblock you manage to find a way out of it.

V: I argue in the book that it’s because I avoided much of the education systems so I didn’t have creativity beat out of me. I maintained mine until I could come back and get a meaningful education.

C: Would you advocate that people when they’re young just learn through experience rather than non-stop academia

V: I think that would probably be far better for Society if that, in fact, happened. Many of my science colleagues always knew they were going to be a scientist. Because I was goofing off in school and got lousy grades, I was sure I was not going to be a scientist even though I was curious about things early on. As a result of not being in school; thinking I was going to have a surfing career; I got drafted off my surfboard and sent to Viet Nam where I was exposed to things that encouraged me to go back to school. One of the things that I enjoyed best there was being a doctor for a small village and orphanage. That was extremely rewarding; being able to use the knowledge that I had accumulated to really affect people’s lives. I’m very good mechanically, so learning to do surgery was not a hard thing to do. In fact I enjoyed it.

C: What’s it like? You are actually performing surgery on people and you hadn’t been to Med school?

V: I think people could be trained to do probably 99% of medicine. Even surgery is very routine. When I was ready to learn after I got back from Viet Nam, I was very motivated and basically started my education over from scratch in a junior college. I don’t think I’ve suffered from that. In fact I probably learned far more going through college than most people do.

C: Cause this time you really wanted to be there. You knew you had a goal and you knew what you wanted,

V: That’s right. In the process of getting my education at UCSD I was introduced, as an undergraduate, to some very high-end science. I was actually given my own research lab as an undergraduate and published my first paper in the proceedings of the National Academy of Sciences as an undergraduate. I just got hooked on making basic discoveries.

C: I think it is fascinating that you are your own benefactor. You run the foundation and you do the research as well. How does that work?

(continued on next page)
Science Creating Artificial Life? (continued from previous page)

V: Science used to be done that way. In fact it was only either wealthy people or people who had a wealthy benefactor that could actually do science.

C: Darwin even married into a wealthy family.

V: That’s right. We switched after World War II into government funding of science. In fact it was almost all privately funded before then. I think the government is not doing such a great job at it and having independent sources for research are certainly the key to every discovery that I’ve made. Our own endowment fund is the key science that moves us forward because government doesn’t like to fund new ideas, only things that are truly proven.

C: (laughs) Interesting, when a lot of science is trying to prove things.

V: Unfortunately most scientists don’t study the unknown because you can’t get funding for it. And that’s the sad thing about society, that we have to find a way to encourage risk-taking, especially when it comes to looking for new breakthroughs in medicine and the environment…looking for new fuels. We need some new ideas out there.

C: What do you think about the future of genomics? What do you see for the next 100 years?

V: We’re going to get so we can design life to really take control of it. We’re harnessing all this power from the survival of humanity. It will probably be the single most important science for the next century.

C: How do you want to be remembered? What’s the mark that you want to leave on society with your work?

V: Well, I’m a young scientist. I’ll be 61 in a few days and I’m hoping I have another 25, 30 years of science so I’m hoping my best work is ahead of me.

C: That’s fantastic. Well thank you so much for joining us on Wired Science.

Deepak Chopra Einstein’s God, or the Hopes for a Secular Spirituality
http://www.huffingtonpost.com/tag/einstein

Being freed from religion offers an open field for new and unknown possibilities. The next point, embracing the natural and the spiritual, is crucial in the age of science. Unless you can find a common ground where reason can meet with spirit, there’s little alternative except a forced choice of one or the other. Einstein was almost unique in his ability to see, however dimly, that a forced choice isn’t necessary. A person can only be religious in the truest sense when unity is sensed already. I think this is Einstein’s most valuable insight. Instead of trying to seek unity at the end of the spiritual journey, Einstein uses it as our guide from the very beginning. The beauty and wonder of the cosmos are inescapable at the intuitive level, which is where wonder is born. Awe is a humbling feeling and thus a good preparation for realizing the vastness of truth. In that sense, however great a mind he possessed, Einstein as a spiritual creature was devotional at heart. He worshipped before the altar of harmony, order, and universal law, all presided over by an unseen consciousness never to be fully known or even named.

The eternal domain is the basis of Nature itself. Therefore, it is the basis of our own nature. The fact that we can comprehend the universe means that we are enmeshed in its mysteries. To that end, every search for understanding and truth is religious -- Einstein felt this even about physics -- and the possibility of finding ever greater truths opens the way for a spirituality that does the same thing. To me, this vision is the most optimistic one to emerge from the profound thinkers of the quantum era. The criteria that Einstein laid down for a “cosmic religion of the future” have lost none of their power to entice us toward freedom and truth.
Evolving Perspectives

Editors Note: We have taken three viewpoints from the Internet which, when woven together, give us a sense of an increasingly beautiful developing tapestry of life.

Bruce H. Lipton, Ph.D., bestselling author of The Biology of Belief: Unleashing the Power of Consciousness Matter and Miracles,

New scientific insights suggest the evolution of human civilization resembles the recurring fate of the Phoenix, a sacred firebird revered in ancient Egyptian mythology. At the end of its lifecycle the Phoenix builds a nest of cinnamon twigs that it then ignites; both nest and bird burn fiercely and are reduced to ashes. From the ashes arises a new and greater Phoenix.

A renaissance in scientific awareness is rewriting our fundamental perceptions about life and evolution. Weaving together the elements of the new physics (quantum mechanics), the new biology (epigenetics) and the new math (fractal geometry) reveal that today's crises are not signifying an end to civilization, rather they are portents of an astounding new beginning, the emergence of a new Phoenix—global humanity.

The character of all cultures is based on a set of fundamental beliefs referred to as the basal paradigm. Significant changes in societal beliefs inevitably lead to a disintegration of the prevailing culture and the emergence of a new one. Western Civilization evolved through a sequence of such cultural upheavals; transitioning from animism (aboriginal cultures such as Native Americans), to polytheism (e.g., Egyptians, Romans and Greeks), to monotheism (Judeo-Christian and Islamic cultures) and to the current culture of scientific materialism (based upon the “truths” of Modern Science). Each civilization is defined by its own unique basal paradigm.

Currently civilization is poised for another cultural upheaval. Recent revisions in science are profoundly revising four flawed “truths” upon which our culture is built. I refer to these old beliefs as the Four Myth-Perceptions of the Apocalypse, misperceptions that are contributing to the demise of our civilization.

Myth-Perception 1 Biology is controlled by matter-based Newtonian mechanics [Revision- Biology is controlled by invisible Quantum mechanical forces]

Myth-Perception 2 Genes control life [Revision- The new science of epigenetics reveals that environment controls genes]

Myth-Perception 3 “Survival of the fittest” drives evolution [Revision- Cooperation drives evolution]

Myth-Perception 4 Evolution is a Random Process [Revision- Organisms evolve to conform to environment] When these fundamentally new scientific insights replace our currently limiting cultural myths, the ashes of our current civilization will give rise to a more magnificent version of the human Phoenix.

One of the widely recognized signs of the spiritual crisis in Western society is its over-reliance on quantifiable technological and scientific progress at the expense of concern about meaning and values. This has been a theme in the writings of our most articulate current chroniclers including Michael Lerner, Riane Eisler, Matthew Fox, Theodore Roszak, and John Saul among others. Yet none of us wish to throw away the scientific advances that have enabled many of us to live longer, healthier, and more comfortable lives than did our ancestors even a hundred years ago.

The French wartime president Georges Clemenceau was supposed to have said that war is too important to leave to the generals. The same can be said about any major human pursuit. Religion is too important to leave to the clergy, and science is too important to leave to the scientists. So everyone here needs to be part of the dialogue about what role science should play in society. Rather than being hostile to the human spirit, can a reinvented scientific enterprise play an active role in encouraging a society based on spiritual meaning? This is a particularly important question for the biological and social sciences that deal with people. Can we promote healing, that is, tikkun olam, through theories of human nature that give us hope about ourselves?

I believe the answer is yes, and otherwise would choose a different line of work. Let me interject some personal background. I was brought up with science in my blood: a father who did major research on the biochemistry of insulin, summers in the seaside scientific ghetto of Woods Hole, MA, and an early interest and talent in mathematics (my college major). But along came the Sixties, and when the whole world was pregnant with exciting change it didn’t feel right to just sit back in a splendid ivory tower. So while working between 1968 and 1970 a few miles north of here at the National Institutes of Health, I decided to make science relevant. This meant learning about the brain and seeking the roots of what motivates some people to initiate, or to accept, the Vietnam War and other actions that do great harm.

Now, some of you will say, the roots of war and of inequality are social, not biological. Yes, of course they are social. But the social is biological: societies are created by organisms. Is this the old reductionism, or what Lerner and the mathematician Ralph Abraham called scientism: the belief that only what is observed through the five traditional senses is real? Not exactly. The social sciences don’t reduce to the natural sciences; rather, the influence is in both directions. What we experience in our social and cultural lives, and what we feel in our souls, has to drive the search for hypotheses about how our bodies and our brains are organized.

(continued on next page)
Evolving Perspectives (continued from previous page)

We hear over and over again that biological motivations boil down to survival of our selves and of our genes. This is an unspoken assumption that pervades much of our discourse. We think it's all selfish genes because this is how conventional wisdom (or, as my on-line book calls it, common nonsense) interprets Darwinian evolutionary theory. Even on the left, many good people unconsciously accept the notion that (to paraphrase Bill Clinton) “it’s survival and reproduction, stupid.” In widely read trade books, scientists like E. O. Wilson and philosophers like Daniel Dennett, warm and decent humanists who are far from reactionary, try to bring science to bear on solving social problems but have trouble stepping outside this orthodox Darwinist box.

But we know in our hearts we are much more than survivors and reproducers. Our need for meaning is real. So are our needs for social bonding, for aesthetic enjoyment, and for bodily stimulation. Sex is associated with reproduction, but we want it for bonding and pleasure even when there’s no possibility of offspring.

Is there any biological basis for all these needs, or must we abandon biology if we want meaning in our lives? If the answer is no to the first question, or yes to the second, we are in bad shape. That would mean that the search for rational understanding and the search for spiritual meaning are forever doomed to clash. That would make us vulnerable to the anti-evolution, “intelligent design” crowd, because only their outlook could give us meaning. In fact, William Jennings Bryan, famous as the prosecuting lawyer in the Scopes trial, opposed evolution (despite his political progressivism) precisely because he feared that belief in Darwin’s theory would deprive us of meaning and be harmful to morality.

D.S.L.

A Sacred Mode of Inquiry: Reconciling Science and Spirit

by Rick Charnes

The place where science and spirit meet is among the most powerful and fertile of the world’s landscapes. Just as the world’s swampy areas where water meets land are the birthplace of many unusual and wonderful creatures, the intersection of science and spirit is an important power-point for humanity, an incubator to much of what may lie ahead for us.

Yet there is such a chasm between the two dimensions, and this rift is inscribed deeply into Western culture. We might even see it as our mind/body split writ large into our epistemological systems. Healing this split -- which itself occupies many dimensions -- might also provide a theoretical ground for Tikkun’s current concern to foster a spiritual politics, since politics is a form of scientific endeavor.

The Double Bind. What is it?

Gregory Bateson, the renowned anthropologist, biologist, and cyberneticist/systems theorist, was one of the original teachers at Esalen, CA. Gregory referred to our ecological conundrum in terms of the Double Bind. The story he sometimes used to explain the Double Bind was about the gnat in “Through the Looking Glass” that showed Alice a strange creature called the Bread and Butterfly. This creature had a head made of a lump of sugar and wings of bread and butter. Alice asked, “What does it live on?” The gnat replied, “Weak tea with cream.” Alice realized that the Bread and Butterfly’s head would melt if he dipped it in tea, and asked, “What happens if he doesn’t get any?” The gnat said, “He dies.” “Does that happen often?” she asked. “It always happens,” replied the gnat. When the systems you need to survive are inherently killing you, that is a Double Bind. Now the next question, for the Bread and Butterfly and for the rest of us, is, how do you get out of a Double Bind?

Tea with the Bread and Butterfly:
An Exploration in Creativity,
Interconnectedness, and The Double Bind

March 2-7, 2008

With Nora Bateson and Alfonso Montouri

Esalen Institute.

http://www.esalen.org/workshops/searchfiles/digitalforest/workshopdetail.lasso

Now more than ever, a discussion of the world as an interconnected creative system is an acutely relevant process toward a shift in thinking and acting. What happens when we look for the contexts, the relationships between living things, and start to see a larger set of intertwined variables, and the lusty vibrancy of each member is integral?

Combining the realms of improvisation, creativity, and systems theory, this workshop will look at the nature of change, learning, and evolution. Through music, poetry, art, and the process of questioning, attendees will play with relationships, contexts, metaphors, and flexibility in order to make a cognitive jump out of the mad tea party and into inquiry.

Nora Bateson is an educator and media producer. Her work focuses on utilizing media and storytelling toward the dialogue of how to bring about cultural understanding, social justice, and environmental awareness. Her upcoming film is That Reminds Me of a Story, about her father Gregory Bateson.

Alfonso Montouri is professor and program director of the Transformative Studies Ph.D. program and the Transformative Leadership M.A. program at California Institute of Integral Studies. He is the author of several books and numerous articles on creativity, complexity, and education.
May 10th to 14th, 2008: Urbana Illinois

ASC/BCL (Biological Computation Laboratory) 50th anniversary conference.

2008 sees the 50th anniversary of the founding, by Heinz von Foerster, of the Biological Computer Laboratory at the University of Illinois, Urbana / Champaign.

The BCL, a cauldron of cybernetics and the home of second order cybernetics, featured a star studded cast of members and visitors. Heinz was also one of the founders of the ASC, which has provided a spiritual home for second order cybernetics since its origination.

Our conference will celebrate this remarkable laboratory in joint festival with the Department of Electrical Engineering at UIUC, which was the umbrella under which the BCL sheltered.

This activity is being organized to coincide with the 8th Understanding Complex Systems (UCS) Symposium (12 - 15 May) on the topic Informatics, Energy and Others.

The symposium Understanding Complex Systems is designed to bring together researchers from many academic disciplines and industry and stimulate cross-disciplinary research activities to build and advance the Complex Systems Research community. A small group of distinguished invited speakers will introduce key complex systems concepts in the context of their discipline. These invited plenary talks are on a ‘Scientific American’ level. Three hands-on tutorials are in parallel with technical sessions, covering the most recent research findings. The organizers will provide information about funding opportunities for complex systems research and promote linkages for interdisciplinary proposals. One session will be on defense issues, ranging from agent based models of the rise and fall of social organizations, including conflict and conflict resolution to landmine counter-measures. The session “Beyond the Edge of Science” will feature thought provoking ideas and concepts.

Though maintaining separate venues and programmes, these two conferences will mingle, and those attending one will be free also to attend the other.

The programme is being planned and co-ordinated by Lou Kauffman and Beth Simpson.

For more information on the UCS Symposium:

http://www.howhy.com/ucs2008/

'Stay tuned' to the ASC website for more news and information as it becomes available ... http://www.asc-cybernetics.org/news.htm

2008 Doctoral and Postdoctoral Summer School on Soft and Critical Systems Thinking with Professors P.B. Checkland (SSM) and W. Ulrich (CSH)

http://www.lss.lu.unisi.ch

University of Lugano, Switzerland, 2-13 June 2008.

TIME TO REGISTER FOR LSS 2008!

- Are you interested in integrating principles of soft and critical systems thinking with your current research or professional practice?

- Would you like to get a first-hand introduction to Soft Systems Methodology (SSM) and Critical Systems Heuristics (CSH) by the originators of these two approaches to soft and critical systems thinking?

- If these themes interest you, LSS 2008 might be for you.

A few places are still available.

Since a formal application is required, the time to apply is NOW.

Faculty:

Peter B. Checkland (School of Management, University of Lancaster, United Kingdom)

Werner Ulrich (Faculty of Arts, University of Fribourg, Switzerland, and Faculty of Technology, The Open University, United Kingdom)

Note:

Chances are that LSS 2008 will be the last of this current series of Doctoral and Postdoctoral Summer Schools on Soft and Critical Systems Thinking. Do not miss this opportunity if it interests you.

Information: http://www.lss.lu.unisi.ch/

(continued on next page)
December 6TH, 2007

Dear ASC Member,

Cybernetic Coalition

For the past 18 months I have been working towards forming what I have referred to as the “Cybernetic Coalition” (CC for short). I have on occasion mentioned aspects of this through ASC channels. Now the CC has come into being it is time to write to members about it.

The Cybernetic Coalition is a small, informal, modest network of friendly societies which each have their own interest in cybernetics but which are open to being open. The societies involved (see below for a list) were chosen for the very personal reason that I know them and their officers (in several cases I am one of their officers) and believe they are credible and will work with us in a positive and collaborative manner.

The point of the Cybernetic Coalition is to increase our ability to work together and support each other, while maintaining the individuality of each member society, particularly to develop and foster understandings of what cybernetics is and may become. It is my hope that we can not over-specify what the CC is before we have had time to let it grow a little, itself.

The initial steps we have taken are two.

Firstly, to distribute information to and for each other. While there are many means of distribution, these suffer two defects: firstly, that they are slow, cumbersome and unreliable; secondly, that they tend to restrict the material shared. We hope to overcome these problems by the simplest of arrangements. Each society has nominated a (corresponding) member who will receive messages on behalf of the society’s members, and pass them on. Our corresponding member is our treasurer Rebecca Hibi (rhibit@msn.com). The corresponding members of the other societies will be treated, for these corresponding purposes, as permanent members of the ASC on our SPORG database (they do not acquire any other ASC rights).

It is my hope that all ASC announcements, including Patterns and the Newsletter I’ve been writing, are distributed to members of the CC. Other messages can also be passed on: simply forward them to Rebecca, and she will act. This message is the first: welcome to our first ASC Cybernetic Coalition communication!

In this way we increase our range of contact: effectively, we increase our membership and reach, although not our income (without any financial cost).

I also hope that we (the ASC) will be able to take on the business of co-ordinating the messages, so that we can share an overall co-ordinating time line.

Secondly, we will hold a workshop on where cybernetics might go. The aim of this workshop is to look for new insights rather than regenerating the familiar old ones. We intend inviting 3 or 4 people from outside the subject for whom cybernetics has had a really significant impact to tell us about their experience. We need to try to get beyond the standard responses that we always trot out, and which have been so ineffectual (so we have to trot them out again!).

Each society will be able to send between 1 and 3 delegates, as it chooses. We have plenty of time to decide who might represent us, and I have various ideas I’m toying with. This may be the first of several workshops: we’ll see! It is scheduled for mid-November 2008 in Vienna.

Further, we will look at other ways of acting together. One possibility I have in mind is that each society might host a chat room that reflected its special interests, and make it accessible to others in the CC. This would give us a range of special interests without having to set each up ourselves, and without having to service more than one of them.

The syle of the CC is to act modestly, step by step, and with(in) a small group. We will continue to look at what might work, and slowly to implement it. Our aim is to get something functioning, not to be big and influential. The group of member societies is closed (at least for the moment). We are not challenging the IFSR, or even the ISSS. As a group, we are getting on with finding ways to be together.

The Cybernetic Coalition offers us, I believe, a way to shift our society and the subject that is sensitive to our roots and history and which little other than commitment. To me it looks like a win-win situation. I hope we will find it so.

With Best Wishes,
Ranulph Glanville, ASC Vice President
ranulph@mac.com

PS. We will shortly hold our elections for new officers. If you wish to suggest further nominations, or nominate people for fellowships for the Wiener and McCulloch awards, please do so immediately by contacting Pille Bunnel, pille@interchange.ubc.ca.

The member societies of the Cybernetic Coalition are:
American Society for Cybernetics (North America)
Autopoiesis (Slovenia)
Cybernetics Society (United Kingdom)
Heinz von Foerster Society (Austria)
Research Committee 51 on SocioCybernetics (Multi-National)
Systeengroep Nederland (Holland)