

# 1+2=4 — A Morning with R. Buckminster Fuller

The Rev. Ron Sala

The Unitarian Universalist Society in Stamford

December 4, 2005

Introduction to speaker: “Richard Buckminster ‘Bucky’ Fuller was an American visionary, designer, architect, and inventor, who was granted 25 US patents and many honorary doctorates and is best known for his development of the geodesic dome. He was also a professor at Southern Illinois University, a prolific writer, and a Unitarian. Though he died in 1983 after a long and productive life, through the miracles of science, he’s back with us this morning! Professor Fuller....”

[Thank you, Professor Ehleben! It’s good to be with you all this morning. It’s good to know the world has avoided oblivion for nearly 23 years, since I last saw it. It’s good to

see that there are so many people dedicated to the same goal I devoted my life to, namely,] to make the world work in the shortest possible time through spontaneous cooperation without ecological offence or the disadvantage of anyone. [I'm confident that this goal is shared by approximately everyone here this morning. It's also good to learn of some of the scientific advances since my time. One of the greatest of these has to be the civilianization of the Internet, where the what began as part of the vast killingry of the Cold War has been adapted to the a vast system of livingry allowing humanity to intercommunicate approximately instantaneously in a world-around manner. I find it fascinating that anyone with an high-speed Internet connection can watch my old lectures 24 hours a days, seven days a week, and I hear the whole New York Public Library will be accessible soon.

It's also interesting that they've named a recently-discovered ball-shaped Carbon 60 molecule after me, "Buckminsterfullerene," or "Bucky balls" for short. Everyone

calls me “Bucky,” though I often refer to myself as “Guinea Pig B.”

After all, I suppose one learns most from experiments one does one’s self—especially using one’s self as the laboratory. To take a personal example,] I was born cross-eyed. Not until I was four years old was it discovered that this was caused by my being abnormally farsighted. My vision was thereafter fully corrected with lenses. Until four I could see only large patterns, houses, trees, outlines of people with blurred coloring. While I saw two dark areas on human faces, I did not see a human eye or a teardrop or a human hair until I was four. Despite my new ability to apprehend details, my childhood’s spontaneous dependence only upon big pattern clues persisted.

Most children like to collect things. At four I started to collect documents of my own development as correlated with world patterns of developing technology. I named my documentation the Chronofile.

As the era of this case history loomed into greater perspective for me, as readable in the Chronofile, it became

more accurately identifiable as that which , on the one hand, terminated Sir Isaac Newton's normally "at rest" world of myriadly and remotely isolated, hybrid cultures, to which change was anathema; and, on the other opened Einstein's normally "dynamic," omni-integrating world culture to which change has come to seem evolutionarily inevitable. By 1917 I was convinced that, unannounced by any authority, a much greater transformation was beginning to take place in [my] generation's unfolding experience than had occurred, for instance, between my father's, grandfather's, great-grandfather's, and great-great-grandfather's successive generations.

I am convinced that neither I nor any other human, past or present, was or is a genius. I am convinced that what I have every physically normal child also has at birth. We could, of course, hypothesize that all babies are born geniuses and get swiftly degeniused. [I suppose my great aunt, Margaret Fuller, wrote much the same thing back in 1842: "No one can be absolutely true to self, eschewing cant, compromise, servile imitation, and complaisance,

without becoming original, for there is in every creature a fountain of life which, if not choked back by stones and other dead rubbish, will create a fresh atmosphere, and bring to life fresh beauty.” Unfavorable circumstances, short-sightedness, frayed nervous systems, and ignorantly articulated love and fear of elders tend to shut off many of the child’s brain-capability valves. I was lucky in avoiding too many disconnects.

There is luck in everything. My luck is that I was born cross-eyed, was ejected so frequently from the establishment that I was finally forced either to perish or to employ some of those faculties with which we are all endowed....

[To take another example of a pivotal moment in my own life was a time when I was 32. That winter, my young daughter Alexandra died of pneumonia. I blamed myself. It drove me to drink, and I came very close to suicide. But, at the last moment, an idea came to me. What if, instead of ending my life, I would make it] an experiment, to find what a single individual can contribute, if anything, to changing

the world and benefiting all humanity. [That became my organizing principle from then on.

I think it's much the same with humanity as a whole. Our troubles are our best teachers.]

[A]ll humanity has always been born naked, absolutely helpless, for months, and though with beautiful equipment, as we learn later on, with no experience, and therefore, absolutely ignorant. That's where all humanity has always started. And we've come to the point where, in our trial and error finding our way, stimulated by a designed-in hunger, designed-in thirst, these are conscious inputs; designed-in procreative urge we have such an enormous amount of, as we learn later on, of designed-in automated processing of the inter-relationships of all the atoms in our organism, starting then, with a consciousness of the hunger, giving a drive to go after...to seek, to experiment. Man having, then, no rulebook, nothing to tell him about that Universe, has had to really find his way entirely by trial and error. He had no words and no experience to assume that the other person has experience. That is at first a very incredibly limited way

of communicating. We now know of human beings being on our planet for probably 3 1/2 million years, with, as far as we can see, not much physiological change, pretty much the same skeleton, and from what we can learn of human beings in their earliest recorded communicating, in an important degree, people in India 5000 years ago, and in China 5000 years ago, were thinking very extraordinarily well in the terms of anything we know about our experience, the way we've been able to resolve experiences into the discovery of principles that seem to be operative in our Universe.

[One of the most important principles we're beginning to discover, which is vital to humanity's survival and success, is that, as it says on the backs of our orders of service, we live in an "interdependent web of all existence, of which we are a part." I like to think of our own particular nexus in that web, to shift metaphors, as our Spaceship Earth.]

Our little Spaceship Earth is only eight thousand miles in diameter, which is almost a negligible dimension in the great vastness of space. Our nearest star (our energy-supplying

mother-ship, the Sun) is ninety-two million miles away, and the nearest star is one hundred thousand times further away. It takes approximately four and one third years for light to get to us from the next nearest energy supply star. That is the kind of space-distanced pattern we are flying. Our little Spaceship Earth is right now travelling at sixty thousand miles an hour around the sun and is also spinning axially, which adds approximately one thousand miles per hour to our motion. Each minute we both spin at one hundred miles and zip in orbit at one thousand miles. That is a whole lot of spin and zip. When we launch our rocketed space capsules at fifteen thousand miles an hour, that additional acceleration speed we give the rocket to attain its own orbit around our speeding Spaceship Earth is only one-fourth greater than the speed of our big planetary spaceship. Spaceship Earth was so extraordinarily well invented and designed that to our knowledge humans have been on board it for million[s of] years not even knowing that they were on board a ship. And our spaceship is so superbly designed as to be able to keep life regenerating on board

despite the phenomenon, entropy, by which all local physical systems lose energy. So we have to obtain our biological life-regenerating energy from another spaceship—the sun.

Our sun is flying in company with us, within the vast reaches of the Galactic system, at just the right distance to give us enough radiation to keep us alive, yet not close enough to burn us up. And the whole scheme of Spaceship Earth and its live passengers is so superbly designed that the Van Allen belts, which we didn't even know we had until yesterday, filter the sun and other star radiation which as it impinges upon our spherical ramparts is so concentrated that if we went nakedly outside the Van Allen belts it would kill us. Our Spaceship Earth's designed infusion of that radiant energy of the stars is processed in such a way that you and I can carry on safely. You and I can go out and take a sunbath, but are unable to take in enough energy through our skins to keep alive. So part of the invention of the Spaceship Earth and its biological life-sustaining is that the

vegetation on the land and the algae in the sea, employing photosynthesis, are designed to impound the life-regenerating energy for us to adequate amount.

But we can't eat all the vegetation. As a matter of fact, we can eat very little of it. We can't eat the bark nor wood of the trees nor the grasses. But insects can eat these, and there are many other animals and creatures that can. We get the energy relayed to us by taking the milk and meat from the animals. The animals can eat the vegetation, and there are a few of the fruits and tender vegetation petals and seeds that we can eat. We have learned to cultivate more of those botanical edibles by genetical inbreeding.

That we are endowed with such intuitive and intellectual capabilities as that of discovering the genes and the R.N.A. and D.N.A. and other fundamental principles governing the fundamental design controls of life systems as well as of nuclear energy and chemical structuring is part of the extraordinary design of the Spaceship Earth, its

equipment, passengers, and internal support systems. It is therefore paradoxical but strategically explicable, as we shall see, that up to now we have been mis-using, abusing, and polluting this extraordinary chemical energy-interchanging system for successfully regenerating all life aboard our planetary spaceship.

One of the interesting things to me about our spaceship is that it is a mechanical vehicle, just as is an automobile. If you own an automobile, you realize that you must put oil and gas into it, and you must put water in the radiator and take care of the car as a whole. You begin to develop quite a little thermodynamic sense. You know that you're either going to have to keep the machine in good order or it's going to be in trouble and fail to function. We have not been seeing our Spaceship Earth as an integrally-designed machine which to be persistently successful must be comprehended and serviced in total.

Now there is one outstandingly important fact regarding Spaceship Earth, and that is that no instruction book came with it. I think it's very significant that there is no instruction book for successfully operating our ship. In view of the infinite attention to all other details displayed by our ship, it must be taken as deliberate and purposeful that an instruction book was omitted. Lack of instruction has forced us to find that there are two kinds of berries-red berries that will kill us and red berries that will nourish us. And we had to find out ways of telling which-was-which red berry before we ate it or otherwise we would die. So we were forced, because of a lack of an instruction book, to use our intellect, which is our supreme faculty, to devise scientific experimental procedures and to interpret effectively the significance of the experimental findings. Thus, because the instruction manual was missing we are learning how we safely can anticipate the consequences of an increasing number of alternative ways of extending our satisfactory survival and growth-both physical and metaphysical.

My own picture of humanity today finds us just about to step out from amongst the pieces of our just one-second-ago broken eggshell. Our innocent, trial-and-error-sustaining nutriment is exhausted. We are faced with an entirely new relationship to the universe. We are going to have to spread our wings of intellect and fly or perish; that is, we must dare immediately to fly by the generalized principles governing universe and not by the ground rules of yesterday's superstitious and erroneously conditioned reflexes. And as we attempt competent thinking we immediately begin to reemploy our innate drive for comprehensive understanding.

We begin by eschewing the role of specialists who deal only in parts. Becoming deliberately expansive instead of contractive, we ask, "How do we think in terms of wholes?" If it is true that the bigger the thinking becomes the more lastingly effective it is, we must ask, "How big can we think?"

Anybody who has been in Washington (and approximately everyone else everywhere today) is familiar

with governmental budgeting and with the modes of developing public recognition of problems and of bringing about official determination to do something about solutions. In the end, the problems are rarely solved, not because we don't know how but because it is discovered either that it is said by those in authority that "it costs too much" or that when we identify the fundamental factors of the environmental problems—and laws are enacted to cope incisively with those factors that there are no funds presently known to be available with which to implement the law. There comes a money bill a year later for implementation and with it the political criteria of assessing wealth by which the previous year's bill would now seemingly "cost too much." So compromises follow compromises. Frequently, nothing but political promises or under-budgeted solutions result. The original legislation partially stills the demands. The pressures on the politicians are lowered, and the lack of implementation is expeditiously shrugged off because of seemingly more pressing, seemingly higher priority, new demands for the money. The most pressing of those

demands is for war, for which the politicians suddenly accredit weaponry acquisitions and military tasks costing many times their previously asserted concepts of what we can afford.

Thus under lethal emergencies vast new magnitudes of wealth come mysteriously into effective operation. We don't seem to be able to afford to do peacefully the logical things we say we ought to be doing to forestall warring-by producing enough to satisfy all the world needs. Under pressure we always find that we can afford to wage the wars brought about by the vital struggle of "have-nots" to share or take over the bounty of the "haves." Simply because it had seemed, theretofore, to cost too much to provide vital support of those "have-nots." The "haves" are thus forced in self-defense suddenly to articulate and realize productive wealth capabilities worth many times the amounts of monetary units they had known themselves to possess and, far more importantly, many times what it would have cost to give adequate economic support to the particular "have-

nots" involved in the warring and, in fact, to all the world's "have-nots."

It is obvious that the real wealth of life aboard our planet is a forwardly-operative, metabolic, and intellectual regenerating system. Quite clearly we have vast amounts of income wealth as Sun radiation and Moon gravity to implement our forward success. Wherefore living only on our energy savings by burning up the fossil fuels which took billions of years to impound from the Sun or living on our capital by burning up our Earth's atoms is lethally ignorant and also utterly irresponsible to our coming generations and their forward days. Our children and their children are our future days. If we do not comprehend and realize our potential ability to support all life forever we are cosmicly bankrupt.

So, planners ... take the initiative. Go to work, and above all co-operate and don't hold back on one another or try to gain at the expense of another. Any success in such

lopsidedness will be increasingly short-lived. These are the synergetic rules that evolution is employing and trying to make clear to us. They are not man-made laws. They are the infinitely accommodative laws of the intellectual integrity governing universe.

[Note on this address: Every word, except those in brackets, was written or spoken by R. Buckminster Fuller during his natural life. I am making this material available in an effort to advance understanding of environmental, political, human rights, economic, democracy, scientific, and social justice issues, etc. I believe this constitutes a 'fair use' of any copyrighted material as provided for in section 107 of the US Copyright Law. In accordance with Title 17 U.S.C. The material is distributed without profit to those who have expressed a prior interest in receiving the included information for research and educational purposes. For more information go to: <http://www.law.cornell.edu/uscode/17/107.shtml>. If you wish to use copyrighted material from this site for purposes of your own that go beyond 'fair use', you must obtain permission from the copyright owner.]

Sources (all by R. Buckminster Fuller):

*Everything I Know* ([http://memeticdrift.net/bucky/eik\\_session\\_01Alt.html](http://memeticdrift.net/bucky/eik_session_01Alt.html))

*Operating Manual For Spaceship Earth* (<http://bfi.org/?q=node/422>)

*Utopia or Oblivion: The Prospects for Humanity*

