

Infinite Possibility or Intelligent Design?

A Sermon for the Unitarian Universalist Society of Amherst

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There is a serious divide in some parts of our world today between those whose basic metaphysical assumptions (their understandings of reality) allow for the infinite possibilities of time and space and those who cannot make sense of our existence without an outside source or intelligent designer. This schism seems most notable in the United States, both because of our constitutional separation of church and state and because we have the freedom to speak our minds – from the pulpit, across the dining room table, or around the room at a school board meeting.

Why is this issue an important topic to bring up in a Sunday worship service? In my opinion, one of the purposes of our religious institutions is to model and promote a way of living with each other that will facilitate The Beloved Community or a world lived in right relationship, Shalom. This morning I would like to provide, hopefully, some insight into this divide between, simplistically put, evolution and intelligent design. It would be my hope that with insight we might find more ways to create understanding between what seem to be unshakable opposites.

I don't particularly think this is going to be an easy thing to do – create bridges between the factions in this debate or find a common ground that everyone can agree on – but if we don't start talking about the debate and how we got to this point in it, neither camp will do anything but hunker down in their own self-righteousness.

A little self-disclosure is necessary at this point. In addition to being a minister, I am also a scientist, both by degree and very much in my way of thinking. I stand firmly in the evolution camp, but as you will hear in this sermon, I also have some ideas about the importance of religion in our schools.

Evolution is not a word that appeared in our dictionaries only after Charles Darwin. Evolution simply means “the gradual process in which something changes into a different and usually more complex form.” (The American Heritage Dictionary, 3rd Edition) The evolution of life on this planet comes directly out of the evolution of the universe, which, in itself, has progressed from less complex to more complex.

Freeman Dyson, physicist and author of numerous books including *The Origins of Life*, writes in an essay (for the Metanexus Institute) entitled *The Future of Evolution* that there are two driving forces behind evolution, whether it is astronomical evolution or biological evolution. These are speciation and symbiosis. Within the universe, speciation has been the process by which the chaotic turmoil following the Big Bang became the stars and the planets that we know today. The process continues, as we sit here this morning. The specific relationship of these astronomical species, such as that between the earth and the sun, is a symbiosis, one that made life possible. “The earth provided chemical and environmental diversity for life to explore. The sun provided physical stability, a steady input of energy on which life could rely. The combination of the earth's variability with the sun's constancy provided the conditions in which life could evolve and prosper.”

Life, in turn, “has evolved by a process of successive refinement and subdivision of form and function, that is to say by speciation, punctuated by a process of bringing together genetically distant species into a single organism, that is to say by symbiosis. As a result of the work of Lynn Margulis and other pioneers, [this] formerly heretical view, that symbiosis has been the mechanism for major steps in the evolution of life, has now become orthodox.” (Dyson, *The Future of Evolution*) One example of this process is found in the inclusion of mitochondria within animal cells. Early on, these structures were separately existing entities which invaded primitive cells from the outside and became adapted to living inside. Mitochondria are structures essential to the formation of energy to run our bodies. The new symbiotic cells thereby quickly acquired, compared to evolution by random mutation of genetic material, a complexity of structure and function that neither component could have come by separately. “In this way symbiosis [allowed] evolution to proceed in giant steps. A symbiotic creature can jump from simple to complicated structures much more rapidly than a creature evolving by the normal processes of mutation and speciation.” (Dyson, *The Future of Evolution*)

This is a simplified description of the major processes comprising what is referred to as Darwinian evolution. Darwinian evolution, according to Freeman Dyson, ended about ten thousand years ago when a single species, *Homo Sapiens*, began to dominate and reorganize the biosphere, the living part of our world. “Since that time, cultural evolution has replaced biological evolution as the main driving force of change.....Cultural evolution is running a thousand times faster than Darwinian evolution, taking us into a new era of cultural interdependence which we call globalization. And [additionally], in the last thirty years, *Homo Sapiens* have revived the ancient pre-Darwinian [process] of horizontal gene transfer, [that is], moving genes easily from microbes to plants and animals, blurring the boundaries between species.” (Dyson, *The Future of Evolution*) In the very beginning of life on this planet, before organisms had become distinct species unable to reproduce with any but their own kind, exchange and recombination of genetic material in what is referred to as horizontal evolution was very common. Now, molecular genetics and recombinant gene technologies will become the major forces, albeit artificial, behind our evolutionary future.

We can still find Darwinian evolution in action, such as in the mutational ability of a bird virus to become contagious between human beings, but the global aspect of our relationships between the peoples of every country of the world adds a multiplied factor of possibility and reproductive prowess to the virulent strains. This is part of the cultural effect human activity is having on classic evolutionary processes. Because of travel patterns between the continents, how much of our species will become extinct when this virus becomes virulent to humans? On a strictly biologically informative level, and without any kind of intended judgment, which gene pools will remain to repopulate the world and how will this impact the future of evolution?

Here is an important point. We don't have to “believe” in evolution any more than we need to “believe” in photosynthesis or the water cycle. Like the process of photosynthesis, evolution is a scientific fact, not a theory. The nation's science organizations say that the “fact” of evolution is uncontested, while at the same time the “theory” of how various mechanisms may bring about evolution remains a healthy area of research.

To underscore its support for evolutionary science, the journal *Science* has hailed Darwinism as the Breakthrough of the Year for 2005. Its editors cite that “several studies published in 2005

have shown beyond any doubt how evolution underpins all aspects of modern biology.” (from an article by Steve Connor, December 23, 2005, in the Independent, UK) In 2005, scientists decoded the genome of the chimpanzee to confirm that the chimp is our closest living relative, descended from a common ancestor. Researchers showed that in the case of the Alaskan stickleback fish, a single genetic mutation was responsible for significant evolutionary changes. The stickleback, with the mutation of one gene, lost its armor and evolved from an ocean-loving species to a variety of landlocked lake dwellers. Evolution is a fact, not a theory.

On the other hand, the idea of intelligent design, that life is too miraculous to have appeared on earth without some sort of outside help, is a statement of faith and not of fact or science. It is, as Judge Jones said in his decision regarding the teaching of ID in the Dover, PA, science classes “nothing less than the progeny of creationism.” He also made a good point when he wrote that the ID proponents “make a bedrock assumption which is utterly false. Their presupposition is that evolutionary theory is antithetical to a belief in the existence of a supreme being and to religion in general.” Evolution “in no way conflicts with, nor does it deny, the existence of a divine creator,” concluded Judge Jones.

I came across what I think is a well written review (even if it did come from a website called sceptic.com) of a movie produced by promoters of intelligent design. The Privileged Planet, is subtitled Creationism by Any Other Name by its reviewer Charles Lambdin. With no hesitation, he begins his essay: “Intelligent design is a dressing up of an old argument with technical jargon added to lend a thin veneer of scientific credibility. [The opportunistic tactics of the ID advocates], which have more in common with politicians than scientists, have been described as the ‘wedge’ strategy – an attempt to gain academic acceptance by maintaining a presence in academic and scientific venues. A prime example of this is the film The Privileged Planet, a contemporary classic of pseudoscience.”

The basic premise of this film is that the likelihood of a habitable planet, capable of supporting the formation of life forms, is so rare as to be impossible without intervention by an intelligent designer. Do I sympathize with those for whom the incredible numbers involved with these probabilities and statistics are difficult to grasp? Sure I do. But the science is that given the numbers of star systems in the universe and the probability, within each, of habitable planets, it is entirely possible that there could be as many as 48 million such planets in our galaxy alone. (from Lambdin’s review of The Privileged Planet) These numbers come from the figures cited by the makers of The Privileged Planet, who neglected to take their seemingly insurmountable probabilities through to their actual conclusions. Regardless of whose numbers one uses, there are likely significant numbers of life supporting planets out there somewhere. I believe I heard a news report just this week discussing the discovery of one such planet.

Huge probabilities are hard to get our mind around. There are so many factors and very specific requirements that were essential before the simplest of organic compounds found itself swimming in the sea after a chance bolt of lightning. From an unknown source I found myself agreeing with these next words: “The immensity of 4.5 billion years (the age of the earth), the spooky resourcefulness of the water molecule, the unrivalled acrobatic agility of protein molecules, and the incredible ability of random processes over time to simulate, in the long run, purposeful progress, all lead one easily to the idea of intelligent design.”

Can I understand those who want to believe in an intelligent, if not benevolent, source for what is too much for our minds to understand? Yes. Can I go there? No.

Here is another thought to ponder, for those of us who honor our ability to reason and hold it highest of our sources of authority: the assumption behind our use of reason is that our universe is indeed reasonable, logical. Can the universe be proved to be entirely logical. I wonder. If not, my trust in the use of reason is an act of faith. The basic assumption behind those of us on the side of science and the use of reason is something we can only assume on faith, not fact. It's something to think about when we are accusing the IDists of basing their pseudoscience on faith, not facts.

I believe that one of the biggest sources of misunderstanding in this debate between evolution and intelligent design is the sorrowful state of science education in this country. Even before the Dover, PA, decision to require the inclusion of intelligent design in science class, the Dover schools were already adapting biology classes to religious sensitivities. "The school did not teach origins of the universe, of the first cell or of humans. Teachers urged students to ask their parents and pastors about life's origins. 'We're not going to touch on how life began,' said one biology teacher. She told her students 'We're going to look at what has happened to life since it got here, however it got here.'" (Intelligent Design Goes on Trial, by Larry Witham, Science and Theology News, January 2006) What an incomplete education those students are getting. I imagine there are other schools doing the same thing and that scares me.

I also believe our general lack of knowledge in this country about religion is a factor in this unfortunate state of affairs.

If I were in charge of the world, or maybe just our schools, not only would there be more and better science, there would also be more philosophy and a required class about religion – not necessarily about denominational or theological differences, but about the history and value (both positive and negative) of religious thinking in general. Without knowledge how can there be understanding? Without understanding, how will the world survive itself?

Nicholas Kristoff, in a New York Times column, humbly pointed out that "the woeful state of scientific understanding in this country didn't come about simply because of the radical religious right" It was also a product of educated folks in the humanities [like himself, says Kristoff] dissing sciences and not bothering to learn about them over the last several decades.

William Grassie of the Metanexus Institute proposes: "Our students, their parents, their teachers, and citizens in general would benefit from studying not only the narrowly construed sciences, but also the broader religious and philosophical issues involved in science. New educational models need to be developed.... While scientists often wax poetic about nature, evoking wonder, awe, and indeed reverence, they mostly lack philosophical and theological language to contextualize such feelings and motivations as continuous with perennial spiritual quests."

As a final thought, I would like to disagree with those who think the scientific humanism that appears inevitable in the face of all the major recent breakthroughs in science is a cold and unfriendly, atheistic place to be. I personally do not think one has to believe in a god or an intelligent designer to be a religious person. Even a warm, fuzzy one. Does not the science that

has conclusively shown that all humans are essentially identical and that we are genetically related to every other living thing on this planet inform your religious thinking? “We affirm and promote the inherent worth and dignity of every person. We affirm and promote the interdependent web of all existence, of which we are a part.” The enlightened view of genetics and evolution is one of unity and equality among all living things on this planet. These ideas, in turn, inform our morality and the ethics with which we live in relationship with all life. That sounds like religious subject matter to me.

I have not, this morning, and could not, cover all the pertinent aspects of this ongoing debate in our country over the inclusion of intelligent design in our science classrooms. Hopefully I have given you some things to think about and some knowledge to inform your conversations on the subject.

To sum up the difficult ideas from this morning’s sermon, I offer these suggestions:

1. Becoming more informed about evolution can help us understand that Darwinism is more than its simplistic description: survival of the fittest. I gave you a little taste of what some of that learning might include.
2. Remember that evolution is a fact, not a theory. The only gaps which can be spoken of with any truth are in remaining theories about the mechanisms of evolution, not its general veracity.
3. Find ways to learn about and discuss the philosophies of science and the history of religious thought.
4. Do not be afraid to admit that scientific findings inform your religious thinking.
5. Do not be afraid to admit that religious thinking informs the ethics with which you think scientific advances should be used.
6. Be not afraid of either science or religion. They’re both essential to our understanding of the world, ourselves, and how we should act as human beings.
7. Try to wrap your mind around 4.5 billion years.