MERE SCIENTISTS AND TRUE BELIEVERS

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The title of today's talk is derived from C.S. Lewis' wonderful book, *Mere Christianity*, in which he says that God's house has many rooms, and that different rooms represent different Christian denominations or faith traditions, but that there are certain features that characterize everyone who occupies His house, regardless of which room we might choose to stay in. Likewise, "mere scientists" are those who are willing to be tolerant of any logical explanation of the empirical data, even if it contradicts their own preferred interpretation.

Yesterday, we talked about historical and empirical science, about "believers" and "science", and about Darwinists, Creationists, and ID. An important part of that discussion was careful definition of certain terms. Today, we need to examine the different things we are dealing with when we say the word, "origins", and why there is so much argument about the subject. As we do this, we're going to spend some time examining the Darwinist stories about the origin of the macromolecules of life, of the first living cell, of the major body plans of the animals, and some of the organs found in the animal kingdom.

As previously discussed, our view of origins, as of so much else, is dependent on our world view. Until fairly recently, which world view we adopted was essentially a matter of personal preference. There was very little scientifically credible evidence to look at when making a decision about accepting the Darwinist explanation of where the universe and everything in it originated, or embracing the alternative of some form of design. (Please note that there are atheists who believe life came to this earth because alien races "seeded" the universe in the past! They base this on some of the issues we'll look at today, and this qualifies them as believing in Intelligent Design.) The situation has now changed, with the advent of the modern Intelligent Design Movement and its rigorous and scientific formulation of the biological case for design, and later we'll spend some time talking about this exciting change.

Even today we cannot "know", in any empirical sense, what occurred in the remote past, so that adopting a world view still involves an exercise of faith. Scientific naturalists use the evidence of the rocks, of the DNA codes of various organisms, and other sources of data that they interpret to produce their "origins myths". (Calling something a myth doesn't mean that it isn't true – it's "a usually traditional story of ostensibly historical events that serves to unfold part of the world view of a people...." Webster, 1963) Some of the specifics of their stories about how these things came about have changed over time as more data have come to light, and they will continue to change to better accommodate new data. But, Baconian science has no power to guarantee the truth of any particular story.

Theists have the same empirical evidence the naturalists do, and they add to this the stories from their holy books, or from tradition. From this expanded "data set", they construct their own "origins myth". I believe with all my heart and soul and mind that God created the living part of this earth in seven literal days a relatively short time ago, but I also freely admit that I cannot show definitively that this story is true. Unlike a new design for an airplane wing, there is no "wind tunnel" to test stories about origins. I can use a lot of indirect evidence, and a lot of circumstantial evidence, to show people that the Bible is God's word and should be trusted. But, it is the Spirit Who gives each of us the faith to believe.

The question of Origins begins with the origin of the universe. Christians are actually a bit at sea here, because it is not at all plain that the Genesis story of Creation intends to tell us how God set the universe in motion. Considerable disagreement exists between scholars with equally strong commitments to the text. In any case, many committed Christians concede that if God wanted to, He could have set up the initial conditions and created the universe via a Big Bang. In fact, one of the important arguments against the Bang, when it was first proposed, was that it implied a "beginning", a moment when God could easily be imagined to have stepped in and put things in motion. Nevertheless, today the Big Bang is the most popular scenario for the origin of the universe, despite its many problems, and the questions for which it doesn't seem to have good answers.

When it comes to the origin of the earth and the solar system, again there is some controversy about whether Genesis is explicitly giving us an account of their creation, or whether they may have been here earlier, and Genesis is telling us how God made the earth ready for life, and then created the

biosphere and all it contains. We aren't going to get into that argument this morning, just move on to the origin of life on this earth.

How life on earth began has been a subject of interest at least since man began to write, and probably considerably longer. However, only in the 19th century were any of our ideas actually tested. In those days, "spontaneous generation" was universally believed – the proposition that non-living things could directly give rise to life. But, a series of experiments, by Redi, Spallanzani, and others, refuted the idea that mice were spontaneously generated from old rags, or geese from cabbages, or flies from rotting meat. And finally in 1864, Louis Pasteur reported the results of his experiments with "swan-necked flasks", definitively showing that microbes cannot be generated spontaneously from a nutrient medium. In Paris, he addressed the faculty of the Sorbonne with these words

> "Never will the doctrine of spontaneous generation recover from the mortal blow of this simple experiment."

However, if Pasteur had been acting as a "mere scientist", limiting his science to dealing only with observations and their logical interpretations, then the most that he should have said was that spontaneous generation is impossible *under the conditions of his experiments*. This distinction is really important, because a materialist story of origins demands spontaneous generation.

Seven short years after Pasteur's words were spoken, Charles Darwin (1871) wrote that:

> "It is often said that all the conditions for the first production of a living organism are now present which could ever have been present. But if (and oh! What a big if!) we could conceive in some warm little pond, with all sorts of ammonia and phosphoric salts, light, heat, electricity, etc. present, that a protein compound was chemically formed ready to undergo still more complex changes, at the present day such matter would be instantly devoured or absorbed, which would not have been the case before living creatures were formed."

Darwin's expression of faith really ought to be excused, given the primitive state of his knowledge about what constituted life. In the 1870s, protoplasm, the "stuff of life" out of which cells were made, was thought to be a simple substance; a mixture of water, protein, sugar, fats, etc. Little was known of the complex internal structure and organization of living cells, and it seemed reasonable to assume that if the proper mixture of chemicals could be brought together under proper conditions, life would automatically emerge.

The Russian biochemist Alexander Oparin provided a more rigorous presentation of the presumed requirements for abiogenesis (the origination of living from lifeless matter) in 1924. He described the chemical composition of the atmosphere he thought necessary, as well as the elements needed in the "primordial soup", if molecules leading to life were to emerge, presumably sparked by the flashes of lightning on the early earth. Later workers contributed details considered to make the construction of the molecules characteristic of life more likely, including the exclusion of oxygen, which would have broken up most, if not all, of the molecules of interest that were actually formed. Until the early 1950s, this was merely speculation based on philosophical assumptions. But at that time, Stanley Miller, a graduate student at the University of Chicago, built a simple apparatus, filled it with a mixture of chemicals suggested in the literature, and using an electric spark for energy and a water trap to collect any molecules that might be produced, simulated the "early earth" for a week at a time.

Miller's experiments, and subsequent work by others over the next three decades, used different mixtures, catalysts, temperatures, energy sources, and other conditions, and produced various combinations of amino acids, sugars, nucleic acid bases, and other molecules such as urea, formaldehyde, etc. The production of a number of life's bio-monomers, as well as other molecules considered likely constituents of living things, in these prebiotic experiments, led to growing confidence in the reality of the "primordial soup." There was also considerable optimism about the future success of the effort to produce biological macromolecules, if not life itself, from non-living substances. This optimism was largely faith-based, rather than "mere science". Despite the fact that no actual biological macromolecules have ever been produced in origin of life experiments, confidence remained high, as shown by textbook presentations right up to the present time.

Into the general triumphalism of this Darwinist scene, Charles Thaxton, Walter Bradley, and Roger Olsen (1984) dropped their ground-breaking book, *The Mystery of Life's Origin: Reassessing Current Theories.* (This book now appears to have been the opening salvo in a renewed battle between those who espouse materialism and those who oppose them with Intelligent Design Theory.) After rigorous analysis and argument, Thaxton, et al concluded that

> "the undirected flow of energy through a primordial atmosphere and ocean is at present a woefully inadequate explanation for the incredible complexity associated with even simple living systems, and is probably wrong."

This was startling news, not least because the authors included a mechanical engineer and a physical chemist, both with PhDs in their fields, rather than the usual Christian ministers or other apologists with limited credentials. Furthermore, the book is a model of "mere science" since it reports on the state of the origin of life field with no hint of the authors' presuppositions, merely their assessment of the logical implications of what they had found in the literature.

The book was so atypical of the usual anti-materialist writing that it garnered praise even from some of those who disagreed entirely with its conclusions. Two separate chapters dealt with the "myth of the prebiotic soup" and a reassessment of the early earth and its atmosphere. These showed that thirty years of research since Miller's simulation had produced an explosion of knowledge about geochemistry, about the identification and age of microfossils, and about the likely composition of the early atmosphere. The new information indicated that whatever "soup" was available would have been far more dilute than in any of the simulations; that fossilized microbes of various kinds were alive only 100-200 million years (a geological moment of time) after the earth cooled; and that it was virtually certain that the early atmosphere contained free oxygen. The implications were clear to anyone acquainted with the Darwinist scenarios for the origin of life: Miller's experiments, and those that followed, did not realistically simulate the early oceans or ponds; there was NOT "plenty of time" for highly unlikely origin of life scenarios to take place; and the exclusion of oxygen from the atmosphere by Miller and subsequent experimenters might make chemo-synthesis more likely, but it misrepresented the scientific consensus on what the early atmosphere was actually like.

The reason for the mismatch, between the conditions in the origin of life simulations and what appeared to be the actual conditions on the early earth, was also plain – an "intelligent designer" (the simulation scientist) was planning the experiment, and choosing those conditions that promised to produce the maximum level of the desired results. Since the simulations were intended to show (and were always represented as showing) what the unguided and unplanned processes found in the natural world could produce when limited solely by the laws of nature, the experiments were

"simulations" in name only, since they differed radically from the best information about the conditions they claimed to simulate (and even then could produce very little).

Thaxton's next three chapters deal with the claim commonly made in the scientific literature, and in textbooks, that in an "open system" (like the earth) with sufficient energy flow (from the sun), the origin of life is plausible, despite the second law of thermodynamics. This law states that in the universe as a whole, the distribution of energy always tends to become less concentrated. In other words, without the action of intelligence, systems break down, always becoming less and less orderly. However, the move from inorganic molecules to a living cell reverses this trend. Thaxton, et al (page 144) first showed that some of the work needed to assemble biological macromolecules

> "...could *potentially* be accomplished by energy flow through the system", but
>
> "...energy flow is a necessary but not sufficient condition for the polymerization of the macromolecules of life. Arranging a pile of bricks into the configuration of a house requires work. One would hardly expect to accomplish this work with dynamite, however."

They then identify the different components of the work needed to make the polymerizations occur, and clarify that in constructing biological macromolecules, there must be something that couples the energy flow to the specific work requirements – a set of instructions to direct the energy flow into useful paths. Otherwise, energy flowing into and through the system is no more useful than sunshine on the body of an animal lying dead by the side of the road. The energy bathing the animal will never cause it to get up again, rather it will merely decay more rapidly.

The reason for this is what they call the "configurational entropy" that must be overcome in order to produce the complex and highly specified sequence of the monomers that is essential for the very specific shape of a protein, or that makes up the "code" that is carried by DNA and RNA. Like the letters that make up the words you are reading, and the words that make up these sentences, the order in which the molecule's parts appear is critical. There is an enormous amount of information embedded in biological macromolecules that is dependent on the specific ordering of the atoms that make them up, and undirected energy flow cannot account for this essential order. Just as the letters of the alphabet can be arranged in an unending

array of nonsense combinations, there are millions of random sequences of amino acids that do not make a protein that functions as an enzyme...or as anything else. Likewise, nonspecific sequences of nucleic acids cannot produce RNA molecules that code for a protein. Nor will randomly constructed DNA strands be capable of storing the mass of information needed to make the essential enzymes and other proteins that are essential to life. Every observation and experiment to date indicates that the "control systems" that are necessary to direct energy flow so that it accomplishes specific types of work require pre-existing intelligence.

Thaxton, et al concluded that:

1) simulations to their date of publication were largely invalid due to unrealistic conditions and illegitimate investigator interference;
2) the crucial weaknesses in prebiotic simulations were intrinsic to the theory, and not subject to solution with more time; and
3) gains in scientific knowledge were increasing the problems for the Darwinist theory of how life arose on earth.

The difficulties faced by the naturalistic story of life's origin are not a matter of ignorance that we need to overcome; it's what we actually know and are continuing to learn, that makes abiogenesis appear to be impossible.

Finally, they argued that since we can never falsify any particular model of the origin of life, science does itself (and society) a disservice when it presents only one side of the issue. Limiting the exposition and discussion in textbooks and journals to materialistic models is a bit like considering only natural causes in an unexplained death. When a man is found at the bottom of a cliff, he may have stumbled and fallen accidentally. However, unless the possibility of a push (intelligent design) is considered, a murderer will never even be looked for, much less apprehended.

The opening shot represented by *The Mystery of Life's Origin* was followed in short order by another. Working entirely independently, Michael Denton, a non-religious molecular biologist in New Zealand, published *Evolution: A Theory in Crisis* in 1986. His book began by explaining the social and scientific milieu in which Darwin grew up; how he lost his faith on the fateful voyage of the Beagle; the theory of evolution he devised to replace the Biblical story (and Paley's "watchmaker hypothesis") that he had grown up with; and how his theory hardened into scientific dogma.

Next, Denton wrote his judgment that Darwin was correct at the "micro-" level. This is at the level of speciation – there is abundant indirect evidence from man's breeding of various kinds of ducks, dogs, pigeons, horses, etc. – a process that can (almost) be seen occurring in the wild, as well . On the other hand, the truly interesting claim that Darwinists make is at the "macro-" level. They teach that the major groups of organisms all originated in a common ancestor - the original living cell that was generated spontaneously from non-living chemicals. This occurred by a process of undirected and unlimited change and divergence – the first cell reproduced until there were many cells, some of them different than their parents. The environment favored some variants, which reproduced more and became dominant. This continued, with each generation differing from the preceding via "insensible" changes, each of which gave an advantage and was therefore reproduced, or did not and was swept away by natural selection. By this method of tiny (random) changes, selection by the environment, and enhanced reproduction, every form of life now seen on earth was derived from the first cell. It is the presentation of this scenario as established fact that departs from "mere science", since there is simply no credible scientific evidence that supports it. In fact, the evidence that we do have, notably the breeding of domestic animals and plants, argues <u>against</u> the process of major change by unlimited divergence that is the essence of macro-evolution.

As a thought experiment, think of attempting to change, one word at a time, a single paragraph of this paper into a different paragraph that says something distinct from the original. Remember that, if the Darwinian scenario is to be satisfied, each and every change of a letter or a word must maintain meaning in the paragraph being modified. At no time can you allow the message to be corrupted. <u>However, this isn't even as difficult as Darwinism's problem</u>. The words only sit on a page – they have no dynamic function. Imagine instead riding a bicycle, competing in a race. Your task is to gradually change your bicycle into a motorcycle, tiny change by tiny change (just like a mouse species that must gradually grow longer legs, bigger ears, and simultaneously the proper muscles, nerves, circulation, body temperature control circuits, etc. etc. that will allow him to compete more effectively with his fellows). Not only must you continue to ride (and each succeeding generation of mice to eat, reproduce and escape) as you make the needed changes, but you must remain fully competitive in the race at each step, or you will lose (go extinct). Keep in mind that even this version of the thought experiment, impossible as it is, <u>is still a serious underestimate of the difficulties</u>. The change in the sentence, or the transformation of the bicycle

that we are envisioning, would be occurring through the action of an intelligent designer – unlike the changes in the mouse species. The mouse's Darwinist transformation must occur through a series of purely random changes, without any vision of what the end result will be, or any direction from intelligence of any kind. These random changes are then acted on by natural selection, with favorable ones being reproduced and unfavorable ones being weeded out.

Denton wrote about most of the standard Darwinian arguments, including homology (anatomical similarities believed to be due to common ancestry), and the fossil record. He spent an entire chapter (9) dealing with a number of the most difficult and best-known examples of gaps in the fossil record that have nothing whatever to fill them. The origin of birds, as well as of their flight feathers, and their peculiar respiratory organs, offer a problem that is, so far, without solution, despite numerous ingenious but implausible attempts at explanation. In fact, Denton says (p.213):

> "The avian lung and the feather bring us very close to answering Darwin's challenge: 'If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down.'"

These two examples are precisely what Darwin asked for. They are complex structures that no one can even imagine, much less find examples illustrating, how they might develop step by tiny step, with each step giving its owner an advantage, however small.

The basic issues dealt with in Denton's first nine chapters were all raised during the years after the publication of The Origin of Species, well within Darwin's lifetime. Various defenses have been offered, none of them totally satisfactory. Darwin predicted that increasing knowledge would bring additional data to support his theory. Unfortunately for the Darwinist origins scenario, this has not occurred. These "old" objections are intact, and in some cases, worse than ever. Furthermore, the advance of scientific knowledge has turned up new and even more devastating arguments against a comprehensive theory or evolution driven solely by random events and natural selection, while being governed by the laws of nature.

Since about 1950, advances in the understanding of the biochemistry of the cell have established an entirely new branch of science. The increase of knowledge in this field is nothing short of phenomenal. In 1953 Watson and

Crick published a paper describing the structure of the DNA molecule that was the first step in solving the puzzle of heredity, and it touched off an explosion of learning and application that continues until this day. Denton spends four entire chapters on molecular biology, showing how what we have learned about living systems provides us with a body of information precisely suited to assessing Darwinian claims about origins.

Proteins are large molecules, consisting most commonly of 100 to 500 amino acids (of the hundreds of amino acids known, only 20 different kinds are utilized by living things), bonded together in a linear arrangement, with varying numbers and types of "side groups" attached here and there along the chain. The easiest way to think of the structure and diversity of proteins is to compare them to sentences. The amino acids are like the letters of the alphabet – 20 amino acids for proteins, 26 letters plus a space for English sentences. It is the specific arrangement of the 26 letters and the spaces that makes the difference between a "non-functional" string of symbols signifying nonsense, and a functional English sentence that conveys meaning. Similarly, it is the specific arrangement of the 20 amino acids in a molecule that determines whether it will function as a protein or not. The complexity of the protein is actually greater than that of English sentences, because the crucial determinant of function is not simply the order of the amino acids, but the 3-dimensional shape of the molecule, once it has "folded" into its final form. This folding is partially determined by the identity and order of the amino acids in the chain, and partly by the types, the numbers, and the positions of the "side-groups" that have been attached.

Many proteins are "structural" in nature, something like bricks or stones for building a house. There is a certain amount of flexibility allowed with these structural proteins; just as a good builder can accommodate odd-shaped stones or bricks and still build a solid house, our bodies have no significant problems with an occasional "odd" structural protein. However, many proteins act as "enzymes", making possible the many chemical reactions that are vital to keeping our bodies alive and functioning properly. These proteins are more similar to a house- or a car-key, in that the precise three-dimensional shape is crucial to their ability to function at all. Small differences in certain parts of a house key will not prevent it from opening the back door, but there are other places that must be precisely correct, or the homeowner will not be able to get into the house. In proteins that function as enzymes, each has one or more "active sites", whose very specific shape is absolutely essential to ANY enzymatic function. Any change that affects

the active site: whether a change of amino acid type or position in the chain; or an addition, deletion, or change in a crucial side group; will render the enzyme non-functional, and threaten the organism with death.

DNA and mRNA are also long, chain-like molecules, but instead of being used in the cell's structure, or as enzymes taking part in the myriad of chemical reactions going on in the cell, these two molecules carry the "codes" that are needed for the protein construction essential to cellular life. The DNA stores the information needed to make all of our protein molecules – hundreds or thousands of them. While in the protein alphabet there are 20 letters, in the DNA alphabet there are only four. Nevertheless, with these four letters, arranged into three-letter groups, we can form 64 (4^3) different "code words". Each of the amino acids used to build protein molecules is represented by at least one DNA code word – some amino acids have several - and there are also codes to mark the start and the end of each DNA message. The RNA we will be talking about is a "messenger" molecule. It picks up the coded message for a particular protein from the DNA in the cell nucleus, and carries it out into the cell where the protein is constructed. RNA has its own code consisting of three-letter code-words, and an "alphabet" of four letters, one of them different from the DNA alphabet.

If the cell is like a factory (and it is), then we should think of DNA as being like the "master blueprint" that is carefully conserved in a safe place, where it cannot be smudged, torn, or otherwise harmed. The RNA is like a "photocopy" of the original blueprint, one that is carried out onto the "shop floor" in the factory, where the actual work is carried out. The proteins that are produced by the cell are like the product of a factory – automobiles, computers, plywood, garden hoses, or whatever. One really big difference is that most factories produce a single product, while many of our cells are churning out scores, hundreds, or even thousands of distinctly different proteins every single minute of their (and our) lives.

The key to understanding what all of this has to do with Darwinism is in realizing that the DNA code is something like a "library" of information, or an integrated set of computer programs. In fact, it is estimated that the coded information contained in the DNA of a single cell, if it were printed up in books, would occupy as much space as is contained in several sets of encyclopedias. No one with a rudimentary understanding of the mathematics of probability thinks that any non-intelligent process could produce the information in even a single volume of an encyclopedia or just

one functional computer program, yet the Darwinist story of origins requires us to believe that the entire DNA code was produced in exactly that way. Nobel Prize winner, Francis Crick, the co-discoverer of the structure of DNA, wrote (1981):

> "An honest man, armed with all the knowledge available to us now, could only state that in some sense, the origin of life appears at the moment to be almost a miracle, so many are the conditions which would have had to have been satisfied to get it going."

Crick's opinion has not changed over the years, and he is not alone. Quotations of this sort can be found from many leading ("mere") scientists as they face up to the real challenge that the data present to their theory.

Denton devotes a later chapter to illustrating, in detail, the sheer mathematical impossibility of the Darwinist scenario for generating the information contained within the DNA. He demolishes what are presented as analogies for mutations (this is the term for random changes in the DNA code) leading to useful information, rigorously showing that each time, the story-teller smuggles in a guiding intelligence to produce the results they claim for unguided chance in the natural world. He sums up with this paragraph (p.324):

> "Neither Darwin, Dawkins nor any other biologist has ever calculate the probability of a random search finding in the finite time available the sorts of complex systems which are so ubiquitous in nature. Even today we have no way of rigorously estimating the probability or degree of isolation of even one functional protein. It is surely a little premature to claim (as Dawkins does) that random processes could have assembled mosquitoes and elephants when we still have to determine the actual probability of the discovery by chance of one single functional protein molecule!"

Denton's statement is still true, and advances in biology have only increased the Darwinist's problems. Readers are introduced to the modern view of the cell as "a world of supreme technology and bewildering complexity". Far from being a simple lump of jelly, it is more like (p.329)

> "an immense automated factory...larger than a city...carrying out...all the manufacturing activities of man on earth....capable of replicating its entire structure within a matter of a few hours."

If this is not enough, consider the brain, with ten thousand million nerve cells, each with ten thousand to one hundred thousand connections to other brain cells, yielding perhaps one thousand million million connections in

your brain, and in mine. This number is impossible to conceptualize, but Denton helps us (p.330):

> "Imagine an area about half the size of the USA (one million square miles) covered in a forest of trees containing ten thousand trees per square mile. If each tree contained one hundred thousand leaves the total number of leaves in the forest would be...equivalent to the number of connections in the human brain!"

These connections are not simply a jumble, but an organized communications system with more specific connections than in the entire communications network on earth. Neil Campbell (1999, p.960), in his popular college textbook, *Biology*, tells students that:

> "The nervous system is probably the most intricately organized aggregate of matter on earth. A single cubic centimeter of the human brain may contain well over 50 million nerve cells, each of which may communicate with thousands of other neurons in data-processing networks that make the most elaborate computer look primitive."

Unbelievably, in the same book (p.787) Campbell urges students not to even consider the evidence of their own eyes:

> "Use of the term *plan* and *design* in no way implies that animal body forms are products of a conscious invention. The body plan or design of an animal results from a pattern of development programmed by the genome, itself the product of millions of years of evolution due to natural selection." (Emphasis in original)

No rational person would accept the proposition that a single computer (remember that this is Campbell's own analogy for the brain!), could emerge by means of random events, even if we're allowed the entire 12-20 billion years since the Big Bang. Yet, generating a computer by some random means would be a simpler task than the unguided production of a single human brain.

Campbell's warning reminds me of Richard Dawkins' book *The Blind Watchmaker*. In chapter one, he tells us that "*Biology is the study of complicated things that appear to have been designed for a purpose.*" But after saying that, his entire book is dedicated to convincing his readers to ignore the clear implications of the evidence of their own eyes; to get them to believe that biological structures and entities so obviously designed could arise through random variation and natural selection. This is surely the position of a true believer, and not of a mere scientist.

Denton explains that it was David Hume who "defeated" Reverend Paley's design arguments – Hume argued that a watch was a machine, and a living organism was not, so that there was no valid analogy between them. It's fascinating that this "refutation" has now been overtaken and resoundingly invalidated by our current knowledge of the cell. Modern cell biology has shown that the cell is filled with miniature machines, made of molecular-size parts precisely comparable to gears, bearings, etc. It turns out that Paley could hardly have chosen a better analogy for the extreme perfection of living things than the pocket watch – but it took almost 300 years for science to learn enough to vindicate him. In Denton's words (page 342):

> "To those who still dogmatically advocate that all this new reality is the result of pure chance one can only reply, like Alice, in the face of the contradictory logic of the Red Queen: 'Alice laughed. "There's no use trying," she said. "One can't believe impossible things." "I dare say you haven't had much practice," said the queen. "When I was your age I did it for half an hour a day. Why sometimes I've believed as many as six impossible things before breakfast."'"

In his last chapter, Denton points to something that we've all noticed, and perhaps been frustrated by. Even in the face of all the falsifications of their Darwinist stories, the scientific community continues to hold on to Darwinism. In fact, our children are indoctrinated with it in school, and we are bombarded with aggressive Darwinism in any newspaper, magazine, book or television program that says anything about science. Denton shows that the explanation lies in Professor Thomas Kuhn's concept of "The Priority of the Paradigm". What Kuhn said, in his influential book, *The Structure of Scientific Revolutions*, was that science advances when the scientific community adopts a particular way of looking at the world, and then trains every student in this view so that everyone works together within that framework. Only when two circumstances occur, and only if both are present at the same time, will the community change its "world view". The first circumstance is that a large number of "anomalies" (pieces of data that simply can't be rationally explained using the paradigm in place) must turn up, sufficient to produce a "crisis" among scientists working in the field. The second (and essential) circumstance is that an acceptable alternative must be available. Nature may abhor a vacuum, but so do working scientists, so even the shakiest explanations are retained until something "better" comes along. Darwinism has problems, but it's the only materialistic explanation available, and today science is fully committed to materialism.

When Denton published this book, it influenced many individuals, but it was largely ignored by the scientific community at large. In part, this is because although there are many anomalies in the Darwinist stories, there are no strictly naturalistic alternatives to Darwinism. Since current definitions of science all include a reference to "natural" explanations, anything that even hints at the supernatural is ruled out of bounds and ignored. It is only naturalistic theories that are deemed "acceptable", even if naturalistic theories can't properly explain what we observe. By faith, materialist scientists believe that further study will reveal the (naturalistic) solutions to their problems. Regardless of the strength of the evidence in its favor, Intelligent Design is simply not "acceptable" to those whose world view is naturalism. This is entirely predictable when dealing with normal human beings.

Perhaps you are wondering why Christians should care about this – for what reason should we get involved in a struggle with the naturalists over what the "origins myth" for our culture is going to be? We looked briefly at this issue yesterday when talking about the danger in which the weak find themselves in a society governed by naturalistic principles. Be aware that if you suggest that morality will suffer if we adopt a Darwinian foundation for society, you will immediately be told that it's not necessary to be religious in order to have good morals. And it is certainly true that many people who identify themselves as atheistic do good deeds, care for the less fortunate, and generally act unselfishly. But that isn't the point – in the naturalistic view, no one has any *obligation* to do these good things, and when we look at history we see that in societies built on a secular base (think about Germany in the 1930s, or the USSR between 1918 and 1989), traditionally moral behavior breaks down rather quickly, especially when times are bad, because there is no objective standard outside ourselves that requires us to act in ways we may not want to.

It is not a coincidence that as Christianity is more and more marginalized, fewer and fewer educated people take it seriously as the foundation for how they live, either personally or in society. As Christian presuppositions are weakened, and Darwinian thinking becomes more acceptable, laws against abortion are abandoned, and discussion of assisted suicide and euthanasia is begun. If the "sacredness of human life" gives way to utilitarianism (the greatest good for the greatest number) as a base for decision-making, then what is the principled argument against killing the weak and the useless,

especially if they are costing us money? Darwinism provides us with nothing solid, and Christianity is under fire even in the United States, where it appears to be strongest. In the Netherlands today, euthanasia of both the elderly and the newly born is openly practiced.

Only if there is a "scientific" alternative to Darwinism will we be able to avoid its dominance as a basis for society – and in a Darwinist world, the ruling dogma eventually reduces to "might makes right". Intelligent Design is the scientific alternative we are looking for. There is a wealth of scientific data and reasoning supporting it, and many faith traditions can come together and agree on this "mere science" as a base for society. Remember that it was the genius of the U.S. founding fathers to root our freedoms in "the laws of nature and of nature's God". Under Darwinism, this must inevitably be abandoned, because there is no foundation for it. For the Darwinist, God is only a survival strategy, a story we tell ourselves because it increases our reproductive potential in some more or less mysterious way.

As Christians, we need to be interested in the conflict between Darwinism (that is, materialism) and Intelligent Design (including some form of theism) because God has given us responsibilities to the world in which we live. A society founded on a Darwinist foundation is dangerous to "the least of these, my brethren", and we have an obligation to care for them, even if doing so does not increase our evolutionary fitness. If Jesus is really our example, our obligation remains, even if fulfilling it puts our lives in danger.

Furthermore, if we wish our children to continue in the Christian tradition, there needs to be room for theists to express their beliefs in the public square. If education, law, and every other aspect of their lives preaches and teaches materialism to them, our job of raising them in the way of the Lord is going to be very difficult. Getting others to do the right thing is a challenge – indeed, getting ourselves to do the right thing isn't so easy, either. A society that recognizes real "right" and "wrong", and that supports our decisions to do the first and avoid the second, will help all of us to live closer to the ideal that God has laid out for us, it will help us raise our children as moral people.....and it will be a much safer place, besides.

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