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**THE IMPORTANCE OF THE INTELLIGENT DESIGN THEORY
FOR ADVENTIST SCIENCE EDUCATION**

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Introduction

Seventh-day Adventist schools and colleges were founded by a church concerned to provide an education that did not alienate its children from their Biblical beliefs and Christian worldview. Many traditionally religious parents fear for their children's orthodox beliefs when they send them to college and university. And apparently with good reason, as studies show that more education often correlates with a more liberal approach to the Bible, and to religion in general. The problem is not new, but it is particularly acute today because the culture at large (at least in "developed" countries) is "post-Christian", with a basically consumerist and secular foundation. I find that significant numbers of my students arrive at college *without* a solid commitment to a traditionally theistic worldview. Relatively few of them are worried about whether to believe in Noah these days. It's more common to find them unsure about whether it's necessary, or even reasonable, to believe in an active sort of God, at all!

I believe that Adventist educators must become evangelists for Biblical theism. There are two components to this evangelism – the first is to regularly, explicitly, and boldly expose the fallacy constructed by the materialists, and presented in textbooks, popular magazines, TV, movies, and virtually every other form of media; the second is to regularly, explicitly, and boldly let students know of one's own commitment to a God-centered and Biblical world view. The fallacy we must counter is the message that only "religion" is characterized by faith in what we can't see or touch or measure; while "science" limits itself to the hard cold facts, and to those things that can be tested and proved. Therefore, we are told, we can trust science for the truth about how things really are. Today, this fallacy is being exposed by the Intelligent Design (ID) movement, and I argue that Adventist science teachers must become familiar with the argument and introduce their students to it, as a "vaccination" against the seductive materialistic influences that surround us.

Part 1: Science is not neutral.

"Science as a way of knowing" is the reigning paradigm of Western culture. Almost any notion that can wrap itself in the mantle of "science" has a better chance of being accepted in the "marketplace" of ideas. Thus, we have seen actors, in the white coats of scientists, attempting with considerable success to convince the American people of improbable things, ranging from A. smoking is good for our throats and nerves, to Z. regular use of a particular laxative is going to improve our quality of life and relationships.

But, what do we mean when we say "science"? There are multiple definitions for the word, as seen by reference to any dictionary. Furthermore, the definition has undergone "evolution" over time. In *General Zoology*, (Storer and Usinger, 1965) we find:

"Science... is exact knowledge or tested and verified human experience.... The raw materials of science are **facts**, the real state of things. Science seeks facts to demonstrate the natural orderly relationships among phenomena; it is self-testing, and it avoids myth, legend, or

bias (prejudice)... The records of science are accumulated facts or **data**.... the scientific method ... is the making of careful observations and experiments, then using the data obtained to formulate general principles.... Thus the scientific method accepts no knowledge as completely fixed or infallible but constantly seeks added evidence to test and to formulate basic principles of nature." (Emphasis in original)

Biology, fifth edition, (Campbell, et al., 1999), a standard text in many colleges and universities around the U.S., is significantly different. After 13 pages of "unifying themes that apply specifically to the study of life", ending with "Evolution is the core theme of biology - a unifying thread that ties every chapter of this text together.", Campbell writes

"... (W)e now examine some general features of science as a process. Like life, science is better understood by observing it than by trying to create a precise definition.... Science is a way of knowing.... At the heart of science are people asking questions about nature and believing that those questions are answerable ... A process known as the scientific method outlines a series of steps for answering questions, but few scientists adhere rigidly to this prescription.... Like other intellectual activities, the best science is a process of minds that are creative, intuitive, imaginative, and social. *Perhaps science is distinguished by its conviction that natural phenomena, including the processes of life, have natural causes - and by its obsession with evidence.*" (Emphasis added)

Note how the definitions have changed in 34 years - from a process dealing with facts, data, and truth to a "way of knowing" that looks for "natural" causes ... that is, for causes that do not involve any sort of intelligence, transcendent or otherwise, in origins. It has become apparent that, in Phillip Johnson's words, the definition of "science" has gradually become "applied philosophical materialism". Many may find this conclusion hard to accept, but the evidence is difficult to refute.

Richard Dawkins, England's preeminent popularizer of Darwinism, wrote in *The Blind Watchmaker*, (Dawkins, 1986, page 1) "Biology is the study of complicated things that give the appearance of having been designed for a purpose." The rest of the book is then dedicated to convincing the reader that this appearance (the data) is deceptive, and that living things are the products of blind, natural forces, with no input from intelligence of any kind. (I encourage every thoughtful person to critically read this award-winning, constantly quoted book, as it reveals the poverty of actual evidence afflicting the materialist side, and the deceptive rhetorical tactics that are consequently being employed as "stand-ins" for the missing data.)

Biology (Campbell, et al, 1999), follows Dawkins' lead, telling students (page 960) 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."

but also urging them to ignore the evidence of their own eyes (page 787):

"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)

Note that while no one would attempt to convince us that the data-processing networks in our desktop or notebook computers could somehow come into being without any input from pre-existing intelligence, when it comes to living things, it is a very different story. I always point out to my students that the evidence of design is so clear, that the author of their text feels it necessary to go out of his way and specifically deny that the data mean what they are so plainly saying, lest they, his readers, lose their way on the true path, and fall into "heresy"!

Many people assume that the emphasis on natural causes is a "finding" of science - that is, something derived from the empirical evidence that scientists study. This is simply not so; the materialism comes first, and only then, the data collection and interpretation. It is the materialists themselves who tell us this. Richard Lewontin (1997), Harvard Genetics Professor, wrote, in a retrospective essay on the recently deceased Carl Sagan:

"We take the side of science *in spite of* the patent absurdity of some of its constructs, *in spite of* its failure to fulfill many of its extravagant promises of health and life, *in spite of* the tolerance of the scientific community for unsubstantiated just-so stories, because we have a prior commitment, a commitment to materialism. It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world, but, on the contrary, that we are forced by our a priori adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counterintuitive, no matter how mystifying to the uninitiated... The primary problem is not to provide the public with the knowledge of how far it is to the nearest star and what genes are made of... Rather, the problem is to get them to reject irrational and supernatural explanations of the world, the demons that exist only in their imaginations, and to accept a social and intellectual apparatus, Science, as the only begetter of truth." (Emphasis in original)

Lewontin not only believes in materialism, he is out to get all the rest of us to believe it, too, starting with every child attending public school, or watching television. Scott C. Todd (1999), of the Department of Biology at Kansas State University, makes the outrageous nature of the materialistic bias even more explicit in a letter to the editor of *Nature*, as he tells us that the data must be *ignored* if it tells us something we don't want to hear:

"Even if all the data point to an intelligent designer, such an hypothesis is excluded from science because it is not naturalistic. Of course, the scientist, as an individual, is free to embrace a reality that transcends naturalism."

Are these examples idiosyncratic exceptions to the popular view of scientists as purely rational beings, basing their beliefs strictly on the data; willing to give up any cherished theory if the empirical observations turn against it; and even proportioning their commitment carefully to the strength of the evidence that can be marshaled for even the most popular idea? Not at all. Edward Larson and Larry Witham (1999) replicated a study first done by James Leuba in 1914, and repeated by him in 1933, of the beliefs of physical and biological scientists in A. a God we may expect to answer prayer, and B. in personal immortality. The results were very nearly the same in all three polls – 40% of all scientists believe in a prayer-answering God, and about the same percentage believe in personal immortality. It is among the "elite" scientists (1800 members of the National Academy of Science) that unbelief is most strongly established. Larson and Witham (1999) found that over 90% of the members of the NAS were unbelievers, ranging from 95% for

biologists to 83% for mathematicians. It is thus at the top of the professional scientific pyramid, among those with the most influence over educational, research, and other policies, that disbelief is the most entrenched. In a situation reminiscent of Darwin's "nature red in tooth and claw", University of Washington sociologist Rodney Stark reported that, in research universities, "the religious people keep their mouths shut, and the irreligious people discriminate. There is a reward system to being irreligious in the upper echelons." (quoted in Larson and Witham, 1999)

Propaganda to the contrary continues, however. In 1998, a booklet issued by the National Academy of Sciences, *Teaching About Evolution and the Nature of Science*, (quoted in Larson and Witham, 1998), "assured readers, 'Whether God exists or not is a question about which science is neutral'." Furthermore, NAS president Bruce Alberts announced that: "There are many very outstanding members of this academy who are very religious people, people who believe in evolution, many of them biologists." However, in regard to this reassurance about the coexistence of religious belief and high achievement in science, Larson and Witham (1998) say, "Our survey suggests otherwise."

The depth of the anti-religious bias in science was enunciated by Oxford University's Peter Atkins, who commented on the 1996 Larson and Witham survey, "You clearly can be a scientist and have religious beliefs. But, I don't think you can be a real scientist in the deepest sense of the word because they are such alien categories of knowledge."

By now, it should be apparent that the scientific community has an atheistic bias. But, this was not the case in the past. Scholars tell us that the scientific method arose in the West (rather than in other cultures) precisely because of the Western belief in a rational, predictable, non-capricious God who made (and generally followed) His laws for the universe ... laws that could be discovered and comprehended by the human mind, and then used to increase man's well-being. There are many examples of early scientists with strongly held and relatively orthodox religious beliefs, including Bacon, Galileo, Kepler, Newton, and others. The virtual monopoly on scientific achievement now held by scientists espousing atheism is a relatively new phenomenon, and this should reassure us that it is not a necessary link. Indeed, if scientists were willing to return to earlier, and less tendentious, definitions of science, much of the "war between science and religion" currently raging in the United States and elsewhere would come to a halt. It is the object of the Intelligent Design movement to bring the scientific enterprise back from Darwinism to its empirical roots.

Part 2: What is Darwinism, and what is Intelligent Design Theory?

Darwinism has been championed by the scientific community for over 50 years, and ID is only the newest challenger. But, ID itself is old. One of the early ID references is found in the Bible. In Romans 1:20, the apostle Paul writes, "Ever since the creation of the world his invisible nature, namely, his eternal power and deity, has been clearly perceived in the things that have been made." (RSV, Thomas Nelson & Sons, 1952) This is a concise exposition of the ID position - that in the "artifacts" of the natural world, we see the clear evidence of a designer, since such complex, specified objects could not have come about except as the result of an intelligent agent. The argument was perhaps most famously expounded by William Paley of England, in his 1802 book,

Natural Theology - or Evidences of the Existence and Attributes of the Deity Collected from the Appearances of Nature. It is in this book that Paley wrote:

"In crossing a heath, suppose I pitched my foot against a *stone*, and were asked how the stone came to be there; I might possibly answer, that, for anything I knew to the contrary, it had lain there for ever; nor would it perhaps be very easy to show the absurdity of this answer. But suppose I had found a *watch* upon the ground, and it should be inquired how the watch happened to be in that place; I should hardly think of the answer which I had before given, that for anything I knew, the watch might have always been there." (Emphasis in original – all Paley quotes from Dawkins, 1986, pp.4 and 5)

Subsequently, Paley argues

"...that the watch must have had a maker; that there must have existed, at some time, and at some place or other, an artificer or artificers, who formed it for the purpose which we find it actually to answer; who comprehended its construction, and designed its use."

The watch implies a watchmaker because of its complexity, and because of the obvious fact that it has a purpose; a purpose for which it had been designed. Given that something so relatively "simple" as a pocket watch compels the intellect of man to postulate a designer, Paley concluded that we must, by analogy, look for a designer in nature, since

"...every indication of contrivance, every manifestation of design, which existed in the watch, exists in the works of nature; with the difference, on the side of nature, of being greater or more, and that in a degree which exceeds all computation."

This was not an idea original to Paley, although he gets credit for it, since he expounded the argument most completely and most memorably. Paley thus blazed a trail that Darwin followed almost 60 years later, when he first published *The Origin of Species* as a refutation of Paley's thesis. Darwin had read and appreciated Paley's work when a young man. However, on his voyage in the *Beagle*, Darwin made many observations, and collected many specimens, that were in conflict with the rather naive creationism of his time. In *The Origin*, he gathered together an enormous amount of contemporary material and wrapped it around one key insight (although Loren Eiseley [1979] reports that even natural selection, widely recognized as Darwin's unique contribution, is described in contemporary works of which Darwin had copies and had apparently read), producing a book of exposition that was at once utterly convincing, and seemingly scientific, owing its force to the mass of empirical data Darwin had gathered. This wealth of detail continues to overwhelm readers of *The Origin*, so that few notice the breaks in the logical chain Darwin constructed.

This is not the place to argue with Darwin, but to point out that it is clear from Darwin's own correspondence that it was his intention to refute Paley, even very early in his work on evolution. And he met with great success. Describing examples of man's selection of farm animals and other organisms, Darwin argued that the natural variation that everyone can see within a species, combined with the tendency of organisms to overpopulate their environment, would inevitably set up a competition for the necessities of life. This would result in new generations with MORE of the variations that offered an advantage in the competition. Since organisms surviving the longest were likely to produce the most offspring, it was plain that any favorable variation inheritable from the parental generation (Darwin had no idea how inheritance worked) would tend to be more prevalent in each subsequent generation, so long as the environment continued to favor it. Again, this was simple stuff (T.H. Huxley is reputed to have said "How very stupid not to have thought of

that" after reading *The Origin*), and not even particularly original. But Darwin, like Paley, was able to lay out the argument in a particularly clear and convincing way, and the wealthy British Victorian upper crust, of which Darwin was a prominent member, was ready to embrace such a theory, perhaps in part to salve their Christian consciences over their own position in the rigid and highly stratified society, whose superstructure of wealth and ease was supported by abundant misery among the workers at the bottom. It may simply have been easier for them to deal with the guilt if they could believe that this was "nature's way".

The message of Darwin's natural selection was that change comes slowly, step by tiny step, and never in sudden large "jumps". Minuscule improvements accumulate in the bodies of living organisms, and finally, after many millions of years, we can see the stupendous changes, though only by examining the fossil record. Clearly, in Darwin's day, his theory of how species (and, he hinted, all living things) originated had merit. Given the prevailing ignorance about the structure and function of the cell, it was not unreasonable to think that his "warm little pond" might have spawned the blobs of jelly that cells appeared to be. Once *The Origin* was published, most of the scientific world embraced the explanation, and those who had doubts were gradually marginalized. Interestingly, Darwin's ideas about the power of natural selection almost suffered their own eclipse, due to a number of conundrums, the first of which was solved after Darwin's death, just as the century ended. Gregor Mendel's paper on genetics was rediscovered, and made plain to the world how Darwin's "variations" were inherited by the offspring from its parents.

At about the same time, another of Darwin's vexing questions – how to produce the new and innovative variations his theory demanded - was also apparently answered. Ionizing radiation was discovered, and legions of underpaid graduate students began their labors in the "fly labs", first radiating and then crossing *Drosophila melanogaster*, the lowly fruit fly, to discover its patterns of inheritance. Here, at last, was a source of innovation (soon called "mutations") in the construction of a living organism. By recording the strange deformities that appeared in the offspring of irradiated flies, scientists began to learn how much change an organism could withstand, if it were to live, and ultimately to reproduce.

Interestingly, the hard-working geneticists overlooked the fact that their data, collected from millions of generations of fruit flies, pointed without exception to an awkward conclusion: that fruit flies, at least, have an "envelope" of variation around them, and as a fly approaches the edges of that envelope, it first ceases to reproduce, and then dies. Flies varied in size from small to large, but there was never a fruit fly as big as even the smallest hummingbird. Flies had eyes that varied in color, but the palette was strictly limited, and beyond the commonly seen colors, no others appeared. Fly wings could vary from shriveled to short to long, but they never turned into beetle or moth wings. If the wealth of this type of information had been examined without preconception, surely scientists would have abandoned Darwin's idea that changes could continue linearly without limit. But, unlimited linear change is an essential mechanism if a single primordial cell is to give rise to an elephant, and a redwood tree, and a crocodile, and a man; and the scientific enterprise was steeped in Darwinist materialism, so the lesson of the fruit flies went unlearned.

The "neo-Darwinian Synthesis" - natural selection, Mendelian genetics, and innovation via mutations – defeated its competitors. By 1949, George Gaylord Simpson could bear witness to his faith, without criticism, in the following words:

"Although many details remain to be worked out, it is already evident that all the objective phenomena of the history of life can be explained by purely naturalistic or, in a proper sense of the sometimes abused word, materialistic factors. They are readily explicable on the basis of differential reproduction in populations (the main factor in the modern conception of natural selection) and of the mainly random interplay of the known processes of heredity.... *Man is the result of a purposeless and natural process that did not have him in mind*" (emphasis added),

In the same book, Simpson (1949) made plain just how little the scientific community would concede to traditional believers:

"There is neither need nor excuse for postulation of nonmaterial intervention in the origin of life, the rise of man, or any other part of the long history of the material cosmos. Yet the origin of that cosmos and the causal principles of its history remain unexplained and inaccessible to science. Here is hidden the First Cause sought by theology and philosophy. The First Cause is not known and I suspect it will never be known to living man. We may, if we are so inclined, worship it in our own ways, but we certainly do not comprehend it."

We've come a long way, baby, from Bacon, Kepler, and Sir Isaac Newton. Today's science, originally established on the basis of empirical observation and belief in the Lawgiver, presumes to dictate, to mankind as a whole, just what will be tolerated in terms of the transcendent.

However, there was a time bomb waiting to go off under the Darwinists' seemingly impregnable fortress. A "lowly and despised lawyer", albeit one who was prodigiously bright, rigorously trained in the analysis of arguments, safely tenured at the prestigious U.C. Berkeley Law School, and recently returned to the Christian faith of his youth, was at a professional meeting in London, where a new book was being touted in the hotel bookstore. *The Blind Watchmaker* was its title, and it aspired to be a definitive debunking of Paley's thesis: that we may infer a Designer from examining the complexity and apparent purpose found in living things. Phillip Johnson read Richard Dawkins' book, and his initial reaction was that, if this was the best evidence that the scientific community had for the materialistic origins of life and its current complexity, then a serious fraud was being perpetrated on a too-credulous public. The modern Intelligent Design movement had its genesis in that London hotel. Johnson was not a fundamentalist, and he was determined that his critique, later published as *Darwin On Trial* (1991), would deal strictly with the empirical evidence and what could reasonably be inferred from it. No talk about a seven-day Creation; or about Noah's Flood; or about a 6,000-year chronology. He would deal with a single, very basic question: did the scientific evidence available actually support the idea that mutations and natural selection were the creative force essential to the Darwinist claims?

The Darwinist answer was predictable: mutations and natural selection were all that we know about, so they must have done the job. They challenged Johnson to suggest his own mechanism, and told him that until he did, he would have to be satisfied with the materialistic one currently in place....neo-Darwinism. Johnson's response was that the object of science should be to use the data to find the closest approximation to the truth, not simply the best materialistic explanation currently available. In a series of public lectures, well-publicized debates, and sharply worded essays and reviews, Phillip Johnson took his case to the public, promoting his book and constantly reiterating his question about the adequacy of the Darwinian explanation. And, like moths attracted to a flame shining across a dark field, young scientists, philosophers, mathematicians, and others dissatisfied with the scientific dogma of the day, began to contact Johnson. He set up and moderated an E-Mail

reflector on which these "mavericks" exchanged news, proposed ideas, debated each other, and honed their arguments. He shared his contacts in the world of publishing, so that in 1994, InterVarsity Press brought out *The Creation Hypothesis*, edited by J.P. Moreland, and containing seven essays by various members of the "Design Crowd" that Johnson had been nurturing in cyberspace. In 1996, the first major research conference of scientists and scholars who reject philosophical naturalism occurred on the campus of Biola University. Over 200 participants gathered to listen to papers read by 18 presenters, as well as to the final presentation, a call by Phillip Johnson to separate materialist philosophy from empirical science. The symposium volume of all papers presented was published by IVP in 1998 as *Mere Creation, Science, Faith & Intelligent Design*, edited by William Dembski.

However, these early efforts were easy for the scientific mainstream to ignore – who needed to pay attention to a lawyer (Johnson) or a philosopher (Moreland) writing about evolution? The first real "shot across the bows" of materialism was fired in 1996, when Michael Behe, a bright and combative young biochemist at Lehigh University, published *Darwin's Black Box* (Free Press). Behe's stature as a working scientist ensured that his book would enjoy instant credibility. Furthermore, his thesis was simultaneously provocative and compelling, and the core of it was presented in a style that almost everyone could grasp. In his book, Behe pointed out that the cell, far from being a "simple little lump of albuminous combination of carbon" (Ernst Haeckel, quoted in *Darwin's Black Box*, p. 24), as thought in Darwin's day, was actually an entire factory, filled with molecular machines of stunning precision and complexity. Within this factory, there are numerous individual machines and cellular systems in which varying numbers of parts work together in such a way that they will only function *if every single piece is in place*. Removal of any piece does not reduce the efficiency; it eliminates entirely the function of the organelle. He called this situation "irreducible complexity" (hereafter, IC), and it was a dagger aimed at the heart of Darwinism. No one who has read his book or heard him lecture can miss his point, as he brought the concept home to the least scientific listener by using a mousetrap as his everyday example. Take away any one of the mousetrap's five pieces, and you do not catch fewer mice, you catch none. The mousetrap will not work at all with a piece missing, because it is irreducibly complex.

The challenge to Darwinism lies in the nature of evolutionary change envisioned by Darwin. Quite simply, if all the pieces must be present in order for a cilium (the hair-like organ used by some microbes to move through their watery environment), or other organelle, to function and give its owner an advantage, then the pieces could not possibly be accumulated step by tiny step, since an incomplete and nonfunctional cilium would be nothing more than wasted energy. The energy used to make the functionless parts (with no purpose right now, only sometime in the future when the remaining pieces had been accumulated) is energy that competitors would be spending on survival and reproduction, thus condemning the "innovator", with only a few parts of a cilium to show in place of longer life and extra offspring, to evolutionary limbo. Only if the numerous parts of a cilium appeared all at the same time, could they give survival advantage, and thus be retained and passed along to future generations. Darwin himself had thought of this very problem, although his example was the vertebrate eye, the contemplation of which, he once wrote to a friend, gave him the cold shudders. Nevertheless, he outlined his idea of how the vertebrate eye might have evolved, characteristically allowing himself to simply *assume* the existence of the most difficult part of the problem, the origin of the sensory cells and their connections to the specialized brain circuitry. Of course, in his day, no one knew of the intricacies of the neurology and biochemistry of vision, nor

could anyone have imagined the existence of Behe's molecular machinery. To his credit, Darwin was no coward. He was a scientist, and was prepared to take risks in defense of his ideas. Thus, in *The Origin of Species*, he laid out a way to disprove Evolution by natural selection:

"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." (Quoted in Dawkins, 1986, page 91)

Behe claims that he has found not one such organ, but an entire cell full of them, and that this data relegates Darwinism, as a mechanism for origins, to the proverbial scrap bin for theories that have been tested and found wanting. It is Behe's contention that the evidence from molecular biology warrants a scientific hypothesis that life was designed by an intelligent agent. Note that this designer is not necessarily the Christian God. There is nothing in the data that points to any particular designer, and Fred Hoyle's (1982) highly intelligent extra-terrestrials would qualify. But, Behe's work has "made space" for at least some of the commitments of the more traditional Christians in science, because their God certainly fits into the picture that Behe is painting.

(Although the examples given here are biological [because I'm a biologist], there is nothing to prevent Chemistry, Physics and Math teachers from presenting this concept, as well. *Nature's Destiny*, Michael Denton's new book (1998), as well as *The Creator and the Cosmos* by Hugh Ross (1993) provide abundant and diverse examples, ranging from the construction of the carbon atom to the precise values for the fundamental constants of the universe.)

3. Why Intelligent Design is "more scientific" than Darwinism

Darwinism is a 19th century answer to a problem that has challenged man for millennia – where did we come from? It owes its popularity and staying power to its materialistic core, and to man's desire to escape from ultimate authority. But, "science" has been redefined in order to accommodate this ideology, and science is beginning to suffer from the straitjacket into which it has been shoved. Modern biology deals with the cellular machinery, as well as with the DNA code that directs the construction of all life forms. An "ancient" (and in Cell Biology today, anything more than about five years old is ancient) theory, devised before 99% of current biological knowledge had been developed, can hardly be expected to account for everything we now know about living organisms. But, by eliminating an entire class of explanations (the very ones that address the newest discoveries in the labs) from consideration, Darwinists have assured that they will have only increasingly lame and unsatisfying "just-so stories" to explain much of what we know about living organisms.

Until very recently, Intelligent Design was in the same boat. Even Behe's work resulted in some scientists looking at the molecular machine and agreeing that it could NOT have evolved step by step, while others looked at precisely the same data and said that if your imagination were only a little better, you COULD dream up a mechanism. The ID position had not been put on a scientific footing, and it was no help that the Darwinist scenario of mutations and natural selection was equally unscientific. As in a boxing match, a "tie" means that the current champion wins. That was the situation until 1998, when William Dembski (PhD Mathematics, University of Chicago, PhD, Philosophy, University of Illinois at Chicago, M. Th., M.S. Psychology) published his

monograph, *The Design Inference*. In it, he offered a “signature” for design – the presence of “specified complexity” (or “specified small probability”). That is to say, design is recognized in highly improbable events (complexity) that also make up an independently identifiable pattern (specification), and Dembski outlined an objective method for detecting this signature of design.

To understand Dembski’s thesis, think of a bowl of pudding in the refrigerator. One morning, you open the door and see a patch of mold on the top of the pudding. The shape of the mold patch is complex – that particular shape has an extremely low probability of occurring again. In fact, if you looked at 1,000 bowls of pudding, each with a patch of mold, no two of them would be exactly the same shape. But, no one would call any of these shapes “designed” because they correspond to no recognizable pattern that is in our minds ahead of time. Suppose, however, that one morning when you look in the refrigerator, the mold patch is the shape of Elvis Presley’s face! You’d call your spouse, the neighbor, etc., in order to show them the mold patch. This is a complex shape, as before, but with the difference that it takes the shape of something that is in millions of peoples’ minds – everyone who has seen “The King” would recognize it. Even with Elvis’ face, a cautious person might be hesitant to ascribe the shape of the mold patch to design, reasoning that such a shape COULD come about by chance. However, what if the next morning, when you look at the pudding with Elvis in the mold patch, this time, it was colored, so that Elvis’ hair was brown, his cheeks were pink, his teeth were white, and his eyes were blue (did Elvis have blue eyes?)? You would be a really dull person if you still thought that this was a chance occurrence. Given a highly specified (therefore highly improbable, and Dembski puts numbers to all of this) shape, that also matches a recognizable pattern that could be specified ahead of time, the implication of design becomes overwhelming. No rational observer (except, perhaps, an ideologue) would deny it.

Following the publication of his scholarly treatise, Dembski (1999) brought out a more “accessible” book, *Intelligent Design*, written for “the rest of us”. However, since it was written at the same time as the monograph, it can best be seen as a commentary on *The Design Inference*, summarizing it and laying out its cultural and theological implications. It is chapter five that introduces the two characteristics of design mentioned above – complexity and specification. These are used to construct Dembski’s “explanatory filter”, through which all patterns are passed to distinguish among law, chance, and design as causes. The first part of the book deals with the history of design arguments, including the Biblical records of signs and miracles, and British natural theology. Dembski shows how earlier critiques of design have actually failed, and discusses how best to challenge naturalism today, demonstrating that ID is currently the leading candidate. The end of the book delves into more of the details, showing how design can be formulated as a theory of information (you’ll have to read it yourself), and proposing (and supporting) his contention that science and theology have much to offer each other. Finally, there is an appendix with answers to nine of the main objections to design that were not addressed in the text. I’ve heard one substantial criticism, that Dembski jumps too quickly from design to Jesus Christ; but it is nevertheless a fine book that everyone could benefit from reading.

This is all very exciting to the “design crowd” because complexity and specification are “testable” and “quantifiable” characteristics, and Dembski has established an objective method for testing structures, processes, etc. to determine if they are the result of law, chance, or design. No longer are the defenses, “You just need more imagination” or “You believe in the ‘God of the Gaps’”, tenable, because the invocation of design is no longer a response to our ignorance, or our aesthetic

judgment, or our biases. What we have now is a scientifically defensible basis for saying “With current knowledge, we have shown that unintelligent causes are unable to produce this artifact.” This isn’t really “new” science, either. It borrows from the same kind of work that goes on constantly in archaeology, forensic science, etc. The examination of patterns to determine whether they are produced by intelligence or by chance (is this a stone tool, or a plain old rock? Did this body with a lump on its head die by murder, or an accident?) is commonplace, and the process is reasonably well understood.

This is a watershed in the science of origins. Darwinism has nothing like it, and this fact has been noticed and deplored (even in print) for decades by many honest Darwinists (although NEVER in science textbooks!). The beauty, as well as the problem, of the theory of natural selection has always been that it can explain anything found in nature – why the monkey grew a tail or lost it; why a species survived or went extinct; why one species grew larger antlers while another contemporary species’ antlers got smaller. A theory that explains absolutely everything is, in reality, explaining nothing, particularly when there is no means of testing it. All that Darwinists can do is make up more or less plausible stories to fit whatever facts are available, and then try to convince the rest of us that this is what happened. Today, it is ID that is testable; that is falsifiable; and that best fits the current data. It represents the most scientific way of looking at the world. This is very good news indeed, and every Christian science teacher should get a basic understanding of Intelligent Design and its implications, and share this with their students.

Conclusion

The Intelligent Design movement is crucially important for Adventist education because it can tell our young people an important truth about Origins. In our increasingly secular culture, Darwinism is being presented everywhere with an evangelistic fervor not seen in the past. All the major media are saturated with attractive, seemingly scientific, presentations equating the Darwinist position with the scientific method that has brought us the incredible technology, medicine, and other good things that we depend on and enjoy. It is presented as being strictly a product of empirical observations, and it is flatly stated that the Darwinist scenario of “slime to man” is a “fact” supported by all the evidence. Simultaneously, the traditionally religious perspective is made to appear anti-intellectual, anti-science, and dependent on a dogmatic belief system founded solely on faith rather than evidence.

These messages, constantly being presented to eager and receptive children, cannot fail to have an effect. They produce a mindset that is predisposed to dismiss the Biblical story of Creation as a fantasy, even if the child doesn’t share these thoughts with the parents, and even if the child is not consciously aware of them. As our children get older, they are bombarded with even more messages aimed at convincing them that “Science (is) the only begetter of truth.” (Lewontin, 1997), and they may easily be induced to reject Creation altogether, and with it, their belief in an active God. It is not a fair fight! The messages our children receive lead them to believe that if one is well-educated and intellectually honest, one must stop believing in Creation by a God Who interacts with His creation. Intelligent Design theory makes it plain that belief in a Designer is a *rational* choice, one that fits a great deal of the evidence of our senses. This is true despite the fact that we cannot “prove” that ID is the correct answer, and even though the results of sin and evil

have obscured the original design in many of nature's "details". Everybody, even well-educated, intellectually honest critical thinkers, must make a "leap of faith" when they choose an "origins myth", and this is true whether one chooses the traditional Biblical explanation, the Darwinist "just-so" stories, or something else .

It is for these reasons that I believe Seventh-day Adventist science teachers **MUST** introduce their students to Intelligent Design, outline its strengths, and explain its importance. If our students are not exposed to thoughtful, educated, and faithful men and women, their beliefs will be strongly influenced, if not determined, by the materialistic cultural "sea" in which they swim. Plainly, every student needs to learn the Darwinist position, so that they can see the evidence for the role of natural selection in explaining the bewildering variety of species currently on the earth, and the wide range of variation we see within any single species. But, they must **ALSO** learn that ultimately, Darwinism as an Origins myth rests on faith in the same way that Creation does. Of course, no one but a traditional believer is likely to tell them this, and Christian science teachers are in the best position to show them this truth. If the scales of decision in this area are going to be balanced, students must be informed that a great deal of the current evidence is more compatible with belief in a Designer than it is with Darwinist materialism. The main objective of this paper is to convince Christian science teachers of the importance of presenting Intelligent Design theory, as well as to assure them that they can do this honestly.

However, this is not the end of a Seventh-day Adventist science teacher's responsibility. We should also be role models of rational, thoughtful, and scientifically trained people who are simultaneously willing to accept the authority of Scripture. I must confess that I spent several years inadvertently failing my students (and their tuition-paying parents) in this regard. My experience as a college student was back in the 1960s, when a professor's foundational religious commitments could generally be taken for granted. When I returned to teach at Pacific Union College, more than a decade later, I lectured about the standard scientific model, and about creation and evolution, but I spent very little time establishing my own position in the minds of my students, thus leaving many of them to wonder just what I **DID** believe. I learned about this problem only when a former student wrote to a colleague, and expressed surprise that I might be considered a traditionalist. He said he had never gotten that impression when he was taking my class! Now, I go out of my way, regularly during the quarter, to make it abundantly clear that I accept the Bible account as true, just as it is written. This means Creation in seven consecutive literal days a short time ago, a world-wide Flood, a literal and physical death and resurrection of Jesus Christ, and a literal and physical Second Coming. Recently, I am both glad and sad to report, my teacher evaluations have sometimes included student complaints that I talk too much about my religious perspectives in science class.

How can I affirm such a literalistic interpretation of Scripture? After all, the Seventh-day Adventist church is on record as favoring Conservative/Evangelical interpretive methods, i.e. thought inspiration, and besides that, I'm a scientist. I talk to my students about these things, and I tell them precisely how I decide when to be a "Fundamentalist" and when to be a Conservative/Evangelical. It all comes down to the central doctrine of the Christian faith – the Story of Redemption. Anything that is clearly taught in Scripture and that is also essential to a coherent and convincing Story of Redemption, I take literally; regardless of the current state of the scientific evidence. The reason is this: I can't make sense of the Sabbath, of sin entering the world, or of

Jesus' death on the cross as my substitute, unless the first 11 chapters of Genesis tell the story of what actually happened. Furthermore, without these chapters, I lack real assurance of His second coming. Jesus Himself linked the last days of earth's history with the early ones. This doesn't mean that I affirm every disputable detail – I can't see that it matters to the Story of Redemption whether the sun was created *ex nihilo* on Day four, or merely appeared at that time. Likewise, while the Bible is very clear that the Creation is young, there is nothing "sacred" about Bishop Ussher's interpretation of the Biblical data to get a date of 6,000 years for the age of the earth.

It's plain that not all Christians agree on the importance of reading Scripture in this way. To illustrate why I think it's essential, I invite my students to think about the issue, and attempt to construct a convincing Story of Redemption without Creation, the Fall, and the Flood. If there is a way to do it, I want to know, as it would certainly make it easier to interpret some of the empirical evidence turned up by the earth sciences. But, it is dangerous to allow our theology to be determined by the current state of the evidence and interpretation of geology, or any other natural science. We must remember, and share with our students, the truth that there is NO view of origins, religious or naturalistic, without its scientific problems. Darwinism has a tremendous "scientific" challenge in explaining the origin of life, and the tremendous increase in information content of the DNA code, if their picture of a single cell proliferating and evolving into the incredible variety seen in the fossil record and around the world today is factual. For Christians, there are many origins scenarios that pose serious theological, as well as scientific, problems. At some point, each of us will choose our own belief, whether Biblical or not, and I remind students of this often. I tell them that I have chosen the story that makes the most spiritual sense to me, and for the time being, I just have to live with the scientific questions it raises. Intelligent Design has already made this part of my life a lot easier, and I see even more promise for the future.

I'm very open about all of this, and if there are students who are shocked by my "unscientific attitude", I ask them what they think Richard Lewontin, or Stephen Jay Gould, or Richard Dawkins would say, if we were to ask these worthies about their belief in the spontaneous generation of life.... Every materialist testifies to his faith in spontaneous generation whenever the subject comes up – despite the fact that there is a paucity of evidence that non-living chemicals have any capacity whatever to come together on their own to form the molecules of life. In fact, all of the experiments to show how it might have happened have been failures, even with the substantial "cheating" that was done in setting them up, as clearly exposed in *The Mystery of Life's Origin* (Thaxton, et al., 1984). Nevertheless, virtually all materialists will affirm the "fact" that spontaneous generation produced life, and that the first cell is the progenitor of every single species currently populating the earth, as well as of all the ones that have gone extinct and now appear only in the fossil record. The reason for their abandonment of empiricism and the resort to faith in the matter of life's origin is easy to find. *Whenever* someone (whether creationist or evolutionist is immaterial) is faced with data and an interpretation that flatly contradicts her worldview, she falls back on faith. This is not a "religious" tendency, it is a "human" tendency. We need to make this clear (using examples as often as possible) to our students again and again and again. It is like an "inoculation" against the abandonment of their faith in the face of the daily assault that is being made against it.

Finally, the distressingly common disinclination to affirm a literal creation in seven consecutive days as described in the Bible is not, in my opinion, a laudable "scientific attitude" in a Seventh-

day Adventist teacher. Every materialist professor, wherever he is teaching, will testify proudly to his faith in the spontaneous generation of life, regardless of the state of the evidence, because it is an integral part of his worldview. Unfortunately, such professors are highly unlikely to let their students know that there is virtually no empirical support, whether from the laboratory or the field, for their belief that life emerged from non-living chemicals. On the other side of the issue, if a professor believes that “In seven days, God created the heavens and the earth, the sea and all that in them is”, as the Bible reports, then he should certainly be at least as willing and eager to profess his faith to his students as is his materialist counterpart! Such a teacher should be eager to point out the very real scientific difficulties in the naturalistic story of life’s origin; to explain the reasons for his own belief in God’s authorship of the biosphere and all that it contains; and to share the scientific evidence that is consistent with the Bible story; along with data that challenge the Biblical view; and explain to the students how he deals with all of it. Anything less than this abandons our students to the culture around them, and this certainly undermines the mission the church had in mind when our schools and colleges were set up in the first place; the mission for which our membership continues to spend so much human and financial capital.

My appeal to every Christian, and particularly to every Seventh-day Adventist, science teacher is to bear witness to your faith in the Biblical story, and to teach the controversy about Origins. Knowledge is power to our students, and it is up to us to give them the power to resist the temptation to believe the attractive lies that are being presented to them by the culture of the 21st century. Intelligent Design theory is the foundation they need for that resistance.

Addendum: There is a wonderful website with numerous articles about ID (these articles can be downloaded), along with a subscription offer for the journal *Origins and Design*, and a list of books, audio and video tapes, and study kits. These products can be ordered, using a credit card, from the site’s secure server. In addition, there is a list of related websites, and a discussion forum which one can read, or even join in to ask questions or to make a point. All of this can be found at: www.arn.org.

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