“Aren’t the Bonds in Peptides More Easily Formed?”

Dr. Bohlin: I have been in contact with a good friend and we have been having a wonderful discussion regarding a series of topics centering around intelligent design. As typical of our conversations we tend to head down tangential trails that avert our focus momentarily. This week’s parley has to do with chemical bonding as associated with protein synthesis. Specifically, your position that the probability of amino acids forming proteins on their own is astronomical. My friend sent you an email recently asking why covalence is not a possibility when considering formation of amino acids and eventually proteins. In your response you referred to two primary problems: chemical and informational. In regards to the chemical you briefly stated that using the early earth scenario (where earth scientists envision a watery world) the energy required to release the water molecule during the peptide bonding process is high especially in an aqueous solution. Further, you state that this barrier can be overcome by the cell through the use of ribosome in a protein fold devoid of water but that the early earth had no RNA to overcome this barrier. Here is my long drawn out question to you.

First, I contend that the weak hydrogen bond (not covalent) associated with the loss of the two hydrogen and one oxygen atom during the formation of an amino acid with the peptide bond is easily broken through a heat catalyst such that existed during the high radioactive decay of the early earth as it cooled from its molten stage (and still does today but to a much lesser degree). This loss of a water molecule would heighten the affinity of the amino acid to the peptide bond thus strengthening their mutual attraction. The early earth model also indicates that pH (percent hydrogen) levels were

probably very different which would also act as a catalyst to break the hydrogen bond as the hydrogen and oxygen atoms try to degas from solution and neutralize the solution. The earth's closed system perpetuated this process indefinitely by trapping the heated gases laden with other hydrous compounds such as sulfuric acid. The formation of the amount of water on earth certainly could not be accomplished by the release of water molecules through the formation of proteins alone. This begs the question of which came first the chicken or the egg? If it were the amino acids, then we would have a sea of amino acids greater than the volume of the oceans. If the amino acids were formed outside of an aqueous solution then where did the water molecules come from that were eventually released? Both hydrogen and oxygen had to be abundantly present and together they form many, many more molecules other than just amino acids and water. The information concern you were referring to suggests that 10 to 65th power is unobtainable. However, when there exists many times more that number of amino acids the odds quickly reduce and become more favorable. 10 to the 65th sounds astronomical but 10 to the 6500th is even more astronomical thus diminishing the former. Further, amino acids can be synthesized in the laboratory which suggests that the building blocks are present on earth. In time, with the correct agents in place (such as powerful radioactive isotopes {neutrinos perhaps?}) the left-handed stereoisotopes of amino acids may also be laboratorily synthesized.

Finally, I would like to know your thoughts on why you believe that proteins were designed. Is it purely philosophical or have you developed a hypothesis that has been tested by others that lends further credence to your postulation? Thank you for your time in advance.

Thank you for your consideration of my earlier response and I am glad to answer your questions and objections.

First, the bonds that are broken to form a peptide bond

formation with the subsequent release of water are not hydrogen bonds, they are covalent. That is why peptide bond formation is endothermic or uphill in relation to energy. Simply providing heat is not going to overcome this problem. Sydney Fox attempted thermal synthesis of proteins in early earth conditions, the results of which he termed proteinoids. Beginning with amino acids (in solution or dry) he heated the material at 200 degrees C for 6-7 hours. The water produced by bond formation (and any original water from the aqueous solution) is evaporated. The elimination of water makes a small yield of polypeptides possible. The increased temperature plus the elimination of water makes the reaction irreversible. However, this process has been rejected for four reasons. First, in living proteins only alpha peptide bonds are formed. In Fox's reactions, beta, gamma and epsilon peptide bonds are also found in abundance. Second, these thermal proteinoids are composed of both L and D amino acids. Only L amino acids are found in living proteins. Third, these are randomly sequenced proteins with no resemblance to proteins with catalytic activity. "Fourth, the geological conditions indicated are too unreasonable to be taken seriously. As Folsome has commented, 'The central question [concerning Fox's proteinoids] is where did all those pure, dry, concentrated, and optically active amino acids come from in the first place.'" (*Mystery of Life's Origin*, 1984, Thaxton, Bradley, and Olsen, p. 155-156)

I am sorry you got the impression that I believed that the formation of peptide bonds and the concomitant release of a water molecule produced the original water on the planet. That is not the nature of the chicken or egg dilemma. The chicken or egg dilemma refers to the fact that in living systems today, proteins are required for DNA and RNA to function with specificity. Histones are required to maintain DNA folding structure and more importantly, proteins are required for DNA and RNA replication. However, it is the DNA which contains the code for the construction of proteins. DNA needs proteins,

proteins need DNA. Which came first in the early earth? DNA or protein, chicken or egg? The proposed RNA world, RNA molecules which can perform some limited enzyme (protein) functions is negated by the fact that there is no mechanism for the production of RNA in an abiotic early earth. Even if this is accomplished, the enzyme-like functions of some small RNA molecules are not sufficient to support life in any shape or form.

Just because 1/10 to the 65th power is large compared to 1/10 to the 6,500 power does not minimize 1/10 to the 65th as a very small probability. It is estimated that there are 10 to the 80th power particles in the universe. The smallest amino acid, glycine is comprised on 13 atoms, each atom (either hydrogen, carbon, nitrogen or oxygen) is composed of multiple protons, electrons and neutrons and each of these is composed of multiple quarks. You can readily recognize that a sea of 10 to the 65th amino acids is a physical impossibility. Current estimates suggest that the concentration of amino acids in the early earth could never have exceeded, 10 to the -7 molar, which is the same as the present Atlantic Ocean (*Mystery of Life's Origin* cited earlier, p. 60). Sheer numbers are not going to help. Most researchers rely on some form of concentration mechanism to get enough amino acids together for protein formation. Even when this happens, many of the same problems that Fox's experiments run into are difficult to eliminate.

Finally, I believe that proteins are designed for both philosophical and scientific reasons. Proteins as stated earlier, contain information. The sequence of the 20 different amino acids in a protein consisting of 100 amino acids is crucial to its function. William Dembski (in the *Design Inference*, Cambridge University Press, 1999 and *Intelligent Design*, Intervarsity Press, 2000) rigorously defines this information as complex specified information or CSI. It is complex because the sequence of a protein is not a simple

repetition as in a nylon polymer. And it is specified because it can tolerate only a small range of substitution at any one of the 100 positions, indeed at some positions, no substitution can be tolerated. Summing these up is where the 10 to the 65th power came from.

Most biologists readily admit today that chance alone is incapable of overcoming these odds. Therefore, they hold out for some undiscovered natural law that will allow information to arise out of the chaos of a mixture of amino acids. But law is also an unlikely candidate. Some have suggested that perhaps certain amino acids have an affinity for certain other amino acids. This could give some level of sequence specificity. This fails on two counts. First no such pattern is observable when nearest neighbors are analyzed in modern proteins. Second, this would defeat the entire process since the sequence would no longer be complex but simple. Simple because the sequence could now be predicted once the first amino acid is put in place. This would lead to a very limited number of possible combinations and not the millions of possibilities currently residing in living cells.

The only known source for CSI today is intelligence. Even the fundamentalist Darwinian Richard Dawkins, said in his book *The Blind Watchmaker*, "Biology is the study of complicated things that give the appearance of having been designed for a purpose." Perhaps they appear to be designed because they were designed. There is certainly nothing unscientific about wanting to explore that possibility.

Respectfully,

Ray Bohlin
Probe Ministries

Redeeming Darwin: The Intelligent Design Controversy

Dr. Bohlin, as a Christian scientist, looks at the unwarranted opposition to intelligent design and sees a group of neo-Darwinists struggling to maintain the orthodoxy of their position as the evidence stacks up against them. In this article, he summarizes what's happening in academia and the lack of sound scientific basis for their attacks agains intelligent design proponents.

What's All the Fuss?

There's a strange phenomenon popping up around the country. Scientists are stepping out of their laboratories and speaking to the media about something that has them quite concerned. It's not the threat of a new flu pandemic; it's not the threat of nuclear weapons proliferation, or even the possible threat of global warming. It's something called Intelligent Design.

In this article we will explore what has so many people upset about Intelligent Design. To do that we will need to establish just what ID is and what the major complaints are about evolution that may be answered by a theory like ID. We will take a closer look at some of the most common examples of ID from astronomy and biology. Then we will take a closer look at the cultural confusion and reaction to this rather simple hypothesis.

So what are scientists and journalists saying? A *Baltimore Sun* reporter put it this way: "In the border war between science and faith, the doctrine of 'intelligent design' is a sly subterfuge—a marzipan confection of an idea presented in the shape of something more substantial."{1}

In other words, Intelligent Design is little more than a sugar cookie promising more than it can deliver.

A science journal editorial said this: "The attack on Darwinism by supporters of Intelligent Design is a straightforward attack on science itself. Intelligent Design is not science because it proposes a supernatural designer as explanation for evolutionary change."{2}

Uh-oh! Science and the supernatural indeed rarely go well together, at least over the last 150 years. But is that what ID actually says? We'll explore that a little later but for now let's find out what's really at stake in this debate over evolution and Intelligent Design.

One college textbook said this: "Evolution is a scientific fact. That is, the descent of all species, with modification, from common ancestors is a hypothesis that in the last 150 years or so has been supported by so much evidence, and has so successfully resisted all challenges, that it has become a fact."{3}

Let's look at a few reasons why some scientists are skeptical of the confidence shown by so many other scientists about Darwinian evolution.{4}

Is There Scientific Proof for Evolution?

Evolution is always portrayed as a slow gradual process. Organisms are portrayed as so well adapted to their environment that they could only afford to change very slowly. But one of the most dramatic events in earth history is something called the Cambrian explosion. The Cambrian is a period of earth history that many earth scientists and paleontologists estimate to have begun over 540 million years ago.{5}

Instead of slow steady evolutionary change, we see a sudden burst of change. The subtitle to a *Time* magazine article put

it this way: “New discoveries show that life as we know it began in an amazing biological frenzy that changed the planet almost overnight.”{6}

For most of the previous 3 billion years of earth history only single-celled organisms were found. “For billions of years, simple creatures like plankton, bacteria and algae ruled the earth. Then, suddenly, life got very complicated.”{7}

So the appearance of most of the major categories of animals happened in a very short period of time, some say less than five million years, when it should have taken tens and maybe even hundreds of millions of years. One geologist who helped pinpoint the very short time frame of the Cambrian explosion expressed this challenge: “We now know how fast fast is. And what I like to ask my biologist friends is, how fast can evolution get before they start feeling uncomfortable?”{8}

The evolutionary process that biologists study in nature today is far slower than what is found in the Cambrian explosion. This is evidence that doesn’t fit the theory. Yet the Cambrian explosion is left out of most textbooks.

Another problem for evolution is its dependence on mutations to bring about major changes in organisms. But for all our studies of mutations we haven’t seen much change. The late French evolutionist, Pierre Paul Grasse, said, “What is the use of their unceasing mutations? . . . a swing to the right, a swing to the left, but no final evolutionary effect.”{9}

Mutations only produce alternate forms of what already exists. New functions don’t suddenly arise by mutations.

Evidence for Intelligent Design, Part One

Intelligent Design is an intellectual movement that challenges Darwinism and its dependence on random/chaotic processes coupled with selection. If people are not alerted to the fact that Darwinism is less than sufficient, then other theories

are wasting their time. They will never get a fair hearing.

Intelligent Design is also a scientific research program that investigates the effects of intelligent causes, which are effects of high specificity coupled with extremely small probabilities.

Now that was a mouthful. What do I mean by high specificity coupled with small probability? Think of the lottery. Someone always wins the lottery despite the long odds. So improbable things do indeed happen.

But let's make this specific. Let's say your sister wins the lottery. Now that is someone you specifically know; but again someone always wins the lottery so the fact that it's your sister doesn't warrant any special attention.

Now let's make things a bit *less* probable and much *more* specific. Let's say your sister wins the lottery not once but three weeks in a row. Now what are you thinking? Like most people you're thinking something is not right. The same person doesn't win the lottery three weeks in a row.

You suspect cheating. You suspect Intelligent Design. Someone with a clever mind is somehow manipulating the lottery.

In astronomy, it has been assumed for several decades that our earth is not likely to be very special. As huge as the universe is, with billions of galaxies, each with billions of stars, surely there are thousands if not millions of planets like ours that are suitable for life.

But lately, more and more planetary astronomers, astrophysicists, cosmologists, and philosophers are realizing that earth is actually quite unique. The recipe for earth is more than just a planet plus mild temperatures plus water.

Our earth is 93,000,000 miles from the sun. Five percent closer and we would be a hothouse like Venus with no chance

for life. If we were twenty percent farther away, we would be a frozen wasteland like Mars. We're just right. Liquid water is necessary for life and our earth has an abundance all year long.

Evidence for Intelligent Design, Part Two

It's really quite amazing to realize that biologists universally recognize the design of living things. Oxford biologist and atheist Richard Dawkins said on page one of his book *The Blind Watchmaker*: "Biology is the study of complicated things that give the appearance of having been designed for a purpose."{10}

Now notice he said, "give the appearance of having been designed for a purpose." Living things certainly look designed, but according to Dawkins, it's an illusion. He spends the rest of his book trying to show how mutation and natural selection, the "blind watchmaker," has created this illusion.

But he does admit things look designed. Well, if it looks designed, maybe it is.

Michael Behe introduced the concept of irreducible complexity in his book *Darwin's Black Box*. Something is irreducibly complex if it is composed of two or more *necessary* parts. Remove one part and function is not just impaired but destroyed. His well-known example is a mousetrap.

A mousetrap is composed of five integral parts: the platform to which everything is attached, the hammer which does the dirty work, the spring which provides the force, the holding bar to keep the hammer in tension, and finally the catch to keep the holding bar in tenuous position. Remove any one of these parts and the mousetrap is not just less efficient; it ceases to function at all. All five parts are necessary. You can't build a mousetrap by natural selection by adding one

piece at a time because it has no function to select until all five parts are together.

Behe showed that the cell, Darwin's "Black Box," is filled with irreducibly complex molecular machines that could not be built by natural selection. In Darwin's time, scientists could only see the cell under very low power microscopes that told little about what was going on inside. It was a black box. Over the last fifty to sixty years, the cell has been revealing its secrets. We have discovered a maze of complexity and information.

If it looks designed, maybe it is!

ID, Science, Education, and Creation

The legitimacy of Intelligent Design as science was at the heart of a recent federal court case, pitting a group of parents and students against the school board from Dover, Pennsylvania. The Dover School Board adopted a policy that mandated a statement be read before all biology classes, indicating that evolution was a theory that needed critical evaluation and that intelligent design was a rival theory that students could seek information about from the library.

Judge Jones not only struck down the policy as unconstitutional, he went further to declare that ID is not science and was motivated purely by religion since it was just a repackaged creationism. His written opinion was scathing. This of course delighted proponents of evolution and many have declared that ID now is dead.

Judge Jones claimed that ID simply is not science and is religiously motivated; therefore it should not even be mentioned in a high school science classroom.

The first question that should occur to you is, Why does a federal judge with no training in science use his courtroom as a means of determining what is and is not science? This

problem has been referred to as the demarcation problem. How do we demarcate science from non-science? People putting down ID often refer to it as "pseudo-science" or simply "unscientific." But philosopher of science Larry Laudan writes, "If we would stand up and be counted on the side of reason, we ought to drop terms like 'pseudo-science' and 'unscientific' from our vocabulary; they are just hollow phrases which do only emotive work for us."{11}

Judge Jones claims that ID has been refuted by mainstream scientists. He cites the work of Kenneth Miller in particular. This is rather strange indeed. For ID to be refuted means that it has been tested by science and found wanting. If it is testable scientifically to the degree that it can be refuted, then it is science after all. This logical contradiction does not seem to occur to Judge Jones.

ID uses empirical data to demonstrate the plausibility of a design inference. It's as scientific as Darwinism.

Notes

1. Baltimore *Sun*, August 13, 2006.
2. *Cell*, January 13, 2006.
3. Douglas Futuyma, *Evolution* (Sinauer Assoc., Sunderland, Mass., 2005), xv.
4. To learn more about Intelligent Design and Evolution visit our website, probe.org, or call us at 1-800-899-PROB, for information about our new DVD based small group curriculum, "Redeeming Darwin: The Intelligent Design Controversy." Once again we have teemed up with EvanTell to produce a small group curriculum designed to inform the church about Intelligent Design and how to use a conversation about this controversial topic to share the gospel.
5. Meyer, Stephen C., Marcus Ross, Paul Nelson and Paul Chien, 2003, *The Cambrian explosion: Biology's Big Bang in Darwinism, Design, and Public Education*, John Angus Campbell and Stephen C. Meyer, eds., East Lansing, Michigan: Michigan State

University Press, pp. 323-402.
6. *Time*, December 4, 1995 (cover).
7. Ibid., 67.
8. Samuel Bowring, *Time*, 1995, 70.
9. Pierre-Paul Grassé quoted in *The Natural Limits to Biological Change*, Lane P. Lester and Raymond G. Bohlin, Richardson, Texas: Probe Books 1984., p. 88.
10. Dawkins, Richard, *The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design*, Nerw York, New York: Norton, 1986.
11. Larry Laudan, (1983) "The demise of the demarcation problem," in Michael Ruse (ed.) *But Is It Science?*, Amherst, Prometheus, 337-350.

© 2007 Probe Ministries

"I Object to Your Article on Genesis Unbound"

I came across your review of the book *Genesis Unbound*. The article wasn't written as a way to see a parallelisn in Genesis 1-3it presents a substitute "Interpretation" of Genesis 1-3. It in fact totally misses an even bigger problem which this view causes: the worldwide flood.

I'm not saying that Mr. Milne hasn't a right to state his views. I am questioning its consistency with Probe's past overall Biblical worldview. It is questionable as an article representative of Probe.

I regret that you had such a negative reaction to Rich Milnes review of John Sailhammer's book. The controversy over the age of the earth within the church is a critical discussion that

often gets lost in people protecting their territory more than seeking the truth and being open to a different approach.

As Probes main science speaker I still refer to Sailhammers work not because I necessarily agree with his conclusions but because I think he challenged the underlying assumptions of both young- and old-earth creationists. If there is ever going to be an in house resolution to this controversy, works such as Sailhammers will need to be discussed openly and critically. That never really happened, unfortunately.

Please read Milnes closing paragraph again:

> *You will have to read all of Dr. Sailhammer's provocative book to make up your own mind. But at least give him the chance to make his case directly from the text. Genesis Unbound is a book to stir your thinking, and should be read slowly. But go back and read Genesis to be reminded of God's greatness in His creation.*

Rich (as well as I) simply thought it was a provocative work that deserved wider attention and response. If you havent read the book, then I would ask that you suspend judgment on Sailhammer until you do. (Though I admit the book would be hard to find now.)

Thank you for your participation with us and for writing.

2007 Probe Ministries

"Your Bethlehem Star Article

is Wrong”

Your Bethlehem Star article is out of date. Check out www.BethlehemStar.net. Also, they recently discovered there were 2 Sejanuses to correct the date. Finally, check out *The Case for Christ* by Strobel.

I did indeed write the Bethlehem Star article well before Rick Larson and his Star model became better known.

However, I have come across it many times since then though I have never had the pleasure of seeing him personally.

He hasn’t convinced me.

1) He is correct that the Bible indicates that stars are for signs but it is very obscure as to what kind of signs. Psalm 19 only says the heavens declare God’s glory. The following verses he quotes don’t change the context. God’s glory is not the same as historical information.

2) The Romans 10 passage he refers to as obviously indicating that the stars communicated the “gospel” to Israel is a huge stretch for me. I just don’t see how he arrives at that obvious conclusion.

3) You mention Lee Strobel’s *Case for Christ* as apparently affirming something about Larson’s theory. I found no references to the Star, Wise Men, or Magi. Bethlehem was only discussed as it relates to the massacre of the innocents by Herod. However what I did find was on page 101 where Strobel mentions that Herod died in 4 BC and his interviewee, John McRay from Wheaton does not correct him.

4) From my quick reskimming of the website, Larson still does not engage the very reasonable possibility that the star was the shekinah glory of God and has nothing to do with actual astronomical events. This is still the most reasonable

explanation to me. Other Christian astronomers I have consulted don't give Larson's idea much credit.

5) Larson embarks on a rather naturalistic, modernist explanation that is not necessary and despite his confident proclamations otherwise, has not firmly established Herod's death in 1 B.C.

6) It's interesting to me that the quotes he gives on the website while congratulating him for his scientific and reasonable approach, no one explicitly says they agree with him. I would think that if they had said they agreed with his theory, it would be quoted on the website.

Respectfully,

Ray Bohlin, PhD

© 2006 Probe Ministries

Is Intelligent Design Dead?

What Is Intelligent Design?

On December 20, 2005, Judge Jones handed down his decision in the lawsuit brought by several citizens from Dover, Pennsylvania, who objected to a new policy adopted by the Dover School Board. This policy mandated a statement be read before all biology classes indicating that evolution was a theory that needed critical evaluation and that Intelligent Design was a rival theory that students could seek information about from the library.

Judge Jones not only struck down the policy as

unconstitutional; he went further to declare that ID is not science and was purely motivated by religion since it was just a repackaged creationism. His written opinion was scathing. This of course delighted proponents of evolution and many have declared that ID now is dead.

In what follows I will examine this "death certificate" and declare it null and void. ID is alive and well, and the coming months and years will demonstrate convincingly the health of ID. But first, let's make sure we know what ID really is.

The media often simply portray ID in a negative context. One student reporter from Southern Methodist University recently put it this way: "Essentially ID is a theory that proposes that there are parts to a cell that are simply too complex to have been evolved." He adds as an afterthought the idea "that rather they have been altered by some sort of 'designer.'"{1} But ID is truly more than just a critique of evolution. The Discovery Institute's Web site describes ID this way: "The theory of intelligent design holds that certain features of the universe and of living things are best explained by an intelligent cause, not an undirected process such as natural selection."{2}

It's interesting to realize that many evolutionists recognize that living things in particular *look* as if they have been designed. British evolutionist Richard Dawkins said, "Biology is the study of complicated things that give the appearance of having been designed for a purpose."{3} Many in the ID community simply reply, "If it looks designed, maybe it is!" So ID is simply an attempt to quantify scientifically what most people clearly recognize: the design of the universe and of living things.

The major contention with evolution is the claim that mutation and natural selection can account for everything we see in living things. ID accepts that evolutionary processes do account for some change in organisms over time. But ID says

certain structures, like the bacterial flagellum that closely resembles a human designed rotary motor, are better explained through an intelligent cause.

In particular, the universal genetic code has all the distinguishing characteristics of coded information or language. Our experience tells us that language only comes from a mind. If so, then the genetic code also likely came from a mind.

Is ID Science?

Judge Jones made several errors in his reasoning. The recent book from the Discovery Institute, *Traipsing Into Evolution,* answers Judge Jones on several levels.{4} I will focus on three areas: first, how a federal judge can tell us what science is and is not when philosophers of science continue to struggle with this; second, Judge Jones' claim that ID has been refuted by scientists; and third, Judge Jones' claims that ID has not been accepted by the scientific community. For these and other reasons, Judge Jones claimed that ID simply is not science and is religiously motivated; therefore it should not even be mentioned in a high school science classroom.

The first question that should occur to you is, Why does a federal judge with no training in science use his courtroom as a means of determining what is and is not science? This problem has been referred to as the "demarcation problem." How do we demarcate science from non-science? Philosopher of science Larry Laudan writes, "If we would stand up and be counted on the side of reason, we ought to drop terms like 'pseudo-science' and 'unscientific' from our vocabulary; they are just hollow phrases which do only emotive work for us."{5}

In addition, philosopher Del Ratzch argues that there are very real possible payoffs for science in considering ID.{6} Judge Jones knew of these positions but chose to ignore them.

Judge Jones claims that ID has been refuted by mainstream scientists. He cites the work of Kenneth Miller in particular. This is rather strange indeed. For ID to be refuted means that it has been tested by science and found wanting. If it is testable scientifically to the degree that it can be refuted, then it is science after all. This logical contradiction does not seem to occur to Judge Jones.

The judge ruled further that ID cannot be science because it is not accepted by the scientific community. But science is not a popularity contest. New and controversial theories are never accepted by a majority of scientists at the beginning, but that doesn't make them unscientific. The Discovery Institute now lists over six hundred scientists from around the world who are willing to sign a list saying they are skeptical of Darwinism. Surely that counts for something.

ID uses empirical data to demonstrate the plausibility of a design inference. It's as scientific as Darwinism.

Is ID Just Reinvented Creationism?

Several parents challenged a directive by the Dover School Board allowing the mention of Intelligent Design in the science classrooms of this district. Judge Jones ruled the directive unconstitutional. One of his reasons was that ID is just reinvented creationism which the Supreme Court has already ruled is substantially a religious doctrine and not appropriate as science.

One of the texts that the Dover school board members made available was the supplemental text *Of Pandas and People.*{7} Having subpoenaed early drafts of the book from the late '80s, the ACLU tried to show that *Pandas* only began using the phrase "Intelligent Design" after the Supreme Court struck down the Louisiana creation law. Therefore Judge Jones ruled that ID is in fact just creationism with a new label.

While it is true that the Supreme Court decision did indeed affect editorial decisions in *Pandas*, it's not for the reasons Judge Jones assumed. The authors and editors of *Pandas* knew their ideas were not the same as creationism and were wrestling with what to call it. Once the Supreme Court ruled that "creationism" meant a literal six day creation, the authors of *Pandas* knew they needed to use a different term.{8}

In addition, the term Intelligent Design had been floating around for several years before *Pandas* was in print. Lane Lester and I used the term in our book *The Natural Limits to Biological Change* in 1984, three years before the Supreme Court decision in *Edwards vs. Aguillard* struck down the Louisiana creationism law. We said, "The simple point is that intelligent design is discernibly different from natural design. In natural design, the apparent order is internally derived from the properties of the components; in creative design, the apparent order is externally imposed and confers new properties of organization not inherent in the components themselves."{9}

Furthermore, none of the leading scientists of the Intelligent Design movement were ever a part of the creationist movement. People like Phil Johnson, Michael Behe, William Dembski, Charles Thaxton, and Steve Meyer never considered themselves to be part of this group. Their ideas were always similar but definitely not the same.

Some creationist groups today even go to great lengths to distance themselves from the ID movement because ID essentially maintains that the Designer cannot be known from the science alone. Therefore, because of ID's attempts to stop short of naming the Designer, some creationist groups will sell some ID books but not endorse their program. This would be very strange indeed if ID is just relabeled creationism.

Once again, Judge Jones got it wrong.

Traipsing Into the Dover Court Decision

In their excellent discussion of the Dover decision, the authors of *Traipsing into Evolution* attack six accusations against Intelligent Design used by Judge Jones.{10}

On page sixty-two of the Dover decision Judge Jones said, "ID violates the centuries-old ground rules of science by invoking and permitting supernatural causation."{11} The main problem for Judge Jones is that ID scientists said repeatedly prior to the trial and in direct testimony during the trial that the science of ID is not able to identify the Designer. It was expressly pointed out to Judge Jones during the trial that the type and identity of the intelligent agent supposed by ID is only identified by religious and philosophical argumentation. That does not mean that design itself cannot be detected scientifically. Indeed, if we ever receive an obviously intelligent message from outer space, we will most certainly be able to determine it has an intelligent cause even though we may have no idea who or what sent it.{12}

Judge Jones also states that "the argument of irreducible complexity, central to ID, employs the same flawed and illogical contrived dualism that doomed creation science in the 1980s." What Judge Jones is referring to is his notion that ID is just a negative argument about Darwinism. If Darwinism can be shown to be false, then ID wins.

But this grossly misrepresents ID. Michael Behe's formulation of irreducible complexity asserts that Darwinian evolution does not predict irreducibly complex machines in the cell where Intelligent Design expressly does predict such machines. So there is definitely a negative component to irreducible complexity. But Darwin himself said that "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."{13} Darwin invited a negative critique.

But there is also a clear positive case for irreducible complexity. When we come across a machine, we intuitively understand it to be intelligently caused, whether we think it functions effectively or not. Intelligent agents can and do produce machines. The concept of irreducible complexity is one way to determine what a machine is.

Judge Jones' third complaint against Intelligent Design was that the attacks on evolution by ID advocates have all been refuted by the scientific community. Judge Jones ignored the fact that at the time of the decision, over five hundred scientists had signed a statement acknowledging their dissent from Darwinism. That list now stands at over six hundred.{14} Certainly some scientists have challenged Behe, Dembski, and others. But their criticisms have been answered effectively both online and in print.{15}

Judge Jones' fourth accusation was that Intelligent Design had failed to gain acceptance in the scientific community. But this is clearly a matter of opinion. As I mentioned previously, over six hundred scientists now express their dissent from Darwin, and most of those also support Intelligent Design, many of them at mainline universities.

No doubt there has been and continues to be strident opposition to Intelligent Design in the scientific community, especially among biologists. But there is always resistance in science to new ideas. And much of the opposition is for philosophical reasons, not scientific ones. Many Darwinists such as Will Provine from Cornell and Richard Dawkins from Oxford are very up front that their adherence to evolution and their disdain for Intelligent Design is over the issue of a Designer by any name. The science is just a backdrop.

Judge Jones' fifth complaint against Intelligent Design was that proponents of ID have not published in the scientific peer-reviewed literature. This is simply not true. De Wolf et

al., in their book *Traipsing Into Evolution,* document in Appendix B a list of thirteen different peer-reviewed articles and books by ID scientists advocating different aspects of the theory. This is admittedly a small number, but that is because there is clear evidence, documented in the same book, of editors having to shy away from ID papers and responses for fear of intimidation by the scientific community. One editor who followed established procedure in getting an ID article reviewed and published was nearly run out of his institution for the offense.

Finally, Judge Jones declared that ID has not been the subject of testing and research. Indeed, any scientific theory needs to be testable in some form or it is not likely to be of some use. But ID microbiologist Scott Minnich testified right in Judge Jones' courtroom that in his laboratory at the University of Idaho he has demonstrated the irreducible complexity of the bacterial flagellum. Minnich also testified to other research he was familiar with which also was testing principles from ID.{16}

As I have summarized, Judge Jones failed to make a reasonable and fair evaluation of the evidence. Intelligent Design is far from dead. Rather, such a poor decision in the Dover case may actually serve ID well as it self-destructs in the years to come.

Notes

1. Brian Wellman, April 26, 2006, Merits of intelligent design, evolution debated, www.smudailycampus.com/vnews/display.v/ART/2006/04/26/444ef833078bc
2. The Web site of the Discovery Institute's Center for Science and Culture, www.discovery.org/csc/topQuestions.php.
3. Richard Dawkins, *The Blind Watchmaker* (New York: W. W. Norton, 1986), 1.
4. David De Wolf, John West, Casey Luskin, and Jonathan Witt,

Traipsing Into Evolution: Intelligent Design and the Kitzmiller vs. Dover Decision (Seattle, WA: Discovery Institute Press, 2006), 25-57.
5. Larry Laudan, "The demise of the demarcation problem," in Michael Ruse (ed.), *But Is It Science?,* (Amherst, MA: Prometheus, 1983), 337-350.
6. Del Ratzch, *Nature, Design, and Science: The Status of Design in Natural Science* (Albany, NY: State University Press of New York, 2001), 147.
7. Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins* (Dallas, TX: Haughton Publishing Co., 1989), 166 pp.
8. DeWolf *et al.,* 22.
9. Lane P. Lester and Raymond G. Bohlin, *The Natural Limits to Biological Change* (Richardson, TX: Probe Books, 1984), 153-154.
10. DeWolf *et al*., 29-45.
11. *Kitzmiller et al. v. Dover Area School Board*, No. 04cv2688, 2005 WL 3465563, *26 (M.D. Pa. Dec. 20, 2005).
12. I don't expect we ever will hear from any extraterrestrials. Earth appears to be more and more unique with every passing day. See my article "Are We Alone in the Universe?" at www.probe.org/are-we-alone-in-the-universe-2/.
13. Charles Darwin, *On the Origin of Species by Means of Natural Selection or the Preservation of Favoured Races in the Struggle for Life* (New York: New American Library [A Mentor Book], 1958), 171 (this is a reprint of the 1872 sixth edition).
14. From the Web site of the Center for Science and Culture, www.dissentfromdarwin.org/ accessed October 11, 2006. The statement reads; "We are skeptical of claims for the ability of random mutation and natural selection to account for the complexity of life. Careful examination of the evidence for Darwinian theory should be encouraged."
15. William Dembski, *The Design Revolution: Answering the Toughest Questions About Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 334 pp.

16. De Wolf *et al*., 56.

© 2006 Probe Ministries

"What's Up With Animal Rights?"

My question is partially about the 'animal rights' movement that seems very popular these days. I was curious to know what you thought about the idea of giving animals rights. I have recently read a book about postmodernism and culture by Peter Augustine Lawler – it is not about animal rights, but he makes the statement that: "At the end of history, human distinctiveness is negated. The laughably incoherent 'animal rights' movement exists for a moment before the nonexistence of rights." I don't know much about the subject of rights, but I was hoping you could possibly recommend some book that touched on the subject from a Christian perspective – not necessarily animal rights, just the philosophy of rights in general- or maybe tell me what you think about what rights are and who has them and so forth.

Former Probe staff member Rich Milne authored an article on animal rights. You are essentially correct that post-modernism dictates an equalization of rights between animals and humans. We are after all just another animal. Non-human animals should be treated no differently than we wish to be treated. Animal rights ethicist Peter Singer now holds a professorship of ethics at Princeton University and is continuing to humiliate himself with the logic of his own position by recently suggesting that bestiality was OK! What else can he say and remain consistent?

Not being a philosopher, I am not familiar with the literature on human rights, but Probe published a book with Zondervan in the 70s which is now out of print titled, *Human Rights and Human Dignity* by John Warwick Montgomery. Montgomery now has the rights to this book and he may have republished it so you may want to do a search on Amazon or elsewhere on the net to find it or a book like it.

Respectfully,

Ray Bohlin
Probe Ministries

"Why Don't You Cite Young Earth Creationists in Your Material?"

Ray:
I couldn't help but notice that ICR/Dr. Henry Morris and Answers In Genesis/Ken Ham aren't cited (or at least I did not see their viewpoints) in some of your material about creation/evolution. Are there points of disagreement? Do you take a stand beyond design that commits to either a young earth or old earth?

I do occasionally refer to writings from young earth creationists. The article on human fossils, for instance, comes directly from young earth creationist Marvin Lubenow's book *Bones of Contention.* I focus on intelligent design because it is an area that nearly all creationists, young and old earth agree on. At Probe we do not take an official position on the age of the earth question primarily because

most of us here, including myself are undecided (see Christian Views of Science and Earth History) about this critical issue. I agree with Phillip Johnson that we need first to stand united against the current naturalistic filibuster in science by opposing the naturalistic approach to origins and then come back to the age of the earth question later.

Respectfully,

Ray Bohlin
Probe Ministries

"What About the Ice Age?"

My son told his teacher that he was tired of learning about the Ice Age because there is nothing about it in the Bible and he shouldn't have to learn about things that aren't in the Bible. Any advice?

The quick and simple answer to your question is that yes, there was an ice age, but there is disagreement as to its extent, length of time, and actual time of occurrence. Standard old earth (this would include old earth creationists; see our article Christian Views of Science and Earth History) rendering concludes that there were several ice ages over the last 50,000 years with the ice advancing and retreating several times. Young earth creationists also accept an ice age but there was only one and it occurred much more recently (within the last 10,000 years) as a post-flood event.

The dilemma you write about can indeed prove difficult for young minds at times. They have difficulty drawing a distinction between learning about something and believing it is true. In my article How to Talk to Your Kids about Creation

and Evolution I address this in section seven titled, "Responding to Evolutionary Theory." I basically suggest you tell your kids that simply demonstrating knowledge about evolution is not the same as believing it. You can always phrase your answer this way, "According to evolution . . ." This way you can demonstrate you understand the material but not necessarily believe it. I also address this in the section "Cultivate a Teachable Spirit" in the article Campus Christianity.

I think you'll find both of these articles helpful.

Respectfully,

Ray Bohlin
Probe Ministries

The Privileged Planet

An Unwanted Premiere!

In June 2005 I was in Washington D.C. for a most unusual premiere. A film based on the 2004 book called *The Privileged Planet*{1} was being introduced to an invitation only group of about 200 at the Smithsonian Institution's National Museum of Natural History.

The Smithsonian was approached several months earlier about allowing their Baird Auditorium to be used for this special showing. They asked to see the film. Several people on the museum payroll viewed the film and said great, let's show it. The inquiring organization was The Discovery Institute, the leading organization promoting Intelligent Design in the U.S. and abroad. Discovery was given instructions on how to use the

Smithsonian logo on the invitation, was asked for a donation of $16,000, and told the premiere was a go.

However, when the invitations went out in late May, the Smithsonian was instantly barraged by calls and emails from disgruntled Darwinians demanding that the premiere be canceled. How dare the prestigious Smithsonian give aid and support to the Intelligent Design Movement by allowing this film on its premises? Never mind that the film has nothing to do with biological evolution and natural selection. People (even some who likely hadn't seen the film or read the book) were on a rampage.

It didn't take long for the Smithsonian to withdraw its co-sponsorship of the event although they said they would honor their commitment to allow the film to be shown. In a letter to Discovery they said, "Upon further review, the Museum has determined that the content of the film is not consistent with the mission of the Smithsonian Institution's scientific research."{2} Initially, the Smithsonian said Discovery would not be required to make the "donation," but eventually kept $5,000 for expenses incurred.

As a Fellow of the Discovery Institute's Center for Science and Culture I was issued an invitation, and as the storm of controversy raged in *The Washington Post* and *New York Times*, I decided to get myself to Washington for this controversial and special event.

The premiere itself was a bit of an anticlimax after all the fuss. Several local scientists, national TV and newspaper media, a Congressman from Texas, and other local dignitaries were treated to a special showing and question and answer period with the authors, Gonzalez and Richards. The reception was held two floors up in the Hall of Geology, Gems, and Minerals.

Most in attendance were quite impressed . . . and mystified!

They were impressed with the quality and premise of the film and mystified how a purely scientific film could be so misrepresented. In what follows, we'll explore the thesis of the book and film and see what all the fuss is about. For now, just remember science is pursued by *people*, and everyone has a worldview that can alter dramatically how science is perceived and what counts as science.

Is the Moon Just for Signs and Seasons?

When I was in the seventh grade, I remember standing in my best friend's backyard with a box over my head in broad daylight. On one end of the box was a small pinhole. On the inside of the box, against the opposite side of the box from the pinhole, was a small piece of aluminum foil. The pinhole, when facing the sun, made a small circle, maybe one-half inch in diameter, on the aluminum foil wall. As the partial solar eclipse progressed, I could watch the progress of the moon shadowing the sun inside the box. I was fascinated that I could safely watch the partial solar eclipse with such a simple device.

You could watch partial solar eclipses on every planet in our solar system with a moon. But earth is the only planet where a full or total solar eclipse can be seen. It turns out that our moon is $1/400^{th}$ the size of the sun. But the sun is 400 times farther away from earth than the moon. So when the moon comes between the sun and the earth a small portion of earth experiences a total solar eclipse, meaning the sun is fully blocked out by the moon.

When a total solar eclipse occurs, the sun is fully blocked out by the moon darkening the earth and providing a unique glimpse of the sun's atmosphere or corona. Normally the sun's corona is overwhelmed by the sun's brightness, but in an eclipse the moon so completely shuts out the sun that the corona shines brightly for a few minutes. It is then that

scientists can measure the light spectrum of the corona which reveals what is burning inside the sun. Otherwise we would not be able to measure the elemental makeup of the sun. So the fact that earth experiences a total eclipse of the sun makes our planet unique in the solar system with respect to what we can learn about what goes on in the sun's interior.

If that was all that was unique about our moon, we could write it off as a curious coincidence. But the size, shape, and orbit of our moon do more for human life than just give us a glimpse of the sun's atmosphere every so often. Without the moon, life as we know it on earth would be impossible.

It turns out that our moon is just the right size and distance from the earth that, in conjunction with the gravity of the sun, it causes substantial diurnal [daily] tides which mix the waters of the oceans, evening out their temperature and stirring their nutrients. With no moon, or a few smaller moons, the tides would lessen greatly in intensity, therefore reducing this mixing effect. Life would be limited to the upper few feet of the oceans, and complex life would be hard pressed to survive.

Is Earth's Atmosphere Just for Breathing?

The book and film, *The Privileged Planet*, reveal many other earth systems as well that combine to make earth unique for life and scientific discovery.

Take a deep breath. Now exhale! No, this is not the latest Probe Ministries exercise routine. If you did what I just recommended on any other planet in the solar system, you'd be dead right now.

Our atmosphere of mostly nitrogen, oxygen, and just the right amount of water and carbon dioxide provides so much more than breathable air. We so easily take it for granted every time we breathe. Earth's closest planetary cousins, Venus and Mars,

have atmospheres dominated by carbon dioxide. Venus's atmosphere is so thick you can't see through it, and it creates surface temperatures as high as 900 degrees Fahrenheit. Mars' thin carbon dioxide atmosphere contributes to such cold temperatures that carbon dioxide freezes at the poles.

Guillermo Gonzalez and Jay Richards, in their book *The Privileged Planet*, tell you more than you thought possible about the unique parameters of our atmosphere in allowing life and scientific discovery. Nitrogen, for example, is necessary for life as a critical component of the building blocks of DNA and proteins. Our atmosphere of seventy percent nitrogen also allows for a transparent atmosphere that allows light as we face the sun and dark nights that allow us to see the stars.

Oxygen, of course, is necessary for animal life, and our atmosphere contains just enough to support life and not so much as to poison life. Oxygen is also a transparent gas, keeping our atmosphere transparent for observation of our dark night skies.

Water as well is necessary for life, but water in our atmosphere, along with nitrogen, oxygen, and carbon dioxide, creates an atmosphere that is breathable but also is the best atmosphere to transmit light in the visible spectrum. Water also creates clouds over about two thirds of the earth at any one time. Clouds help control our temperature by reflecting some of the sun's energy back out into space.

Without water in our atmosphere, we never would see a rainbow. Rainbows prompted scientists of the seventeenth century to search for an explanation of the rainbow's beauty and mystery. This search eventually resulted in understanding the solar spectrum and the effect of prisms in bending light of different wavelengths.

Carbon dioxide is life's major source of carbon, that

versatile and stable element absolutely necessary for life of any kind. If earth were just five percent closer to the sun, however, we would end up much like Venus: nothing but carbon dioxide resulting in a runaway greenhouse effect and totally uninhabitable planet.

Once again, earth is shown to be just right—just right for life and just right for scientific observers. What an amazing coincidence!

More and more, scientists are coming to realize that the earth is not just some insignificant pale blue dot orbiting around an insignificant star. Our planet seems designed not just for life, but for scientific discovery as well.

So the Earth Has Oceans, Crust, Mantle, and Core. So What?

The starship Enterprise from *Star Trek* used a nifty force field deployed around the ship to protect it from oncoming photon torpedoes. During an attack, those on the bridge were always concerned with how the "shield" was holding. There was great consternation if energy levels dipped low enough to make the shield ineffective.

Our planet earth has a similar protective shield. Earth possesses a magnetic field around it that shields us from the harmful solar wind. Our atmosphere would be slowly stripped away without our magnetic field. This magnetic shield is generated because the earth is just the right size to maintain a hot liquid iron core. The heat from this core convects through the mantle, creating plate tectonics and electricity. The electricity generates our magnetic field. But you have to have the right size planet with a molten metallic core and a crust that weakens somewhat due to chemical reactions with water so it will bend and not break. All this benefits life.

The size of earth is important for other reasons. A smaller

planet would lose its atmosphere much too readily, and its interior would cool too quickly, eliminating the protective magnetic field. A more massive earth would retain too much of harmful gases such as methane. On a more massive planet, the thicker atmosphere would make breathing much more difficult.

Earth’s voluminous quantities of water are also extremely necessary for life and even for technological life. Water helps regulate our atmosphere and, of course, provides the perfect soluble medium for life. Water is perhaps the most unique molecule in the universe with its unique solvent properties coupled with the fact that ice floats instead of sinks like all other solid/liquid pairs. This unique feature means that when temperatures are cold enough for water to freeze, only the top layer freezes and life can go on below the ice. If ice sank, then all liquid water would eventually freeze and life would be extinguished in some environments every winter.

In order for earth to maintain its watery oceans it needs to be the right distance from the sun. As noted earlier, if the earth were just five percent closer to the sun we would end up like Venus with thick hot clouds of carbon dioxide for an atmosphere. If we were just twenty percent farther away we would end up like Mars, a frozen wasteland. The heat coming from our just right liquid core also helps maintain our watery home.

All in all earth is a remarkable place for its size, distance from the sun, elemental make-up, size and closeness of the moon, presence of water, stable liquid iron core that generates a magnetic field, and so many other features. The suspicion of design and purpose quickly arises.

Has the Earth Been Designed for Multiple

Purposes?

In many circles of academia, the idea that our earth is both designed for life and for scientific discovery is both surprising and resented. For years the notion that we are just an insignificant planet circling an ordinary star, otherwise known as the Copernican Principle, has dominated the physical sciences.

But discovery after discovery has altered that view, and has brought many kicking and screaming to a design perspective. Simon Conway Morris, a paleontologist from England, is quoted on the dust jacket of *The Privileged Planet* as saying:

> In a book of magnificent sweep and daring, Guillermo Gonzalez and Jay Richards drive home the argument that the old cliché of no place like home is eerily true of Earth. Not only that, but if the scientific method were to emerge anywhere, Earth is about as suitable as you can get. Gonzalez and Richards have flung down the gauntlet. Let the debate begin; it is a question that involves us all.

The book and film of the same name have been wildly successful and controversial. At the Washington premiere I discussed earlier, scientists and legislators agreed that the thesis the authors propose is deserving of wide discussion.

A father brought his eight-year old son to a showing of the film we sponsored at Probe Ministries. I privately thought he would be too young. They had to leave before the film was done, but they purchased the DVD before they left and finished viewing it at home. As soon as Mom walked in the door, the eight-year old promptly began to explain the intricacies of solar eclipses, the size of the moon relative to the sun, and how these factors were not only a boon for life but also for scientific discovery.

The film does an excellent job of taking sometimes complex

scientific concepts and communicating them in a way that most anybody can appreciate. This film deserves as wide a distribution as possible.

But because much of the scientific community remains locked in a purely naturalistic worldview, the perspective of purpose and design will continue to be resisted. However, parents and educators can readily use this excellent resource to simply investigate the facts and help to eventually gain Intelligent Design a much deserved place at the roundtable of scientific inquiry.

One other comment from the dust jacket says it well:

> Not only have Guillermo Gonzalez and Jay Richards written a book with a remarkable thesis, they have constructed their argument on an abundance of evidence and with a cautiousness of statement that make their volume even more remarkable. In my opinion, *The Privileged Planet* deserves very special attention.

Notes

1. Guillermo Gonzalez and Jay Richards, *The Privileged Planet* (Washington D.C.: Regnery Publishing, Inc., 2004).
2. June 1, 2005 entry on Discovery Institute's blog at www.evolutionnews.org/2005/06/.

© 2006 Probe Ministries

"You Misguided Piece of ****!"

What the h*ll are you, you misguided piece of sh!!! What did your so called 'God' snap his fingers and wham! earth is**

‘created’ hehe you are an idiot. Where is your God anyway? Floating up in the atmosphere somewhere? Religion is something misguided humans look for when their life is in the dumps (eg. crops fail, someone dies etc etc), they want to believe in something…….. which does not exist. Homo sapiens increased brain size has allowed it to think of things like this. That is all Christianity is, you can believe in it but don’t expect other people to believe a falicy.[sic]

Thanks for taking the time to visit at least one of my articles; whether you actually read anything I can’t tell from your message. Unfortunately your comments follow a rather common pattern of showing a lot of bluster with no substance. If you think I have made an error of fact or judgment, I would be glad to discuss something specific with you. I am sorry you have such a low opinion of people of faith (who, by the way, in reference to your comment about other people not believing it, are in the vast majority). It sounds to me like you are more mad at God than convinced of His nonexistence.

Respectfully,

Ray Bohlin, Ph.D.
Probe Ministries