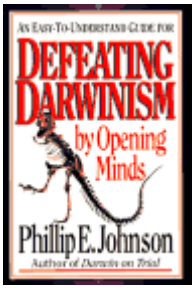
Defeating Darwinism

Introduction

What's this? A lawyer debating philosophy with scientists? If you keep close tabs on the creation/evolution debate, you've probably already heard the name Phillip Johnson. If not, but you're interested in seeing how one Christian is challenging the dogma of Darwinism, you'll want to know about this man.



Phillip Johnson is a law professor at the University of California, Berkley. In 1997 InterVarsity Press published *Defeating Darwinism by Opening Minds*, Johnson's third book in his debate with naturalistic evolution. His first book, *Darwin On Trial*, examined the scientific evidence for evolution and launched a series of lectures and debates across the United States and overseas in universities and on radio and television. His second book, *Reason in the Balance*, examined the influence of naturalism in the spheres of science, law, and education. *Defeating Darwinism* brings his case to high school and early college-level students and their parents.

So, what prompted a law professor to take on the evolutionists? It seems that Johnson became aware of a significant difference between the way the theory of evolution is presented to the public and the way it's discussed among scientists. To the general public, evolution is presented as being settled with respect to the really important questions. Among scientists, however, there is still no consensus as to how evolution could have occurred. As another author said, evolution is a theory in crisis. Professor Johnson studied the

literature closely and concluded that what keeps the "evolution-as-fact" dogma alive is not scientific evidence at all, but rather a commitment to the philosophy of naturalism.

Naturalism is the belief that everything that exists is on the same basic level, that of nature. There is no God who created the universe whether in six days or in 40 million years.

One needs to be cautious here. Many scientists believe in God. However, the rule of the day in the laboratory and the classroom is a commitment to the philosophy of naturalism or at least to practical naturalism. Consequently, whether there is a God or not, no reference can be made to Him in the realm of scientific study.

Two reasons come to mind to explain why Johnson has received such a wide hearing in secular academia. First, he keeps the focus on evolution, *not* on a particular theory of creation. This is annoying to evolutionists. But Johnson knows that as soon as he allows his views to be put under the spotlight, the debate will be over. Why? Because the evolutionists will immediately label his views as "religious," and he will be dismissed out of hand. Second, he is a legal scholar with years of experience in the logical analysis of evidence. He has the skill to carefully dissect the arguments of evolutionists, show their weaknesses, and reveal their unargued presuppositions.

In this essay we'll take a closer look at Johnson's book *Defeating Darwinism*. We'll see how evolution gained dominance as a theory of origins, and we'll learn how Johnson exposes its UNscientific foundations. I urge you to get a copy of this book even if science isn't your area, just to learn one way to engage our culture in the realm of ideas.

Where's the Beef?

In his new book, *Defeating Darwinism By Opening Minds*, Phillip

Johnson seeks to help high-school and college students and their parents evaluate the claims of Darwinism.

In his first book, *Darwin on Trial,* Johnson described the evidential problems with evolution in some detail. In *Defeating Darwinism*, he simply notes that possible transitional forms in the fossil record are very few in number and they are not found where fossil evidence is most plentiful. The problem, he says, is that textbooks and museums often present evidence in a way that implies there is more evidence available than there really is. As an example, Johnson points to an exhibit in San Francisco called the "Hard Facts Wall" which fills in gaps in the fossil record with imaginary ancestors. Says Johnson:

> *Visitors to the museum at first take the exhibit at face value; after I explain it to them, they are astonished that a reputable museum would commit such a deception. But the museum curators are not consciously dishonest; they are true believers who are just trying too hard to help the public get to the right' answer.(1)*

Even though the physical evidence is not there, and there is no known mechanism for the transition from one type of organism to another, the scientific community clings to evolution as fact. The reasoning seems to be this: Since science studies the natural order, scientific theory must remain within naturalistic bounds. Since neo-Darwinism is the best naturalistic theory, it *must* be true. This commitment extends beyond simply influencing scientific study; it is indoctrinated into students as the way things are. Johnson says that, "When students ask intelligent questions like 'Is this stuff really true?' teachers are encouraged or required not to take the questions seriously."(2)

A fifteen-year-old high school student found out about the power of Darwinist orthodoxy when he challenged a requirement

to watch a program on public television which promoted the "molecule to man" theory as fact. When school administrators showed an inclination to go along, the bottom fell out. Johnson stated, "the Darwinists, . . . flooded the city's newspapers with their letters. Some of the letters were so venomous that the editorial page editor of the Denver Post admitted that her liberal faith had been shaken."(3) When CBS carried the story, a prominent evolutionist made the teenager out to be an enemy of education. Orthodoxy is not to be questioned.

One of the most significant factors in establishing the reign of evolution was the movie *Inherit the Wind*, the imaginative re-telling of the story of the Scopes "Monkey Trial" of 1925. The trial is presented as a David-and-Goliath match between the few reasonable and enlightened advocates of progress and the forces of ignorance and oppression who are shackled by their "Old Time Religion." The important players were caricatured and significant details were completely falsified, but the point was made: religion can co-exist with science, but only if it minds its own business.

The book *Defeating Darwinism* is an important contribution not only because of the questions it raises about evolution, but also because it teaches the reader *how* to think about issues. Next, we'll look at some fallacious arguments evolutionists use.

Baloney Detectors Wanted

In his book *Defeating Darwinism by Opening Minds*, Phillip Johnson analyzes the role *Inherit the Wind* played in our thinking about the relation of religion and science. This was the play—and later the movie—which retold the story of the Scopes "Monkey Trial" of 1925. One significant character who only appeared for a few minutes was the Radio Man, the radio announcer who made a live broadcast from the courtroom.

Near the end of the play, when the prosecuting attorney launches into a long speech denouncing the evils of evolution, the radio program director decides that the attorney's speech has become boring, and Radio Man turns off the microphone. This is the only microphone in the courtroom. Johnson sees this move as symbolic. He says: "That is why what happened in the real-life Scopes trial hardly matters; the writers and producers of *Inherit the Wind* owned the microphone, making their interpretation far more important than the reality."(4)

This example illustrates one of several logical fallacies evolutionists sometimes commit which Johnson exposes in his chapter "Tuning Up Your Baloney Detector." This first fallacy is the selective use of evidence. Radio Man could broadcast what *he* wanted people to hear without giving the other side equal time. What we hear about today, says Johnson, are the evidences which seem to support evolution. What we don't hear about is the absence of significant evidence in the fossil record as a whole. Seeing the entire picture can, and should, easily give one doubts about the story we're now being told by the evolutionists.

Another fallacy evolutionists sometimes employ is the *ad hominem* argument, or the argument "against the man." If a doubter can be labeled a "fundamentalist" or a believer in "creation science" (meaning creation in six, twenty-four hour days), his doubts can be set aside on the grounds of religious prejudice.

Johnson cautions us to watch out also for "vague terms and shifting definitions." The word *evolution*, for example, can mean different things. Are we speaking of microevolution, small changes within a species, or are we talking about macroevolution, major mutations from one type of organism to another? As Johnson says, "That one word *evolution* can mean something so tiny it hardly matters, or so big it explains the whole history of the universe."(5)

Johnson notes that fewer than 10 per cent of Americans actually believe that "humans . . . were created by a materialistic evolutionary process in which God played no part."(6) Nonetheless, the vast majority who doubt this are not allowed to think for themselves on the matter of the fact of evolution. Rather than being educated to think for themselves, students are indoctrinated with the dogmatic claims of evolutionists.

In response, Johnson urges students to discern whether what they are being taught is simply assumed or whether it is based on real evidence. When evolutionists insist on the *fact* of evolution without having concrete evidence, and without having any idea of the *mechanism* of evolution, they're revealing a faith commitment.

Although Johnson's particular strength is in exposing the flaws in evolutionists' arguments, he also presents a positive case for intelligent design in the creation of life. We'll look at that subject next.

Intelligent Design

When Charles Darwin presented his theory of evolution, little was known about what goes on inside living cells. They were "black boxes," objects the insides of which were unknown. With the development of molecular biology, scientists have come to realize that cells are extremely complex.

In his book, *Defeating Darwinism by Opening Minds*, Phillip Johnson introduces the reader to some exciting new discoveries in biology which he believes deal a significant blow to Darwinian evolution.

Johnson says it's now recognized that there's information encoded in cells which can't be reduced to matter. The evolutionist Richard Dawkins writes,

> *Each nucleus . . . contains a digitally coded database*

> *larger, in information content, than all 30 volumes of the Encyclopedia Britannica put together. And this figure is for each cell, not all the cells of the body put together."(7)*

This information is distinct from the physical structure in the same way that the message of a book is distinct from the ink and paper which records it. The question biologists must answer is, Where did this genetic information come from? Information implies intelligence. It can't be explained by physical mutations and natural selection. This is a serious problem for Darwinists.

Another finding which also is a major problem for Darwinists is what is called the irreducible complexity of living organisms. Johnson explains what this means: "Molecular mechanisms . . . are made up of many parts that interact in complex ways, and all the parts need to work together. Any single part has no useful function unless all the other parts are also present."(8) The eye, for example, requires the coordinated working of many different parts to do its work. Each of these parts, however, can accomplish nothing on its own. That being the case, why would the individual parts have been preserved through time by natural selection? If there *were* gradual development, there must have been some intelligence behind it to know what to retain and what to destroy.

These two factors, then—information content and irreducible complexity—are strong physical evidence for intelligent design. Information implies intelligence, and complexity can't be accounted for by mutation and selection. It requires design.

In spite of the evidence, however, Darwinists still insist that the origin of life can't lie in supernatural creation. As we noted on earlier, the key issue for them is their prior commitment to a naturalistic philosophy. As geneticist Richard

Lewontin said, "[W]e 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 counter-intuitive, . . . Moreover, that materialism is absolute, for we cannot allow a Divine Foot in the door."(9)

It's Phillip Johnson's project to expose this prior commitment and to convince evolutionists to acknowledge it. Now we'll turn to look at Johnson's overall project and see what lessons we can draw from it.

Evaluation

Johnson calls his basic strategy for addressing the issue of evolution, the "wedge." He wants to drive a wedge into the "log" of scientific materialism so as to separate the facts of scientific investigation from the naturalistic philosophy which dominates science.

One of the criticisms of Johnson's work is that he wants to throw the baby out with the bathwater. Theistic evolutionists, for example, say that one needn't accept a materialistic theory of evolution to recognize the gradual development of life on our planet. Indeed, Johnson seems to be fighting two battles: the first against those who insist upon doing science in a thoroughgoing naturalistic framework; the second against macroevolution of any sort.

I noted earlier that Johnson argues against separating the so-called *fact* of evolution from the *mechanism* of evolution. He insists that before we can know *that* evolution happened, we need to know *how* it happened. This certainly isn't a universal logical principle. I don't need to know precisely how a camera and film produce pictures to know that they do. Nonetheless, Johnson is correct in pressing for conclusive fossil evidence for gradual change or for a plausible explanation for sudden macromutations.

Johnson's challenge to the scientific community boils down to this question: "What should we do if empirical evidence and materialist philosophy are going in different directions?"(10) In other words, Are you willing to abandon a theory of purposeless processes if the evidence weighs against such a theory? When scientists are willing to do this, then science will be free to discover—as far as it's able—what nature is really like apart from personal prejudices.

It's evident that Johnson has struck a nerve in the scientific community. He's debated well-known scientists and has spoken at prestigious universities across America and overseas. He has not allowed opponents to pin him down on a particular theory of creation and then to dismiss him with the usual "religion vs. science" argument.

Johnson notes that Marx, Freud, and Darwin were three of the most influential men in this century. Marxism and Freudianism have both passed into history. Says Johnson, "I am convinced that Darwin is next on the block. His fall will be by far the mightiest of the three."(11)

But this will only happen, he says, if we "step off the reservation"(12) and do the work necessary to prove our case. We must encourage our young people to take up the challenge of thinking for themselves on this matter and not be intimidated by those who wish to maintain the status quo. This will involve a risk, but as Johnson says: "We will never know how great the opportunity was if we are afraid to take the risk."(13)

This book is valuable for any Christian who wants to learn how to think critically, whether the reader is scientifically-minded or not. Here we find a model for turning the tables on those who want to keep us on the defensive. If we have to give an answer for what we believe, it's only fair that our critics should do the same. *Defeating Darwinism* is an example of how to get them to do it.

Notes

1. Phillip E. Johnson, *Defeating Darwinism by Opening Minds* (Downers Grove, Ill.: InterVarsityPress, 1997), 38.

2. Ibid., 54.

3. Ibid., 35.

4. Ibid., 33.

5. Ibid., 45.

6. Ibid., 10.

7. Ibid., 77.

8. Ibid.

9. Ibid., 81.

10. Ibid., 114.

11. Ibid., 113.

12. Ibid., chap. 8.

13. Ibid., 118.

Darwin's Black Box

Michael Behe's book Darwin's Black Box *was hailed by Christianity Today as 1996's Book of the Year, with good reason. This is the first book suggesting Intelligent Design*

that has received such serious attention from the scientific community. Dr. Ray Bohlin, with a background in molecular biology, reviews this book from a perspective as a creationist and scientist.

 *This article is also available in Spanish.*

Darwin's Black Box: The Biochemistry of the Cell

What do mouse traps, molecular biology, blood clotting, Rube Goldberg machines, and irreducible complexity have to do with each other? At first glance they seem to have little if anything to do with each other. However, they are all part of a recent book by Free Press titled, *Darwin's Black Box: The Biochemical Challenge to Evolution* by Michael Behe. Michael Behe is a biophysics professor at Lehigh University in Pennsylvania and his book, released last summer, has been causing a firestorm of activity in academic circles ever since.

The stranglehold that Darwinism has had in the biological sciences for decades has already been weakened over the last 30 years due to the new creationist movement and more recently by the push from intelligent design theorists. But Behe's new book may end up being the straw that broke the camel's back. Usually books like these are released by Christian publishers or at least a secular press that is small and willing to take a chance. Also, creationist books are rarely sold in secular bookstores or reviewed in secular publications. *Darwin's Black Box* has gained the attention of evolutionists not normally accustomed to responding to anti- evolutionary ideas in the academic arena. People like Niles Eldredge from the American Museum of Natural History, Daniel Dennett, author of *Darwin's Dangerous Idea*, Richard Dawkins of Oxford University and author of *The Blind Watchmaker*, Jerry Robison of Harvard University, and David Hull from the University of Chicago have

all been forced to respond to Behe either in print or in person.

In summary, the reason for all this attention is that they readily admit that Behe is clearly a reputable scientist from a reputable institution and his argument is therefore more sophisticated than they are accustomed to hearing from creationists. Mild, backhanded compliments aside, they unreservedly say he is flat wrong, but they have gone to much greater lengths in the literature, from the podium, and in the electronic media to explain precisely why they think he is wrong. Creationists and intelligent design theorists are usually dismissed out of hand, but not Behe's *Darwin's Black Box.*

Behe's simple claim is that when Darwin wrote *The Origin of Species*, the cell was a mysterious black box. We could see the outside of it, but we had no idea of how it worked. In *Origin*, Darwin stated,

> *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. But I can find no such case.*

Simply put, Behe has found such a case. Behe claims that with the opening of the black box of the cell through the last 40 years of research in molecular and cell biology, there are now numerous examples of complex molecular machines that absolutely break down the theory of natural selection as an all-encompassing explanation of living systems. The power and logic of his examples prompted *Christianity Today* to name *Darwin's Black Box* as their 1996 Book of the Year. Quite a distinction for a book on science published by a secular publisher!

In this essay I will be examining a few of Behe's examples and detailing further just how the scientific community has been

reacting to this highly readable and influential book.

Irreducible Complexity and Mousetraps

Behe claims the data of biochemistry argues strongly that many of the molecular machines in the cell could not have arisen through a step-by-step process of natural selection. In contrast, Behe claims that much of the molecular machinery in the cell is irreducibly complex.

Let me first address this concept of irreducible complexity. It's really a quite simple concept to grasp. Something is irreducibly complex if it's composed of several parts and each part is absolutely necessary for the structure to function. The implication is that such irreducibly complex structures or machines cannot be built by natural selection because in natural selection, each component must be useful to the organism as the molecular machine is built. Behe uses the example of a mousetrap. A mousetrap has five parts that are absolutely necessary for the mousetrap to function. Take any one of these parts away and the mousetrap can no longer catch mice.

The mousetrap must contain a solid base to attach the four other parts to, a hammer that clamps down on the mouse, a spring which gives the hammer the necessary power, a holding bar which holds the now energized hammer in position, and a catch to which the holding bar is secured, holding the hammer in coiled tension. Eventually, the jiggling action of a mouse, lured to the catch by a tasty morsel of peanut butter, causes the holding bar to slip away from the catch, releasing the hammer to spring down upon the unsuspecting mouse.

It's fairly easy to imagine the complete breakdown of functionality if you take away any of these five parts. Without the base, the other parts can't maintain the proper stability and distance from each other to be functional; without the spring or hammer, there is no way to actually

catch the mouse; and without both the catch and holding bar, there is no way to set the trap. All the parts must be present and accounted for in order for a mouse to be caught and the machine to function at all.

You can’t build a mousetrap by Darwinian natural selection. Let’s say you have a factory that produces all five parts of a mousetrap but uses them for different purposes. Over the years as the production lines change, leftover parts of no-longer-made contraptions are put aside on shelves in a storage room. One summer, the factory is overrun with mice. If someone were to put his mind to it, he might run by the storage room and begin to play around with these leftover parts and just might construct a mousetrap. But those pieces, left to themselves, are never going to spontaneously self-assemble into a mousetrap. A hammer-like part may accidentally fall from its box into a box of springs, but it’s useless until all five parts are assembled so they can function together. Nature would select against the continued production of the miscellaneous parts if they are not producing an immediate benefit to the organism.

Michael Behe simply claims that we have learned that several of the molecular machines in the cell are just as irreducibly complex as a mousetrap and, therefore, just as unable to be constructed by natural selection.

The Mighty Cilium

One of Behe’s examples is the cilium. Cilia are tiny hair-like structures on the outside of cells that either help move fluid over a stationary cell, such as the cells in your lungs, or serve as a means of propelling a cell through water, as in the single-celled paramecium. There are often many cilia on the surface of a cell, and you can watch them beat in unison the way a stadium crowd performs the wave at a ball game.

A cilium operates like paddles in a row boat; however, since

it is a hair-like structure, it can bend. There are two parts to the operation of a cilium, the power stroke and the recovery stroke. The power stroke starts with the cilium essentially parallel to the surface of the cell. With the cilium held rigid, it lifts up, anchored at its base in the cell membrane, and pushes liquid backwards until it has moved nearly 180 degrees from its previous position. For the recovery stroke, the cilium bends near the base, and the bend moves down the length of the cilium as it hugs the surface of the cell until it reaches its previous stretched out position, again having moved 180 degrees back to its original position. How does this microscopic hair-like structure do this? Studies have shown that three primary proteins are necessary, though over 200 others are utilized.

If you made a cross-section of a cilium and made a photograph of it with an electron microscope, you would see that the internal structure of the cilium is composed of a central pair of fibers surrounded by an additional 9 pairs of these same fibers arranged in a circle. These fibers or microtubules are long hollow sticks made by stacking the protein tubulin. The bending action of cilia depends on the vertical shifts made by these microtubules.

The bending is caused by another protein that is stretched between the pairs of tubules called nexin. Nexin acts as a sort of rubber band connector between the tubules. As the microtubules shift vertically, the rubber band is stretched taut, the microtubules continue to shift if they bend. Whew! I know this is getting complicated, but hang with me a little longer. The microtubules slide past each other by the action of a motor protein called dynein. The dynein protein also connects two microtubules together. One end of the dynein remains stationary on one microtubule, while the other end releases its hold on the neighboring microtubule and reattaches a little higher and pulls the other microtubule down.

Without the motor protein, the microtubules don’t slide and the cilium simply stands rigid. Without nexin, the tubules will slide against each other until they completely move past each other and the cilium disintegrates. Without the tubulin, there are no microtubules and no motion. The cilium is irreducibly complex. Like the mousetrap, it has all the properties of design and none of the properties of natural selection.

Rube Goldberg Blood Clotting

Rube Goldberg was a cartoonist in the earlier part of this century. He became famous for drawing weird contraptions that must go through many seemingly unnecessary steps in order to accomplish a rather simple purpose. Over the years, some evolutionists have alluded to living systems as Rube Goldberg machines as evidence of their construction by natural selection as opposed to being designed by a Creator. Things such as the Panda’s thumb and the intricate workings of the many varieties of orchids are said to be contrived structures that an intelligent creator surely would have found a better way of doing.

If you have never seen a cartoon of a Rube Goldberg machine, let me describe one for you from Mike Behe’s book, *Darwin’s Black Box*. This one is titled the “Mosquito Bite Scratcher.” Water falling off a roof migrates into a drain pipe and collects into a flask. In the flask is a cork that floats up as the glass fills. Inserted in the cork is a needle that eventually rises high enough to puncture a suspended paper cup filled with beer. The beer then sprinkles onto a nearby bird that becomes intoxicated and falls off its platform and onto a spring. The spring propels the inebriated bird onto another platform where the bird pulls a string (no doubt mistaking it for a worm in its intoxicated state). The pulled string fires a cannon underneath a small dog, frightening him and causing him to flip over on his back. His rapid breathing raises and

lowers a disk above his stomach which is attached to a needle positioned next to a mosquito bite on a man's neck allowing the bite to be scratched, causing no embarrassment to the man while he talks to a lady.

Well, this machine is obviously more complicated than it needs to be. But the machine is still designed and as Behe claims, it is also irreducibly complex. In other words, if one of the steps fails or is absent, the machine doesn't work. The whole contraption is useless. Well, there are a few molecular mechanisms in our bodies that are very similar to Rube Goldberg machines and therefore irreducibly complex. One is the blood-clotting cascade. When you cut your finger an amazing thing happens. Initially, it begins to bleed, but if you just leave it alone, after a few minutes, the flow of blood stops. A clot has formed, providing a protein mesh that initially catches the blood cells and eventually closes up the wound entirely, preventing the plasma from escaping as well.

This seemingly straightforward process involves over a dozen different proteins with names like thrombin, fibrinogen, Christmas, Stuart, and accelerin. Some of these proteins are involved in forming the clot. Others are responsible for regulating clot formation. Regulating proteins are needed because you only want clots forming at the site of a wound not in the middle of flowing arteries. Yet other proteins have the job of removing the clot once it is no longer needed. The body also needs to eliminate the clot when it has outlived its usefulness, but not before.

Now it's easy to see why some, when considering the blood-clotting cascade, wonder if a Creator could have devised something simpler. But that assumes we fully understand the system. Perhaps it absolutely needs to be this way. Besides, this doesn't in any way diminish the fact that even a Rube Goldberg machine is designed just as the blood clotting system seems to be.

Silence of Molecular Evolution and the Reaction

Clearly, the irreducible complexity inherent in many biochemical systems not only precludes the possibility that they evolved by Darwinian natural selection, but actually suggests the strong conclusion that some kind of intelligent design is necessary. Behe makes a very significant point by recognizing that the data that implies intelligent design doesn't necessarily mean one knows who the designer is. Inferring that intelligent design is present is a reasonable scientific conclusion. Planetary astronomers, for example, claim that we will be able distinguish a radio signal from space that was sent by an intelligent civilization from the surrounding radio noise even though we won't initially understand it and won't know who sent it.

Yet the astounding complexity of the cell has gone largely unnoticed and greatly unreported to the general public. There is an embarrassed silence. Behe speculates as to why; he says,

> *Why does the scientific community not greedily embrace its startling discovery? Why is the observation of design handled with intellectual gloves? The dilemma is that while one side of the elephant is labeled intelligent design, the other side might be labeled God (p.233).*

This may also help to account for another curious omission that Behe highlights, the almost total lack of scientific literature attempting to describe how complex molecular systems could have arisen by Darwinian natural selection. The *Journal of Molecular Evolution* was established in 1971, dedicated to explaining how life at the molecular level came to be. One would hope to find studies exploring the origin of complex biochemical systems in this journal. But, in fact, none of the papers published in *JME* over the entire course of its life as a journal has ever proposed the origin of a single

complex biochemical system in a gradual step-by-step Darwinian process.

Furthermore, Behe adds,

> *The search can be extended, but the results are the same. There has never been a meeting, or a book or a paper on details of the evolution of complex biochemical systems (p. 179).*

Behe's sophisticated argument has garnered the attention of many within the scientific community. His book has been reviewed in the pages of *Nature*, *Boston Review*, *Wall Street Journal*, and on many sites on the Internet. While some have genuinely engaged the ideas and offered serious rebuttal, most have sat back on Darwinian authority and claimed that Behe is just lazy or hasn't given the evolutionary establishment enough time. Jerry Coyne in *Nature* (19 September 1996, pp. 227-28) put it this way:

> *There is no doubt that the pathways described by Behe are dauntingly complex, and their evolution will be hard to unravel. Unlike anatomical structures, the evolution of which can be traced with fossils, biochemical evolution must be reconstructed from highly evolved living organisms, and we may forever be unable to envisage the first proto-pathways. It is not valid, however, to assume that, because one man cannot imagine such pathways, they could not have existed.*

But that's precisely the point; it is not one man but the entire biochemical community that has failed to elucidate a specific pathway leading to a complex biochemical system.

I highly recommend Behe's book. Its impact will be felt for many years to come.

A Darwinian View of Life

Probe's Dr. Ray Bohlin reviews Richard Dawkins' anti-theistic book, A River Out of Eden: A Darwinian View of Life*, showing the holes in Dawkins' arguments.*

A River of DNA

A River Out of Eden: A Darwinian View of Life by Richard Dawkins is the fourth in a series being published by Basic Books entitled "The Science Masters Series." This series is said to be "a global publishing venture consisting of original science books written by leading scientists. "Purposing to "present cutting-edge ideas in a format that will enable a broad audience to attain scientific literacy," this series is aimed at the non-specialist.

The first three releases were *The Last Three Minutes: Conjectures about the Ultimate End of the Universe* by Paul Davies, *The Origin of Humankind* by Richard Leakey, and *The Origin of the Universe* by John D. Barrow. These were followed by the contribution from Dawkins. A look at these books, and at future contributors like Daniel Dennett, Jared Diamond, Stephen Jay Gould, Murray Gell-Mann, Lynn Margulis, and George C. Williams, makes the endeavor look less like a scientific literacy series and more like an indoctrination in philosophical naturalism.

The exposition of a Darwinian view of life by Dawkins in *River Out of Eden* certainly fits into the overt anti-theism category. His "River Out of Eden" is a river of DNA that is the true source of life and the one molecule that must be understood if life is to be understood.

This river of DNA originally flowed as one river (one species)

which eventually branched into two, three, four, and eventually millions of rivers. Each river is distinct from the others and no longer exchanges water with the others, just as species are isolated reproductively from other species. This metaphor allows Dawkins to explain both the common ancestry of all life along with the necessity of gradualism in the evolutionary process.

Dawkins refers to this river of DNA as a digital river. That is, the information contained in the DNA river is completely analogous to the digital information of languages and computers.

Surprisingly, Dawkins gives away the store in this first chapter. In pressing home the digital analogy, Dawkins first uses probability to indicate that the code arose only once and that we are all, therefore, descended from a common ancestor:

> *The odds of arriving at the same 64:21 (64 codons: 21 amino acids) mapping twice by chance are less than one in a million million million million million. Yet the genetic code is in fact identical in all animals, plants and bacteria that have ever been looked at. All earthly living things are certainly descended from a single ancestor.(p. 12)*

So it is reasonable to use probability to indicate that the code could not have arisen twice, but there is no discussion of the probability of the code arising by chance even once. A curious omission! If one tried to counter with such a question, Dawkins would predictably fall back on the assumption of naturalism that since we know only natural processes are available for the origin of anything, the genetic code must have somehow beaten the odds.

African Eve

Chapter 2 attempts to tell the story of the now famous “African Eve.” African Eve embodies the idea that we are all

descended from a single female, probably from Africa, about 200,000 to 100,000 years ago. This conclusion originates from sequence data of the DNA contained in mitochondria.

Mitochondria are tiny little powerhouses that produce energy in each and every cell of your body. Just as your body contains many organs that perform different functions, the cell contains many organelles that also perform specific functions. The mitochondrion is an organelle whose task is to produce energy molecules the cell can use to accomplish its tasks.

However, mitochondria are also the only organelle to contain their own DNA. Certain proteins necessary to the function of mitochondria are coded for by the mitochondrial DNA and not by the nuclear DNA like every other protein in the cell. One other unique aspect of mitochondria is their maternal inheritance. That is, all the mitochondria in your body are descended from the ones you initially inherited from your mother. The sperm injects only its DNA into the egg cell, not its mitochondria. Therefore, an analysis of mitochondrial DNA reveals maternal history only, uncluttered by the mixture of paternal DNA like nuclear DNA. That's why these studies only revealed an African Eve, though other recent studies claim to have followed DNA from the Y chromosome to indicate an ancient "Adam."

Now these scientists don't actually think they have uncovered proof of a real Adam and Eve. They only use the names as metaphors. But this action does reveal a shift in some evolutionists minds that there is a single universal ancestor rather than a population of ancestors. This at least is closer to a biblical view rather than farther away.

Finally, Dawkins makes his case for the reliability of these molecular phylogenies in general. Here he glosses over weaknesses in the theory and actually misrepresents the data. On page 43 he says, "On the whole, the number of cytochrome c

letter changes separating pairs of creatures is pretty much what we'd expect from previous ideas of the branching pattern of the evolutionary tree." In other words, Dawkins thinks that the trees obtained from molecular sequences nearly matches the evolutionary trees we already had. Later on page 44, when speaking of all molecular phylogenies performed on various sequences, he says, "They all yield pretty much the same family tree which by the way, is rather good evidence, if evidence were needed, that the theory of evolution is true."

Well, besides implying that evidence is not really needed to prove evolution, Dawkins stumbles in trying to display confidence in the molecular data. What exactly does "pretty much" mean anyway? Inherent in that statement are the numerous contradictions that don't fit the predictions or the ambiguous holes in the general theory. But then, evidence isn't really needed anyway is it?

While this chapter contained the usual degree of arrogance from Dawkins, particularly in his disdain for the original account of Adam and Eve, it was somewhat less compelling or persuasive than is his usual style. He hedged his bet frequently and simply waived his hand at controversy. Unfortunately, this may not be picked up by the unwary reader.

Scoffing at Design

In Chapter 3 Dawkins launches a full-scale assault on the argument from design. After presumably debunking arguments from the apparent design of mimicry (not perfect design, you know, just good enough), Dawkins states, "Never say, and never take seriously anybody who says, 'I cannot believe so-and-so could have evolved by gradual selection.' I have dubbed this fallacy 'the Argument from Personal Incredulity.'"

To some degree I'm afraid that many creationists have given Dawkins and others an easy target. Such a statement, "I cannot believe…," has been used many times by well-meaning

creationists but is really not very defensible. It is not helpful to simply state that you can't believe something; we must elaborate the reasons why. First, Dawkins levels the charge that much of what exists in nature is far from perfectly designed and is only good enough. This he claims is to be expected of natural selection rather than a designer. This is because a designer would design it right while natural selection has to bumble and fumble its way to a solution. To begin with, the lack of perfection in no way argues for or against a designer.

I have always marveled at some evolutionists who imply that if it isn't perfect, then Nature did it. Just what is perfection? And how are we to be sure that our idea of a perfect design wasn't rejected by the Creator because of some flaw we cannot perceive? It is a classic case of creating God in our own image.

The evolutionists are the ones guilty of erecting the straw man argument in this instance. In addition, Dawkins fully admits that these features work perfectly well for the task at hand. The Creator only commanded His creatures to be fruitful and multiply, not necessarily to be perfectly designed (humanly speaking) wonders. Romans 1:18-20 indicates that the evidence is sufficient if you investigate thoroughly.

Dawkins further closes off criticism by declaring that "there will be times when it is hard to think of what the gradual intermediates may have been. These will be challenges to our ingenuity, but if our ingenuity fails, so much the worse for our ingenuity." So if explanations fail us, the fault is not with the evolutionary process, just our limited thinking. How convenient that the evolutionary process is so unfalsifiable in this crucial area. But after all, he implies, this is science and intelligent design is not!

Dawkins concludes the chapter with a discussion on the evolution of the honeybee waggle dance. It is filled with

probabilistic statements like “The suggestion is that…. Perhaps the dance is a kind of…. It is not difficult to imagine…. Nobody knows why this happens, but it does…. It probably provided the necessary….” Yet at the end, Dawkins proclaims,

> *We have found a plausible series of graded intermediates by which the modern bee dance could have been evolved from simpler beginnings. The story as I have told it…may not be the right one. But something a bit like it surely did happen.*

Again, “it happened” only because any other explanation has been disallowed by definition and not by the evidence.

God’s Utility Function

Dawkins concludes his attack on design in his book *River Out of Eden,* with a more philosophical discussion in Chapter 4, God’s Utility Function. He begins with a discussion of the ubiquitous presence of “cruelty” in nature, even mentioning Darwin’s loss of faith in the face of this reality. Of course, his answer is that nature is neither cruel nor kind, but indifferent. That’s just the way nature is.

But a curious admission ensues from his discussion. And that is, “We humans have purpose on the brain.” Dawkins just drops that in to help him put down his fellow man in his usual arrogant style. But I immediately asked myself, “Where does this ‘purpose on the brain’ stuff come from?”

The rest of nature certainly seems indifferent. Why is it that man, within an evolutionary worldview, has “purpose on the brain”? In his attempt to be cute, Dawkins has asked an important question: Why is man unique in this respect?

As Christians, we recognize God as a purposeful being; therefore if we are made in His image, we will also be purposeful beings. It is natural for us to ask “Why?”

questions. No doubt if pressed, someone will dream up some selective or adaptive advantage for this trait. But this, as usual, would only be hindsight, based on the assumption of an evolutionary worldview. There would be no data to back it up.

At the chapter's end Dawkins returns to his initial topic. "So long as DNA is passed on, it does not matter who or what gets hurt in the process…. But Nature is neither kind nor unkind…. Nature is not interested one way or another in suffering, unless it affects the survival of DNA." Even Dawkins admits that this is not a recipe for happiness. The problem of evil returns. Dawkins's simple answer is that there is no problem of evil. Nature just is.

He recounts a story from the British papers of a school bus crash with numerous fatalities and reports a Catholic priest's inadequate response to the inevitable "Why" question. The priest indicates that we really don't know why God would allow such things but that these events at least confirm that we live in a world of real values: real positive and negative. "If the universe were just electrons, there would be no problem of evil or suffering." Dawkins retorts that meaningless tragedies like this are just what we expect from a universe of just electrons and selfish genes.

However, it is also what we expect in a fallen world. Evolutionary writers never recognize this clear biblical theme. This is not the way God intended His world to be. What is unexpected in an evolutionary world are people shaped by uncaring natural selection who care about evil and suffering at all. Why are we not as indifferent as natural selection?

In making his point, Dawkins says that the amount of suffering in the natural world is beyond all "decent" contemplation. Where does decency come from? He calls the bus crash a "terrible" story. Why is this so terrible if it is truly meaningless? Clearly, Dawkins cannot live within the boundaries of his own worldview. We see purpose and we fret

over suffering and evil because we are created in the image of a God who has the same characteristics. There are aspects of our humanity that are not explainable by mutation and natural selection. Dawkins must try to explain it, however, because his naturalistic worldview leaves him no choice.

Are We Alone?

Dawkins closes his book with a final chapter on the origin of life and a discussion on the possibilities of life elsewhere in the universe. This chapter is a bit of a disappointment because there is really very little to say. To be sure, it is filled with the usual Dawkins arrogance and leaps of naturalistic logic, but there is no real conclusion just the possibility of contacting whatever other life may be out there.

Dawkins begins with a definition of life as a replication bomb. Just as some stars eventually explode in supernovas, so some stars explode with information in the form of life that may eventually send radio messages or actual life forms out into space. Dawkins admits that ours is the only example of a replication bomb we know, so it is difficult to generalize as to the overall sequence of events that must follow from when life first appears to the sending of information out into space, but he does it anyway.

While we can clearly distinguish between random and intelligent radio messages, Dawkins is unable to even ask the question about the origin of the information-rich DNA code. I suppose his answer is contained on page 138 when he says, “We do not know exactly what the original critical event, the initiation of self-replication, looked like, but we can infer what kind of an event it must have been. It began as a chemical event.”

This inference is drawn not from chemical, geological, or biological data, because the real data contradicts such a

notion. Dawkins takes a few pages to evoke wonder from the reader by documenting the difficult barriers that had to be crossed. His conclusion that it was a chemical event is rather an implication that is derived from his naturalistic worldview. It is a chemical event because that is all that is allowed. Creation is excluded by definition, not by evidence. While chemical evolution may be difficult, we are assured that it happened!

The book closes with a discussion of the Ten Thresholds that must be crossed for a civilization of our type to exist. Along the way, Dawkins continues to overreach the evidence and make assumptions based on naturalism without the slightest thought that his scenario may be false or at least very wide of the mark.

All along the way Dawkins tries to amaze us with both the necessity and complexity of each threshold but fails miserably to explain how each jump is to be accomplished. He depends totally on the explanatory power of natural selection to accomplish whatever transition is needed. It is just a matter of time.

But, of course, this begs the question. Dawkins perfects this art for 161 pages. Despite the smoke and mirrors, Richard Dawkins is still trying to sail upstream without a paddle. It just won't work. While many of his explanations and ruminations should make careful reading for creationists (he is not stupid and writes well), I have tried to point out a few of his inconsistencies, assumptions, and poor logic.

What bothers me most is that this is meant to be a popular book. His wit and dogmatism will convince and influence many. For these reasons I found it a frustrating and sometimes maddening book to read. Unfortunately, few will think their way through these pages and ask tough questions of the author along the way. This is where the real danger lies. We must not only show others where he is wrong but help them how to

discover these errors on their own. We must help people to think, not just react.

Genesis Unbound

A New and Different Genesis 1

Have you ever read a book that totally changed the way you thought about something? Or heard an idea that gave you a completely new picture of something you thought you knew well? This essay is about just such a book.

Most of us know the verses of Genesis 1 so well we could recite parts of them from memory. Some have studied them for years and read shelves of books about what the first chapters of Genesis mean. But what if someone suggested that most of what you have thought and pictured and been told about those early chapters might not be quite right? Would you reach for the red tag of "Heresy" to slap on the book? Would you be sure that the author could not possibly be right? In this discussion we are reviewing a new book called *Genesis Unbound*, and it may well cause you to reexamine what you thought Genesis 1 and 2 are about.

The author, Dr. John Sailhammer, is not a newcomer to theology. Educated at Dallas Theological Seminary and UCLA, Dr. Sailhammer taught at Trinity Evangelical Divinity School. He now teaches at Northwestern College. He has written several well-respected books on the first five books of the Bible (the Pentateuch) and is considered an excellent conservative Old Testament scholar. The commentary on Genesis in Zondervan's

Expositor's Bible Commentary is by Dr. Sailhammer. His recent book gives a surprisingly new, and yet very old, look at the first chapters of Genesis.

To lay the groundwork for any new view, it is important to understand the prevailing view first. Sailhammer helpfully provides five basic assumptions that he says make up the core beliefs of nearly all the current views.

The first of these core assumptions is that the first verse of Genesis 1, "In the beginning God created the heavens and the earth," refers to the creation of some sort of unformed mass that God will make into a universe as the six days progress.

The second assumption that almost all commentators make about Genesis 1 is that the "light" created on day one was something unique and temporary for dividing the days until the fourth day when God would create the sun, moon, and stars.

Third, it is generally assumed that the sun, moon, and stars were actually created on the fourth day.

Fourth, until recent science began to question the assumption, it has been almost universally believed that the days of Genesis 1 were normal, 24-hour days. Some placed a gap between the first and second verses, to place all of the geological ages, but this was not a widely held view. In our century it is common to make the days long ages so the Bible will agree with the consensus of modern geology.

Lastly, the earth that God is making ready for man in Genesis 1 has almost always been seen as the whole planet. Accordingly, verse one is about the creation of the whole universe, and verse two begins a description of how God fashioned the earth for (1) the creatures He was about to make, and (2) a home for the two people He would make in His own image.

But suppose there were some assumptions in this list that we

did not need to make? How would that change our view of these first chapters of Genesis? Next we will consider how a Jewish reader of Moses' time might have understood Genesis 1.

The Forming of the Promised Land

We all make assumptions when we read or hear something; we cannot think without a structure. But sometimes we make unnecessary assumptions that hinder our understanding. Of the five assumptions that many make about Genesis 1, could some be unnecessary baggage? The first assumption was that "In the beginning God created the heavens and the earth" describes an initially chaotic state out of which God would create the material world. But suppose instead that this verse actually described God's creation of heaven and earth? Dr. Sailhammer carefully develops the view that in the Old Testament, the Hebrew word for "In the beginning" often describes a period of indeterminate time. Genesis 10:10 says "And the beginning of his kingdom was Babel and Erech and Accad and Calneh." Jeremiah 28:1 describes "The beginning of the reign of Zedekiah king of Judah, in the fourth year." Genesis Unbound suggests that we picture God creating the whole universe, "the heavens and the earth," over some unspecified time in the past.

When we begin verse two, "And the earth was formless and void," Sailhammer says it is not talking about the whole of planet earth. What are Moses' five books about? The nation of Israel. What is the whole theme of the Pentateuch? How God chooses a people and takes them to the promised land He has made for them. Why not give "earth" in verse two its other meaning of "land"? And specifically "The Land." God, through Moses, is telling us how He prepared the Promised Land for the people He already knew He would choose.

Startling?

Why, then, was the land "formless and void?" It wasn't!

Genesis Unbound contends that this assumption crept in with the first Greek translation of the Bible, the Septuagint. It translates the Hebrew into Greek as “unseen and unformed” in order to harmonize the Bible with the view of the Greeks, who believed the world was formed out of chaos, so the translators wanted to seem relevant and mirrored that idea! According to Dr. Sailhammer, it would be better to translate the phrase as “an uninhabitable wasteland.” God had not yet prepared it for man, but it was not chaos either. God was preparing to take the “wasteland” and make it the “promised land.”

On day two, God prepares the sky for the land He will soon begin to make ready. The word often translated “firmament” Sailhammer suggests actually refers to what we would call the sky. And the waters above the firmament are the clouds that God sets in the sky. Interestingly, this is exactly what John Calvin thought. He wrote, “To my mind, this is a certain principle, that nothing is here treated of but the visible form of the world. He who would learn astronomy . . . let him go elsewhere.”

On day three, God gathers together the seas and makes the dry land appear. The land is brought out of the water to make a fit place for Adam and Eve. The water settles into rivers and lakes. The Hebrew word for any body of water can be translated “sea.” Here it is plural, while if it referred to the ocean it would be singular.

Then God creates “fruit trees.” In Sailhammer’s understanding, that is what the words describe, not all kinds of vegetation.

At the end of the third day, the Promised Land has been prepared with clouds in the sky, rivers and lakes, and fruit trees for food.

The Filling of the Land

The book *Genesis Unbound* presents what seems at first a

completely new understanding of Genesis 1. But by seeing the chapter as God preparing the Promised Land, first for Adam and Eve, and eventually for His chosen nation Israel, many problems are avoided. Dr. Sailhammer takes the days to be normal 24-hour days, but sees the creation of the whole universe as having taken place in the first verse, over some unstated period of time in the past. Then God focuses in on His preparation of a place for His last creation to live.

Now, on day four, God gives a new purpose to the sun, moon, and stars that have been shining since He created them "in the beginning." On day four, God declares they are to guide the people He is about to make. They will act as measures of time; they will serve humanity. There have been no people placed on earth yet, so the sun has merely been a star in the sky. Now God speaks, and the host of heaven takes on a new function as celestial markers. On the first three days, God created the land and places for things. Now He is declaring what is to fill each part of the stage, and what their functions will be.

On day five the same word for "create" that was used in verse one occurs again: bara. Why does God use this word again? Dr. Sailhammer suggests that Moses is drawing our attention back to 1:1 to remind us that only God can create things out of nothing. But on day five, when God populates this new land He has made, it is with animals and birds that are descendants of those He made on day one. God speaks, His creation responds, He sees it is good and blesses His creation.

Day six is the climax of the account, and the center of God's activity. From nothing God has created the universe in Genesis 1:1. He has prepared a special land and populated it with His creations. And then we come to man.

Here God changes His whole approach. He now announces, "Let us make man in Our image." And in order for the creation to fully bear His image, He makes them male and female. Sailhammer makes an interesting point here as he discusses why the text

suddenly says “Let us.” He sees a reflection of God’s character in the fact that it takes both a male and female before God’s image can be born by humans. Just as men and women complement one another, so too the “us” points to the relationships that exist within the Godhead. So, in Dr. Sailhammer’s fascinating argument in *Genesis Unbound*, when God sets out to create “in His image” for the first time, He first creates a special land for them, then appoints the sun, moon, and stars to a new purpose, fills the land, sky, and waters with creatures, and creates a garden for Adam and Eve to live in.

Some might object that God doesn’t seem to do very much. But, Sailhammer argues that God had already created everything out of nothing in Genesis 1:1. Now, God speaks ten times (just as He spoke the Ten Commandments) and makes a land perfect for humans to live in. He creates for Adam and Eve a garden. And that garden will someday be the very land that God promises to Abraham, and eventually brings the nation of Israel to, for as we will see next, Eden is the land of Israel.

Does Genesis 2 Contradict Genesis 1?

At last we come to day seven. God has created a place for each of His creations, and just as He instructs His creation to do in the Ten Commandments, God Himself is said to “rest.”

He has taken a wild land, unfit for people, and made it into a literal garden spot. Now, in a pattern that He sets for His creation to follow, He takes a day of rest. This becomes deeply significant later on when Moses receives the Ten Commandments. In Exodus 20:11 God says “For in six days the LORD made the sky, the earth, and the seas and all that is in them, and rested on the seventh day.” Thus the divine pattern is also to be the human plan. Even now that we are burdened with the effects of the Fall, even in our rebelliousness, God still wants His creation to rest, and take time to bless our Creator.

Then what are we to make of Genesis 2? Many modern scholars have spoken of two creation accounts and seen this as an inconsistency or an error in the Bible. The usual answer has been that the account in Genesis 2 is a narrowing of focus from chapter 1, looking just at the creation of man and woman in detail. If this is so, Dr. Sailhammer asks, then why not see Genesis 1 as describing the same place as Genesis 2, Eden? Thus he continues his argument into chapter 2.

In Genesis 2:5-6, some have seen a contradiction with the first chapter. How can there be no shrubs or plants or rain? What *Genesis Unbound* sees in these verses is a comparison being set up between before and after the Fall. There are no "shrubs of the field" or "plants of the field" because these would come as a result of Adam and Eve's disobedience. These are the "thorns and thistles" and "plants of the field" that Adam is told he must work to cultivate in Genesis 3:18-19.

When the text says "it had not rained on the earth," it is a contrast to when God will "send rain on the earth" during the Flood. And there was "no man to cultivate the ground" because this too would come as a result of the Fall in Genesis 3:23. So the text is already preparing us for what the results of man's disobedience will be, even as the Garden is being made.

Dr. Sailhammer also finds the large amount of space devoted to locating Eden of considerable significance. While modern commentators have despaired of ever locating the exact place, he sees the length of the description as indicative that at least Moses expected people to recognize where Eden was located.

The primary way that Eden is located is by the rivers that flow from it. And what are those rivers? One of them is the Pishon, a river now unknown. But the second is the Gihon, which flows around the land of Cush. Since Cush is roughly the same as Egypt, might not the river Gihon be the Nile River of Egypt? And the other two rivers are the Tigres and the

Euphrates. Sailhammer thinks it is not coincidence that two of these rivers are exactly the ones that God uses to explain to Abraham where the promised land will be (Gen. 15:18).

Next we will consider why Eden and Israel are so closely connected, and whether Genesis should be read as poetry or not.

Genesis Unbound and the Rest of Scripture

Dr. John Sailhammer's new book *Genesis Unbound* has many novel explanations of Genesis 1 and 2. But at the same time, it both helps us see how a Hebrew reader might have understood what Moses wrote and answers a number of puzzling questions that most of us have had about the text. One of these questions is, "What became of Eden after God devoted so much care to making it?"

Earlier we looked at how the rivers God uses to describe where Eden was, are much the same as the ones He uses to tell Abraham where the promised land was to be. Think of the parallels. In the same way that God prepares a special place for Adam and Eve, a place they will be driven out of if they are disobedient, so too, He promises first Abraham, and then the whole nation of Israel a special place, that they will be driven out of if they are disobedient. In fact, both are sent the same direction, to the east, when they do disobey. And then, where will the Messiah come to? Exactly the same area as the first Adam lived! And where is the New Jerusalem of Revelation 21 located? Just where God placed the first Jerusalem, which was in the same place that He created for Adam and Eve: Eden!

In this view, the whole Bible ties together in a way that makes complete sense and has God wasting nothing as He prepares a land for His people. The blessings and curses that form so much a part of the later books of the Pentateuch, can now be seen as being foreshadowed in God's initial command to

Adam and Eve.

But should we even be reading Genesis so literally? After all, isn't Genesis really poetry? As an Old Testament scholar, Sailhammer makes short work of the argument. What is it that characterizes all Hebrew poetry? Parallelism and meter. Parallelism is the use of two lines to express the same idea in two ways. For example:

The Lord is a great God
And a great king above all gods.

These express the same thought in two related ways. Hebrew poetry also has a certain meter, where either the number of words or symbols will be approximately the same between two lines. Does Genesis 1 or 2 fit that pattern? Absolutely not. And in fact, Sailhammer chides Evangelicals, who, to try to take these chapters less literally, speak of "poetry-like" language. As he says, this seems like "little more than an attempt to dismiss the obvious intent of these narratives to tell us, in literal terms, what actually happened at creation."

In conclusion, he considers the question, "Is the Big Bang being described in Genesis 1:1?" Interestingly enough, his answer is a fairly firm, "No." As he pointedly comments, "When understood as the Big Bang, creation becomes just another example of the forces of the physical world we see around us today. . . . Our world, however, cannot be traced back to the divine act of creation. Science and history will always be separated from the divine acts of creation."

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.

Evolution's Big Bang

The Cambrian explosion of life has long befuddled evolutionists. New data have only deepened the mystery and caused a critical rethinking of cherished evolutionary concepts.

 *This article is also available in Spanish.*

Another Big Bang?

The impish Calvin, from the now defunct daily comic strip "Calvin and Hobbes," once offered to rename the Big Bang Hypothesis, "The Horrendous Space Kablooie!" Most of us have heard at some point of cosmology's preferred explanation for the origin of the universe, the Big Bang Hypothesis. The Big Bang of cosmology describes the origin of the universe as occurring in a powerful explosion that eventually results in the universe as we see it today. But a recent issue of *Time* magazine (4 December 1995) heralded a new Big Bang, a Big Bang of biological evolution previously known as the Cambrian Explosion of Life. And just as many draw theistic conclusions from cosmology's Big Bang, so it is possible to draw theistic conclusions from what is now being called Evolution's Big Bang.

But first, just what is evolution's Big Bang? The cover of this issue of *Time* declared: "New discoveries show that life as we know it began in an amazing biological frenzy that changed the planet almost overnight." A subheading just in

front of the inside article proclaimed, “For billions of years, simple creatures like plankton, bacteria, and algae ruled the earth. Then, suddenly, life got very complicated.”

The standard evolutionary story describes an earth bombarded by meteorites from its origin 4.5 billion years ago until almost 3.8 billion years ago. Within only 100 million years the first life evolved following the cessation of this celestial onslaught. This, in and of itself, is a huge evolutionary hurdle without explanation. For the next 3 billion years, little else but single- celled life forms ruled the planet. Then suddenly, in the Cambrian geological period, the earth is populated with a huge diversity of complex multicellular life forms. This has always looked suspiciously like some form of creation event, and paleontologists frequently seemed rather embarrassed by the reality of the Cambrian Explosion.

So, where is the documentation for the long history of the evolution of these creatures? The usual answer is that the necessary fossil layers prior to the Cambrian period have not been discovered yet. The fossils are just missing! Hmmm. . . . how convenient! This, after all, was Darwin’s excuse and many evolutionists after him followed suit. Well, recent discoveries from Canada, Greenland, China, Siberia, and Namibia document quite clearly that this period of biological creativity occurred in a geological instant virtually all around the globe. So, the usual excuse no longer holds water. While evolutionists are not exactly joining a creationist wave of conversion, they are being forced to ask tough questions concerning the nature of evolutionary change. Darwin did not envision major evolutionary change happening this fast. Darwinism has always been characterized by slow gradual change that is imperceptible in our time frame. Major evolutionary change was only visible as we looked to the fossils to reveal the number and type of intermediates between species and major groups. But the Cambrian explosion is anything but gradual,

and identifiable intermediates are totally absent. Where are the ancestors? What conditions could have prompted this frenzy of creativity? Is there some form of unknowable evolutionary mechanism at work? I think you will find the evolutionary community's answers to be quite revealing.

How Fast is Fast?

Anomalocaris! Ottoia! Wiwaxia! Hallucigenia! Opabinia! If these names are unfamiliar to you, well, they should be. For they are only becoming familiar to paleontologists over the last twenty years. Paleontologists are those scientists who study the fossils embedded in ancient layers of rock. And this strange list represents a group of animals from the Cambrian period that is only now being appreciated—animals which supposedly lived over 500 million years ago. These animals not only possess strange sounding names, but are even stranger looking! So strange and different are they that most are contained in phyla of which they are the only example and which no longer exists.

Whoa! . . . you say! And just what is a phyla? Well, if you think way back to high school biology, *phyla* is actually the plural form of *phylum,* a Latin term designating a large category of biological classification. The largest category of classification is the Kingdom. We all know about the Animal and Plant Kingdoms. Well, Phylum is the next category below Kingdom. The Animal Kingdom consists of such well known phyla as the molluscs which contains clams, oysters, and snails. Another commonly known phylum is the annelids to which belong the earthworms. The largest of all phyla is the arthropods. Arthropods range from insects to millipedes to spiders to shrimp. We are placed in the phylum Chordata along with all other vertebrates, the fish, amphibians, reptiles, and other mammals. Representatives from different phyla are very different creatures. There is not much in common between a human, an earthworm, a clam, and a mosquito. They are all from

different phyla—so different that evolutionists have assumed that it must have taken tens of millions of years for these phyla to evolve from one common ancestor.

Yet, here is the real puzzle of the Cambrian Explosion for the theory of evolution. All the known phyla, except one, along with the oddities with which I began this discussion, first appear in the Cambrian period. There are no ancestors. There are no intermediates. Fossil experts used to think that the Cambrian lasted 75 million years. But even that seemed to be a pretty short time for all this evolutionary change. Eventually the Cambrian was shortened to only 30 million years. And if that wasn't bad enough, the time frame of the real work of bringing all these different creatures into existence was limited to the first five to ten million years of the Cambrian. This is extraordinarily fast! Harvard's Stephen Jay Gould says, "Fast is now a lot faster than we thought, and that is extraordinarily interesting." What an understatement! "Extraordinarily impossible" might be a better phrase!

In the *Time* magazine article (p. 70), paleontologist Samuel Bowring says, "We now know how fast fast is. And what I like to ask my biologist friends is, How fast can evolution get before you start feeling uncomfortable?" I would love to ask Bowring just what he meant by that statement. It's almost as if he is recognizing that current evolutionary mechanisms can't possibly act that fast. The potential answers to that dilemma are only creating more questions, questions that evolutionists may never be able to answer.

How Could the Cambrian Explosion Occur?

Charles Darwin proposed an evolutionary process that was slow and gradual. This formulation has remained the mainstay of evolutionary explanations for the over 100 years since Darwin until very recently. One of the many reasons for a rethinking of this slow, gradual, snail-like pace has been the intricate complexity of living things. In the years before Darwin, the

marvelous fit of an organism to its environment was considered the chief evidence of a Supreme Designer. But Darwin supposedly showed another and better way, natural selection. But if organisms were so finely-tuned to their environment, so wonderfully adapted to their particular niche, then if they were to change at all over time, then that change would have to be very gradual so as not to upset too quickly that delicate balance between the organism and its environment.

This notion of the gradualness of the evolutionary process was deeply reinforced with the discovery of DNA and the genetic code. DNA operates as an informational code for the development of an organism from a single cell to an adult and also regulates all the chemical processes that go on in cells. Mutations, or mistakes in the code had to have very minor effects. Disruption of the blueprint would be very sensitive. The small changes brought about by mutations would have to be cumulative over very long periods of time to bring about significant evolutionary changes.

This necessity of gradualism explains the difficulty evolutionists have concerning the Cambrian explosion or Evolution's Big Bang, as *Time* magazine called it. How could animals as diverse as arthropods, molluscs, jellyfish, and even primitive vertebrates all appear within a time span of only 5-10 million years with no ancestors and no intermediates? Evolution just doesn't work this way. Fossil experts and biologists are only beginning to wrestle with this thorny dilemma. Some think that genes which control the process of development from a fertilized egg to an adult, the so- called *Hox* genes, may have reached a critical mass which led to an explosion of complexity. Some of the simplest multi-celled organisms like the jellyfish only have three *Hox* genes, while insects have eight, and some not-quite-vertebrates have ten. Critical mass may be a real phenomena in physics, but biological processes rarely if ever work that way. Besides, that doesn't solve the important riddle of where the first *Hox*

gene came from in the first place. Genetic information does not just spontaneously arise from random DNA sequences.

Other scientists think that a wholesale reorganization of all the genes must have also changed along with the duplication of *Hox* genes to bring about this stupendous amount of change. But that only complicates the picture by requiring additional, simultaneous genetic mutations that have to occur virtually all at once. This would have an enormous negative effect on an organism that was already adapted to its environment. How could it survive? It seems that the equivalent of a miracle would be required. But such things aren't allowed in evolution. To quote *Time* magazine again,

> *Of course, understanding what made the Cambrian explosion possible doesn't address the larger question of what made it happen so fast. Here scientists delicately slide across data-thin ice, suggesting scenarios that are based on intuition rather than solid evidence.*

Why Hasn't Such Rapid Change Ever Happened Again?

Before addressing this question, let's review our discussion thus far. Evolution's Big Bang, the Cambrian explosion of life that supposedly occurred over 500 million years ago, continues to puzzle evolutionists. Recent discoveries have narrowed the time frame from over 70 million years to less than 10 million years. This has only complicated their dilemma because so many different creatures appear in the Cambrian with no ancestors or intermediates. The major evolutionary innovations represented in the Cambrian would ordinarily require at least tens of millions of years to accomplish. Some might even suggest over 100 million years would be required. The differences between the creatures that suddenly appear in the Cambrian are enormous. In fact these differences are so large many of these animals are one of a kind. Nothing like them

existed before and nothing like them has ever appeared again.

In fact, a question that is just as perplexing as how this explosion of diversity could occur so fast, is why hasn't such drastic change ever happened in the 500 million years since? The same basic body plans that arose in the Cambrian remain surprisingly constant ever since. Apparently, the most significant biological changes in the history of the earth occurred in less than ten million years, and for 500 million years afterward, this level of change never happened again. Why not? This may seem like a simple question, but it is far more complicated than it appears.

Many biologists think the answer must lie within the genetic structure of organisms. During the Cambrian, new forms of life could readily appear because the genetic organization of organisms was relatively loose. Once all these body plans came into existence and were successful, then these same genetic structures became relatively inflexible in order to preserve what worked so well. In other words there may be genetically built-in limits to change. Developmental biologist Rudolf Raff said, "There must be limits to change. After all we've had these same old body plans for half a billion years." Lane Lester and I coauthored a book over ten years ago titled *The Natural Limits to Biological Change*. Though the limits to change we proposed were tighter than what these evolution scientists are proposing, it is the same basic idea. We even suggested that these limits to change would be found in the genetic organization and regulatory programs that are already built in.

Some evolutionists have gone so far as to suggest that the mechanisms of evolution operating in the Cambrian were probably radically different from what has taken place ever since. This raises the possibility that we may never be able to study these mechanisms because animals with the proper genetic structure no longer exist. We are left only with the products of the Cambrian explosion and none of the precursors.

The speculations will therefore be wild and uncontrollable since there will be no way to test these theories. Fossils leave no trace of their genetic organization. We may never be able to know how this marvelous burst of creativity occurred. Sounds like evolutionists may be faced with the very same problems they accuse creationists of stumbling over: a process that was unique to the past, unobservable in any shape or form, and unrepeatable.

Stuart Kaufmann, a leader in complexity theory, places his faith in self-organizing systems that spontaneously give rise to order out of chaos—a sort of a naturalistic, impersonal self-creator. A supernatural Creator performs the same function with the added benefit of providing a source of intelligent design as well.

Marvelous Evidence of Creation and Design and the Role of World View

So often at Probe our focus is on some issue that has the opposing forces shaped by worldview. A worldview is a system of beliefs or philosophy of life that helps us to interpret the world around us. We often compare one's worldview to a pair of glasses that helps bring everything into focus. Just as it is important for someone with impaired vision to have the right prescription glasses, so it is also necessary for sin-impaired people to have the right world view with which to make sense of the world of ideas around us.

Clearly we believe that the Bible offers the only tool to arrive at the right prescription or worldview. We have been discussing here Evolution's Big Bang, the Cambrian explosion of life approximately 543 million years ago according to evolutionists. The latest discoveries in this field were highlighted in *Time* magazine's 4 December 1995 issue. Three weeks later, some very interesting letters appeared from readers in *Time*. They are very instructive of the effects of

one's worldview when evaluating the very same evidence. Much of our time in this pamphlet has been spent detailing the vast problems that the Cambrian explosion produces for evolutionary theory. But that is from the vantage point of a biblical worldview. One *Time* magazine reader commented, "This report should end discussions about whether God created the earth. Now there is no way to deny the theory of evolution." Another reader said, "It is great to see a national magazine put the factual evidence of evolution's vast, complex story out there for the lay public."

Now, before you go assuming that they surely didn't read the same story I have been describing in these pages, listen to these readers with a different perspective. "A more appropriate title for your article could have been 'Evolution's Big Bust.' One hundred and thirty-five years of Darwinism out the window just like that? What a poor excuse for the lack of transitional forms." Another reader said, "This story read more like confirmation for Noah's Deluge than Darwin's theory of evolution."

Well, they all read the same story. Many even quoted from the article to explain their views. So, how can four people read the same information and come to such radically different conclusions? The difference is worldview. To those who are working within a naturalistic worldview, one which holds that there is no God, some form of evolution must be true. Therefore, while the evidence of the Cambrian may be perplexing, the fact that scientists are wrestling with it and offering some possible explanations is exciting and invigorating. However, I find that they are usually missing the big picture. By concentrating on explaining the minutiae, naturalistic thinkers often miss the clear possibility of intelligent design precisely because they don't expect to find any.

A great example of this is a comment by Harvard's Steven Jay Gould on the Cambrian creatures found in the Burgess Shale of

Canada:

> *Imagine an organism built of a hundred basic features, with twenty possible forms per feature. The grab bag contains a hundred compartments, with twenty tokens in each. To make a new Burgess creature, the Great-Token-Stringer takes one token at random from each compartment and strings them together. Voila, the creature works—and you have nearly as many successful experiments as a musical scale can build catchy tunes.*

Sounds like a marvelous description of a Creator to me, but perhaps only if you are thinking biblically from the start.

Why We Believe in Creation (and Not Unguided Evolution)

Dr. Ray Bohlin explains why our understanding of the origins of life is directly related to our understanding of God. A Christian understands that God created us intentionally. We are not the result of some random, evolutionary accident. A consistent biblical worldview will be seen in how we consider the question of creation.

The Historical Nature of Genesis

I am often asked why the creation/evolution controversy is so important. Tempers flare, sometimes explosively, over this issue. Some people think, there are enough problems with the image of evangelicals without creating unnecessary controversies. Is it just a matter of interpreting Genesis? If

so, then let the theologians debate the issues and leave me out. But let’s not obscure the simple message of the gospel. Others wonder, is it just a scientific argument? If so, then why should I care about the controversy? I’m not a scientist. Well, I think much more is at stake than that. It has to do with the very nature and character of God!

We must realize that the book of Genesis is the foundation of the entire Bible. The word Genesis means “beginnings.” Genesis tells the story of the beginning of the universe, solar system, earth, life, man, sin, Israel, nations, and salvation. An understanding of Genesis is crucial to our understanding of the rest of Scripture.

For example, Genesis chapters 1-11 are quoted or referred to more than 100 times in the New Testament alone. And it is over these chapters that the primary battle for the historicity of Genesis rages. All of the first eleven chapters are referred to in the New Testament. Every New Testament author refers somewhere to Genesis 1-11.

Jesus Himself, on six different occasions, refers to each one of the first seven chapters of Genesis, thus affirming His belief in their historical nature. He refers back to Adam and Eve to defend His position on marriage and divorce in Matthew 19:3-6. He makes His argument a historical one when He says that “from the beginning” God created them male and female. Jesus affirms that Adam and Eve were real people. Jesus’ comments are in an historical context.

Jesus affirms the historicity of Cain and Abel in Matthew 23:29-36. In this passage, Jesus connects the blood of righteous Abel to the blood of the prophet Zechariah. The murder of Zechariah at the door of the Temple was within the last 400 years and was clearly historical. If this was historical, then so was the murder of Abel!

Jesus confirms the historical nature Noah and the Flood in

Matthew 24:37-39. The time before Noah is related to the time that Christ returns. If the flood is just a story to communicate a pre-New Testament vision of the gospel, then is Jesus return just another story to communicate some other spiritual truth? The historicity of Genesis 1-11 is tied to many aspects of Jesus' teachings.

In many ways it is difficult to separate the book of Genesis, even the first eleven chapters, from the rest of Scripture, without literally rejecting the inspiration of Scripture and the divine nature of Jesus. It is hardly possible to assume that Jesus was knowingly deceiving these pre-modern people in order to communicate the gospel in a context they understood.

How can the first 11 chapters be separated from even the rest of Genesis? The time of Abraham has been verified by archaeology. The places, customs, and religions spoken in Genesis related to Abraham are accurate. The story of Abraham begins in Genesis 12. If Genesis 1 is mythology and Genesis 12 history, where does the allegory stop and the history begin in the first 11 chapters? It is all written in the same historical narrative style.

The Nature of the Evolutionary Process

Many believers do indeed call Genesis 1-11 allegory or myth. They boldly declare that God simply used evolution as His method to create! The purpose of the creation account is only to promote God as a transcendent all-powerful God who is completely different from the gods of the surrounding Near East cultures of that time. This is called theistic evolution. Without question, God could create by any means He chose. But is the God of the Scriptures the god of evolution?

My simple answer to that question is **no!** At least not the evolution which is communicated in today's textbooks and university classrooms. The nature of the evolutionary process is contrary to the nature of God.

The principles behind evolution are ideas such as the selfish gene, and survival of the fittest. An offshoot of evolutionary thinking is the relatively new field of sociobiology. In another essay (Sociobiology: Evolution, Genes and Morality), I defined sociobiology as the biological basis for ALL social behavior. In other words, our behaviors are the result natural selection as much as our physical characteristics.

For instance, if you ask a sociobiologist the question, why do we love our children, he or she will answer that "we love our children because it works." It is an effective means to raise productive offspring, so it was "selected for" over time. Ultimately, then, from this perspective, all behavior is selfish. Everything we do is geared toward furthering our own survival and the production and the survival of our own offspring. Our behaviors have been selected over time to aid in our survival and reproduction and that's all.

Evolution is a wasteful, inefficient process. Carl Sagan says that the fossil record is filled with the failed experiments of evolution. Evolutionary history is littered with dead-ends and false starts. Stephen Jay Gould characterizes the nature of the evolutionary process as one of contingency history. Organisms survive primarily by chance rather than some inherent superiority over other organisms. There is no purpose, no goal, no meaning at all.

The question has to be, would God use such a method? A person's character is reflected in his or her work. Not just in what is produced, but the process also is indicative of the mind that is at work. For instance, the paintings of Vincent van Gogh reveal a troubled mind, not just in the subjects he painted but also in the colors he used and character of the brush strokes. And you don't have to be an art critic to see this in his paintings, particularly those just before he took his own life.

God is a person and thus has character. We should see God's

character in His work as well as in His method. First, let's take a brief look at the revelation of God's character.

Jesus is the perfect manifestation of God's character. Jesus said, "Anyone who has seen me has seen the Father" (John 14:9-11). Not only that, but Jesus is the Person of the Godhead that brought about the creation. Colossians 1:16 reads, "All things were created by Him, for Him, and through Him." John 1:3—"Nothing came into being apart from Him." Hebrews 1:2—"By Whom and through Whom the worlds were created."

Since Jesus is a person and is also the creator, then if Jesus used evolution as his method to create, then we should see a correlation between the character of Jesus and the process of evolution.

The Personal Character of Jesus the Creator

If Jesus used evolution as His method of creation, then His character must be reconcilable with the evolutionary process. We discussed above the nature of the evolutionary process. Now I want to take a brief look at the character of God. A detailed unveiling of Jesus' character is found in Matthew 5. This is not an ideal we are to strive for, but a picture of what can happen in the life of a believer who is fully yielded to Christ.

In Matthew 5:3, Jesus says, "Blessed are the poor in spirit." This phrase describes one who allowed himself to be trodden down. Jesus exemplified a security in Himself that did not become offended when He was put down. An evolutionarily successful organism seeks its own interests, not the interests of others.

In verse 5, Jesus says, "Blessed are the gentle." The mild, patient and long-suffering are not likely to succeed in an

evolutionary world. The meek are pushed aside by the self-assertive. Ultimately it is the strong, the fit and the selfish that are the ones who succeed!

In verse 7, Jesus says, “Blessed are the merciful.” The struggle for existence is never motivated by mercy. Mercy could only be tolerated if shown towards a member of the same species that shares a significant proportion of their genes. To be merciful outside your immediate family unit may compromise your survival or the survival of your offspring, neither of which is productive in an evolutionary world.

In verse 9, Jesus says, “Blessed are the peacemakers.” Jesus also said we should love our enemies. In many mammals, such as lions and gorillas, the first act of a new dominant male following his ascent to power is to kill the younger offspring sired by the previous dominant male. This has the double effect of removing offspring from the group that are not his, and bringing their mothers into heat so he can mate with them to produce his own offspring. This is selfish natural selection at work. Where is the mercy, the gentleness, the peacemaking in these events?

The struggle for existence among living organisms today is a result of sin entering a perfect creation and is not the method of bringing that creation into existence.

Romans 8:19-22 reveals that nature is groaning in the pains of childbirth, because of being subjected to futility, for redemption from the curse. Nature is in turmoil. Organisms do struggle for survival. Competition is often fierce. While there are many examples of cooperation in nature, it can always be explained in terms of selfish gain and cooperation is the easiest way to obtain the desired end. Organisms do act selfishly. But ***to hear nature’s groaning and interpret it as the song of creation is to be ignorant of both God and nature!***

Some Christians debate the effects of the fall and how far

back into earth history the effects can be realized. But the point is that something happened at the fall. This passage makes clear that the creation does not function today as God intended it to and it is not the creation's fault. The creation was subjected to futility because of man's sin.

When we take the time to investigate whether the God revealed in the Scriptures is the same God who created through the evolutionary process as it is currently understood, the answer is clear. The God of the Scriptures is not the god of evolution.

A Modern Twist on Theistic Evolution

In a modern formulation, some theistic evolutionists are declaring that not only **could** God use evolution, but He **must** use some form of evolution to create. These individuals indicate that there is a "functional integrity" to the universe that God created initially and for God to intervene in any way, is to admit that He made a mistake earlier. And of course, God does not make mistakes. Physics professor Howard van Till from Calvin College describes:

> …a created world that has no functional deficiencies, no gaps in its economy of the sort that would require God to act immediately, temporarily assuming the role of creature to perform functions within the economy of the creation that other creatures have not been equipped to perform." [*Christian Scholars Review*, vol. XXI:I (September 1991), p. 38].

Diogenes Allen from Princeton Theological Seminary put it this way:

> According to a Christian conception of God as creator of a universe that is rational through and through, there are no missing relations between the members of nature. If, in our study of nature, we run into what seems to be an instance of

> a connection missing between members of nature, the Christian doctrine of creation implies that we should keep looking for one" [*Christian Belief in a Postmodern World* (Louisville: Westminster /John Knox Press, 1989), p. 53].

A loose paraphrase might be, "If you find evidence of a miracle, you need to keep looking for a naturalistic explanation." This view of creation seems awfully close to deism or semi-deism. Theistic evolutionists deny this, of course, by reminding us that, unlike deism, they firmly believe that God continuously upholds the universe. If He were to completely withdraw as deism holds, the universe would come apart.

But the Bible, particularly the gospels, is full of miracles. The Lord Jesus was born as a human baby in a stable, He changed water into wine, healed blindness and leprosy, fed multitudes on scraps of food, raised people from the dead, died on a cross, and rose from the dead Himself. The response is that this is salvation history which is entirely different from natural history. Diogenes Allen put it this way:

> In general we may say that God creates a consistent set of law-like behaviors. As part of that set there are the known physical laws. These laws apply to a wide variety of situations. But in certain unusual situations such as creating a chosen people, revealing divine intentions in Jesus, and revealing the nature of the kingdom of God, higher laws come into play that give a different outcome than normal physical laws which concern different situations. The normal physical laws do not apply because we are in a domain that extends beyond their competence.

It is true that we do not invoke God to account for repeatable observable events such as apples falling from trees. But what could be more unusual and beyond the competence of physical laws than the creation of life, the creation of coded information in DNA, the creation of a human being? Even in

this framework, it seems reasonable to assume that these events could also be a part of salvation history. What we end up with, however, is a view that says that the activity of the Creator cannot be detected in any of the workings of nature. Once again, the God of the Scriptures is not the god of evolution.

The Theology of Romans 1

The world of nature that is left to us by those who believe in theistic evolution is indistinguishable from that of the philosophical naturalist or even the pantheist. Whether you accept Genesis 1 and 2 as being historical or not, the clear tenor of the narrative is of a God who interacts with his creation, not one who just lets it unwind according to some preconceived plan. How is a scientist supposed to see God in the creation if all there is, from his perspective, is natural mechanisms?

The pantheist could see this perspective as compatible with his view of the natural world as well. The pantheist sees god as an impersonal force that is present all throughout nature. god is all and in all. All is one. Matter itself contains the inherent ability to bring about complexity according to the mind which permeates all of nature. Similarly, theistic evolution requires that matter contains within itself, by God's creative design, the full capacity to actualize all of the physical and biological complexities that exist. The distinctions of Christian theism become blurred.

Finally, if God created through evolution, what are we to do with Romans 1:18-20? Paul says:

> For the wrath of God is revealed from heaven against all ungodliness and unrighteousness of men, who suppress the truth in unrighteousness, because that which is known about God is evident within them; for God made it evident to them. For since the creation of the world His invisible

> attributes, His eternal power and divine nature, have been clearly seen, being understood through what has been made, so that they are without excuse.

The fact that God exists, and even a few things about His power and nature, is clearly understood by observing the natural world, that which He created. If God's method of creation is indistinguishable from that of a naturalist or a pantheist, where is this so-called evidence?

Princeton theologian, Diogenes Allen, says that "even though nature does not establish God's existence, nature points to the possibility of God. That is, it raises questions which science cannot answer and which philosophy has been unable to answer" (*Christian Belief in a Postmodern World*, p.180). But Romans declares that his invisible nature, eternal power, and deity are **clearly seen through what has been made!** This is more than raising questions! If God has created through naturalistic evolution then men and women have quite a few excuses. If natural processes are all that is needed, who needs God?

One final note. It has been interesting to me that, as I have observed theistic evolutionists throughout my academic career, I have found that evolutionists have little tolerance for theistic evolutionists because if you accept evolution, then why do you need God? Perhaps even more importantly, they are puzzled about why one would continue to believe in the God of the Bible if you have concluded that He used inefficient, chancey, contingent, and messy natural selection as His method. Even they see the incompatibility of the two.

In summary, Genesis and creation are central to Scripture and Jesus appears to have believed in an historical and interactive creation. Evolution is contrary to the nature and character of God. And, if natural processes are all that is needed for creation, then men are indeed full of excuses to the existence of God, contrary to Romans 1.

The Origin of the Universe

What is the newest evidence for the Big Bang? The cosmic background radiation is exactly what was expected if the universe began as an immensely hot event 10-20 billion years ago. But the universe that was created is "just right" for life. Richard Milne explains that dozens of factors are exquisitely fine-tuned for life to be able to exist, at least on our planet.

What Was the Big Bang?

"If you're religious, this is like looking at God."{1}

A mystic, describing his vision in a trance? A poet, looking at the beauty of nature and seeing God? No, a Berkeley astrophysicist, commenting on the data he was making public in 1992 that seemed to confirm a basic expectation of the Big Bang theory.

Just what is the Big Bang theory of the origin of the universe? One scientist summed it up succinctly by saying: "The explosion from zero volume at zero time of a corpuscle of energy equivalent to the mass and radiation that now constitute the Universe."{2} What does that mean? It means that everything we now see or know about was once compacted into an unimaginably small blip that suddenly expanded in a huge explosion that created the very space and time it was expanding into. Or as Calvin of *Calvin and Hobbes* put it, "The Horrendous Space Kablooie."

The Big Bang has become as much a part of our common science

knowledge as dinosaurs, something we speak about with the same sense of familiarity we talk about atoms. But, like atoms, how much do we really know about this wondrous explosion of everything?

In this essay we'll talk about what scientists mean by the Big Bang theory, why it's often in the news, why some scientists oppose it, what it tells us about our home the universe, and what we as Christians can learn from all of this.

Science is often seen as attacking the God of the Bible, but in this case scientific discoveries seem to be revealing God's work. The Bible begins with the statement that God created the heavens and the earth, leaving no doubt that all we see had a beginning and had a Creator.

But by the 1700s many people accepted an earlier theory that Immanuel Kant made more popular. The theory held that the universe is an infinite expanse with no beginning and no end. This fit the philosophy of the time, as people did not want to think that they might have to face judgment by a God who had the power to both begin and end the universe.

In the roaring twenties, Edwin Hubble had begun to investigate mysterious masses of stars called nebulae. Some thought we were all part of one giant galaxy; others thought there might be a whole world of galaxies outside our own. Hubble was able to show that there are many galaxies besides our own. In 1929 he announced we were in a huge universe, so big it would take light billions of years to travel across it. Not only was it immense, but every part was moving away from every other part at incredible speeds, some receding at 100 million miles an hour!

Priests do not enter into this story very often, but in the late 20s and early 30s a Belgian priest and mathematics teacher by the name of Georges Lemaître (who was fond of saying "There is no conflict between science and religion")

first constructed and then published a theory that changed the course of cosmology in the twentieth century. Taking Hubble's observation that the galaxies were rapidly receding from one another, he ran the theory backwards to a time when all the matter in the universe was very close together. He called this the "primordial atom" and imagined a beginning when the whole universe exploded like "fireworks of unimaginable beauty" with a "big noise."{3} Thus was born the Big Bang theory.

Why Is Everybody Excited?

Geffory Burbidge has been complaining recently that his colleagues in astronomy have been all too quick to join "the First Church of Christ of the Big Bang." And what is causing this big rush? Findings from the Hubble Space telescope and the COBE (Cosmic Background Explorer) satellite that are confirming the Big Bang theory in unprecedented detail.

When the Big Bang was originally formulated about sixty years ago, not much thought was given to the conditions of the universe at the very beginning. But by the early 60s some scientists had realized that such an incredibly hot origin might have left slight traces behind. There might still be a whisper of the beginning of everything. This whisper would be a very small remnant of the heat of that first fiery instant.

In 1965 two Bell scientists announced they had indeed found such a remnant, a cosmic background radiation. This radiation, the signature of the heat of a long ago creation, was very close to what several theorists had rather off-handily predicted some years before. Their paper had gone unnoticed because there was at that time no way to measure such a small signal, but when Arno Penzias and Robert Wilson, of Bell Laboratories, published their short article, it was quickly seen as confirmation of the Big Bang, and they received the Nobel Prize in 1978.

Then, in 1989, the United States launched the COBE satellite to look for details of the cosmic background radiation. The first evidence looked promising, but showed a background radiation so smooth that it was hard to understand how any cosmic structures like stars or galaxies could have formed. Unless there were some differences in the initial temperature of space, there would have been no reason for matter to cluster and form stars.

Then, in a dramatic press conference in 1992, George Smoot and others announced that they had found ripples of temperature differences in the radiation data. Even Stephen Hawking, the wheelchair-bound English astrophysicist, proclaimed, "It is the discovery of the century, if not of all time."{4} Every major newspaper in the world carried stories about the "echoes of creation." And many assumed that the Big Bang was proved.

But even as many scientists exulted in the new data, new questions also began to arise, but they were not questions about whether the Big Bang happened, but about how it progressed. For most scientists, the Big Bang theory is not "in trouble" as is sometimes reported. What is in question is how this sea of energy that was there in the first moments of the Big Bang was transformed into the myriad of galaxies, clusters, quasars, and other astronomical oddities.

Science, by its very nature, attempts to find the best explanation for observed phenomena. But the Big Bang has drawn an impenetrable curtain across the stage of history. For some this is a frustration: "This view of the origin of the universe is thoroughly unsatisfactory . . . . [because] the origin of the Big Bang itself is not susceptible to discussion," fumes the editor of *Nature*.{5} But for others, the very impossibility of going behind the creation points to God in a powerful way. "For since the creation of the world His invisible attributes, His eternal power and divine nature, have been clearly seen, being understood through what has been made, so that they are without excuse" (Rom. 1:20).

“Big Bang Theory Collapses”

The banner headline in *Nature* magazine read “Down with the Big Bang.”{6} Sounding more like a 60s chant about the Establishment, the editorial was, however, very serious. And *Nature* magazine is perhaps the most respected science publication in the world. Why was the editor so exercised about the leading cosmological theory? Because it was “philosophically unacceptable.” “The origin of the Big Bang is not susceptible to discussion,” fumed John Maddox. And besides that “Creationists . . . have ample justification in the doctrine of the Big Bang.” So, for Maddox, a scientific theory that is only rivaled in acceptance by evolution is “thoroughly unsatisfactory” because 1) it says that scientists cannot know everything, and 2) the theory might encourage belief in a creator. But materialists like Maddox are not alone.

“Big Bang Theory Collapses” shouted the title of an article written in a creationist journal. It went on to make such remarks as “The Big Bang theory has received one body blow after another” and “A cruel fate has befallen the grandest theory of all.” They reported the “death knell of the cold-dark-matter theory” as if this were the main theory cosmologists had developed. Remarks suggesting results from the COBE satellite “should really make them wish they had gone into some other field” came across as very unprofessional. The description of scientists as “smug in their assurance” about the cosmic background radiation seemed more descriptive of this article itself than the theory it was attempting to criticize.{7}

Young earth creationists find the Big Bang theory a failure primarily because it does not fit an interpretation of Genesis 1 that requires the universe be created less than 50,000 years ago. But what are the scientific problems with the Big Bang?

One continuing problem surrounding theories of the origin of the universe has been “How much matter is there in the

universe?” It is generally agreed that there is indirect evidence of far more matter in the universe than we have been able to detect. But what form is this matter in? This so-called “missing mass” may, by some estimates, make up 90% of all the matter in the universe. But where is it? Several theories attempt to answer this question, but at the moment, there are not many ways to test competing theories.

Another continuing problem is finding out what caused the clumpiness of the universe? When we look out into the sea of galaxies that surrounds our own, we find that the swirling pools of stars are not evenly distributed in space but rather segregated into “walls” separated by “voids.” It is not yet known what accounts for this foam-like structure, but any theory of galaxy formation needs to provide an answer.

So, while the Big Bang certainly has difficulties, and may be replaced some day, it has also been the basis for many correct predictions about the structure of the universe. Like any scientific theory, the Big Bang is not a static idea but a theory that is always open to new information that may change its basic form, or lead to its rejection, or merely confirm that it is indeed correct. But, especially for Christians, it’s ironic that while most scientists have been searching for a naturalistic answer for the origin of the universe, they have instead, ended up with a theory that points strongly to a Creator.

A “Just Right” Universe

Imagine piles of dimes stacked on all of North America as high as the moon. More than you could possibly ever count. Then imagine a billion other continents covered over with more dimes. Now, somewhere in those billion piles, hide one red dime. What are the chances of taking a blind-folded person out into these piles and having them pick up the one red dime on the first try. Not likely? Well, the odds of the universe just

happening to have the correct number of protons and electrons is the same as the odds for getting the red dime the first time. And if the universe did not have just the right ratio of these particles, galaxies, stars, and planets could never have formed, let alone people and all the rest of nature.{8}

In the last fifteen years, scientists who study the make up of our solar system, and the stars in our galaxy, have come to the conclusion that unless conditions had been perfectly fine-tuned for us, life could never have arisen on planet Earth even by evolution. Every time we learn something about the form of the universe, we find new reasons to glorify God, and to thank Him for His creation.

Arno Penzias, who with Robert Wilson was awarded the Nobel Prize for detecting the cosmic background radiation in 1965, much later remarked that: “Astronomy leads us to a unique event, a universe which was created out of nothing, one with the very delicate balance needed to provide exactly the conditions required to permit life, and one which has an underlying (one might say supernatural’) plan.”{9}

Robert Griffiths summarized it nicely when he said: “If we need an atheist for a debate, I go to the philosophy department. The physics department isn’t much use.”{10} Obviously those physicists know too much.

When Paul talks about what all people know about God, he points to the natural world as the foremost witness (Rom. 1:20). And, in these last years of the twentieth century, as we discover more and more about the conditions necessary for life, we find everywhere signs that we could not possibly be here by chance. Every detail of the basic structure of nature, even such things as how far away the moon is from the earth, must be fine-tuned to an unprecedented degree for us to live here on earth.

In the design of the universe, in the construction of our

solar system, and in the very systems of our own earth, there is immense evidence of planning. The Big Bang theory provides strong evidence of fine tuning so clear that even a dogmatic atheist such as Sir Fred Hoyle was moved to affirm that "a superintellect has monkeyed with physics, as well as with chemistry and biology"{11} to create a world for humans to live in.

Will we give glory to God for His great creation, or will we continue to proclaim that we are merely the chance creations of a random process of undirected evolution? The choice is ours.

What Can Christians Learn?

"The scientist's pursuit of the past ends in the moment of creation. This is an exceedingly strange development, unexpected by all but the theologians. They have always accepted the word of the Bible: In the beginning God created heaven and earth."{12} This has been a difficult lesson for scientists, and many have yet to learn it. But what lessons can Christians learn from the search for Big Bang?

One of the primary lessons is that we need to know what it is a theorist is trying to prove. Often, as one reads the literature, one sees some rather clear statements about why certain possibilities are chosen. As is often the case, Sir Fred Hoyle is a good example: "This possibility [of a steady state universe] seemed attractive, especially when taken in conjunction with the aesthetic objections to the creation of the universe in the remote past."{13} Hoyle is very clearly saying that, because he disliked the idea that the universe might have been "created" sometime in the past, perhaps by God, he would seek to develop another theory that avoids that possibility.

A second lesson is that we must be careful of the role we give

to science. A scientist very astutely observed that "We live…in an age obsessed with scientific sanctification and technological authority.' If creationism is judged scientific, America will respect it."{14} His point is that Christians, like everyone else, have fallen prey to the idea that if an idea is judged "scientific" it must be right. The phrase "scientific creationism" is an excellent example of this tendency. But is science really the final judge of truth? For the Christian, and anyone else who believes that not all of what makes humans both beautiful and unique is measurable, the answer must be "No." Science is a good companion, but not a good guide. Whenever Christians have wedded themselves to a scientific theory they have suffered through painful divorces when that theory has proved to be an unfaithful guide to the world. The church's acceptance of an Aristotelian unmoved earth is but one example of the church not recognizing that science can and will change. The Big Bang may be today's best theory, but, as one of the best scientific authors on the Big Bang has written: "[O]ne ought to take the extrapolations back to the beginning of time with a healthy dose of skepticism. The Big Bang cosmology may yet be superseded."{15}

Whether we are young earth creationists or materialistic evolutionists, this warning is equally true. The Big Bang is the best answer we have at this moment. It may change next year, and by next century it will almost surely have changed, perhaps dramatically. If science fully supports our view of Scripture now, will we be willing to change it when science changes? The Bible is beautifully clear that "The heavens are telling of the glory of God; And their expanse is declaring the work of His hands" (Psalm 19:1), but we must admit that we are not always clear exactly what the details of the message are. It is God's glory that we must be clear about.

Notes

1. *Scientific American*, July 1992, 34.
2. *Nature*, 356:731 (30 April 1992), unsigned opinion.
3. *Los Angeles Times*, 12 January 1933. Quoted in Timothy Ferris, *Coming of Age in the Milky Way* (New York: William Morrow, 1988), 211.
4. Hugh Ross, *The Creator and the Cosmos*, second expanded edition (Colorado Springs, Col.: NavPress, 1995), 19.
5. *Nature*, John Maddox, 340:425 (10 August 1989).
6. Ibid.
7. Duane T. Gish, "Big Bang Theory Collapses," Impact #216, June 1991.
8. Hugh Ross, *The Creator and the Cosmos*, chapter 14.
9. Ibid., 122.
10. Ibid., 123.
11. Ibid., 121.
12. Robert Jastrow, *God and the Astronomers* (New York: W.W. Norton, 1978), 115.
13. Hugh Ross, *The Fingerprint of God* (Orange, Calif.: Promise Publishing, 1989), 76.
14. *Discover*, March 1987, 6.
15. *Nature*, Joseph Silk, 322:505 (7 August 1986).

The Worldview of Jurassic Park – A Biblical Christian Assessment

Dr. Bohlin examines the message of Jurassic Park, bringing out some of the underlying messages on science, evolution, new age thinking, and cloning. The movie may be entertaining, but a Christian scientist points out some of the misconceptions

people are taking away from the movie. Remember, this is just a piece of fiction—not a scientific treatise.

The Intent Behind *Jurassic Park*

Driving home after seeing the movie *Jurassic Park* in the first week of its release, I kept seeing tyrannosaurs and velociraptors coming out from behind buildings, through intersections, and down the street, headed straight at me. I would imagine: What would I do? Where would I turn? I certainly wouldn't shine any lights out of my car or scream. Dead give-aways to a hungry, angry dinosaur. Then I would force myself to realize that it was just a movie. It was not reality. My relief would take hold only briefly until the next intersection or big building.

In case you can't tell, I scare easily at movies. *Jurassic Park* terrified me. It all looked so real. Steven Spielberg turned out the biggest money-making film in history. Much of the reason for that was the realistic portrayal of the dinosaurs. But there was more to *Jurassic Park* than great special effects. It was based on the riveting novel by Michael Crichton and while many left the movie dazzled by the dinosaurs, others were leaving with questions and new views of science and nature.

The movie *Jurassic Park* was terrific entertainment, but it was entertainment with a purpose. The purpose was many-fold and the message was interspersed throughout the movie, and more so throughout the book. My purpose in this essay is to give you some insight into the battle that was waged for your mind throughout the course of this movie.

Jurassic Park was intended to warn the general public concerning the inherent dangers of biotechnology first of all, but also science in general. Consider this comment from the author Michael Crichton:

Biotechnology and genetic engineering are very powerful. The film suggests that [science's] control of nature is elusive. And just as war is too important to leave to the generals, science is too important to leave to scientists. Everyone needs to be attentive.{1}

Overall, I would agree with Crichton. All too often, scientists purposefully refrain from asking ethical questions concerning their work in the interest of the pursuit of science.

But now consider director Steven Spielberg, quoted in the pages of the *Wall Street Journal:* "There's a big moral question in this story. DNA cloning may be viable, but is it acceptable?"{2} And again in the *New York Times*, Spielberg said, "Science is intrusive. I wouldn't ban molecular biology altogether, because it's useful in finding cures for AIDS, cancer and other diseases. But it's also dangerous and that's the theme of *Jurassic Park*."{3} So Spielberg openly states that the real theme of *Jurassic Park* is that science is intrusive.

In case you are skeptical of a movie's ability to communicate this message to young people today, listen to this comment from an eleven-year-old after seeing the movie. She said, "Jurassic Park's message is important! We shouldn't fool around with nature."{4} The media, movies and music in particular, are powerful voices to our young people today. We cannot underestimate the power of the media, especially in the form of a blockbuster like *Jurassic Park*, to change the way we perceive the world around us.

Many issues of today were addressed in the movie. Biotechnology, science, evolution, feminism, and new age philosophy all found a spokesman in *Jurassic Park*.

The Dangers of Science, Biotechnology, and Computers

The movie *Jurassic Park* directly attacked the scientific establishment. Throughout the movie, Ian Malcolm voiced the concerns about the direction and nature of science. You may remember the scene around the lunch table just after the group has watched the three velociraptors devour an entire cow in only a few minutes. Ian Malcolm brashly takes center stage with comments like this: "The scientific power….didn't require any discipline to attain it….So you don't take any responsibility for it."{5} The key word here is responsibility. Malcolm intimates that Jurassic Park scientists have behaved irrationally and irresponsibly.

Later in the same scene, Malcolm adds, "Genetic power is the most awesome force the planet's ever seen, but, you wield it like a kid that's found his dad's gun." Genetic engineering rises above nuclear and chemical or computer technology because of its ability to restructure the very molecular heart of living creatures. Even to create new organisms. Use of such power requires wisdom and patience. Malcolm punctuates his criticism in the same scene when he says, "Your scientists were so preoccupied with whether or not they could, they didn't stop to think if they should."

Malcolm's criticisms should hit a raw nerve in the scientific community. As Christians we ask similar questions and raise similar concerns when scientists want to harvest fetal tissue for research purposes or experiment with human embryos. If Malcolm had limited his remarks to *Jurassic Park* only, I would have no complaint. But Malcolm extends the problem to science as a whole when he comments that scientific discovery is the rape of the natural world. Many youngsters will form the opinion that all scientists are to be distrusted. A meaningful point has been lost because it was wielded with the surgical precision of a baseball bat.

Surprisingly, computers take a more subtle slap in the face—surprising because computers were essential in creating many of the dinosaur action scenes that simply could not be done with robotic models. You may remember early in the movie, the paleontological camp of Drs. Grant and Satler where Grant openly shows his distrust of computers. The scene appears a little comical as the field- tested veteran expresses his hate for computers and senses that computers will take the fun out of his quaint profession.

Not so comical is the portrayal of Dennis Nedry, the computer genius behind *Jurassic Park*. You get left with the impression that computers are not for normal people and the only ones who profit by them or understand them are people who are not to be trusted. Nedry was clearly presented as a dangerous person because of his combination of computer wizardry and his resentment of those who don't understand him or computers. Yet at the end of the movie, a young girl's computer hacking ability saves the day by bringing the system back on line.

The point to be made is that technology is not the villain. Fire is used for both good and evil purposes, but no one is calling for fire to be banned. It is the worldview of the culture that determines how computers, biotechnology, or any other technology is to be used. The problem with *Jurassic Park* was the arrogance of human will and lack of humility before God, not technology.

The Avalanche of Evolutionary Assumptions

There were many obvious naturalistic or evolutionary assumptions built into the story which, while not totally unexpected, were too frequently exaggerated and overplayed.

For instance, by the end of the book and the film you felt bludgeoned by the connection between birds and dinosaurs. Some of these connections made some sense. An example would be the similarities between the eating behavior of birds of prey and

the tyrannosaur. It is likely that both held their prey down with their claws or talons and tore pieces of flesh off with their jaws or beaks. A non-evolutionary interpretation is simply that similarity in structure indicates a similarity in function. An ancestral relationship is not necessary.

But many of the links had no basis in reality and were badly reasoned speculations. The owl-like hoots of the poison-spitting dilophosaur jumped out as an example of pure fantasy. There is no way to guess or estimate the vocalization behavior from a fossilized skeleton.

Another example came in the scene when Dr. Alan Grant and the two kids, Tim and Lex, meet a herd of gallimimus, a dinosaur similar in appearance to an oversized ostrich. Grant remarks that the herd turns in unison like a flock of birds avoiding a predator. Well, sure, flocks of birds do behave this way, but so do herds of grazing mammals and schools of fish. So observing this behavior in dinosaurs no more links them to birds than the webbed feet and flattened bill of the Australian platypus links it to ducks! Even in an evolutionary scheme, most of the behaviors unique to birds would have evolved after the time of the dinosaurs.

A contradiction to the hypothesis that birds evolved from dinosaurs is the portrayal of the velociraptors hunting in packs. Mammals behave this way, as do some fishes such as the sharks, but I am not aware of any birds or reptiles that do. The concealment of this contradiction exposes the sensational intent of the story. It is used primarily to enhance the story, but many will assume that it is a realistic evolutionary connection.

Finally, a complex and fascinating piece of dialogue in the movie mixed together an attack on creationism, an exaltation of humanism and atheism, and a touch of feminist male bashing. I suspect that it was included in order to add a little humor and to keep aspects of political correctness in our collective

consciousness. Shortly after the tour of the park begins and before they have seen any dinosaurs, Ian Malcolm reflects on the irony of what *Jurassic Park* has accomplished. He muses, "God creates dinosaurs. God destroys dinosaurs. God creates man. Man destroys God. Man creates dinosaurs." To which Ellie Satler replies, "Dinosaurs eat man. Woman inherits the earth!" Malcolm clearly mocks God by indicating that not only does man declare God irrelevant, but also proceeds to duplicate God's creative capability by creating dinosaurs all over again. We are as smart and as powerful as we once thought God to be. God is no longer needed.

While the movie was not openly hostile to religious views, Crichton clearly intended to marginalize theistic views of origins with humor, sarcasm, and an overload of evolutionary interpretations.

Jurassic Park and the New Age

Ian Malcolm, in the scene in the biology lab as the group inspects a newly hatching velociraptor, pontificates that "evolution" has taught us that life will not be limited or extinguished. "If there is one thing the history of evolution has taught us, it's that life will not be contained. Life breaks free. It expands to new territories, it crashes through barriers, painfully, maybe even dangerously, but, uh, well, there it is!….I'm simply saying that, uh, life finds a way."

Evolution is given an intelligence all its own! Life finds a way. There is an almost personal quality given to living things, particularly to the process of evolution. Most evolutionary scientists would not put it this way. To them evolution proceeds blindly, without purpose, without direction. This intelligence or purposefulness in nature actually reflects a pantheistic or new age perspective on the biological world.

The pantheist believes that all is one and therefore all is

god. God is impersonal rather than personal and god's intelligence permeates all of nature. Therefore the universe is intelligent and purposeful. Consequently a reverence for nature develops instead of reverence for God. In the lunch room scene Malcolm says, "The lack of humility before nature being displayed here, staggers me." Malcolm speaks of Nature with a capital "N." While we should respect and cherish all of nature as being God's creation, humility seems inappropriate. Later in the same scene, Malcom again ascribes a personal quality to nature when he says, "What's so great about discovery? It's a violent penetrative act that scars what it explores. What you call discovery, I call the rape of the natural world." Apparently, any scientific discovery intrudes upon the private domain of nature. Not only is this new age in its tone, but it also criticizes Western culture's attempts to understand the natural world through science.

There were other unusual new age perspectives displayed by other characters. Paleobotanist Ellie Satler displayed an uncharacteristically unscientific and feminine, or was it New Age, perspective when she chastened John Hammond for thinking that there was a rational solution to the breakdowns in the park. You may remember the scene in the dining hall, where philanthropist John Hammond and Dr. Satler are eating ice cream while tyrannosaurs and velociraptors are loose in the park with Dr. Grant, Ian Malcolm, and Hammond's grandchildren. At one point, Satler says, "You can't think your way out of this one, John. You have to feel it." Somehow, the solution to the problem is to be found in gaining perspective through your emotions, perhaps getting in touch with the "force" that permeates everything around us as in *Star Wars*.

Finally, in this same scene, John Hammond, provides a rather humanistic perspective on scientific discovery. He is responding to Ellie Satler's criticisms that a purely safe and enjoyable *Jurassic Park*, is not possible. Believing that man can accomplish anything he sets his mind to, Hammond blurts

out, “Creation is a sheer act of will!” If men and women were gods in the pantheistic sense, perhaps this would be true of humans. But if you think about it, this statement is truer than first appears, for the true Creator of the universe simply spoke and it came into being. The beginning of each day’s activity in Genesis 1 begins with the phrase, “And God said.”

Creation is an act of will, but it is the Divine Will of the Supreme Sovereign of the universe. And we know this because the Bible tells us so!

They Clone Dinosaurs Don’t They?

The movie *Jurassic Park* raised the possibility of cloning dinosaurs. Prior to the release of the movie, magazines and newspapers were filled with speculations concerning the real possibility of cloning dinosaurs. The specter of cloning dinosaurs was left too much in the realm of the eminently possible. Much of this confidence stemmed from statements from Michael Crichton, the author of the book, and producer Steven Spielberg.

Scientists are very reluctant to use the word “never.” But this issue is as safe as they come. Dinosaurs will never be cloned. The positive votes come mainly from Crichton, Spielberg, and the public. Reflecting back on his early research for the book, Michael Crichton said, “I began to think it really could happen.”{6} The official *Jurassic Park* Souvenir magazine fueled the speculation when it said, “The story of *Jurassic Park* is not far-fetched. It is based on actual, ongoing genetic and paleontologic research. In the words of Steven Spielberg: This is not science fiction; it’s science eventuality.”{7} No doubt spurred on by such grandiose statements, 58% of 1000 people polled for *USA Today* said they believe that scientists will be able to recreate animals through genetic engineering.{8}

Now contrast this optimism with the more sobering statements from scientists. The *Dallas Morning News* said, "You're not likely to see Tyrannosaurus Rex in the Dallas Zoo anytime soon. Scientists say that reconstituting any creature from its DNA simply won't work."{9} And *Newsweek* summarized the huge obstacles when it said, "Researchers have not found an amber-trapped insect containing dinosaur blood. They have no guarantee that the cells in the blood, and the DNA in the cells, will be preserved intact. They don't know how to splice the DNA into a meaningful blueprint, or fill the gaps with DNA from living creatures. And they don't have an embryo cell to use as a vehicle for cloning."{10} These are major obstacles. Let's look at them one at a time.

First, insects in amber. DNA has been extracted from insects encased in amber from deposits as old as 120 million years.{11} Amber does preserve biological tissues very well. But only very small fragments of a few individual genes were obtained. The cloning of gene fragments is a far cry from cloning an entire genome. Without the entire intact genome, organized into the proper sequence and divided into chromosomes, it is virtually impossible to reconstruct an organism from gene fragments.

Second, filling in the gaps. The genetic engineers of *Jurassic Park* used frog DNA to shore up the missing stretches of the cloned dinosaur DNA. But this is primarily a plot device to allow for the possibility of amphibian environmentally-induced sex change. An evolutionary scientist would have used reptilian or bird DNA which would be expected to have a higher degree of compatibility. It is also very far-fetched that an integrated set of genes to perform gender switching which does occur in some amphibians, could actually be inserted accidentally and be functional.

Third, a viable dinosaur egg. The idea of placing the dinosaur genetic material into crocodile or ostrich eggs is preposterous. You would need a real dinosaur egg of the same

species as the DNA. Unfortunately, there are no such eggs left. And we can't recreate one without a model to copy. So don't get your hopes up. There will never be a real *Jurassic Park*!

Notes

1. Sharon Begley, "Here come the DNAsaurs," *Newsweek*, 14 June 1993, 61.

2. Patrick Cox, "*Jurassic Park*, A Luddite Monster," The *Wall Street Journal*, 9 July 1993.

3. Steven Spielberg, quoted by Patrick Cox, *WSJ*, 9 July 1993.

4. Cox, *WSJ*, 9 July 1993.

5. From this point on all dialogue is from the movie *Jurassic Park*, Kathleen Kennedy and Gerald R. Molen, Producers, copyright 1993, Universal City Studios, Inc., and Amblin Entertainment.

6. Michael Crichton, quoted in "Crichton's Creation," *The Jurassic Park Official Souvenir Magazine*, (Brooklyn, N.Y.: The Topps Company, Inc., 1993), 4.

7. "Welcome to Jurassic Park," *The Jurassic Park Official Souvenir Magazine*, (Brooklyn, N.Y.: The Topps Company, Inc., 1993), 2.

8. American Opinion Research poll of 1,000 adults from May 7-24, 1993 cited in *USA Today,* Friday, June 11, 1993, 2A.

9. Graphic inset, "How Real is *Jurassic Park*?," The *Dallas Morning News*, Monday, 14 June 1993, 10D.

10. Begley, "Here Come the DNAsaurs," 60-61.

11. Raul J. Cano, Hendrik N. Poinar, Norman J. Pieniazek, Aftim Acra, and George O. Poinar, Jr. "Amplification and sequencing of DNA from a 120 135-million-year-old weevil,"

Nature 363 (10 June 1993): 536-38.

The Natural Limits to Biological Change

Summarizing his book by the same name, Probe's Dr. Ray Bohlin critiques both Neo-Darwinism and punctuated equilibrium and offers an alternative based on intelligent design.

One of the most significant questions in the origins debate concerns the nature of biological change. Can organisms change into an infinite array of creatures? Or are there genetically imposed limits to the amount of change which can take place? There are two major theories of evolutionary change: neo-Darwinism and punctuated equilibrium. As creationists, Lane Lester and I proposed in 1984 that indeed there are limits to change in our book, *The Natural Limits to Biological Change*. Theoretically, it may seem difficult to propose that immense variety may occur within a group of organisms yet this variety is constrained within certain genetically induced limits. It may seem contradictory even. But in the intervening ten years, my confidence in the proposal has only strengthened, and my confidence in any evolutionary mechanism to accomplish any significant adaptational change has waned considerably.

The arguments against neo-Darwinism center around four topics: mutation, natural selection, population genetics, and paleontology. Our major objection to the role of mutations in evolutionary change is the clear lack of data to indicate that mutations really accomplish anything new. While some weird-looking fruit flies have been created in the laboratory, they

are still fruit flies. Bacteria are still bacteria. We quoted from Pierre-Paul Grasse', the great French evolutionist. When commenting on the mutations of bacteria he said:

> What is the use of their unceasing mutations if they do not change? In sum, the mutations of bacteria and viruses are merely hereditary fluctuations around a median position; a swing to the right, a swing to the left, but no final evolutionary effect.

A mechanism for the creation of new genetic material is also sadly inadequate. Sometimes, an extra copy of a gene arises due to a DNA duplication error. Evolutionists suggest that this extra gene can accumulate mutations and eventually code for a new gene with a different function. In reality, however, this fails to explain how an old gene takes on a new function and new regulation pathways by the introduction of genetic mistakes into the gene and the regulatory apparatus.

Natural selection is a conservative process, not a creative one. The famous example of peppered moths teaches us how a species survives in a changing environment by possessing two varieties adapted to different conditions. Antibiotic resistance in bacteria only instructed us in the ingenious mechanisms of different bacteria to share the already existing genes for antibiotic resistance among themselves.

Decades of research in the science of population genetics has not helped the neo-Darwinist position. The data from protein and gene variation shed only a dim light on the major problem of evolution—the appearance of novel adaptations. The major significance of population genetics has been helping to understand how an organism responds to minor environmental fluctuations. And even this can be clouded in fundamental differences in theory.

The data of paleontology have been elaborated at length elsewhere. Gradual, neo-Darwinian evolution is not observable

in the fossil record. The rarity of transitional forms has been called the trade secret of paleontology. Mutations, natural selection, genetics, and paleontology have all proved to be dead ends for Darwinism.

Obstacles to the Theory of Punctuated Equilibrium

The coelacanth is a fish that has existed for hundreds of millions of years according to evolutionists and was thought to resemble the ancestors of modern amphibians. However, research into their anatomy, physiology, and life history since their rediscovery off Madagascar in 1938 have revealed no clues to their possible preadaptation to a terrestrial existence. The coelacanth is an example of stasis—the long-term stability of new species—the first cornerstone of evolution. A second is the sudden appearance of new species. One doesn't have to look very far for statements by paleontologists pointing to the fact that transitional forms are traditionally absent.

Introduced in 1972 by Niles Eldredge and Stephen Gould as a description of the pattern in the fossil record, punctuated equilibrium centers on the claims of stasis and sudden appearance. The major vehicle of evolutionary change becomes speciation, a process which gives rise to new species. Eldredge and Gould suggested that where there is lots of speciation, there should be lots of morphological differences. Where there is little speciation, there will be few morphological differences.

Morphological Change Becomes Associated with Speciation

If morphological change is supposed to be associated with speciation, then groups of organism that contain large numbers of species should also display large morphological differences

within the group. But there are numerous examples of specific groups of related organisms that contain large numbers of species, like the minnows (*Notropis*), which show very little morphological divergence. This is exactly the opposite of their prediction. Sunfishes (*Lepomis*), however, a group with relatively few species, show just as much morphological divergence as the minnows. This is one more contradiction of punctuated equilibrium because here there is little speciation but a lot of differences.

Another tricky aspect of the claims of punctuated equilibrium is that a new species of fossil can only be recognized because of observable differences, usually in the skeletal structure. Biological species, however, are designated by many criteria (chromosome structure, etc.,) that cannot be detected in a fossil. Therefore, trying to extend a paleontological description of species and speciation will be very difficult.

What we see is that beyond punctuated equilibrium's ability to describe the fossil record, it is of little use to evolutionary biologists because they cannot imagine a way to make it work with real organisms. Gould and Eldredge admitted as much in their review of punctuated equilibrium's progress in the journal, *Nature*, in 1993 when they lamented that:

> But continuing unhappiness, justified this time, focuses upon claims that speciation causes significant morphological change, for no validation of such a position has emerged.

In addition, punctuationalists offer no new mechanisms for arriving at new genetic information. No new theory of evolutionary change is complete without some workable mechanism for generating new genetic information. There appears to be a general lack of appreciation as to what a mutation is and what its effects on the organism may be. Discussions of regulatory and developmental mutations are carried out with no regard as to the overwhelmingly destructive effect such mutations produce compared to

mutations in structural genes. Developmental mutations can cripple an organism or even lead to death. Thus, punctuated equilibrium raises more questions than it answers.

Another Alternative

As I have tried to point out, the two major competing models of evolutionary change are far from being considered accepted facts of nature. Both suffer from serious problems from which, some say, they may never be able to recover. However, if one sits back and views the evidence as a whole, a totally different perspective arises as a possibility.

First, virtually all taxonomic levels, even species appear abruptly in the fossil record. This, it will be remembered, is one of the sharper criticisms of neo-Darwinism, and one of the two cornerstones of punctuated equilibrium. It is relevant not only that the various levels of taxa appear abruptly but also that alongside the higher taxonomic levels there are unique adaptations. This is the key. Unique and highly specialized adaptations usually, if not always, appear fully formed in the fossil record. The origin of the different types of invertebrate animals such as the sponges, mollusks, echinoderms like the starfish, arthropods like crustaceans, and others all appear suddenly, without ancestors, in the Cambrian period.

Second, there is the steady maintenance of the basic body plan of the organism through time. One need only think of the living fossils from paleontology and of bacteria and the Drosophila fruit flies from genetics. The basic body plan does not change whether analyzed through time in the fossil record or through mutations in the laboratory. This conclusion is reinforced by animal and plant breeders through artificial selection. There is much variation, but it can be manipulated only to a limit.

Third, we found that in the few cases where organisms have

adapted to new environments, this is predominantly brought about through very ordinary processes utilizing genetic variation that was probably always present in the species. Mutations, when they do play a role, produce defective organisms that survive and thrive only in unusual and unique environments. At best the chances of mutants out-competing normal or wild-type organisms are minute.

Fourth, we see the apparent inability of mutations to truly contribute to the origin of new structures. The theory of gene duplication in its present form is unsuitable to account for the origin of new genetic information that is a must for any theory of evolutionary mechanism.

Fifth, we observed the amazing complexity and integration of the genetic machinery in every living cell. What we do know of the genetic machinery is impressive; what we have yet to learn staggers the imagination. One's curiosity is aroused as to how mutation, selection, and speciation could ever hope to improve or change the machinery in any substantial way. The cellular machinery poses an even bigger problem. The molecular workings of cilia, electron transport, protein synthesis, cellular targeting, and so many others, are simply astounding.

The sixth and final element involves the big picture. Ecosystems themselves are a marvelous balance of complexity and integration. One can devise schemes of energy flow or biomass flow through an ecosystem as complicated as any biochemical pathway or genetic regulatory scheme. At the center of all this is the wondrous fit of an organism to its own peculiar environment. In the time before Darwin this wondrous fit was the chief evidence of a Supreme Designer.

So, while it is clear that organisms change, there may be a limit to biological change.

The Natural Limits to Biological Change

Has Darwin's theory of natural selection really shown intelligent design in nature to be unreasonable? In view of the failure of evolutionary mechanisms to be convincing, might biological change be a limited affair? Could the limits of biological change arise from the very nature of the genetic code itself, the unique set of structural and regulatory genes present in various groups of organisms and the tight organization and coadapted nature of the entire genome? I believe there are limits to biological change and that these limits are set by the structure and function of the genetic machinery.

Intelligent design is not a new concept. Of course the concept itself, goes back into the previous centuries. Intelligent design, however, is taking on a more sophisticated form. As knowledge of informational codes and information theory grows, the possibility of making predictions of the intricacy of the DNA informational code grow more realistic. If DNA required intelligent pre-programming, the signs should be unmistakable.

The mark of intelligence is not exactly hard to discern. We speak of the genetic code, DNA transcribed into RNA, RNA translated into protein. These are language terms. They are used not just because they are convenient, but because they accurately describe what is going on in the cell. There is a transfer of information. I believe that an application of information theory to the field of genetics will yield a comprehensible theory of limited biological change.

This is wholly reasonable because information theory concerns itself statistically with the essential characteristics of information and how that information is accurately transmitted or communicated. DNA is an informational code, so the connection is readily apparent. The overwhelming conclusion is that information does not and cannot arise spontaneously by mechanistic processes. Intelligence appears to be a necessity

in the origin of any informational code, including the genetic code, no matter how much time is given.

More directly though, our concern was with what happens after the code is in place. Could intelligence be required for the first cell but not afterward? To answer that we must look at the informational content of DNA a little more closely. Similar to what happens in language, there are two fundamental principles involved in the expression of genetic information. First, there is a finite set of words that are essentials of content. In organisms, this is comparable to structural genes. Second, the rules of grammar provide for the richness of expression using the finite set of words. In organisms, these rules or programs consist of the regulatory and developmental mechanisms. In human languages, given a finite set of words and a set of rules, the variety of expression goes on and on. It is conceivable, therefore, that different groups of organisms, maybe bats and whales for example, are characterized by different regulatory mechanisms, i.e., different developmental programs.

There is growing interest in a biological theory of intelligent design around the world. While many still vigorously oppose all such ideas, there is a much greater openness than ever before. Philosophers, mathematicians, chemists, engineers, and biologists are willing to suggest, even demand that a more rigorous study of intelligent design in relation to biological organisms be pursued. A renaissance may be around the corner.

Confirming New Data

It was known ten years ago that much of the information for the early stages of development were contained in the cytoplasm or the cell membrane. This has since been rigorously confirmed. There is information, therefore, that is possibly not contained in the nucleus. So our emphasis on the genetic material was a little too strong. There is at least another

source of information to consider. This seems to imply that in order to change the body plan changes are required to be coordinated in perhaps two unrelated sources of information in the embryo. This would make a change in the developmental pathway even more difficult to achieve.

Michael Denton's book, *Evolution: A Theory in Crisis*, revealed that development through the earliest embryonic stages is vastly different in amphibians, reptiles, and mammals. Supposedly similar early structures arise from non-similar structures and pathways in the embryo. This bears witness to our contention that unique developmental pathways would separate the basic types, even when the structures are thought to be homologous.

The complexity of living things continue to astound the imagination. Michael Behe has introduced the term **irreducible complexity**. Irreducibly complex systems are systems which must have all molecular components present in order to be functional. He used the molecular machinery of cilia as an example. Cilia contain numerous molecular components such as the proteins nexin, dynein, and microtubules that all need to be present if a cilia is to perform at all. Cilia cannot arise step by step.

But perhaps the most gratifying confirmation of our ideas came about recently in the publication of a book edited by J. P. Moreland, *The Creation Hypothesis*. The chapter on the origin of human language contained this passage on the complexities of the genetic language.

In order for any organism to be what it is, its genetic program, (DNA) must specify what sort of organism it will be and, within surprisingly narrow limits, what specific characteristics it will assume. Such limits, innately determined, apply as much to a human being or to a Rhesus monkey as to a special variety of fruit fly or yeast or bacterium (p. 252).

Later after discussing the cascade of information from DNA to protein they conclude:

> The whole cascading network of relationships must be specified within rather narrowly defined limits in order for any organism whatever to be a viable possibility. Moreover, the problem of biogenesis and the origin of human language capacity are linked at their basis by more than just a remarkable analogy. It turns out that the human genome must include the essential characteristics of the entire conceptual system that we find manifested in the great variety of languages and their uses, but within rather narrow limits, by human beings throughout the world (p. 254).

The use of such phrases as “narrowly defined limits” and “great variety” applying to both human languages and the information content of DNA is promising. If languages require intelligent pre-programming, then so does the genetic code.

It is difficult for me to imagine that that honest men and women could study the immense complexities of even the “simplest” creatures and not marvel, or better yet worship, at the feet of their Creator.

Human Fossils

The study of human evolution suffers from too few fossils, tunnel worldview vision, powerful personalities, and too much media misinformation. Probe’s Dr. Ray Bohlin tries to sort out the data from a creationist perspective.

Australopithecines

A recent issue of *Time* magazine (14 March 1994) displayed a picture of *Homo erectus* on the cover with the title, “How Man Began: Fossil bones from the dawn of humanity are rewriting the story of evolution.” The question of human origins fascinates us! Many people are intrigued by the possibility of descending from an ape-like ancestor only 7 million years ago. The field of paleoanthropology, the study of human fossils, embraces colorful personalities that compete for our allegiance to their particular evolutionary scheme. Mary and Louis Leakey, their son, Richard Leakey, and Donald Johanson are all recognizable names in this fascinating field of study.

Reading *Time*, *Newsweek*, and *National Geographic* convinces most people that humans evolved from ape- like ancestors. However, a now well-known poll indicates that 47% of adults in the United States, almost half, believe humans were created only 10,000 years ago and that only 9%, less than 1 in 10, believe humans are the result of an evolutionary process in which God played no part. So who’s fooling whom? I want to take a brief look at the evidence for human evolution. This is an engrossing topic with some surprising answers.

The story begins about 3.5 million years ago with the appearance of a group of animals collectively known as australopithecines. *Australo* means “southern” and *pithecines* meaning “apes.” These “southern apes,” initially discovered in South Africa, were small, apparently upright walking apes. Then around 2 million years ago, a new creature appears that is now put into the genus *Homo*, *Homo habilis*. *Homo habilis* possesses the same stature of the australopithecines but with a slightly larger brain. It is also suggested that he used a few primitive tools. Next appears the real star of human evolution, *Homo erectus*. *Homo erectus* possesses the skeletal frame of modern humans though he’s a little more robust, and his brain capacity is closer still to humans. *Homo erectus*

uses more advanced tools. This “almost” human hangs around we’re told for over 1.5 million years when nearly modern humans (*Homo sapiens*) begin to appear. Soon the offshoot Neanderthals arise and about the same time thoroughly modern humans appear in the last 100,000 years.

While this is the standard story, and the one you will find in the recent issue of *Time* magazine, it is far from convincing when all the data are considered. Take the australopithecines, for example. While there is still some debate about whether these creatures walked upright at all, most anthropologists accept that they walked on two legs. But it is misleading if you don’t know the rest of the story. The fact is, that Lucy, the most well known australopithecine (*Australopithecus afarensis*), was also mildly adapted to life in the trees. The evolutionist William Howells said “there is general agreement that Lucy’s gait is **not** properly understood, and that it was **not** something simply transitional to ours” (*Getting Here: The Story of Human Evolution*, 1993, emphasis mine). If Lucy walked upright, it was distinct from apes and humans. Not exactly what you would expect from a transitional form. Lucy is simply an extinct ape with no clear connection to humans.

The Uncertainties of *Homo Erectus*

We have all seen the series of extinct creatures that lead from ape to man. Evolutionists confidently declare that while there may be a lot of details missing from the story, the basic outline is fairly complete. This all seems rather impressive. In his recent book, *Bones of Contention* (Baker, 1992, p. 21), creationist Marvin Lubenow, offers an important observation:

> *What is not generally known is that this sequence, impressive as it seems, is a very artificial and arbitrary arrangement because 1) some fossils are selectively excluded if they do not fit well into the evolutionary scheme; 2) some human fossils are arbitrarily downgraded to make them appear to be*

> *evolutionary ancestors when they are in fact true humans; and 3) some non-human fossils are upgraded to make them appear to be human ancestors.*

The australopithecines are a good example of Lubenow's third point. These extinct apes are trumpeted as human ancestors because of their crude bipedal walking ability. But nearly everything else about them is ape-like. The origin of their bipedality would be no small evolutionary task. Even Richard Leakey admits as much in his book with Roger Lewin, *Origins Reconsidered* (pp. 83-84), when he says that the change from walking on four legs to walking on two legs

> …would have required an extensive remodeling of the ape's bone and muscle architecture and of the overall proportion in the lower half of the body. Mechanisms of gait are different, mechanics of balance are different, functions of major muscles are different—an entire functional complex had to be transformed for efficient bipedalism to be possible.

Yet these immense changes are not documented from the fossil record.

A good example of Lubenow's second point, the arbitrary downgrading of human fossils to make them appear to be our ancestors, is *Homo erectus*. *Homo erectus* is said to span the time from around 1.7 million years ago to nearly 400,000 years ago. From its first appearance, erectus is admitted to have a fully human post-cranial skeleton (that means everything but the head). But the brain size is given an evolutionary twist by saying that it only approaches the average for modern humans. In reality, *Homo erectus* brain size is within the range of modern humans.

Throughout the course of their book, *Origins Reconsidered*, Leakey and Lewin document an impressive array of characteristics that distinguish the ape-like qualities of australopithecines from the human qualities of *Homo erectus*.

Australopithecines are small in stature, only 3-4 feet tall, and the males are twice the size of females. In humans and *Homo erectus*, the males are only 15-20% larger than females, and a juvenile *erectus* fossil is estimated to have grown to a height of six feet if he had lived.

In *Homo erectus*, all of the following characteristics display the human pattern, while in australopithecines, the ape pattern is evident: growth pattern, dental structure and development, facial structure and development, brain morphology, height to weight ratio, probable position of larynx based on the contours of the base of the skull making speech possible, and the size of the birth canal relative to the size of the adult brain.

Where some *Homo erectus* fossils differ from humans can be explained by the effects of inbreeding, dietary restrictions, and a harsh environment. But evolutionists need an intermediate, and *Homo erectus*is the only option available.

Neanderthals and the Paleontologists

In the field of paleoanthropology, the study of human fossils, one must approach the data and interpretations of the scientists involved with a careful and skeptical eye. There are a number of obvious reasons for this healthy skepticism. The most important reason being that they are looking for man’s evolutionary ancestors. If that is what you are looking for, then that is likely what you will report to have found. That is just human nature.

A second reason, is that there is a great deal of competitiveness among anthropologists. They are involved in a race to be the one to discover **the** missing link which will mean immense notoriety and financial gain. The temptation to exaggerate the importance of their findings at the expense of others is very great.

Another reason for skepticism is that all anthropologists compare only plaster casts of the fossils or measurements available in the literature and not the fossils themselves. The actual fossils are understandably considered too delicate, fragile, and valuable to be handled directly all the time. However, plaster casts are sadly unable to accurately reproduce many of the details needed for proper study. In 1984, the largest collection of actual fossils was gathered from around the world at the American Museum of Natural History for the opening of the "Ancestors" exhibit. It was a unique opportunity for side by side comparisons that took much persuasion to pull off. The mounts for each skull or fragment were individually prepared using a cast of the original fossil. Unfortunately, when the real fossils showed up, most of them did not fit! It is a myth to think that those who teach and write on human origins have actually held in their hands even a fraction of the original material.

Evolutionists have been embarrassed on more than one occasion when their evolutionary bias, competitiveness, and lack of familiarity with the original fossils were not considered. A good example is the misinterpretation of neanderthals. Though there is still much dispute whether neanderthals are a sub-species of humans or a completely different species, in the early part of this century, there was unanimity in the belief that neanderthals were brutish, stooped creatures who were more closely related to apes than to humans. This impression stood for over forty years. One of the first complete neanderthal skeletons was found in a cave in France in 1908. It was given to the French paleontologist, Marcellin Boule to reconstruct.

From other fragmentary fossils, Boule had already formed an evolutionary bias that neanderthals were not related to humans. Boule saw only the "primitive" traits of neanderthals and ignored clear evidence of arthritis and rickets in the skeleton. Boule reconstructed the skeleton without the curves

in the spine that allow humans to walk upright. He also placed the skull far forward so that it would have been difficult to even look up as we do. Other miscues produced an individual who was little more than a shuffling hunchback. Because of his reputation, this reconstruction stood until 1957, when two scientists re-examined the reconstruction and found Boule's prejudicial mistakes. Their study concluded that neanderthals, when healthy, stood erect, and walked normally. Neanderthals were simply stronger, stockier members of the human family.

Allowing the Facts to Speak

It is interesting to observe certain pieces of the fossil evidence for human evolution either ignored or stretched in order to not upset the accepted picture of human evolution. Creationist Marvin Lubenow, in his recent book, *Bones of Contention*, gives numerous examples of this kind of manipulation, and I'd like to discuss three of the most glaring incidents.

First is a bone fragment of the lower end of the upper arm, near the elbow, that was found near Kanapoi, Kenya, in 1965 and is given the designation, KP 271. What is unusual about this discovery is the date of around 4.5 million years—unusual because it appears for all intents and purposes to be human. Humans are not supposed to have been around 4.5 million years ago. Consequently, this small piece of humerus is usually designated as Australopithecus because that is the only hominid species known to be available at that time. Lubenow quotes Harvard anthropologist William Howells in a stunning admission,

> *The humeral fragment from Kanapoi, with a date of about 4.4 million, could not be distinguished from Homo sapiens morphologically or by multivariate analysis by Patterson and myself in 1967. . . . We suggested that it might represent Australopithecus because at that time allocation to Homo seemed preposterous, although it would be the correct one*

without the time element. (pp. 56-57).

The only reason KP 271 is not listed as human is because it can't be, according to evolution.

Second, many have heard of a series of footprints found by Mary Leakey near Laetoli, Tanzania. Richard Leakey and Roger Lewin, however, just gloss over them by calling them hominid footprints (*Origins Reconsidered*, p. 103). But Lubenow documents that these footprints are identical to those made today by humans that always walk barefoot. Yet these footprints are routinely classified as Australopithecine. William Howells refers to the conclusions of Russell Tuttle from the University of Chicago and a leading expert on hominoid gates and limbs as saying that the footprints are nearly identical to modern humans and that australopithecine feet are significantly different. Tuttle suggests an undiscovered species made these prints. But he can't say that a human made them because humans aren't supposed to exist yet. In the words of evolutionist William Howells, "Here is something of an enigma" (*Getting Here: The Story of Human Evolution*, p. 79). Indeed!

Finally, Lubenow documents the incredible saga of determining the date for Skull 1470. Skull 1470 was very modern in its appearance but was found in rock previously dated at 2.9 million years—much too old for a modern skull. So some scientists set out to determine a much younger date. Lubenow recounts the back and forth wrangling over the issue. Several radioactive methods and paleomagnetism mainly pointed to 2.9 million years, but a few were found contradictory. Ultimately the radioactive dates were tossed aside in favor of a date of 1.9 million years, a date that fit the human evolution better, based on the certainty of the dates of pig evolution. Yes, pig evolution. To quote Lubenow, "The pigs won. . . . The pigs took it all. But in reality, it wasn't the pigs that won. It was evolution that won. In the dating game, evolution always

wins” (p. 266).

A Creationist Perspective on Ancient Humans

Thus far we have been discussing some of the significant problems with evolutionary explanations of ancient human remains. But questions still remain. Many of these individuals do look very different from modern humans. Who are they? Where did they come from? Does any of this make sense from a creationist perspective? While we need to be careful not to over interpret the data as we have accused evolutionists of doing, there are a few suggestions that make some sense.

The most obvious first step is to recognize that *Homo erectus*, archaic *Homo sapiens*, neanderthals, and *Homo sapiens* form a continuum of the human family. The different forms represent genetic variation within a species and not distinct species. Many evolutionists themselves have difficulty drawing the line between these four different labels.

A group of human fossils from Kow Swamp, Australia, are no more than 13,000 years old yet contain may of the skull characteristics of *Homo erectus*. Some of the explanations for this involve cultural modifications and not genetic differences. In other words, many of the characteristics of *Homo erectus* can be achieved in modern humans by lifestyle changes. These could include deliberate forehead compression, deformation due to inbreeding, modifications due to dietary deficiencies and peculiarities. The late Arthur Custance documents differences in the modern skulls of Eskimos due to the massive jaw muscles that are developed because of their diet (*Genesis and Early Man*, 1975). Many of these changes would be labeled as primitive if dug up in some ancient river bed, yet they exist in fully modern humans today.

Marvin Lubenow offers the interesting suggestion that many of these ancient humans are the remains of individuals within the

first millennia after the flood of Noah (*Bones of Contention*, pp. 144-156). Effects of the ice age, constant cloud cover (preventing Vitamin D formation leading to rickets), largely vegetarian and uncooked diet, and expression of local genetic variation could readily account for the many different, yet anatomically related human forms. Are these ancient humans former ape-like creatures that are evolving towards humans, or are they humans caught in a unique and harsh world that brought about numerous interspecies variants? Evolutionists never bother to ask the latter question. A creationist perspective, in this case, may lead to questions that evolutionists may never ask. That is the value, in science, of a different perspective.