

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.

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The Little Lamb That Made a Monkey of Us All

Like many others, I was caught totally flat-footed, astonished by the announcement of the successful cloning of an adult sheep, Dolly. Caught so unaware, in fact, that Probe is re-airing my three-year-old program on human cloning the week of March 17-21, 1997, because so little had changed. When the announcement of a successful sheep cloning was made, it was too late to pull the program from the schedule; tapes had already been sent to all the radio stations and there just wasn't time to replace it in only three weeks. Consequently (and spurred by a number of phone calls and e-mails from around the country), I have compiled a few thoughts and comments regarding scientific and moral considerations about this historic breakthrough to temporarily plug the gap.

Scientific Considerations

Normal mammary cells were intentionally starved of critical growth nutrients in order to allow the cells to reach a dormant stage of the normal cell cycle. This process of bringing the cells into dormancy apparently allows the cell's DNA to be reprogrammed by the proteins already in the egg cell for renewed cell division and new cell functions. The cells were fused with an enucleated egg cell (a cell that had its

nucleus removed) and stimulated to begin cell division by an electric pulse.

The process was inefficient. Out of 277 cell fusions, 29 began growing *in vitro*. All 29 were implanted in receptive ewes, 13 became pregnant, and only one lamb was born as a result. This is a success rate of only 3.4%. In nature, somewhere between 33 and 50% of all fertilized eggs develop fully into newborns.

The procedure was very non-technical, and no one is really sure why it worked. It needs to be repeated. All attempts to clone mouse cells from adults have failed. Some suggest that sheep embryos do not employ the DNA in the nucleus until after 3-4 cell divisions. This may give the egg cell sufficient time to reprogram the DNA from mammary cell functions to egg cell functions. Human and mouse cells employ the nuclear DNA after the second cell division. Human and mouse cells may not be capable of being cloned because of this difference.

The purpose of these experiments was to find a more effective way to reproduce genetically engineered sheep for the production of pharmaceuticals. A sheep embryo can be engineered to produce a certain human protein or hormone in its milk. The human protein can then be harvested from the milk and sold on the market. Instead of trusting the somewhat unpredictable and time-consuming methods of normal animal husbandry to reproduce this genetic hybrid, cloning it assures that the engineered gene product will not be lost.

Genetic material is the same in all cells of an organism (except the reproductive cells, sperm and egg, which have only half the full complement), but differentiated cells are biochemically programmed to perform limited functions, and all other functions are turned off. Based on attempts in frogs and mice, most scientists felt that the reprogramming was impossible.

A critical question is the lifespan of Dolly. All cells have a

built-in senescence or death after so many cell divisions. Dolly began from a cell that was already six years old. A normal lifespan for a ewe is around 11 years. Will Dolly live to see her seventh birthday?

It is also uncertain as to whether Dolly will be reproductively fertile. Frog clones are usually sterile.

Reprogramming the nucleus could lead to procedures to stimulate degenerating nerve cells to be replaced by newly growing nerve cells. Adults do not generate nerve cells normally.

Moral Considerations

Will humans be cloned for spare parts? While this is certainly possible, I consider it very unlikely that this would be sanctioned by any government. That doesn't mean, however, that someone won't try.

Will humans be cloned to replace a dying infant or child? This is certainly a possibility, but we need to ask if this is an appropriate way to deal with loss. Might unrealistic expectations be placed on a clone that would not be placed on a normally-produced child?

Will humans be cloned to produce children for otherwise childless couples? This is the most often-given reason for human cloning. This argument is unpersuasive when there are currently so many children that need adoption. Also, this further devalues children to the level of a commodity. If *in vitro* fertilization is expensive, cloning will be worse.

Will humans be cloned for vanity? Someone will certainly try.

Will human clones have a soul? In my mind, they will be no different from an identical twin or a baby that results from *in vitro* fertilization. How a single fertilized egg splits in two to become two individuals is a similar mystery.

Does cloning threaten genetic diversity? Excessive cloning may indeed deplete the genetic diversity of an animal population, leaving the population susceptible to disease and other disasters. But most biologists are aware of these problems, and I would not expect this to be a major concern unless cloning were the only means available to continue a species.

If the technique is perfected in animals first, will this save the tragic loss of fetal life that resulted from the early human experimentation with *in vitro* fertilization? *In vitro* fertilization was perfected in humans before it was known how effective a procedure it would be. This resulted in many wasted human beings in the embryonic stages. The success rate is still only 1 in 5 to 1 in 10; normal fertilization and implantation success rates are 2-3 times that. While animal models will help, there will be unique aspects to human development that can only be known and overcome by direct human experimentation which disrespects the sanctity of human life.

This provides a means for lesbians to have a child. One supplies the nucleus and the other provides the egg. The egg does contain some unique genetic material in the mitochondria that are not contributed by sperm or nucleus. One cell from each donor would be fused together to create a new individual, though all the nuclear genetic material comes from one cell. Sue Bohlin has an upcoming program on homosexual myths including gay marriage. This is no longer marriage as it is currently understood, and the technological hoops that must be jumped through for any gay couple to have children should be a clear warning that something is wrong with the whole arrangement.

Are human clones unique individuals? Even identical twins manage to forge their own identity. The same would be true of clones. In fact, this may argue strongly against the usefulness of cloning since you can never reproduce all the life experiences that have molded a particular personality.

The genes will be the same, but the environment and the spirit will not.

All together, I find the prospect of animal cloning potentially useful. But I wonder if the procedure is as perfectible as some hope, and may end up being an inefficient process to achieve the desired result. Human cloning is fraught with too many possible difficulties, from the waste of human fetal life during research and development to the commercializing of human babies (see [my previous cloning article](#)) with far too little potential advantage to individuals and society. What there is to learn about embryonic development through cloning experiments can be learned through animal experimentation. The cloning of adult human beings is an unnecessary and unethical practice that should be strongly discouraged if not banned altogether.

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Can Humans Be Cloned Like Sheep?

Why Is Cloning So Difficult and How Did They Do It?

Like so many others I was caught totally flat-footed and astonished by the announcement of the successful cloning of an adult sheep, Dolly. A few years ago I aired a radio program on the prospects of human cloning and considerably downplayed the possibilities. Earlier this year, we here at Probe had decided

to rebroadcast this program because little had changed. When the announcement about Dolly was made, it was too late to pull the program from the schedule as tapes had already been sent to all the radio stations, and there just wasn't time to replace or update it. Consequently, I compiled a few thoughts and comments on this historic breakthrough and quickly made it available on our web site to temporarily plug the gap.

Subsequently, the article was featured on Christian Leadership's web site, [Leadership University](http://www.leaderu.com) (www.leaderu.com), and I started receiving numerous phone calls and e-mails as a result. This essay is now an updated and expanded version of that article to help us think through both the scientific and moral implications of this stunning achievement.

The genetic material is the same in all cells of an organism (except the reproductive cells, sperm and egg, which have only half the full complement of chromosomes). However, differentiated cells (liver cells, stomach cells, muscle cells, etc.) are biochemically programmed to perform limited functions and all other functions are turned off. Most scientists felt that the reprogramming was next to impossible based on cloning attempts in frogs and mice.

So what did the scientists in Scotland do that was successful? Well, they took normal mammary cells from an adult ewe and starved them (i.e., denied them certain critical growth nutrients) in order to allow the cells to reach a dormant stage. This process of bringing the cells into dormancy apparently allows the cells' DNA to be deprogrammed. Apparently most if not all of the programming for specific functions of the mammary cells were turned off and the DNA made available for reprogramming. The starved mammary cells were then fused with an egg cell that had its nucleus removed. The egg cell was then stimulated to begin cell division by an electric pulse. Proteins already in the egg cell somehow altered the DNA from the mammary cell to be renewed for cell

division and embryological functions.

As might be expected, the process was inefficient. Out of 277 cell fusions, 29 began growing as embryos *in vitro* or in the petri dish. All 29 were implanted into 13 receptive ewes, yet only one became pregnant. As a result of these efforts, one lamb was born. This translates to a success rate of only 3.4%, and the success rate is even less (.36%), when you calculate using the 277 initial cell fusions attempted. In nature, on the other hand, somewhere between 33 and 50% of all fertilized eggs develop fully into newborns.

Altogether the procedure was rather non-technical, and no one is really sure why it worked. The experiments still need to be repeated. Previously, all attempts to clone mice from adult cells have failed. But clearly, an astounding breakthrough has been made. You can be sure that numerous labs around the world will be attempting to repeat these experiments and trying the technique on other mammalian species. Can this procedure be done with humans? Should we try it with humans? I'll be dealing with these questions later in this discussion.

Why Clone Anything?

Before proceeding to deal with the question of human cloning, a more basic concern needs to be addressed. Some, for example, may be asking, "Why would anyone want to clone anything in the first place, but especially sheep?"

The purpose of these experiments was to find a more effective way to reproduce already genetically engineered sheep for production of pharmaceuticals. Sheep can be genetically engineered to produce a certain human protein or hormone in its milk. The human protein can then be harvested from the milk and sold on the market. This is accomplished by taking the human gene for the production of this protein or hormone and inserting it into an early sheep embryo. Hopefully the embryo will grow into a sheep that will produce the protein.

This is not a certainty, and while the process may improve, it will never be perfect. Mating the engineered sheep is also not foolproof because even mating with another genetically engineered sheep may result in lambs that have lost the inserted human gene and cannot produce the desired protein. Therefore, instead of trusting the somewhat unpredictable and time-consuming methods of normal animal husbandry to reproduce this genetic hybrid, cloning more directly assures that the engineered gene product will not be lost.

There may be other benefits to cloning technology. Reprogramming the nucleus of other cells, such as nerve cells, could lead to procedures to stimulate degenerating nerve cells to be replaced by newly growing nerve cells. Nerve cells in adults do not ordinarily regenerate or reproduce. This could have important implications for those suffering from Parkinson's and Alzheimer's.

If the process can actually be perfected to the extent that production costs are reduced and the quality of the eventual product is improved, then this would be a legitimate research goal. The simplicity of the technique, though still inefficient, makes this plausible. But there are still questions that need to be answered.

One critical question concerns the lifespan of Dolly. All cells have a built in senescence or death after so many cell divisions. Dolly began with a cell from a ewe that was already six years old. A normal lifespan for a ewe is around 11 years. Will Dolly live to see her seventh birthday? Actually most cell divisions are used up during embryological development. Dolly's cells may peter out even earlier. This is critical because a 10-year-old sheep is considered elderly, and lambing and wool production decline in sheep after their seventh year. My guess though is that since Dolly's genes were reprogrammed from mammary cell functions to embryological functions, that the senescence clock was also reset back to the beginning. I expect Dolly to live a normal lifespan.

It is also uncertain as to whether Dolly will be reproductively fertile. Frogs cloned from tadpole cells are usually sterile. It is possible that while Dolly is normal anatomically, the cloning process may somehow interfere with the proper development of the reproductive cells. If this were the case, there may be other problems not immediately detectable. This will be answered this summer when Dolly reaches sexual maturity.

Can We Clone Humans?

While we have established that animal cloning may be permissible and even scientifically useful, what about cloning humans? First of all, is it feasible? Secondly, just because we can do it, should we? Should we even try?

At this point it is reasonable to assume that because the procedure works with sheep and possibly with cattle (the experiments with cattle are already underway), it should be perfectible with humans. This does not mean, however, that there may not be unique barriers to cloning humans as opposed to cloning sheep.

Some suggest that by using the particular procedure developed by the researchers in Scotland, sheep may be easier to clone. The reason is that sheep embryos do not employ the DNA in the nucleus until after 3 to 4 cell divisions. This may give the egg cell sufficient time to reprogram the DNA from mammary cell functions to egg cell functions. Human and mouse cells employ the nuclear DNA after only the second cell division. This may be why similar experiments have not worked in mice. Therefore, human cells and mouse cells may not be capable of being cloned because of this difference.

If this barrier does indeed exist, it is not necessarily insurmountable. The news of a cloned sheep was surprising enough that no one, including me, is now going to step out on the same sawed-off limb and predict that it **can't** eventually

work with humans. I mentioned earlier that the procedure is so startlingly non-technical that there are numerous laboratories around the world that could immediately begin their own cloning research program with a minimum of investment and expertise. While I fully expect that many labs will begin studies on cloning other mammalian species besides sheep, I'm not so sure about humans.

In 1993, researchers here in the United States employed well known techniques to artificially twin human embryos. They immediately became embroiled in a firestorm of public scrutiny that they did not anticipate nor enjoy (see my earlier article, ["Human Cloning: Have Human Beings Been Cloned?"](#)). They were even criticized by other researchers in the field for jumping ahead without scrutinizing the ethical ramifications. The public reaction was no doubt very sobering to the rest of the scientific community. Many countries have already either completely banned experimentation in human cloning or at least imposed a temporary moratorium so that the ethical questions can be properly investigated before stepping ahead. Even the researchers in Scotland responsible for Dolly have plainly stated that they see no reason to pursue human cloning and are personally repulsed by the idea.

There are some in the scientific community, however, who feel that the ability to do something is reason enough to do it. But in this case, I believe that they are the minority. For example, molecular biologists imposed a moratorium of their own in the 70s when genetic technology was first being developed until critical questions could be answered. Also, while nuclear weapons have been produced for over 50 years, only two have been used and that was 52 years ago. Many are now being dismantled. These cases show us that human restraint, though rare, is possible.

So while it is reasonable to believe that humans can be cloned, and that someone, somewhere may try, the overall climate is so against it that I don't think we will see it

announced anytime soon.

Why Clone Humans?

Overall, the public reaction has been negative toward cloning human beings, and this is rather curious in a culture that is admittedly post-Christian in orientation. Nevertheless, many people still want to draw a distinction between animals and humans.

As Christians we understand this desire because we assert that humans are made in the image of God and that animals are not. There is, therefore, a clear demarcation between animals and humans. But in an evolutionary view, humans are nothing special—just another animal species. The expected reaction was offered by an editorial in the *Dallas Morning News* (Monday, 3 March 1997, 9D) by Tom Siegfried which he titled: “It’s hard to see a reason why a human Dolly is evil.” He summarized his perspective when he said, “The ability to clone is part of gaining deeper knowledge of life itself. So Dolly should not be seen as scary, but as a signal that life still conceals many miracles for humans to discover.” To the naturalist, any knowledge is valuable, and the means to obtain it is justified essentially by its benefit to society.

With this in mind, let’s explore some of the reasons why people have suggested that human cloning is a worthwhile proposition and deal with some of the questions people are asking.

Concerns About Human Cloning

There is much that can be learned about human embryonic development by researching human cloning. While this is true, this is precisely the reasoning used by Nazi Germany to justify experimentation on Jews. Experiments were performed on exposure to cold, water, and other extreme conditions with

human subjects, frequently to the point of death, because data on human subjects was deemed indispensable. Of course, we know now that animal models work just as well; consequently, there is no need to use human models to gain this type of data.

Will humans be cloned for spare parts? A few writers have suggested that some individuals may want to establish an embryonic clone to be frozen and put away. Then, in the event of a childhood disease requiring a transplant, the embryo can be thawed, implanted in a surrogate, and raised to a sufficient age for the spare organ to be harvested and transplanted. While this is certainly possible, I consider it very unlikely that these practices would be sanctioned by any government because it completely tosses aside the uniqueness of humanity and trashes the concept of human dignity. That doesn't mean, however, that someone won't try.

Will human cloning be used to replace a dying infant or child? This is certainly a possibility, but we need to ask if taking such a course of action is an appropriate way to deal with loss. Unrealistic expectations may be placed on a clone that would not be placed on a normally produced child. The cloned child may be the same genetically, but different in other respects. This could create more frustration than comfort.

Will humans be cloned to provide children for otherwise childless couples? This is the reason most often given for human cloning, yet the argument is unpersuasive when there are so many children that need adoption. Also, this devalues children to the level of a commodity. Also, if *in vitro* fertilization seems expensive at \$5,000-8,000 a try, cloning will be more so.

Will human clones have souls? In my mind, they will be no different than an identical twin or a baby that results from *in vitro* fertilization. How a single fertilized egg splits in two to become two individuals is a similar mystery, but it happens.

Does cloning threaten genetic diversity? Excessive cloning may indeed deplete the genetic diversity of an animal population, leaving the population susceptible to disease and other disasters. But most biologists are aware of these problems, and I would not expect this to be a major concern unless cloning were the only means available to continue a species.

If the technique is perfected in animals first, will this save the tragic loss of fetal life that resulted from the early human experimentation with in vitro fertilization? In vitro fertilization was perfected in humans before it was known how effective a procedure it would be. This resulted in many wasted human beings in the embryonic stages. The success rate is still only 10 to 20%. The success rate of normal fertilization and implantation is around 33 to 50%. While animal models will help, there will be unique aspects to human development that can only be known and overcome by direct human experimentation which does not respect the sanctity of human life.

Cloning provides a means for lesbians to have children as a couple. One supplies the nucleus and the other provides the egg. The egg does contain some unique genetic material in the mitochondria that are not contributed by sperm or nucleus. One cell from each partner is fused together to create a new individual, though all the nuclear genetic material comes from only one cell. The real question is whether this is the proper environment for any child to grow up in. (For more information on this topic, see Sue Bohlin's essay, ["Homosexual Myths."](#)) Homosexual "marriages" are not really marriages in the normal understanding of the term, and the technological hoops that must be jumped through for any gay couple to have children should be a clear warning that something is wrong with the whole arrangement.

Are human clones unique individuals? Even identical twins manage to forge their own identity. The same would be true of clones. In fact, this may argue strongly against the

usefulness of cloning since we can never reproduce all the life experiences that have molded a particular personality. The genes will be the same, but the environment and the spirit will not.

All together, I find the prospect of animal cloning potentially useful. But I wonder if the procedure is as perfectible as some hope. It may end up being an inefficient process to achieve the desired result. Human cloning is fraught with too many possible difficulties, from the waste of human fetal life during research and development to the commercializing of human babies (see my previous [Human Cloning](#) article) with far too little potential advantage to individuals and society. What there is to learn about embryonic development through cloning experiments can be learned through animal experimentation. The cloning of adult human beings is an unnecessary and unethical practice that should be strongly discouraged if not banned altogether.

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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.

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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 Tigris 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 unrepeatably.

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.

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Euthanasia: The Battle for Life from a Christian Viewpoint

Dr. Bohlin approaches this issue from a biblical worldview. As a Christian, he looks at current events and attitudes in this sad area and points out that popular sentiments may be far from biblical and godly.

Physician-Assisted Suicide in the United States

On March 6, 1996, the Ninth U. S. Circuit Court of Appeals struck down Washington state's ban on physician-assisted suicide. By a surprisingly commanding 8-3 vote, the court ruled that terminally- ill adults have a constitutional right to end their lives. Essentially, the court decided that an individual's right to determine the time and manner of his own death outweighed the state's duty to preserve life. This ruling will also likely uphold Oregon's voter approved doctor-

assisted suicide law that has been bogged down in the courts.

The only recourse now is the Supreme Court, which is not expected to overrule the Appeals Court's decisions. On April 2, the Second U.S. Circuit Court of Appeals ruled that New York state's bans on assisted-suicide were "discriminatory." Then on May 15, 1996, Dr. Jack Kevorkian, the infamous "Dr. Death," was acquitted for a third time of doctor-assisted suicide in the state of Michigan.

The stage is set for a revolution in the law concerning euthanasia in this country. Kevorkian's escapes from the law and these recent rulings from the Appeals Courts will further encourage the "right- to-die" lobby which seeks to make doctor-assisted suicide the law of the land. What will be overlooked is over 2,000 years of medical practice and ethical codes. The Hippocratic Oath, originating in 400 B.C., and the standard for medical practice ever since, states, "I will keep [the sick] from harm and injustice. I will neither give a deadly drug to anybody if asked for it, nor will I make a suggestion to that effect."

Allowing doctors to end life as well as preserve life would change the face of the entire medical community. The doctor/patient relationship will be forever compromised. Is your doctor's advice truly in your best interests or in his best interest to rid the hospital and himself of a pesky patient and situation?

Dr. Thomas Beam, chairman of the Medical Ethics Commission of the Christian Medical and Dental Society points out, "While the act of physician-assisted suicide seems compassionate on the surface, it is often the abandonment of the patient in their most needy time. Instead of support, the patient may only find confirmation of the hopelessness of their condition and physician-assisted suicide is legitimized as the only 'way.'" [\(1\)](#) It is not terribly difficult to see how this circumstance would undermine the delicate relationship between

a doctor and his patient.

Surely, you say, most people don't agree with the policy of doctor-assisted suicide. However, the *New England Journal of Medicine* reported a poll from the state of Michigan which indicated that "66 percent of state residents and 56 percent of Michigan doctors would prefer that doctor-assisted suicide be legalized not outlawed."[\(2\)](#) And even though doctor-assisted laws were defeated in referendums in California and Washington, the defeats were narrow. And a similar law was finally passed in Oregon in 1994. In addition, 23 states are now considering such legislation. And as mentioned earlier, two different Appeals Courts have ruled in favor of doctor-assisted laws. In this essay I will examine why so many favor legalization of assisted suicide. I will take a close look at Dr. Jack Kevorkian, the most visible proponent of assisted suicide. Also, I will examine what the Bible has to say about life, death, and God's sovereignty. Finally, I will discuss some test cases and inform you about what you can do to combat this growing evil in our land.

Who is Dr. Jack Kevorkian and Why Do People Seek His Help?

Why is such a large segment of our society, over 60% in some communities, enamored with the possibility of physician-assisted suicide? While there can be many roads that will lead to this conclusion, the primary one is fear. People today fear being at the mercy of technology, of being kept alive with no hope of recovery by machines. Few seem to realize that it is already legal for a terminally ill patient to refuse life-prolonging measures. We must realize that there is a difference between simply allowing nature to take its course when someone is clearly dying and taking direct measures to hasten someone's death. Former Surgeon General C. Everett Koop acknowledges,

If someone is dying and there is no doubt about that, and you believe as I do that there is a difference between giving a person all the life to which he is entitled as opposed to prolonging the act of dying, then you might come to a time when you say this person can take certain amounts of fluid by mouth and we're not going to continue this intravenous solution because he is on the way out. [\(3\)](#)

Extraordinary measures are not required to keep a dying person alive at all costs. But some people fear exactly that. Removing this fear will take a lot of the wind out of the euthanasia sails.

Secondly, people fear the pain of the dying process. Intractable pain is a real fear, but few people today realize that most of the pain of terminally ill patients can be dealt with. Many doctors, particularly in the U.S., are not aware of all the measures at their disposal. There are new ways of administering morphine, for example, that can achieve effective pain management with lower doses and therefore a lower risk of respiratory complications.

Dr. Paul Cundiff, practicing oncologist and hospice care physician with 18 years of experience treating dying patients says,

It is a disgrace that the majority of our health care providers lack the knowledge and the skills to treat pain and other symptoms of terminal disease properly. The absence of palliative care training for medical professionals results in sub-optimal care for almost all terminally ill patients and elicits the wish to hasten their own deaths in a few. [\(4\)](#)

But many would even be willing to live with the pain if they knew that they would not be left alone. The growth in the hospice movement will help alleviate this fear as well. The staff at a hospice is trained to deal not only with physical

pain, but with psychological, social, and spiritual pain as well. If you have seen pictures of the many people Jack Kevorkian has assisted to commit suicide, you cannot help but notice that these are lonely, miserable people. Pain has had little to do with their desire to commit suicide. As a nation we have in large part abandoned our elderly population. When God commanded Israel to honor their fathers and their mothers, this was understood to mean primarily in their older years. Extended families no longer live together even when the medical needs of parents are not severe or terribly limiting. No one wants to be a burden or to be burdened.

Dr. Jack Kevorkian is a retired pathologist with essentially no training in patient care. He is simply on a personal mission to bring about legalized physician-assisted suicide to help usher in a code of ethics based totally on relativism. "Ethics must change as the situation changes," he says. "That's the way to keep control. Not by an inflexible maxim that applies for two thousand years, but an ethical code that will change a decade later." [\(5\)](#) Right now Kevorkian's victims are the few lonely and desperate individuals who seek him out. The future victims of his crusade will not only be those who wish to die, but those whom doctors and relatives feel should die.

The Lessons of Holland

One of the primary reasons for concern about the legalization of physician-assisted suicide is the now runaway death culture of Holland. Doctor-assisted suicide was essentially legalized in Holland in 1973 by two court decisions. While not officially legalizing euthanasia in Holland, the courts simply said that if you follow certain guidelines you will not be prosecuted.

The problem is that any such regulations are not enforceable. As a result, the government of Netherlands reported in 1991 that only 41% of the doctors obey the rules and 27% admitted

to performing involuntary euthanasia. That is, without the patient's consent! In addition, over 2% of the deaths in Holland in 1990 were the result of direct voluntary euthanasia, but 6% of all deaths were the result of involuntary euthanasia.

Many people in Holland today carry around a card that states they are not to be euthanized without their consent! That is precisely where we are headed. Once a right to physician-assisted suicide is established as it was in Holland, it soon degenerates into others being willing and able to make the decision for you. [\(6\)](#)

In Holland, doctors performed involuntary killing because they thought the family had suffered too much; some were tired of taking care of patients, and one was mad at his patient! [\(7\)](#) Even the conditions of allowed voluntary euthanasia are appalling. Robin Bernhoft, a U.S. surgeon of the liver and pancreas, relates an incident where a doctor in Holland told of a 26 year-old ballerina with arthritis in her toes requesting to be euthanized. Apparently since she could no longer pursue her career as a dancer, she was depressed and no longer wished to live. Amazingly, the doctor complied with her request. His only justification was to say that "One doesn't enjoy such things, but it was her choice!" [\(8\)](#)

With this in mind, when the discussion of guidelines comes up, remember that in Holland, guidelines were useless. Enforcement is near impossible, and families and doctors as well as patients will succumb to the pressures of pain, depression and inconvenience. Sadly, pain and depression are treatable. There have been tremendous advancements in pain management which the American medical community is only recently being brought up to speed on. Depression can also be addressed but some patients, families, and doctors are often too impatient and lacking in genuine compassion to do the hard work to bring someone out of a depression. It is easier to offer help in suicide.

The lessons of Holland need to reinforce in our minds the necessity of making as many people aware of the dangers as possible. Since our society is now dominated by a worldview that prizes individual autonomy and shuns any mention of Biblical ethics, it can be very easy, yet ultimately, deadly, to go along with the crowd.

Why Life Is Worth Living: What the Bible Teaches

As we discuss the issue of euthanasia and physician-assisted suicide, it is critical that we not only understand what is going on in the world around us but that we also understand what the Bible clearly teaches about, life, death, pain, suffering, and the value of each human life.

First, The Bible teaches that we are made in the image of God and therefore, every human life is sacred (Genesis 1:26). In Psalm 139:13-16 we learn that each of us is fearfully and wonderfully made. God himself has knit us together in our mother's womb. We must be very important to Him if He has taken such care to bring us into existence.

Second, the Bible is very clear that God is sovereign over life, death and judgement. In Deuteronomy 32:39 The Lord says, "See now that I myself am He! There is no god besides me, **I** put to death and **I** bring to life, **I** have wounded and **I** will heal, and no one can deliver out of my hand." Psalm 139:16 says that it is God who has ordained all of our days before there is even one of them. Paul says essentially the same thing in Ephesians 1:11.

Third, to assist someone in committing suicide is to commit murder and this breaks God's unequivocal commandment in Exodus 20:13.

Fourth, God's purposes are beyond our understanding. We often appeal to God as to why some tragedy has happened to us or

someone we know. Yet listen to Job's reply to the Lord in Job 42:1-3:

I know that you can do all things; no plan of yours can be thwarted. [You asked,] 'Who is this that obscures My counsel without knowledge?' Surely I spoke of things I did not understand, things too wonderful for me to know.

We forget that our minds are finite and His is infinite. We cannot always expect to understand all of what God is about. To think that we can step in and declare that someone's life is no longer worth living is simply not our decision to make. Only God knows when it is time. In Isaiah 55:8-9 the Lord declares, "For my thoughts are not your thoughts, neither are your ways my ways. As the heavens are higher than the earth, so are my ways higher your ways and my thoughts higher than your thoughts."

Fifth, our bodies belong to God anyway. Paul reminds us in 1 Corinthians 6:15,19 that we are members of Christ's body and that we have been bought with a price. Therefore we should glorify God with our bodies. The only one to receive glory when someone requests doctor-assisted suicide is not God, not the doctor, not even the family but the patient for being willing to "nobly" face the realities of life and "unselfishly" end everyone else's misery. There is no glory for God in this decision.

Lastly, suffering draws us closer to God. In light of the euthanasia controversy, listen to Paul's words from 2 Corinthians 1:8:

We were under great pressure, far beyond our ability to endure, so that we despaired even of life. Indeed, in our hearts we felt the sentence of death. But this happened that we might not rely on ourselves but on God, who raises the dead.

Not only does He raise the dead but there is nothing that can separate us from His love (Romans 8:38). For an inspiring and thoroughly biblical discussion of the euthanasia issue, read Joni Earickson Tada's book *When is it Right to Die?* (Zondervan, 1992). Her testimony and clear thinking is in stark contrast to the conventional wisdom of the world today. We must do the same.

What Will You Do? What Can You Do?

The Christian Medical and Dental Society has produced an excellent resource on physician-assisted suicide titled *The Battle for Life*. [\(9\)](#) As a part of the package they provide several cases to test your grasp of the principles involved and to help Christians be aware of the tough decisions that have to be made. I would like to share two of those with you and then discuss what you can do now to combat the "right to die" forces in this country.

Here is test case one:

Your 80 year-old grandmother has been fighting cancer for some time now and feels the emotional strain. She feels like she'll become a burden to the family. Her doctor notes that she seems to have lost her desire to live. Should she be able to have her doctor give her a prescription expressly designed to kill her?

This is precisely what the courts have legalized in recent months and precisely what God's word says is wrong. It is wrong because it would be taking her life into our hands and violating God's sovereignty. Because physician-assisted suicide goes beyond letting someone die naturally to actually causing the death, it violates God's commandment, You shall not murder. There is a clear distinction between allowing death to take its natural course in someone who is clearly dying with no hope of a cure, and taking specific measures to

end someone's life. There comes a time when the body is imminently dying. Bodily functions begin to shut down. At this point, people should be made as comfortable as possible, be supported and encouraged by their family and doctors, and allowed to die. This is death with dignity. Taking a lethal injection or breathing poisonous carbon monoxide takes life out of God's hands and into our own.

Test case number two:

Your spouse has an incurable fatal disease, has lost control of bodily functions and is unable to communicate. Special treatment and equipment can extend your spouse's life for a few weeks or even months but will involve much pain and exhaustion. Would it be morally right for you to not arrange for the treatment?

Many would accept a decision not to arrange for treatment because that would not be killing but simply allowing death to take its natural course. Such decisions are not always clear-cut, however, and a physician and family members must take into account the pros and cons of intervention versus a faster natural death. Sometimes we rationalize that we need to keep the patient alive as long as possible because God may still work a miracle. But just how much time does God need to work a miracle? If God is going to intervene He will do so on His time and not ours.

Now that we have a better understanding of the issues, you may be wondering just what we can do about this threat among us. Three things:

Pray – Pray that God will turn the hearts of people back to Himself and back to protecting life. Pray for righteousness and justice in our legal system, that we enact laws that preserve life, punish the guilty and protect the innocent.

Speak Out – Present this information to other groups. Talk

with your friends and family and discuss the reasons for protecting life. Contact your state and federal legislators and tell them to stand against physician-assisted suicide.

Reach Out – Visit the elderly, care for those who can't care for themselves, comfort the sick. Consider joining or starting a church ministry to the elderly, handicapped, or other individuals with special needs. As Christians we must lead the way with our hearts and actions and not just our words. If we devote our energies to providing quality and loving care and effective pain control, the euthanasia issue will die from a lack of interest.

Notes

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8. Robin Bernhoft, M.D. 1995. Quoted in *Euthanasia: False Light*. Produced by IAETF, P.O. Box 760, Steubenville, OH 43952. Running time: 14:48.

9. *The Battle for Life* is an educational resource kit produced by the Christian Medical and Dental Society. The Kit includes an award winning video, *Euthanasia: False Light*, a leader's presentation guide with discussion questions, handouts for Christian and secular audiences, overhead transparencies, Biblical principles summary, research synopsis, cassette tape of public service announcements, and bulletin inserts. The Kit is available from the Christian Medical and Dental Society, P.O. Box 5, Bristol, TN 37621, Phone (615) 844-1000, FAX: (615) 844-1005. The retail price for the complete kit is \$30.

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World Population

The battle to feed all of humanity is over. In the 1970s the world will undergo famines; hundreds of millions of people are going to starve to death in spite of any crash programs embarked upon now.

So predicted Stanford professor Paul Erhlich in his widely influential 1968 book *The Population Bomb*. It sold more than three million copies but its many predictions of global catastrophe never came true. Most famines in the 70s and 80s

were in African countries saddled with Marxist governments or political turmoil.

Has Erhlich admitted these errors? No, in 1989 he wrote *The Population Explosion*. Without comment on his past mistakes he merely moves them into the future again, like those who predict the end of the world. Erhlich wrote,

The Population Bomb tried to alert people to the connection of population growth to such events...but society has turned a deaf ear. Meanwhile, a largely prospective disaster has turned into the real thing... There still may be time to limit the scope of the impending catastrophe, but not much time.

Are we really that close to disaster? In September of 1989 the *Scientific American* published a series of articles on "Managing Planet Earth." While somewhat pessimistic in tone, they are generally balanced in their reviews. In an article on "Strategies for Agriculture" the authors conclude, "World food production could grow significantly more slowly than the current rate and there would still be enough food for 10 million mouths by the time they arrive."

In 1968 Erhlich forecast "[I]f...our population growth, and our water use continue, in 1984 the United States will quite literally be drying up." He also declared "Lake Erie has died... Lake Michigan will soon follow it in extinction." In fact, Lake Erie has been reclaimed, and we have not exactly dried up either.

In 1980 Julian Simon, an advocate of population growth to fuel economic growth, bet Paul Erhlich \$1,000 that prices of five non-renewable metals would go down. For years, Ehrlich and others had been prophesying that the world would soon run out of many metals, halting industrial growth. They claimed that the world's supplies of oil and gas would soon be exhausted and the West would be subjected to crippling shortages. In 1990 Erhlich quietly paid Simon the \$1,000. Not only had the

price of all five metals dropped, but the known world reserves has gone up!

In his 1989 book, *The Population Explosion*, Erhlich not only continues to predict apocalyptic devastation, but he connects population growth to many social problems we are currently facing. Most people are unaware," he writes, "of the role that overpopulation plays in many of the problems oppressing them... Visitors to our nation's capital find homeless people sleeping in the park opposite the White House, and drug abuse and crime sprees fill the evening news. News about the AIDS epidemic seems to be everywhere."

It is certainly true that homelessness and AIDS are terrible problems, but to blame them on overpopulation in America seems either a display of great ignorance (unlikely, as Erhlich is a Stanford professor) or willful misinformation.

Are There Really Too Many People?

In the book of Genesis, Adam and Eve were given the command to multiply and fill the earth. In Genesis 9 Noah is given the same charge. We must consider the rest of the creation as we determine if we have yet fulfilled that command. But world population is not the problem.

We share the planet with 5.7 billion people. If one could stand all the people in the world, men, women and children two feet apart, how much of the world would they take up? All of Africa? All of North America? New York state? If every person alive today stood two feet apart they would fill less than the area of Dallas County! And there would still be room for all the buildings! If the world's people were put together into families of four living on 50' by 100' lots, they could all live in the state of Texas, with more than seven thousand square miles left over. So the total number of people is not the real problem, at least at this point.

One of the statements one hears with depressing regularity in discussions of world population is "If the present rate continues. ..." But in fact the "present rate" is almost never continuing. Consider a frequently used figure, the doubling time for a country. This is the time it takes for a nation of 100 million people to reach 200 million. It is also a measure of how fast new food supplies must be found. The faster the doubling time the more urgent the need for agricultural development.

In 1968 the world's doubling time was about every 35 years. This was frequently used as the basis for pronouncements that "if the present rates continue" the world will be faced with mass starvation in some small number of years.

But the "present rate" was already declining, and the world now doubles about every 82 years. And more conservative scholars had pointed this out years ago. As the standard of living of a country increases, its doubling time also increases. Thus the developed nations are close to stability now, and as less developed nations become more industrialized their population growth also slows. That is the basis on which many experts predict that the world population will stabilize at about ten to eleven billion people.

Malthus's essay "On the Principle of Population," has, as he himself said, "a melancholy hue" about it. It was Malthus, with his view that human populations would soon overtake food production, who inspired the labeling of economics as the "dismal science." But was Malthus right?

Malthus assumed that food supplies would always limit population growth. But in the two hundred years since he wrote, this has not been the case. By one means or another farmers and agricultural scientists have always found a way to increase farm production to keep up with population growth. But we have yet to find efficient ways to get food from where it is produced to where it is needed most.

One Christian has seriously suggested that old oil tankers, which now sit unused because of the huge world supply of oil, could be put back into service cheaply transporting grain from producers to consumers.

The fact that we have 5.7 billion people in the world is not why we have starving people. We have the surplus food to feed all the world's people. What we do not have are stable governments and economic opportunities that allow people to earn a fair wage for their labor.

Alarmism and Faulty Predictions

In his 1968 book *The Population Explosion*, Paul Erhlich announces the approaching food crisis. "'Then, in 1965-66 came the first dramatic blow...mankind suffered a shocking defeat in...the war on hunger.'" In 1966, while the population of the world increased by some 70 million people, there was no compensatory increase in food production." He continues by laying out likely scenarios of the world being rocked by food rebellions that will lead to nuclear war and the devastation of the planet, possibly leaving cockroaches as the most intelligent creatures on earth.

Fortunately Erhlich was wrong. Food production continued to increase and more than keep pace with the population. So what did Erhlich learn?

In 1989 he wrote another book, *The Population Explosion*. Doom was again close: "In 1988, for the first time since World War II, the United States consumed more grain than it grew...only the presence of large carryover stocks prevented a serious food crisis. It is not clear how easy it will be to restore those stocks."

Again, thankfully, Erhlich was wrong. By 1990, world grain production was up 50% from 1988! And it has continued to increase to the present.

Erhlich's inaccurate prophecies are numerous. In 1968 he quotes Louis H. Bean approvingly: "My examination of the trend of India's grain production over the last eighteen years leads me to the conclusion that the present 1967 1968 production...is at a maximum level." But in seven years India increased its grain production by nearly 26%! By 1992 it had increased it 112%!

Famines are the exception in most countries, and even then absolute lack of food is usually not the problem. In a *Scientific American* article on world population one author says: "Food surpluses exist in many nations, and even when famines do occur the cause is much less the absence of food than its maldistribution which is often accentuated by politics and civil war, as in the Sudan." This passing comment touches on the real problem. Most famines in the last twenty years are a direct result of internal wars in African nations.

Whether in Ethiopia, Sudan, or Somalia, the devastating famines and the hopeless faces of dying children we have all seen on TV are the result of politics. As one segment of the population wars against another, starvation is often a political weapon. And in each of the famine-torn countries of Africa one can show that it has been disrupted distribution more than low food production that has caused people to starve to death.

The Bible itself gives evidence that population pressures do not cause famines. When is the first famine in the Bible? In Abraham's time, when the world population could not have been a problem. There have always been famines, but wise leaders have also known how to prepare for famines, as did Joseph later in Egypt.

Many researchers expect the world's population to level off between ten and eleven billion people. Two specialists predicted that "world food production could grow significantly more slowly than the current rate, and there would still be

enough food for 10 billion mouths by the time they come.”

The earth can provide all the food needed for the foreseeable future. So why are so many saying we must take powerful measures, like widespread abortion, to control world population?

Environmentalism and World Population

One of the driving forces behind much of the population explosion movement is that of environmental concern. People are afraid that the earth is being rapidly ruined, and they are sure that world population is one of the worst problems. Unfortunately there is some truth to this. There are areas in the world where too many people have been squeezed into one place, or where too many animals are grazing the grass to the ground. But these happen because other people do not care to help. The environment is damaged when people must choose between death by starvation and cutting down trees or overgrazing fields. What we need to protest is the way the people are treated, not their existence.

Many of the role models put forward by the environmental zealots often have very mixed messages. Paul Erhlich praises Prince Philip of Great Britain for having “taken courageous stands in the population issue and its connection to environmental problems.” But this is the same Prince Philip who, when asked what he would like to be reincarnated as, replied: a “killer virus to lower human population levels.” Certainly a princely thing to say.

There are also ecological movements that hate people. The Deep Ecology movement is one such loosely organized movement. Groups like Green Peace, Earth First!, and the Animal Liberation Front tend to see the human race as a cancer on the environment, something to be suspected and tolerated, but only in small numbers. Some want to see no more than 250 million people on earth; others wouldn't mind if humans died out

altogether. These people see any large population as a problem, and are ready to take action to make the earth "right" again. Others have openly said that the AIDS virus is a good thing in that it will eliminate at least some people who are ruining the environment. Often the extreme positions of groups like these make other ecological organizations seem almost conservative by comparison.

Much of the time, people accept the argument that the earth is too crowded because that is all they hear. The media are usually not interested in reasoned, factual responses to problems because they lack the shock appeal that gets people to tune in, or read a paper, or buy a magazine. Thus, TV is filled with those who have extreme views, or who can speak eloquently about the latest crisis.

So how can Christians make a difference in all of this confusion? First, by actually being involved in caring for the creation God has given us charge of. Too many of us read in our Bibles about how God created the world and cares for it, but fail to act as if it were really true. Let us be actively involved in saving the creation, and then we may earn the right to speak about why we are doing it.

Most Christians were slow in protesting abortion; so too many of us have been slow in showing an active concern for the environment. The earth that God created can provide places to live and food for all that God has made. But just as we must take care of our own houses if we want them to last, so too we must take care of the earth God has given us to live in.

A Christian Response

The plight of starving people in other countries seems to be like many other major world problems so immense and complicated that we feel we can do little or nothing about them. We often feel overcome by the task before we even start. How should we begin? What should we do?

One stock statement of the environmental movement is "Think globally, act locally." As Christians we should change this to "Pray globally, act locally." Because our God has created the whole world, we, too, are to be concerned and to pray for it. Second, we can also show our concern by how we act in our own communities. And finally, we can give to those organizations that can act as our hands in other places.

Prayer is always our most powerful weapon. We need to be praying that God would make us sensitive to the needs of the world. Pray that God will help us be willing to give of what we have in order to help others. Pray that our lives will be an example to others of a real concern for the poor and hungry, just the way Jesus' own life was.

We can also encourage our churches to consider issues like world population and caring for the creation in the larger picture of biblical teaching. Instead of "Earth Day," why not "Creation Day?" Our churches should teach how stewardship can be lived in daily activities.

One good way to be involved is to give to a relief fund that not only feeds the hungry but also helps people develop the skills to farm more efficiently. Many relief organizations are involved in community programs such as improving the local water supply or teaching new crop rotation techniques. Seek out these organizations and give to them.

Get alternative sources of information. Best-selling books and TV programs usually follow the most sensational sources of what's new. Find books that cover world hunger from different perspectives. Look in your local library. Write to Probe.

The problem in the world today is not that there are too many people. The earth can feed many more mouths than it currently does. But we must pray and work for justice to prevail in many of the countries that now suffer famines caused by political wars. More than enough food is produced each year to feed all

the people in the world. But we do need to increase the standard of living and develop agricultural resources in a way that does not destroy the land in the process. We need Christians trained in agriculture and resource management.

Why not consider a career in agriculture? It would be very difficult to get into Saudi Arabia as a missionary. But if you go as an agricultural consultant or an irrigation specialist you will be greeted with open arms. "Sustainable agriculture" is the need of the future, and if you train in this field you will be able to go to almost any less-developed country in the world. What a great way to be involved in a greater harvest of both food and souls for the kingdom of God.

When we look out at the world we must not just see teeming hordes of people but men and women for whom Christ gave His life. And as we consider our responsibility to the world around us we need to remember what the Psalmist said: "The earth is the LORD's and all it contains" (Ps. 24:1).

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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.

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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: “[0]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.

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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).