The Impotence of Darwinism: A Christian Scientist Looks at the Evidence

Dr. Ray Bohlin looks at some of the tenets of Darwinism and finds them lacking support in the real world. Speaking from a biblical worldview perspective, he finds that the gaps and inconsistencies in current Darwinian thinking should demand that different theories be examined and evaluated.

This article is also available in Spanish.

Darwinism, Design, and Illusions

Darwinian evolution has been described as a universal acid that eats through everything it touches.{1} What Daniel Dennett meant was that evolution as an idea, what he called "Darwin's dangerous idea," is an all-encompassing worldview. Darwinism forms the basis of the way many people think and act. It touches everything.

What Darwin proposed in 1859 was simply that all organisms are related by common descent. This process of descent or evolution was carried out by natural selection acting on variation found in populations. There was no guidance, no purpose, and no design in nature. The modern Neo-Darwinian variety of evolution identifies the source of variation as genetic mutation, changes in the DNA structure of organisms. Therefore, evolution is described as the common descent of all organisms by mutation and natural selection, and is assumed to be able to explain everything we see in the biological realm.

This explanatory power is what Dennett refers to as "Darwin's dangerous idea." Darwinism assumes there is no plan or purpose

to life. Therefore, everything we see in the life history of an organism, including human beings, derives in some way from evolution, meaning mutation and natural selection. This includes our ways of thinking and the ways we behave. Even religion is said to have arisen as a survival mechanism to promote group unity that aids individual survival and reproduction.

Since evolution has become the cornerstone of the dominant worldview of our time—scientific naturalism—those who hold to it would be expected to take notice when somebody says it's wrong! A growing number of scientists and philosophers are saying with greater confidence that Darwinism, as a mode of explaining all of life, is failing and failing badly. Much of the criticism can be found in the cornerstone of evolution, mutation and natural selection and the evidence for its pervasiveness in natural history. One of the biggest stumbling blocks is evolution's repudiation of any form of design or purpose in nature. Even the staunch Darwinist and evolutionary naturalist, Britain's Richard Dawkins, admits, "Biology is the study of complicated things that give the appearance of having been designed for a purpose."{2}

No one denies that biological structures and organisms look designed; the argument is over what has caused this design. Is it due to a natural process that gives the appearance of design as Dawkins believes? Or is it actually designed with true purpose woven into the true fabric of life? Darwinian evolution claims to have the explanatory power and the evidence to fully explain life's apparent design. Let's explore the evidence.

The Misuse of Artificial Selection

It is assumed by most that evolution makes possible almost unlimited biological change. However, a few simple observations will tell us that there are indeed limits to

change. Certainly the ubiquitous presence of convergence suggests that biological change is not limitless since certain solutions are arrived at again and again. There appear to be only so many ways that organisms can propel themselves: through water, over land or through the air. The wings of insects, birds and bats, though not ancestrally related, all show certain design similarities. At the very least, various physical parameters constrain biological change and adaptation. So there are certainly physical constraints, but what about biological constraints?

Darwin relied heavily on his analogy to *artificial* selection as evidence of *natural* selection. Darwin became a skilled breeder of pigeons, and he clearly recognized that just about any identifiable trait could be accentuated or diminished, whether the color scheme of feathers, length of the tail, or size of the bird itself. Darwin reasoned that natural selection could accomplish the same thing. It would just need more time.

But artificial selection has proven just the opposite. For essentially every trait, although it is usually harboring some variability, there has always been a limit. Whether the organisms or selected traits are roses, dogs, pigeons, horses, cattle, protein content in corn, or the sugar content in beets, selection is certainly possible. But all selected qualities eventually fizzle out. Chickens don't produce cylindrical eggs. We can't produce a plum the size of a pea or a grapefruit. There are limits to how far we can go. Some people grow as tall as seven feet, and some grow no taller than three; but none are over twelve feet or under two. There are limits to change.

But perhaps the most telling argument against the usefulness of artificial selection as a model for natural selection is the actual process of selection. Although Darwin called it *artificial* selection, a better term would have been *intentional* selection. The phrase "artificial selection" makes

it sound simple and undirected. Yet every breeder, whether of plants or animals is always looking for something in particular. The selection process is always designed to a particular end.

If you want a dog that hunts better, you breed your best hunters hoping to accentuate the trait. If you desire roses of a particular color, you choose roses of similar color hoping to arrive at the desired shade. In other words, you plan and manipulate the process. Natural selection can do no such thing. Natural selection can only rely on what variation comes along. Trying to compare a directed to an undirected process offers no clues at all.

Most evolutionists I share this with usually object that we do have good examples of natural selection to document its reality. Let's look at a few well-known examples.

The Real Power of Natural Selection

It should have been instructive when we had to wait for the 1950s, almost 100 years after the publication of *Origin of Species*, for a documentable case of natural selection, the famous Peppered Moth (*Biston betularia*). The story begins with the observation that, before the industrial revolution, moth collections of Great Britain contained the peppered variety, a light colored but speckled moth. With the rise of industrial pollution, a dark form or melanic variety became more prevalent. As environmental controls were enacted, pollution levels decreased and the peppered variety made a strong comeback.

It seemed that as pollution increased, the lichens on trees died off and the bark became blackened. The previously camouflaged peppered variety was now conspicuous and the previously conspicuous melanic form was now camouflaged. Birds could more readily see the conspicuous variety and the two

forms changed frequency depending on their surrounding conditions. This was natural selection at work.

There were always a few problems with this standard story. What did it really show? First, the melanic form was always in the population, just at very low frequencies. So we start with two varieties of the peppered moth and we still have two forms. The frequencies change but nothing new has been added to the population. Second, we really don't know the genetics of industrial melanism in these moths. We don't have a detailed explanation of how the two forms are generated. And third, in some populations, the frequencies of the two moths changed whether there was a corresponding change in the tree bark or not. The only consistent factor is pollution.{3} The most well-known example of evolution in action reduces to a mere footnote. Regarding this change in the Peppered Moth story, evolutionary biologist Jerry Coyne lamented that "From time to time evolutionists re-examine a classic experimental study and find, to their horror, that it is flawed or downright wrong."{4}

Even Darwin's Finches from the Galapagos Islands off the coast of Ecuador tell us little of large scale evolution. The thirteen species of finches on the Galapagos show subtle variation in the size and shape of their beaks based on the primary food source of the particular species of finch. Jonathan Wiener's *Beak of the Finch*{5} nicely summarizes the decades of work by ornithologists Peter and Rosemary Grant. While the finches do show change over time in response to environmental factors (hence, natural selection), the change is reversible! The ground finches (six species) do interbreed in the wild, and the size and shape of their beaks will vary slightly depending if the year is wet or dry (varying the size seeds produced) and revert back when the conditions reverse. There is no directional change. It is even possible that the thirteen species are more like six to seven species since hybrids form so readily, especially among the ground finches,

and survive quite well. Once again, where is the real evolution?

There are many other documented examples of natural selection operating in the wild. But they all show that, while limited change is possible, there are limits to change. No one as far as I know questions the reality of natural selection. The real issue is that examples such as the Peppered Moth and Darwin's Finches tell us nothing about evolution.

Mutations Do Not Produce Real Change

While most evolutionists will acknowledge that there are limits to change, they insist that natural selection is not sufficient without a continual source of variation. In the Neo-Darwinian Synthesis, mutations of all sorts fill that role. These mutations fall into two main categories: mutations to structural genes and mutations to developmental genes. I will define structural genes as those which code for a protein which performs a maintenance, metabolic, support, or specialized function in the cell. Developmental genes influence specific tasks in embryological development, and therefore can change the morphology or actual appearance of an organism.

Most evolutionary studies have focused on mutations in structural genes. But in order for large scale changes to happen, mutations in developmental genes must be explored. Says Scott Gilbert:

> *"To study large changes in evolution, biologists needed to look for changes in the regulatory genes that make the embryo, not just in the structural genes that provide fitness within populations."*[{6}]

We'll come back to these developmental mutations a little later.

Most examples we have of mutations generating supposed evolutionary change involve structural genes. The most common example of these kinds of mutations producing significant evolutionary change involves microbial antibiotic resistance. Since the introduction of penicillin during World War II, the use of antibiotics has mushroomed. Much to everyone's surprise, bacteria have the uncanny ability to become resistant to these antibiotics. This has been trumpeted far and wide as real evidence that nature's struggle for existence results in genetic change—evolution.

But microbial antibiotic resistance comes in many forms that aren't so dramatic. Sometimes the genetic mutation simply allows the antibiotic to be pumped out of the cell faster than normal or taken into the cell more slowly. Other times the antibiotic is deactivated inside the cell by a closely related enzyme already present. In other cases, the molecule inside the cell that is the target of the antibiotic is ever so slightly modified so the antibiotic no longer affects it. All of these mechanisms occur naturally and the mutations simply intensify an ability the cell already has. No new genetic information is added.{7}

In addition, genetically programmed antibiotic resistance is passed from one bacteria to another by special DNA molecules called plasmids. These are circular pieces of DNA that have only a few genes. Bacteria readily exchange plasmids as a matter of course, even across species lines. Therefore, rarely is a new mutation required when bacteria "become" resistant. They probably received the genes from another bacterium.

Most bacteria also suffer a metabolic cost to achieve antibiotic resistance. That is, they grow more slowly than wild-type bacteria, even when the antibiotic is not present. And we have never observed a bacterium changing from a single-celled organism to a multicellular form by mutation. You just get a slightly different bacterium of the same species. The great French evolutionist Pierre Paul-Grassé, when speaking

about the mutations of bacteria said,

> *"What is the use of their unceasing mutations if they do not change? In sum the mutations of bacteria and viruses are merely hereditary fluctuations around a median position; a swing to the right, a swing to the left, but no final evolutionary effect."{8}*

What I have been describing so far is what is often referred to as microevolution. Evolutionists have basically assumed that the well-documented processes of microevolution eventually produce macroevolutionary changes given enough time. But this has been coming under greater scrutiny lately, even by evolutionists. There appears to be a real discontinuity between microevolution and the kind of change necessary to turn an amoeba-like organism into a fish, even over hundreds of millions of years.

Below is just a quick sampling of comments and musings from the current literature.

> "One of the oldest problems in evolutionary biology remains largely unsolved. . . . historically, the neo-Darwinian synthesizers stressed the predominance of micromutations in evolution, whereas others noted the similarities between some dramatic mutations and evolutionary transitions to argue for macromutationism."{9}

> "A long-standing issue in evolutionary biology is whether the processes observable in extant populations and species (microevolution) are sufficient to account for the larger-scale changes evident over longer periods of life's history (macroevolution)."{10}

> "A persistent debate in evolutionary biology is one over the continuity of microevolution and macroevolution—whether macroevolutionary trends are governed by the principles of microevolution."{11}

While each of the above authors does not question evolution directly, they are questioning whether what we have been studying all these years, microevolution, has anything to do with the more important question of what leads to macroevolution. And if microevolution is not the process, then what is?

Natural Selection Does Not Produce New Body Plans

The fundamental question which needs addressing is, How have we come to have sponges, starfish, cockroaches, butterflies, eels, frogs, woodpeckers, and humans from single cell beginnings with no design, purpose or plan? All the above listed organisms have very different body plans. A body plan simply describes how an organism is put together. So can we discover just how all these different body plans can arise by mutation and natural selection? This is a far bigger and more difficult problem than antibiotic resistance, a mere biochemical change. Now we have to consider just how morphological change comes about.

The problem of macroevolution requires developmental mutations. Simply changing a protein here and there won't do it. We somehow have to change how the organism is built. Structural genes tend to have little effect on the development of a body plan. But the genes that control development and ultimately influence the body plan tend to find their expression quite early in development. But this is a problem because the developing embryo is quite sensitive to early developmental mutations. Wallace Arthur wrote:

> "Those genes that control key early developmental processes are involved in the establishment of the basic body plan. Mutations in these genes will usually be extremely disadvantageous, and it is conceivable that they are always so."{12}

But these are the mutations needed for altering body plans. However, evolutionists for decades have been studying the wrong mutations. Those dealing with structural genes, microevolution, only deal with how organisms survive as they are, it doesn't tell us how they got to be the way they are. Optiz and Raft note that

> "The Modern Synthesis is a remarkable achievement. However, starting in the 1970's, many biologists began questioning its adequacy in explaining evolution. . . . Microevolution looks at adaptations that concern only the survival of the fittest, not the arrival of the fittest."{13}

Wallace Arthur:

> "In a developmentally explicit approach it is clear that many late changes can not accumulate to give an early one. Thus if taxonomically distant organisms differ right back to their early embryogenesis, as is often the case, the mutations involved in their evolutionary divergence did not involve the same genes as those involved in the typical speciation event."{14}

To sum up the current dilemma, significant morphological change requires early developmental mutations. But these mutations are nearly universally disadvantageous. And microevolution, despite its presence in textbooks as proof of evolution, actually tells us precious little about the evolutionary process. If these developmental mutations that can offer an actual benefit are so rare, then macroevolution would be expected to be a slow and difficult, yet bumpy process. Indeed, Darwin expected that "As natural selection acts solely by accumulating slight, successive, favorable variations, it can produce no great or sudden modifications; it can only act in short and slow steps."

The origin of body plans is wrapped up in the evidence of paleontology, the fossils and developmental biology. What does

the fossil record have to say about the origin of basic body plans? When we look for fossils indicating Darwin's expected slow gradual process we are greatly disappointed. The Cambrian Explosion continues to mystify and intrigue. The Cambrian Explosion occurred around 543 million years ago according to paleontologists. In the space of just a few million years, nearly all the animal phyla make their first appearance.

> "The term 'explosion' should not be taken too literally, but in terms of evolution it is still very dramatic. What it means is rapid diversification of animal life. 'Rapid' in this case means a few million years, rather than the tens or even hundreds of millions of years that are more typical . . .{15}

Prior to the Cambrian, (550-485 million years ago), during the Vendian (620-550 million years ago) we find fossil evidence for simple sponges, perhaps some cnidarians and the enigmatic Ediacaran assemblage. For the most part we find only single cell organisms such as bacteria, cyanobacteria, algae, and protozoan. Suddenly, in the Cambrian explosion (545-535 million years ago) we find sponges, cnidarians, platyhelminthes, ctenophores, mollusks, annelids, chordates (even a primitive fish), and echinoderms.

While many animal phyla are not present in the Cambrian, they are mostly phyla of few members and unlikely to be fossilized in these conditions. James Valentine goes further in saying that "The diversity of body plans indicated by combining all of these Early Cambrian remains is very great. Judging from the phylogenetic tree of life, all living phyla (animal) were probably present by the close of the explosion interval."{16} Later Valentine assures us that the fossil record of the explosion period is as good as or better than an average section of the geologic column.{17} So we just can't resort to the notion that the fossil record is just too incomplete.

In the Cambrian Explosion we have the first appearance of most

animal body plans. This sudden appearance is without evidence of ancestry in the previous periods. This explosion of body plans requires a quantum increase of biological information. New genetic information and regulation is required.{18} Mutations at the earliest stages of embryological development are required and they must come in almost rapid fire sequence. Some have suggested that perhaps the genetic regulation of body plans was just more flexible, making for more experimentation. But we find some of the same organisms in the strata from China to Canada and throughout the period of the explosion. These organisms do not show evidence of greater flexibility of form.

The type of mutation is definitely a problem, but so is the rate of mutation. Susumo Ohno points out that "it still takes 10 million years to undergo 1% change in DNA base sequences. . . . [The] emergence of nearly all the extant phyla of the Kingdom Animalia within the time span of 6-10 million years can't possibly be explained by mutational divergence of individual gene functions."{19}

Darwinism would also require early similarities between organisms with slow diversification. Phyla should only become recognizable after perhaps hundreds of millions of years of descent with modification. Yet the great diversity appears first with gradual drifting afterward, the opposite of what evolution would predict. Again some suggest that the genetic structure of early organisms was less constrained today, allowing early developmental mutations with less severe results. But there would still be some developmental trajectory that would exist so the selective advantage of the mutation would have to outweigh the disruption of an already established developmental pathway.

But each of these speculations is unobservable and untestable. It's quite possible that developmental constraints may be even more rigid with fewer genes. But even if the constraints were weaker, then there should be more variability in morphology of

species over space and time. But as I said earlier, the Cambrian fauna are easily recognizable from the early Cambrian deposits in China and Greenland to the middle Cambrian deposits of the Burgess Shale. There is no testable or observational basis for hypothesizing less stringent developmental constraints.

This stunning burst of body plans in the early Cambrian and the lack of significant new body plans since the Cambrian indicate a limit to change. Evolutionary developmental biologist Rudolf Raff told *Time* magazine over ten years ago that "There must be limits to change. After all, we've had these same old body plans for half a billion years."{20} Indeed, perhaps these limits to change are far more pervasive and genetically determined than Raff even suspects.

Along the way, functional organisms must form the intermediate forms. But even the functionality of these intermediate organisms transforming from one body plan to another has long puzzled even the most dedicated evolutionists. S. J. Gould, the late Harvard paleontologist, asked,

> "But how can a series of reasonable intermediates be constructed? . . . The dung-mimicking insect is well protected, but can there be any edge in looking only 5 percent like a turd?"{21}

With his usual flair, Gould asks a penetrating question. Most have no problem with natural selection taking a nearly completed design and making it just a little bit more effective. Where the trouble really starts is trying to create a whole new design from old parts. Evolution has still not answered this critical question. I fully believe that evolution is incapable of answering this question with anything more than "I think it can." However, unlike the little train that could, it will take far more than willpower to come up with the evidence.

In this brief discussion I haven't even mentioned the challenges of Michael Behe's irreducible complexity,{22} William Dembski's specified complexity,{23} and a host of other evolutionary problems and difficulties. This truly is a theory in crisis.

Notes

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6. Scott F. Gilbert, "Opening Darwin's black box: teaching evolution through developmental genetics," *Nature Reviews Genetics* 4 (2003): 735-741.
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12. Wallace Arthur, *The Origin of Animal Body Plans* (Cambridge: Cambridge University Press, 1997), 14.
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16. James Valentine, *On the Origin of Phyla* (Chicago: University of Chicago Press, 2004), 183.
17. Ibid., p. 194.
18. Stephen C. Meyer, "The origin of biological information and the higher taxonomic categories," *Proceedings of the Biological Society of Washington* 117 (2), (2004):213-239.
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20. Rudolf Raff, quoted in "Then Life Exploded," by J. Madeleine Nash, *Time*, Dec. 4, 1995, p. 74.
21. S. J. Gould, *Ever Since Darwin,* 1977, 104.
22. Michael Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution* (New York: Free Press, 1996).
23. William A. Dembski, *No Free Lunch: Why Specified Complexity Cannot Be Purchased without Intelligence,* (Lanham, Maryland: Roman and Littlefield, 2002).

"What is Inductive Reasoning?"

I took an aptitude test, in fact two of them, in which I tested very low in inductive reasoning. Apparently, this is a reasoning in which lawyers, doctors, and scientists, among other people, tend to have very strong aptitudes. What do you know about this reasoning process? What does it look like? If God has not made one strong in it, how should one compensate

for it? (In one of the two tests I took, the administrator told me I needed to seek out people who were gifted in this area before I made major decisions.) I figured you may a lot more about this and use it quite often considering your scientific background.

Inductive reasoning uses facts and observations to reason to a general conclusion.

Induction: The reasoning process in which generalizations, laws, or principles are formed from the observation of particular cases; reasoning that moves from the part to the whole, from the particular to the general. Most human reasoning is inductive or empirical in character since it consists of generalizations based on our sense experience.

Ray Bohlin is a person
Ray Bohlin has feelings
Joe Blow is a person
Joe Blow has feelings
Sue Bohlin is a person
Sue Bohlin has feelings
Therefore, probably all persons have feelings.

The conclusion is not certain but likely. The premises provide some support for the conclusion

The conclusion is not itself a fact but a generalization or trend. For instance, Darwin observed that the shapes of the carapaces (shells) of the tortoises on the Galapagos were specific to each island. From this he reasoned (inductively) that perhaps they were all related and the specific differences were due to initial variations present in the first tortoises that occupied each island. His conclusion was just an idea, an analysis of a possible trend or connection. From this he would need to derive experiments designed to gather more specific data from which he would hopefully reason deductively to a specific conclusion. If this is true, and if

this is true, and if this is true, then this must be true.

Deduction: The reasoning process in which conclusions are drawn from accepted premises. The premises are more general than the conclusion, so deduction is often defined as reasoning from the whole down to the part or from the general to the particular.

All humans are mortal.		Very general
Aristotle is human.		More specific but still general
Therefore, Aristotle is mortal.		Aristotle will die! Quite specific

If the first two are true, the conclusion must be true. The conclusion is certain.

Deductive reasoning reasons to an obvious conclusion that follows logically from the premises. Inductive reasoning takes the observations (facts) and reasons to a possible or general conclusion that is more tentative. Lawyers, doctors, and scientists need this kind of reasoning to solve problems, to take the available facts and determine which direction to take their investigation next. They then need to collect additional facts to confirm their earlier conclusion or even deductively arrive at a definite, firm conclusion.

Some people have a hard time seeing connections between seemingly isolated facts that others see a clear trend from. The tests you took apparently put you in that category.

In my work I see a lot of evidence for intelligent design in the universe and life but the evidence is not so clear as to be able to draw a certain conclusion. I believe I am right, but not 100% certain. I continue to look for additional evidence to make my conclusion more reliable.

This was perhaps more than you bargained for, but I hope it helps. You may need to take some time and read it several

times and come back to it again after a few days to let it percolate a little. I had to do some checking to make sure I got it right so let me know if I can help further.

Respectfully,

Ray Bohlin
Probe Ministries

“What Do You Think About Surrogate Mothering?”

My wife is considering acting as a surrogate mother for a friend who is having difficult with in vitro fertilization. Her embryos won’t implant. Both of us couples are Christians. My wife and I have 3 kids and although she doesn’t want another child for us she is willing to carry one for her friend. What are your thoughts about entering into this relationship?

First, I consider surrogate parenting a very risky venture. Just because your wife is able to intellectually say she will give up the baby to your friends when the time comes, does not mean she will be able to do so emotionally. Carrying a baby for nine months creates a powerful bond that is not easily broken. This is easily seen in teenage mothers who often change their minds about giving their baby up for adoption after birth. The surrogate mom can rationally say and believe “this baby is not mine,” but her emotions find it difficult to believe this after carrying the child for nine months.

Since there is also a relationship among friends here the risk is even greater, because even just a hint of wavering as the

time of birth approaches could be interpreted as betrayal. The mother acting as the surrogate would also be faced with seeing this child regularly and having the pain of separation renewed frequently.

Second, there is the sacrifice of the family of the surrogate mother. Her husband and children will need to endure the difficulties of a pregnant mom and wife for a child that is not theirs. How is this explained to her children particularly? Pregnancy always involves risk and this is asking a lot of the family. All parties would need to seek God's peace before proceeding. If anyone is hesitant, I would not proceed.

Third, I am troubled by the implications of surrogacy to the concept of a couple becoming one flesh through marriage and child-bearing. I would want to be sure of the Lord's leading in this regard because I just have a suspicion that surrogacy may violate this principle by having someone outside the marriage carry a baby from another union.

While I do not see a clear and unambiguous reason to say no, that is my advice due to the number of potential problems and pitfalls. We sometimes have to face difficult decisions with couples dealing with infertility because we seem to say we are unsympathetic to their dilemma. But we must also be realistic to realize that God does not promise that all potential solutions to all our problems are Biblical. Having a child of our own is not promised or demanded. Often a family's unwillingness to adopt is not just rooted in the natural desire to have children but in a selfishness that only wants "our" child.

If it were me, I would not do it.

Respectfully,

Ray Bohlin
Probe Ministries

“Did the Human Genome Project Prove that Darwin Was Right?”

Help! I read Arthur Caplan’s article “Darwin Vindicated!” about the results of the Human Genome Project and it is seriously shaking my faith!

Caplan has never been a friend of Christians or creationists. In this inflammatory article, designed to stimulate public opinion, he has outdone himself. If Darwin were alive today, he would be astounded and humbled by what we now understand about the human genome and the genomes of other organisms. In some respects, it is difficult to know where to begin. So let’s just pick a few of the more glaring statements to help us understand that little else should be trusted.

First, he says, “Eric Lander of the Whitehead Institute in Cambridge, Mass., said that if you look at our genome it is clear that evolution must make new genes from old parts.”

While it may be true that we can see some examples of shared sequences between genes, it is by no means true that we see wholesale evidence of gene duplication throughout the genome. According to Li, et. al., (*Nature* 409, 15 Feb 2001:847-848) less than 4,000 genes belong to superfamilies that show sequences sharing at least 30% of their sequence. Over 25,000 genes demonstrated less than 30% sequence identity, indicating that as much as 62% of the human genes mapped by the Human Genome Project were unique, i.e., not likely the result of gene duplication. Determining that similar genes are the result of gene duplication is tricky business, not the least of which is trying to find out just how duplicated genes (which does occur) ever arrive at a new function. There are lots of guesses out there, but no observable mechanism exists

at this time.

Second, he says, “The core recipe of humanity carries clumps of genes that show we are descended from bacteria. There is no other way to explain the jerry-rigged nature of the genes that control key aspects of our development.”

Not everyone agrees. The complexity of the genome does not mean necessarily that it has been jerry-rigged by evolution. There is still so much we do not know. Caplan is speaking more out of ignorance and assumption than data. “Junk DNA” used to be a common term in genetics circles. Since only about 1.5% of the total human genome sequence codes for actual genes and proteins, the rest was thought to be junk, useless DNA. The term “Junk DNA” is rarely used in academic papers anymore because much of this “junk” is now known to have a purpose, usually a regulatory function. Even the highly repetitive elements are demonstrating patterns that indicate some kind of function. Listen to this comment from Gene Meyers, one of the principal geneticists from Celera Genomics:

> “What really astounds me is the architecture of life,” he said. “The system is extremely complex. It’s like it was designed.” My ears perked up. Designed? Doesn’t that imply a designer, an intelligence, something more than the fortuitous bumping together of chemicals in the primordial slime? Myers thought before he replied. “There’s a huge intelligence there. I don’t see that as being unscientific. Others may, but not me.” (“Human Genome Map Has Scientists Talking About the Divine – Surprisingly low number of genes raises big questions,” Tom Abate, Monday, February 19, 2001, *San Francisco Chronicle*)

Jerry-rigged? Hardly! Confusing at the moment? Certainly! But more likely to reveal hidden levels of complexity than messy jerry-rigging.

Finally, Caplan says, “No one can look at how the book of life

is written and not come away fully understanding that our genetic instructions have evolved from the same programs that guided the development of earlier animals. Our genetic instructions have been slowly assembled from the genetic instructions that made jellyfish, dinosaurs, wooly mammoths and our primate ancestors."

This comes partly from the documenting of fewer genes (30,000-45,000 genes instead of the expected 100,000 or more) and the fact that some of these genes are indeed very similar in nearly all species looked at. Are there similarities? Certainly! Are the similarities only explainable by evolution? Not at all!

First, the fewer genes are not a given number yet since the computer programs used to look for new genes relied on already known gene sequences to spot potential genes. Only crude estimates were used for the possibility of completely novel genes. Even if the number is correct, this means that the organization of the genome is as important as the actual genes. We already know that many genes can be used to make several different proteins through complex patterns of regulation. This only raises the stakes for evolution. More organization, more complexity are the hallmarks of design, not messy natural selection.

Also even though we only have two or three times as many genes as a fruit fly, Svante Paabo, writing in *Science* (Feb. 16, 2001, vol 291, p. 1219) said, "A glimpse of what this will show us comes from considering the fact that about 26,000 to 38,000 genes are found in the draft version of our own genome, a number that is only two to three times larger than the 13,600 genes in the fruit fly genome. Furthermore, some 10% of human genes are clearly related to particular genes in the fly and the worm."

Basic cellular processes require many of the same proteins and therefore the same genes. Even if flies and humans are not

related, why would these genes be expected to be dissimilar? Human engineers frequently reuse common elements because they work. Besides, Paabo states that only 10% of the genes show any relationship. That means 90% do not. Far too much attention has been focused on the similarities and not enough on the differences. I welcome a sequence of the chimpanzee genome because I expect that among the many striking similarities, there will be uniquenesses unexplainable by Darwinian natural selection.

Arthur Caplan simply shows himself to be a part of the evolutionary establishment that appears to be worried by the inroads of intelligent design theory and is fighting back using only authority and bluster. "If I, Arthur Caplan, a bioethicist and Ph.D., say something loud enough and forcefully enough, some will believe it simply because of the position I hold." This strategy is slowing falling apart as the clear and ever increasing weight of the evidence causes more and more people to say, "Wait a minute, these guys (Phil Johnson, William Dembski, Mike Behe, Jonathan Wells, etc.) aren't dummies. Surely they can't be dismissed as easily as that." The bluster and appeals to authority are wearing thin and some are asking hard questions. Some will stop and begin to reevaluate; others, like Caplan, will only shout a little louder and ultimately lose credibility.

Stay tuned.

Respectfully,

Ray Bohlin
Probe Ministries

Cracking of human genome confirms theory of evolution
By Arthur Caplan, Ph.D.
SPECIAL TO MSNBC

Feb. 21, 2001 — The media flubbed the headline for the

biggest news event in the past 50 years of science. The reporters and TV talking heads who crammed the Washington, D.C., press conference on Feb. 12 did understand that the details they were hearing about the human genome offered the story of a lifetime. But, they missed the real headline. Their stories should have simply said, “Darwin vindicated!”

Most reporters ballyhooed the fierce competition between scientists working for the publicly funded Human Genome Project and those employed by the privately funded Celera Genomics Corporation of Rockville, Md., to gain credit for the discovery. Others wondered about the financial implications of allowing human genes to be patented.

Still other headlines were meant to give us pause about whether it would be good or bad to know more about the role genes play in determining our health. Knowing more about our genes, after all, might not be so great in an era in which there is not much guarantee of medical privacy but a pretty good chance of discrimination by insurers and employers against those with “bad” genes.

There were even a couple of headlines that suggested that humanity should not be quite so arrogant since we do not have as many genes as we thought relative to other plants and animals. In fact, as it turns out, we have only twice as many genes as a fruit fly, or roughly the same number as an ear of corn, about 30,000. Reductionism may not be all that it has been cracked up to be by molecular biologists.

But none of these headlines capture the most basic, the most important consequence of mapping out all of our genes. The genome reveals, indisputably and beyond any serious doubt, that Darwin was right—mankind evolved over a long period of time from primitive animal ancestors.

Our genes show that scientific creationism cannot be true. The response to all those who thump their bible and say

there is no proof, no test and no evidence in support of evolution is, “The proof is right here, in our genes.”

Eric Lander of the Whitehead Institute in Cambridge, Mass., said that if you look at our genome it is clear that evolution must make new genes from old parts.

The core recipe of humanity carries clumps of genes that show we are descended from bacteria. There is no other way to explain the jerry-rigged nature of the genes that control key aspects of our development.

No one can look at how the book of life is written and not come away fully understanding that our genetic instructions have evolved from the same programs that guided the development of earlier animals. Our genetic instructions have been slowly assembled from the genetic instructions that made jellyfish, dinosaurs, wooly mammoths and our primate ancestors.

There is, as the scientists who cracked the genome all agreed, no other possible explanation.

Sure the business side of cracking our genetic code is fascinating. And we all need to be sure that our government does not leave us in the genetic lurch without laws to ensure our privacy and protect us against genetic discrimination.

All that, however, is concern for the future. Right now the big news from mapping our genome is that mankind evolved. The theory of evolution is the only way to explain the arrangement of the 30,000 genes and three billion letters that constitute our genetic code.

The history of humanity is written in our DNA. Those who dismiss evolution as myth, who insist that evolution has no place in biology textbooks and our children’s classrooms, are wrong.

The message our genes send is that Charles Darwin was right.

Arthur Caplan, Ph.D., is director of the Center for Bioethics at the University of Pennsylvania in Philadelphia.

“How Should I, as a Non-Christian, React to Creationist Claims?”

Hello, I’m a French science student interested in the creation/evolution debate. I have had no religious upbringing, and don’t take the Gospel as gospel truth, so I guess I must be an Evil Darwinist. Where I live, there doesn’t seem to be a great “debate” about evolution: I haven’t heard of any creationist scientists, besides from when I find Religious sites on the Internet. So I guess we haven’t yet been blessed with Pseudoscientific Creationists. True we have fanatics, but they’re Catholic and tend to be old Nazis dressed in black who want to go back to saying Mass in Latin, so don’t even go near calling themselves scientists. OK I’m being facetious

Anyway, how do you advise me, a non-christian, to react to creationist scientific claims? I hope you’ll provide an answer other than “convert to Christianity” – you won’t get away that easily: If your claims are scientifically sound, I should be able to accept that. However I often find them a mere imitation of the scientific method, a rational method I understand and respect more than your personal interpretation of the Bible.

By the way I worked on Genetic Algorithms a little (programs using genetic mechanisms to solve specific problems), and have

therefore witnessed how complexity and ingenious patterns can arise out of chaos – and how the dominant pattern will switch in a fairly short time, not showing so many intermediate genomes (punctuated equilibrum, generally used to explain holes in the fossil reccord). I am aware that you don't seem to disagree with microevolution, but I don't believe that "micro-" and "macro-" evolution mean anything. You seem only to use that definition by defining "macroevolution" as what can't be witnessed directly at our scale, and is therefore false. Why not "micromechanics" and "macromechanics"?: We can't prove that planets follow Newtonian mechanics, therefore the sun goes around the moon, 'cos I think the Bible says so.

Anyway, what should I think of your site? It seems cunningly made, maybe even honest. I wouldn't mind discussing this.

PS: I hope I get a better answer than "Go look at our site – it contains all the answers you need".

PPS: I hope you don't get too much of these. Actually I wish you get a lot and read them all. I don't want to be a nuisance, I'm just curious.

Thank you for your interesting message. I am glad to know a little of your background and familiarity with our site. I will therefore assume a few things as I talk with you and rely on you to let me know if anything needs clarification. I certainly do believe that the Intelligent Design movement has something to offer science today. I think the contributions of Michael Behe and William Dembski in their books, *Darwin's Black Box* and *The Design Inference,* lay the critical theoretical and evidential groundwork for a scientifically workable theory of design. It is crucial to realize that this does not mean a complete overhaul of science. Design is only meant to allow for design to be a legitimate hypothesis when addressing questions of the origin of complex systems. Some systems will carry the earmarks of design and some will not.

Behe's concept of "irreducible complexity" claims to identify molecular machines within cells that require a design hypothesis due to the fact that they are composed of multiple parts which rely on each other for any activity. Our own experience tells us that when we see such things, like a mousetrap, an intelligence was necessary to put it together. Even things as ridiculous as a Rube Goldberg machine, inefficient and wasteful as they appear, are still designed. Arguments about the intent and intelligence of the "designer" are theological and superfluous to the scientific merit of the hypothesis.

Dembski's emphasis on complex specified information being an indicator of design is another crucial piece of the puzzle. The DNA code is both complex and specified. All other codes we know of from experience require an intelligence to bring them about. These codes may operate on their own once in existence, but require intelligence to put them together. Now this does not in itself require an intelligence to bring about the DNA code, but it should at least be a viable option. Science will currently categorically rule out this possibility since it does not propose a naturalistic process for bringing about the DNA code. I believe this is done out of a philosophical prejudice as opposed to a legitimate scientific problem.

The connections between irreducible complexity and intelligence, and complex specified information and intelligence, are the crucial components of a viable theory of Intelligent Design (ID). I think there is plenty of data from molecular biology and astronomy (fine-tuning parameters of the universe) which already make Intelligent Design a worthwhile scientific pursuit.

Even Richard Dawkins admits that biology is the study of complicated things that give the appearance of having been designed for a purpose. Maybe it isn't just an appearance. If they have been designed for a purpose, we should be able to tell and it should fall under the umbrella of science since

science is primarily a search for truth.

Genetic algorithms are still operating from a computer program utilizing the designed computer itself to arrive at its designs. In other words the potential for design is built into the program and the computer. The genetic algorithm program willl not write itself and the program will not run itself apart from the computer, a designed machine.

This perhaps provides a starting point. There are other places on our site that can give you some more details but this should do for now.

BTW, the micro-macro distinction is one that many evolutionists recognize and use so it is not just some creationist invention. But you are correct that it does have to do with the distinction between the minor changes we see happening all around us and the unobserved changes that must have occurred in the past which there is often no discernible fossil evidence for. There is also an embryological component to the distinction. Currently observed microevolutionary changes are all changes that would occur late in embryological development; the overall body plan is not affected. Body plans are determined very early in embryological development which, if all life is descended from a common ancestor, must have also changed in the past. But nearly all mutations observed that occur early in development result in catastrophic deformities. You can’t just add up microevolutionary, late development changes and eventually get an early developmental, body plan mutation. They are very different things.

Respectfully,

Dr. Ray Bohlin
Probe Ministries

“I Have No Problem Deriving Meaning in Life as an Evolved Biological Organism”

Dear Raymond Bohlin,

I am also a graduate of the University of Illinois and found your article on the Probe Ministries website interesting reading. I was surprised at the low-quality answers you had received from evolutionary biologists about morality and meaning. To me it is absolutely wonderful, amazing, and awe-inspiring that you and I, or any human beings can have actual conversations and exchange ideas. It is amazing to me because I believe that we are a result of evolution unguided by any supernatural god. To me there can be deep conviction that we are biological organisms and that there is no god while also maintaining a deep sense of meaning and purpose. It seems to me that if you believe God created everything around us, then He did an embarrassingly poor job. Why have around 50% of our DNA be wasted garbage from a violent evolutionary past? If people are created in God’s image, why give them an appendix? Surely if you were truly an all-powerful being capable of anything, you should have done much better. But, if we are a result of random chance and evolutionary process unguided by a supernatural power, then the world is amazing. It is awe-inspiring to have such amazing diversity of life and to have a species with the power to be aware of itself.That 50% of our DNA actually works becomes amazing and wonderful testimony to the glory of the evolutionary process. If we are merely a creation of an all-powerful god, then we are clearly his rejects, because he should have been able to do much better.

But if we are a result of an evolutionary process then we are amazing and valuable.

Similarly, I see the same problem with meaning. You claim that if we are "merely" biological then there is no real meaning. I would argue just the opposite. If we are merely the result of a supernatural god, then the best we can do is discover God's predetermined meaning. We are unimportant and can never create any meaning in our lives. But if we are biological organisms in the absence of a supernatural god, then we are the creators of meaning. We are the meaning pioneers who must establish meaning, value, and morality as we go. To me, my life seems so much more meaningful if I feel that I can create meaning and values, and be one of the first species to truly experience love, beauty, and understanding. If I am just some all powerful-god's creation, then my personal life seems meaningless because all meaning has been pre-established by some supernatural force beyond my meager comprehension. To say we are "merely" or "just" biological to me is insulting. Being biological does not prevent me from having as much meaning and purpose as I want in my life. But now, the responsibility lies on me. If I have a meaningless life, then it is my own fault for not creating any meaning. I personally find deep meaning and purpose in the love, compassion, and discovery of ideas that I share with my fellow humans who are also creating meaning and purpose in their own lives.

Whether you consider the answers I received from evolutionary biologists to be disappointing or not, they are the standard answers. Your willingness to reach for something more and create meaning is what I would categorize as the third response, that of an existential leap for hope and meaning.

But first to your criticisms of the Creator's workmanship. Please be aware that the previous estimates of useless DNA were closer to 90%. I would not be so quick to assume that the remaining 50% unaccounted for will remain so. We have only

begun to unravel the mystery of DNA and its organization. My prediction is that there will be little left without some function after the next 100 years. One of the principal geneticists with Celera Genomics, the private company that arrived at its own independent human DNA sequence, was quoted in the *San Francisco Chronicle* saying,

> "'What really astounds me is the architecture of life,' he said. 'The system is extremely complex. It's like it was designed.'. . . There's a huge intelligence there. I don't see that as being unscientific. Others may, but not me." (February 19, *SFC*, Tom Abate, "Human Genome Map Has Scientists Talking About the Divine").

So what we already know reveals not some clumsily ordered mess thrown together by natural selection, but a highly ordered and specified arrangement.

Over 100 years ago, there were dozens of reputed vestigial human structures such as the appendix, tonsils, and tailbone, but all of these have since yielded a function. The tonsils and appendix are members of the integrated immune system. Can we live without them? Yes, but we are better off with them. Surgeons rarely take out the appendix anymore as part of routine abdominal surgery unless absolutely necessary. The more we learn about our bodies the more complex and truly amazing they are. The power of adult stem cells is proving to be truly amazing and they have resided inside us all the time. I think it is rather presumptuous of anyone to suggest that they could have done a better job of designing our bodies. Our knowledge of how everything works is still progressing. What may seem sloppy today may soon be revealed as the right combination of characteristics to achieve an amazing design. That at least seems to be the pattern. We used to think cells were simple accumulations of membrane, protoplasm, and protein. The last sixty years have revealed ever increasing levels of complexity and organization never even dreamed of. I just don't see how you can view our bodies as rejects. What

would you change? What could have been done better in your mind?

If we are the product of an evolutionary process than we truly are amazing. I will grant you that. So amazing that I would suggest that we are alone in the universe. The odds are so stacked against any kind of unguided evolution producing sentient beings such as ourselves, that there just isn't anybody else out there.

I don't understand your revelry in the ability to create meaning. What are we to create it out of? Nothing? Something doesn't come from nothing. Meaning grabbed out of thin air is still air no matter what you call it. In an evolutionary world view all that matters is survival and reproduction and as I said in the article, this ultimately fades away at death which is nothing more than extinction. So what good is the meaning you create? It is ultimately an illusion. A survival device and nothing more. How is that exciting? I am sorry if you are insulted by the characterization of being merely biological, but again, in an evolutionary worldview, that is reality. Your brain has evolved only as an aid to survival and reproduction, not as a truth- and meaning-creating machine.

If we share this meaning and purpose creating capacity with our fellow humans, certainly we arrive at different conclusions. If our conclusions are different, how do we judge who is right? Or does it really even matter? I would suggest that it doesn't matter at all. You are left with the post-modern dictum of "it may be true for you but it's not true for me." The statement is self-contradictory because it assumes that at least that statement is universally true, but how can it be?

Theism can provide true meaning and purpose through the One who is self-existent. Why you think God's assignment of true meaning and purpose somehow cheapens it baffles me. If I were to create a robot, I the creator determine its function and

usefulness, not the machine itself. Remember also, that something must be eternal. As I said earlier, something does not come from nothing. So the fact that something is here means something has to have always been here. That something can be either material or immaterial. The material universe, according to current Big Bang cosmology, had a beginning. Therefore it certainly seems reasonable to assume that God is eternal. I don't suggest that the Big Bang proves God, but it does make the assumption eminently reasonable.

You may choose to create your own meaning if you like, but I cannot see how it can be anything but an illusion in an evolutionary, purely materialistic worldview.

Respectfully,

Ray Bohlin, Ph.D.
Probe Ministries

"Do You Have More Information on Human Cloning?"

I am looking to inform my class on the steps to cloning a human and also the most recent experiments done in this field of work. I have read your articles, but is there any additional information you could provide me?

Below is the recent announcement by the first group to publicly say they are actively going to seek to clone a human. There is no published results from any laboratory anywhere in the world. The potato is just a little too hot yet. The story from the BBC may also provide some additional links for you.

The article confirms some of the scientific and ethical

problems I have mentioned elsewhere.

Respectfully,

Ray Bohlin
Probe Ministries

Tuesday, 30 January, 2001, 17:08 GMT
Cloned human planned 'by 2003'

http://news.bbc.co.uk/hi/english/sci/tech/newsid_1144000/1144694.stm

By BBC News Online's Alex Kirby

A private consortium of scientists plans to clone a human being within the next two years.

The group says it will use the technique only for helping infertile couples with no other opportunity to become parents.

It says the technology will resemble that used to clone animals, and will be made widely available.

One member said the group hoped to produce the world's first baby clone within 12 to 24 months.

It was founded by an Italian physician, Dr Severino Antinori, whose work includes trying to help post-menopausal women to become pregnant.

A spokesman for the group is Panos Zavos, professor of reproductive physiology at the University of Kentucky, US.

No alternative

He said it would "develop guidelines with which the technology cannot be indiscriminately applied for anybody who wants to clone themselves."

As with animal cloning, he said, the technology would involve

injecting genetic material from the father into the mother's egg, which would then be implanted in her womb.

"The effort will be to assist couples that have no other alternatives to reproduce and want to have their own biological child, not somebody else's eggs or sperm," Professor Zavos said.

He said he believed human cloning was achievable. It could at first cost $50,000 or more, but he hoped that could come down to around the cost of in vitro fertilisation, about $10,000 to $20,000.

Professor Zavos said he was well aware of the ethical dimensions of the project.

"The world has to come to grips [with the fact] that the cloning technology is almost here," he said. "The irony about it is that there are so many people that are attempting to do it, and they could be doing it even as we
speak in their garages.

"It is time for us to develop the package in a responsible manner, and make the package available to the world. I think I have faith in the world that they will handle it properly."

'Irresponsible' plan

But the plans of Professor Zavos and his colleagues received an unenthusiastic response in the UK.

Dr Harry Griffin is assistant director of the Roslin Institute, Scotland, which successfully cloned Dolly the sheep.

He told BBC News Online: "It would be wholly irresponsible to try to clone a human being, given the present state of the technology.

"The success rate with animal cloning is about one to two per

cent in the published results, and I think lower than that on average. I don’t know anyone working in this area who thinks the rate will easily be improved.

“There are many cases where the cloned animal dies late in pregnancy or soon after birth.

“The chances of success are so low it would be irresponsible to encourage people to think there’s a real prospect. The risks are too great for the woman, and of course for the child.

“I remain opposed to the idea of cloning human beings. Even if it were possible and safe—which it’s not—it wouldn’t be in the interest of the child to be a copy of its parent.”

Tom Horwood, of the Catholic Media Office in London, told BBC News Online: “A lot of our objections come down to questions of technique.

‘Morally abhorrent’

“But beyond that, cloning human beings is inconsistent with their dignity, and involves seeing them as a means, not an end.

“The scientists involved in the project are planning a conference in Rome to explain their plans.

“I don’t think you’ll start getting lots of papal pronouncements just because they’re meeting in Rome.

“The reaction in the Vatican will be the same as everywhere else—that the project is morally abhorrent and ethically very dubious.”

“What Do You Think of the ‘Many Universes’ Theory?”

Hi Dr. Bohlin, my name is _____ and I wrote to you a while back. Your answer was greatly appreciated and helped me a great deal. You see my problem was with continuing to believe in my Christian faith and dealing with scientific evidence. Most of it I can deal with, without any problem at all. In fact sometimes it helps to increase my faith. But one area in science that I cannot come to grips with is the new research being done in cosmology. From all of my research, I found that the majority of astronomers and cosmologists favor the “inflationary” theory of our universe. It may not seem like a problem at first, but after further examination it has created a huge problem for me. According to the inflationary universe model, there may be and probably are an infinite amount of universes. Each one spawning like a new bubble and having different laws than the other universes. It attempts to easily explain our design seen throughout the universe. If there are an infinite amount of universes, surely through probability, you will end up having one which fits the requirements for life. I thought that this was just one person’s theory, but soon found out that a lot of evidence points in the direction of inflation. Could you tell me what you know of this and how this can or if it can fit with my faith. My faith has always been the most important thing to me, but I cannot just believe that easily if a major part of my belief is incorrect. How do Christians deal with an issue like this, and if this theory turns out to be true, in what way does this affect the Christian faith? I have read a book by Robert J. Russell, William Stoeger, and George Coyne, but it seems to go around the question. Any input that you have would be greatly appreciated.

The many universes hypothesis is not so much a part of the

inflationary universe theory as an addendum to it. It has been added as an attempt at an explanation for the fine-tuned nature of our universe from an explosion. While inflation is somewhat testable scientifically, the many universes hypotheses is pure conjecture. How can we ever discover other universes with properties different from ours? Its only value is to suggest multiple universes to overcome the odds of this one occurring by chance just this once, which in many cosmologists' and astronomers' eyes indicates the necessity for an intelligence to order it. The many universes hypothesis is therefore a thinly disguised rationalization to avoid the necessity of intelligence in the universe.

The many universes model also relies on quantum mechanics to suggest that the universe emerged from a quantum fluctuation from nothing to something. While quantum fluctuations are mysterious, we only know them to operate within a space-time universe. Without a space-time universe, there is no such thing as quantum mechanics. So this would negate the use of quantum mechanics to explain the origin of the universe from nothing since quantum mechanics didn't exist until the universe existed.

By the way, while my faith in Jesus does depend on evidence (the resurrection, historicity of the Bible, etc.) it does not rest on the accuracy of the latest scientific theories. Men will always find ways to order their universe without God. Just because they think they can, doesn't mean God is any less real. Be careful of being willing to jettison your faith based on scientific theories. There is still much we don't know about the universe and even the Bible to be that tenuous about our faith because of science. When scientists proclaim that the facts argue against God, they are usually simply showing their own bias and refusal to consider the mountain of evidence in favor of His existence. Scientists are human too.

Respectfully,

Ray Bohlin
Probe Ministries

“Your Position Against Stem Cell Research Disregards Diabetics”

I know that you don’t think it’s right to use stem cells and you have that right, it’s granted to you in the constitution. But do you have diabetes? Do you know what it’s like to have to get blood 4 times a day to know what your blood sugar is so that you can make good decisions so you don’t die and every time you get in a car to drive? Then have to stick a needle into your skin to give yourself insulin to survive because your body does not produce insulin anymore. Do you know what that’s like? Do you? The way I see it from your webpage you’re not looking at the 16 million Americans with diabetes that have to live with this. If the stem cell research was to succeed then there would be no more Diabetes, Parkinson’s and many other diseases.

I appreciate your passion for a desire to cure diabetes. It is a difficult disease, and I am sorry to learn that you suffer from it. However, allow me to reframe the argument.

We need to make a distinction between embryonic stem cells and adult stem cells. We have no problem with using adult stem cells to research treatment and cures of disease. What if embryonic stem cell research *doesn’t* succeed? There are no guarantees. We haven’t even cured a mouse, let alone treated any human disease with embryonic stem cells. Then we have will have wasted thousands of human embryos for nothing. Not to

mention all the women who had to endure hormonal treatments to obtain their eggs to make the embryos. How much is their sacrifice worth to you?

What if adult stem cell research (research with no ethical questions and much hope of success) achieves a treatment before embryonic stem cell research? Again, we will have wasted thousands of human embryos for nothing.

I have a genetic disease myself, hemochromatosis, excess iron in the blood and organs. When left untreated it can lead to liver disease and cancer. I simply need a pint of blood withdrawn every 2-3 months to keep my iron levels under control. This is not the inconvenience of diabetes. But I am not without understanding of the issues. My health and convenience is not worth the sacrifice of human embryos who have no option of informed consent. I refuse to sacrifice the next generation in any way for my convenience. It’s always been the other way around, the current generation sacrificing for the next.

You are also entitled to your opinion. But don’t assume I have callously tossed aside the suffering of others. I simply choose the life of human embryos, embryos who have every potential to form a human being if left in their natural surroundings, over my convenience. To suggest that these early embryos are simply reproductive cells like sperm and egg is disingenuous and medically incorrect.

Respectfully,

Ray Bohlin
Probe Ministries

Christian Environmentalism – A Biblical Worldview Perspective on You and the Earth

Dr. Bohlin applies a biblical point of view in determining a concerned Christian relationship to environmentalism. As Christians, we know we have been made stewards of this earth, having a responsibility to care for it. Understanding our relationship to God and to the rest of creation gives us the right perspective to apply to this task.

This article is also available in Spanish.

Is There an Environmental Problem?

The news media are full of stories concerning environmental disasters of one kind or another, from global warming to endangered species to destruction of the rain forests to nuclear accidents. Some are real and some are imaginary, but it's not hard to notice that the environmental issue receives very little attention in Christian circles. There are so many other significant issues that occupy our attention that we seem to think of the environment as somebody else's issue. Many Christians are openly skeptical of the reality of any environmental crisis. It's viewed as a liberal issue, or New Age propaganda, or just plain unimportant since this earth will be destroyed after the millennium. What we fail to realize is that Christians have a sacred responsibility to the earth and the creatures within it. The earth is being affected by humans in an unprecedented manner, and we do not know what the short or long term effects will be.

Calvin DeWitt, in his book *The Environment and the Christian*,{1} lists seven degradations of the earth. First, land is being converted from wilderness to agricultural use and from agricultural use to urban areas at an ever-increasing rate. Some of these lands cannot be reclaimed at all, at least not in the near future.

Second, as many as three species a day become extinct. Even if this figure is exaggerated, we still need to realize that once a species has disappeared, it is gone. Neither the species nor the role it occupied in the ecosystem can be retrieved.

Third, land continues to be degraded by the use of pesticides, herbicides, and fertilizers. While many farmers are rebelling against this trend and growing their produce organically or without chemicals, the most profitable and largest growers still use an abundance of chemicals.

Fourth, the treatment of hazardous chemicals and wastes continues as an unsolved problem. Storing of medium term nuclear wastes is still largely an unsolved problem.

Fifth, pollution is rapidly becoming a global problem. Human garbage turns up on the shores of uninhabited South Pacific islands, far from the shipping lanes.

Sixth, our atmosphere appears to be changing. Is it warming due to the increase of gases like carbon dioxide from the burning of fossil fuels? Is the ozone layer shrinking due to the use of chemicals contained in refrigerators, air conditioners, spray cans, and fire extinguishers? While I remain skeptical of the global threat that many see, pollution continues to be a local and regional concern prompting ever more stringent emission controls for our automobiles.

Seventh, we are losing the experiences of cultures that have lived in harmony with the creation for hundreds or even thousands of years. Cultures such as the Mennonites and Amish, as well as those of the rain forests, are crowded out by the

expansion of civilization.

Never before have human beings wielded so much power over God's creation. How should we as Christians think about these problems?

The Environmental Ethics of Naturalism and Pantheism

Some people have blamed Western culture's Judeo-Christian heritage for the environmental crisis. These critics point squarely at Genesis 1:26-28, where God commands His new creation, man, to have dominion over the earth and to rule and subdue it.{2} This mandate is seen as a clear license to exploit the earth for man's own purposes. With this kind of philosophy, they ask, how can the earth ever be saved? While I will deal with the inaccuracy of this interpretation a little later, you can see why many of the leaders in the environmental movement are calling for a radical shift away from this Christian position. But what are the alternatives?

The need to survive provides a rationale for environmental concern within an *evolutionary* or *naturalistic* world view. Survival of the human species is the ultimate value. Man cannot continue to survive without a healthy planet. We must act to preserve the earth in order to assure the future of our children.

The evolutionary or naturalistic view of nature is, however, ultimately pragmatic. That is, nature has value only as long as we need it. The value of nature is contingent on the whim of egotistical man.{3} If, as technology increases, we are able to artificially reproduce portions of the ecosystem for our survival needs, then certain aspects of nature lose their significance. We no longer need them to survive. This view is ultimately destructive, because man will possess only that which he needs. The rest of nature can be discarded.

In the fictional universe of *Star Trek*, vacations are spent in a computer generated virtual reality and meals are produced by molecular manipulation. No gardens, herds, or parks are needed. What value does nature have then?

Another alternative is the *pantheistic* or *New Age* worldview. Superficially, this view offers some hope. All of nature is equal because all is god and god is all. Nature is respected and valued because it is part of the essence of god. If humans have value, then nature has value.

But while pantheism elevates nature, it simultaneously degrades man and will ultimately degrade nature as well. To the pantheist, man has no more value than a blade of grass. In India the rats and cows consume needed grain and spread disease with the blessings of the pantheists. To restrict the rats and cows would be to restrict god, so man takes second place to the rats and cows. Man is a part of nature, yet it is man that is being restricted. So ultimately, all of nature is degraded.{4}

Pantheism claims that what is, is right. To clean up the environment would mean eliminating the undesirable elements. But, since god is all and in all, how can there be any undesirable elements? Pantheism fails because it makes no distinctions between man and nature.

The Christian Environmental Ethic

A true Christian environmental ethic differs from the naturalistic and pantheistic ethics in that it is based on the reality of God as Creator and man as his image-bearer and steward. God is the Creator of nature, not part of nature. He transcends nature (Gen. 1-2; Job 38-41; Ps. 19, 24, 104; Rom 1:18-20; Col. 1:16-17). All of nature, including man, is equal in its origin. Nature has value in and of itself because God created it. Nature's value is intrinsic; it will not change because the fact of its creation will not change.{5} The rock,

the tree, and the cat deserve our respect because God made them to be as they are.{6}

While man is a creature and therefore is identified with the other creatures, he is also created in God's image. It is this image that separates humans from the rest of creation (Gen. 1:26-27; Ps. 139:13-16).{7} God did not bestow His image anywhere else in nature.

Therefore, while a cat has value because God created it, it is inappropriate to romanticize the cat as though it had human emotions. All God's creatures glorify Him by their very existence, but only one is able to worship and serve Him by an act of the will.

But a responsibility goes along with bearing the image of God. In its proper sense, man's rule and dominion over the earth is that of a steward or a caretaker, not a reckless exploiter. Man is not sovereign over the lower orders of creation. Ownership is in the hands of the Lord.{8}

God told Adam and Eve to cultivate and keep the garden (Gen. 2:15), and we may certainly use nature for our benefit, but we may only use it as God intends. An effective steward understands that which he oversees, and science can help us discover the intricacies of nature.

Technology puts the creation to man's use, but unnecessary waste and pollution degrades it and spoils the creation's ability to give glory to its Creator. I think it is helpful to realize that we are to exercise dominion over nature, not as though we are entitled to exploit it, but as something borrowed or held in trust.

Recall that in the parable of the talents in Matthew 25, the steward who merely buried his talent out of fear of losing it was severely chastised. What little he did have was taken away and given to those who already had a great deal.{9} When Christ returns, His earth may well be handed back to Him

rusted, corroded, polluted, and ugly. To what degree will you or I be held responsible?

This more thoroughly biblical view of nature and the environment will allow us to see more clearly the challenges that lie ahead. Our stewardship of the earth must grapple with the reality that it does not belong to us but to God though we have been given permission to use the earth for our basic needs.

Abuse of Dominion

While God intended us to live in harmony with nature, we have more often than not been at odds with nature. This reality tells us that man has not fulfilled his mandate. The source of our ecological crisis lies in man's fallen nature and the abuse of his dominion.

Man is a rebel who has set himself at the center of the universe. He has exploited created things as though they were nothing in themselves and as though he has an autonomous right to do so.{10} Man's abuse of his dominion becomes clear when we look at the value we place on time and money. Our often uncontrolled greed and haste have led to the deterioration of the environment.{11} We evaluate projects almost exclusively in terms of their potential impact on humans.

For instance, builders know that it is faster and more cost effective to bulldoze trees that are growing on the site of a proposed subdivision than it is to build the houses around them. Even if the uprooted trees are replaced with saplings once the houses are constructed, the loss of the mature trees enhances erosion, eliminates a means of absorbing pollutants, producing oxygen, and providing shade, and produces a scar that heals slowly if at all.

Building around the trees, while more expensive and time-consuming, minimizes the destructive impact of human society

on God's earth. But, because of man's sinful heart, the first option has been utilized more often than not.

As Christians we must treat nature as having value in itself, and we must be careful to exercise dominion without being destructive.{12} To quote Francis Schaeffer, We have the right to rid our house of ants; but what we have no right to do is to forget to honor the ant as God made it, out in the place where God made the ant to be. When we meet the ant on the sidewalk, we step over him. He is a creature, like ourselves; not made in the image of God, it is true, but equal with man as far as creation is concerned.{13}

The Bible contains numerous examples of the care with which we are expected to treat the environment. Leviticus 25:1-12 speaks of the care Israel was to have for the land. Deuteronomy 25:4 and 22:6 indicates the proper care for domestic animals and a respect for wildlife. In Isaiah 5:8-10 the Lord judges those who have misused the land. Job 38:25-28 and Psalm 104:27-30 speak of God's nurture and care for His creation. Psalm 104 tells us that certain places were made with certain animals in mind. This would make our national parks and wilderness preserves a biblical concept. And Jesus spoke on two occasions of how much the Father cared for even the smallest sparrow (Matt. 6:26, 10:29). How can we do less?

Christian Responsibility

I believe that as Christians we have a responsibility to the earth that exceeds that of unredeemed people. We are the only ones who are rightly related to the Creator. We should be showing others the way to environmental responsibility.

Christians, of all people, should not be destroyers, Schaeffer said.{14} We may cut down a tree to build a house or to make a fire, but not just to cut it down. While there is nothing wrong with profit in the marketplace, in some cases we must voluntarily limit our profit in order to protect the

environment.{15}

When the church puts belief into practice, our humanity and sense of beauty are restored.{16} But this is not what we see. Concern for the environment is not on the front burner of most evangelical Christians. The church has failed in its mission of steward of the earth.

We have spoken out loudly against the materialism of science as expressed in the issues of abortion, human dignity, evolution, and genetic engineering, but have shown ourselves to be little more than materialists in our technological orientation towards nature.{17} All too often Christians have adopted a mindset similar to a naturalist that would assert that simply more technology will answer our problems. In this respect we have essentially abandoned this very Christian issue.

By failing to fulfill our responsibilities to the earth, we are also losing a great evangelistic opportunity. Many young people in our society are seeking an improved environment, yet they think that most Christians don't care about ecological issues and that most churches offer no opportunity for involvement.{18} For example, in many churches today you can find soft drink machines dispensing aluminum cans with no receptacle provided to recycle the aluminum, one of our most profitable recyclable materials.

As a result, other worldviews and religions have made the environmental issue their own. Because the environmental movement has been co-opted by those involved in the New Age Movement particularly, many Christians have begun to confuse interest in the environment with interest in pantheism and have hesitated to get involved. But we cannot allow the enemy to take over leadership in an area that is rightfully ours.

As the redeemed of the earth, our motivation to care for the land is even higher than that of the evolutionist, the

Buddhist, or the advocate of the New Age. Jesus has redeemed all of the effects of the curse, including our relationship with God, our relationship with other people, and our relationship with the creation (1 Cor. 15:21-22, Rom. 5:12-21). Although the heavens and the earth will eventually be destroyed, we should still work for healing now.

For Further Reading

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DeWitt, Calvin B., Ed. *The Environment and the Christian: What Can We Learn from the New Testament?* Grand Rapids , Mich.: Baker Book House, 1991.

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Notes

1. Calvin DeWitt, ed., *The Environment and the Christian: What Does the New Testament Say About the Environment* (Grand Rapids: Baker, 1991).
2. Lynn White, “The Historical Roots of Our Ecologic Crisis,” *Science*, 155 (1967):1203-07.
3. Francis Schaeffer, *Pollution and the Death of Man: The Christian View of Ecology* (Wheaton, Ill.: Tyndale House Publishers, 1970), 26-27.
4. Ibid, 30-33.
5. Ibid, 47-49.
6. Ibid, 54-55.
7. Ibid, 49-50.
8. Ibid, 69.
9. Ibid, 69-70.
10. Ibid, 71.
11. Ibid, 83.
12. Ibid, 74-75.

13. Ibid, 74.
14. Ibid, 74.
15. Ibid, 90-91.
16. Ibid, 92-93.
17. Ibid, 85.
18. Ibid, 85.