

# Myths About Intelligent Design

*January 1, 2006*

In December a decision by U.S. District Judge John Jones in Dover, Pennsylvania once again put the topic of intelligent design in the news. He ruled that the school board's actions were unconstitutional and merely an attempt to smuggle religious views into a science classroom.

Media coverage of the Dover case and the broader topic of intelligent design have often been inadequate. When I have spoken on this subject, I have found that many Christians don't have an accurate perspective on this subject. So let me take a moment to address some of the myths surrounding this scientific theory.

First, proponents of intelligent design are not trying to smuggle religion into the classroom. While that may have been the intent of some of the Dover school board members, it is clear that is not the desire of scientists working on intelligent design. The Discovery Institute is one of the leading think tanks in the area of intelligent design and it actually opposes the idea of requiring it be taught in the classroom. They are pursuing it as a scientific theory not as a public school curriculum.

It might be worth noting that what Judge Jones struck down was a requirement that a short statement be read in class that mentioned the phrase "intelligent design" twice. It also allowed students to look at a supplemental text on intelligent design titled *Of Pandas and People*. The students would be instructed from the standard biology textbook published by Prentice Hall, but would be allowed to also read from the supplemental text if they desired.

Second, intelligent design is not just the latest modified attempt to introduce creationism into the classroom. Judge Jones and the media make it seem like the same people who promoted scientific creationism in the 1970s and 1980s are the same people pushing intelligent design now. That is not the case. None of the leaders of the intelligent design movement have been involved with creationist groups like the Institute for Creation Research or Answers in Genesis or Reasons to Believe. In fact, if you go to the websites of many creation groups, you will find they are often critical of intelligent design because it does not specifically identify a creator.

Third, intelligent design is much more than a refutation of evolution. It provides a positive model that can be tested. Judge Jones argued that “the fact that a scientific theory cannot yet render an explanation on every point should not be used as a pretext to thrust an untestable alternative hypothesis grounded in religion into a science classroom.”

Scientists pursuing intelligent design are doing much more than just criticizing evolution. They are proposing new ideas that can be tested. For example, Michael Behe (author of the book [\*Darwin's Black Box\*](#)) suggests that molecular motors within the cell exhibit what he calls irreducible complexity. He shows that the bacterial flagellum requires numerous parts to all be present simultaneously for it to function. It is a testable model that other scientists can verify or refute using scientific data.

The ruling by Judge Jones won't end the debate about intelligent design. But at least when we debate its merits or flaws, we should get our facts straight.

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# The Case for a Creator

It has been the popular belief for decades that science and Christianity are light years apart. However, as our knowledge of cosmology, astronomy, physics, biochemistry, and DNA has continued to grow, this supposed gap has all but disappeared. Lee Strobel, award-winning journalist and former atheist, explores these and many other compelling evidences in his latest book, *The Case for a Creator*. In this article we will discuss just a handful of these evidences, as presented in his book, and find out how science itself is steadily nailing the lid on atheisms coffin.[\[1\]](#) Lets begin with the argument from cosmology.

## Cosmology

Cosmology is the study of the origin of the universe. In investigating this field of study, Lee Strobel interviews philosopher and theologian, Dr. William Lane Craig. Craig describes in great detail what he calls “one of the most plausible arguments for God’s existence, the Kalam cosmological argument.”[\[2\]](#) This argument has three simple steps: Whatever begins to exist has a cause. The universe began to exist. Therefore, the universe has a cause.

Craig then explains that when he first began to defend the Kalam argument he anticipated that the first step of the argument, whatever begins to exist has a cause, would be almost universally accepted. It was the second point, the universe began to exist, which he believed would be more controversial. However, so much evidence has accumulated, Craig explained, that atheists are finding it difficult to deny that the universe had a beginning. So theyve begun to attack the first premise instead.[\[3\]](#)

One such attack was presented in the April 2002 issue of *Discover* magazine. In an article entitled Guths Grand Guess,

the author describes how quantum theory allows for things a dog, a house, a planet to be materialized out of a quantum vacuum. One professor is quoted as saying, Our universe is simply one of those things which happens from time to time.[\[4\]](#) Could such an audacious claim be valid?

Craig debunks this claim by making two very important points. First, These subatomic particles the article talks about are called virtual particles. They are theoretical entities and it's not even clear that they actually exist as opposed to being merely theoretical constructs.[\[5\]](#) Secondly, however, these particles, if they are real, do not come out of nothing. The quantum vacuum is not what most people envision when they think of a vacuum that is, absolutely nothing. On the contrary, it's a sea of fluctuating energy. This begs the question, So where does this energy come from? It must have a cause. So even quantum theory fails to explain the origin of the universe without a Creator. Rather, as Craig explains, the first cause of the universe is the transcendent personal Creator[\[6\]](#) of the Bible which states that In the beginning God created the heavens and the earth.

## Anthropic Principle

What is called the *anthropic principle* essentially states that all seemingly arbitrary and unrelated constants in physics have one strange thing in common these are precisely the values you need if you want to have a universe capable of producing life.[\[7\]](#) To explore the particulars of this, Strobel interviews Robin Collins, who has doctorates in both physics and philosophy.

Collins, who has written several books on this subject, is asked to describe one of his favorite examples. He proceeds to illustrate the fine-tuned properties of gravity. He does so by comparing the range of possible gravitational force strengths with an old-fashioned linear radio dial that spans the entire

width of the known universe. He says,

*Imagine that you want to move the dial from where its currently set. Even if you were to move it by only one inch, the impact on life in the universe would be catastrophic. . . .*

*That small adjustment of the dial would increase gravity by a billion-fold. . . .*

*Animals anywhere near the size of human beings would be crushed. . . . As astrophysicist Martin Rees said, In an imaginary strong gravity world, even insects would need thick legs to support them, and no animals could get much larger. In fact, a planet with a gravitational pull of a thousand times that of the Earth would have a diameter of only forty feet, which wouldnt be enough to sustain an ecosystem. . . .*

*As you can see, compared to the total range of force strengths in nature, gravity has an incomprehensibly narrow range of life to exist.*[\*{8}\*](#)

Collins goes on to discuss several other constants which show a remarkable degree of fine-tuning such as the mass difference between neutrons and protons, electromagnetic forces, strong nuclear forces, and the cosmological constant. In fact, one expert has said that there are more than thirty separate physical or cosmological parameters that require precise calibration in order to produce a life-sustaining universe.[\*{9}\*](#)

It is this amazing degree of fine-tuning within physics which Collins believes is by far the most persuasive current argument of the existence of God.[\*{10}\*](#) The deeper we dig, Collins concludes, we see that God is more subtle and more ingenious and more creative than we ever thought possible. And I think that's the way God created the universe for usto be full of surprises."[\*{11}\*](#)

# Astronomy

It had been said for years that there's nothing unusual about Earth. It's an average, unassuming rock that's spinning mindlessly around an unremarkable star in a run-of-the-mill galaxy a lonely speck in the great enveloping cosmic dark, as the late Carl Sagan put it.[{12}](#) However, this is no longer thought to be the case. Even secular scientists are talking about the astounding convergence of numerous unexpected "coincidences" that make intelligent life possible on Earth, and in all likelihood, nowhere else in the universe.

In exploring these recent discoveries, Lee Strobel meets with Dr. Guillermo Gonzalez and Dr. Jay Wesley Richards, coauthors of the book *The Privileged Planet*. After hashing out a long list of unique characteristics of our own galaxy, our sun, and our planet, they then began to discuss another amazing coincidence: a whole new dimension of evidence that suggests this astounding world was created, in part, so we could have the adventure of exploring it.[{13}](#)

One of the more interesting examples given is that of a solar eclipse. Perfect solar eclipses have allowed scientists to do things such as determine specific properties of stars and confirm predictions associated with Einstein's theory of relativity. Such things would be extremely difficult to explore if it weren't for total eclipses. However, such eclipses are unique to Earth within our solar system. Of the nine planets and over sixty moons, only Earth provides the optimal scenario for viewing an eclipse. This is possible because our moon, which is 400 times smaller than our Sun, happens to also be exactly 400 times closer. This allows for just the right conditions for a perfect solar eclipse.

What intrigues Gonzalez is that the very time and place where perfect solar eclipses appear in our universe also corresponds to the one time and place where there are observers to see them.[{14}](#) Richards adds, What is mysterious is that the same

conditions that give us a habitable planet also make our location so wonderful for scientific measurement and discovery. So we say there's a correlation between habitability and measurability.[\[15\]](#)

Indeed, this is exactly what we would expect if an all-loving, all-powerful God created the universe not only to sustain man but also, and most importantly, that man could find Him through it.

## Information

In 1871, Darwin suggested in a personal letter that life may have originated spontaneously in some warm little pond, with all sorts [of chemicals] present.[\[16\]](#) However, in his day the immense complexity of living cells was virtually unknown. Today that's not the case. Modern science has revealed that cells are extremely complex and that this complexity is governed by the information packed structures of DNA. This raises the question, Where did this information come from?

To answer this question Strobel enlists the help of Dr. Stephen Meyer, who has degrees in physics, geology, history, and philosophy. During the course of their discussion, Meyer elaborates on various explanations as to the origin of information in the first living cell. After describing the virtual impossibility of simple random chance over time producing such information, and acknowledging the fact that virtually all origin-of-life experts have utterly rejected such an approach,[\[17\]](#) Strobel focuses Meyer in on a more recent attempt at an explanation, that which at times has been called *biochemical predestination*.

Meyer says the idea is that the development of life was inevitable because the amino acids in proteins and the bases, or letters, in the DNA alphabet had self-ordering capacities that accounted for the origin of the information in these

molecules.{18} He then goes on to explain why this notion just isnt true.

First, he notes that the kind of self-ordering we see in nature, such as that in salt crystals, is repetitive; a particular sequence is simply repeated over and over again. It would be like handing a person an instruction book for how to build an automobile, Meyer explains, but all the book said was the-the-the-the-the. You couldnt hope to convey all the necessary information with that one-word vocabulary.{19}

Secondly, and more importantly, he points out that science has demonstrated the complete absence of any attraction between the four letters of the DNA code themselves. So theres nothing chemically that forces them into any particular sequence, Meyer states. The sequencing has to come from outside the system.{20}

For Strobel, as well as many scientists, the conclusion is compelling: An intelligent entity has quite literally spelled out evidence of His existence through the four chemical letters in the genetic code. Its almost as if the Creator autographed every cell.{21}

## Consciousness

Webster defines consciousness as the quality or state of being aware especially of something within oneself.{22} According to Darwinists, the physical world is all there is. Consciousness, therefore, is nothing more than a byproduct of the properties of chemicals. As far back as 1871, evolutionists believed that the mind is a function of matter, when that matter has attained a certain degree of organization.{23} Is this really true? Is the mind simply, as MITs Marvin Minsky put it, a computer made of meat?{24} Or is the Bible correct in its assertion that men and women are comprised of both material and immaterial components?



To address this question, Strobel interviews Dr. J. P. Moreland, who has degrees in chemistry and theology, and a Ph.D. in philosophy. One of the most compelling arguments presented by Moreland during this interview was the positive experimental evidence that consciousness and the self are more than simply a physical byproduct of the brain. For example, Moreland said, neurosurgeon Wilder Penfield electrically stimulated the brains of epilepsy patients and found he could cause them to move their arms or legs, turn their heads or eyes, talk, or swallow. Invariably the patient would respond by saying, I didn't do that. You did. According to Penfield, the patient thinks of himself as having an existence separate from his body. No matter how much Penfield probed the cerebral cortex, he said, There is no place . . . where electrical stimulation will cause a patient to [think]. That's because [thought] originates in the conscious self, not the brain.[\[25\]](#)

As Strobel notes in agreement, it is evidence like this which has led one pair of scientists to conclude that physics, neuroscience, and humanistic psychology all converge on the same principle: mind is not reducible to matter. . . . The vain expectation that matter might someday account for mind . . . is like the alchemist's dream of producing gold from lead.[\[26\]](#)

## Conclusion

It is evidences like these, as well as the many others presented by Lee Strobel, which has continued to persuade scientists in every field of study that there must be a Designer. Naturalistic explanations are not sufficient to explain the beauty, complexity, and design that we observe both around us and within us. Strobel, indeed, presents an amazingly strong case for a Creator.

## Notes

1. Lee Strobel, *The Case for a Creator* (Grand Rapids, Mich.:

- Zondervan, 2004) jacket.
2. Ibid., 97.
  3. Ibid., 98.
  4. Brad Lemley, "Guth's Grand Guess," *Discover* (April 2002) p. 35.
  5. Strobel, 101.
  6. Ibid., 110.
  7. Ibid., 126.
  8. Ibid., 132.
  9. Ibid., 132.
  10. Ibid., 130.
  11. Ibid., 150.
  - 12., Ibid., 153.
  13. Ibid., 185.
  14. Ibid., 186.
  15. Ibid., 186.
  16. Francis Darwin, *The Life and Letters of Charles Darwin* (New York: D. Appleton, 1887), 202.
  17. Strobel, 229.
  18. Ibid., 232.
  19. Ibid., 234.
  20. Ibid., 235.
  21. Ibid., 244.
  22. Merriam-Webster's Collegiate Dictionary, 10th ed., s.v., "Consciousness."
  23. Thomas Huxley, "Mr. Darwin's Critics," *Contemporary Review* (November 1871)
  24. Strobel, 250.
  25. Ibid., 258.
  26. Ibid., 272.

# Dr. Ray Bohlin Responds to Attacks on Intelligent Design

To the editor of *Newsweek*:

Jonathan Alter must have thoroughly enjoyed writing this incredibly polemical piece, taking full advantage of every stereotype, argument from authority, straw man, and unsupported assertion his space would allow. He craftily gives credit to scientific sounding arguments against evolutionary theory while claiming they have all been discredited without mentioning the well-reasoned answers to these criticisms. As an example he cites Ken Miller's criticism of ID without mentioning that Miller himself has been respectfully answered, critiqued and refuted.

If simply rehashing the old science vs. religion argument is the best the media and the general science community can do, the battle is over. I have been making a scientific case against Darwinism and for Intelligent Design for over thirty years. As one credentialed in science, a Discovery Institute Fellow and one of the first 100 signers (now over 400) to their statement of scientific skepticism about Darwinism, I can tell you that our ranks are swelling and our case getting stronger all the time. Pieces like Alter's only show us and *Newsweek's* readers, the bankruptcy of the Darwinian paradigm.

Raymond G. Bohlin, Ph.D.  
President, Probe Ministries

I would like to make some additional comments here.

1. Alter magically proclaims that "One of the reasons we have fewer science majors is the pernicious right-wing notion that conventional biology is vaguely atheistic." How does he know that? Of course he just states it as a bald assertion, expecting us to just believe it because he says so. His claim

might be true, but he is clearly trying to blame doubts about evolution for the U.S.'s perceived sputtering in science. Need a whipping boy? Try "right-wing fundamentalists." Some will believe that every time.

2. He says that offering ID as "an alternative to evolution in ninth-grade biology is a cruel joke." Nowhere has anybody made such a request. Even in Dover, PA, the disclaimer by the school board simply offers ID as something students might explore. It is not officially offered in the classroom as a competing theory. Discovery Institute itself maintains that ID is not ready for such treatment.

3. In the same paragraph, Alter says "ID walks like science and talks like science but, so far, performs in the lab worse than medieval alchemy." I guess that was supposed to sting. What Alter doesn't realize is that in molecular and cell biology, in particular, the language of design is everywhere in describing the workings of the incredible molecular machines inside the cell. They just claim that natural selection produced them with no real attempts to explain how. And as a mechanistic theory, evolution should be able to. So in reality, ID is used all the time in biological research, even by evolutionists, you just can't call it that if you want your work to be published.

4. Alter drags the ever present Kenneth Miller into his discussion. He mentions, parenthetically, that Miller attends Mass every week. So what? It's a double standard to allow Miller's attendance at church serve to further his credibility when my association with a Christian ministry has been used to discredit my testimony and somehow claim that my scientific reasoning is now suspect. Nobody ever mentions Miller's possible conflict of interest in his defense of evolution and criticism of ID. Kenneth Miller is coauthor of a well-known high school biology textbook that strongly promotes evolution as the grand unifying principle of biology. If evolution is dethroned, he loses money and his reputation. How come his

reasoning isn't compromised?

5. Alter claims that science and religion are not at odds over evolution. Fine. But science is at odds with the Darwinian mechanism and there have always been doubts. As I said in my letter to the editor, the scientific case for ID only grows stronger and the debate is here to stay. Let them keep making the science vs. religion argument and the more thoughtful and reasonable among us will see through the smoke screen and will give ID a chance. That's all we ask.

6. Alter makes it seem that the appeal to science standards and school boards is a last ditch effort when all else has failed. In reality, these are true grassroots efforts by people who have read the books and want the truth taught to their children. Many have been frustrated for years that their kids are exposed to an evolutionary filibuster in school and are encouraged that there is a growing scientific revolt in support of their concerns. The *Time* article mentions that 30% of surveyed biology teachers felt pressure to give evolution a short treatment by concerned parents. What about the greater than 50% of students (far more vulnerable to pressure than adult teachers) who have felt bullied by evolution for decades?

7. All this negative publicity is actually a good thing in the long run. As long as the silly arguments are answered, we gain new adherents with every wise-cracking, arrogant article. Why? Because reasonable people see through all the fuss eventually and realize that something funny is going on. After that they read Behe, Dembski, Meyer, Gonzalez, Richards, Nelson, Wells, Thaxton, Bradley, and other ID leaders and it all begins to come together. May our tribe increase!

**See Also:**

- [Mere Creation: Science, Faith and Intelligent Design](#)
- [Dr. Bill Dembski's response to Steven Pinker's Assault on ID in Time on his blog, "Uncommon Descent"](#)

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# 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.

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# “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 slowly 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, woolly 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.

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## **“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 equilibrium, generally used to explain holes in the fossil record). 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 will 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

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## **“Your Articles on Intelligent Design Have Given Me Hope!”**

Wow! I feel like I have hope! Lately I've seriously been having doubt about the Christian faith. A big reason for this is the creation/evolution controversy. I'm a freshman at Baylor University. I've been working on my research paper on Christians' reservations on evolution. It's a topic I picked. . . I thought it might help me out with my struggle. Thank you so much for the articles that you have posted on the Probe Ministries website. After all the negative things I've read about evolution and even Jesus, denying that He was even a historical person, I feel more hopeful now. I feel like there's something with this intelligent design theory! It's a much better sounding alternative than some of the other stuff I've read.

Thanks again!

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## **“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

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# **“The Creation/Evolution Controversy is Keeping Me From Believing”**

Dear Ray Bohlin,

I read your article [Christian Views of Science and Earth History](#), and at the end it said about how you have been researching about this for twenty years, but still haven't come to a conclusion about it. If (macro)evolution isn't proved true, then why would people involved in science treat it as a fact? Two people who come to my mind are Michael Behe and Phillip Johnson. I guess Behe believes in macroevolution and Johnson doesn't, but they still both support Intelligent Design theory. Does Johnson just not know enough about science, or is Behe perhaps wrong? Maybe I've just become way too skeptical. I don't like being like this, but it's hard not to be! How can I not let this controversy about evolution keep me from believing? How do you do it? Maybe you just have more faith than I do. I don't know.

Basically, my only question is concerning the age of the earth and universe. I do not consider this the critical issue so I am willing to live with a certain amount of tension here. There are many good Christians, both theologians and scientists who disagree on the time frame of Genesis, so you are not alone.

Macroevolution is treated as fact primarily because it is necessary for a naturalistic world view. If there is no God then some form of evolution must be true. This is why so many evolutionists are not troubled by evolution's problems. They are firmly convinced that some form of evolution has occurred and the problems will be solved some day. Here their faith is in their world view and not necessarily science. Phil Johnson does a good job of talking about this in his first two books, *Darwin on Trial* and *Reason in the Balance*.

Being skeptical is OK. If Christianity is really true, then it can stand up to the scrutiny. I encourage you to continue to ask your questions and seek for answers. I have never been disappointed when I have felt the need to dig a little deeper. The Lord won't disappoint you either.

An excellent book you may want to pick up is by Lee Strobel called *The Case for Faith* (Harper Collins/Zondervan). It's a series of interviews with top Christian scholars looking for answers to the toughest challenges to faith. One of the interviews is with Dr. Walter Bradley from Texas A & M about evolution and the origin of life. Because each chapter is a retelling of an interview it's not overly technical but extremely helpful and honest.

I certainly don't feel I have all the answers about the evolution question either. I am convinced however, that evolution certainly doesn't have all the answers and some of the missing answers are to the most crucial questions such as a workable and observable mechanism of change.

In the past when I was feeling threatened as you are I would frequently need to return to the basics which I knew were true. The facts of Jesus historical existence, the reliability of the New Testament, the historical reliability of his resurrection, and God's clear direction and presence in my life. Then I would combine this with Jesus own confirmation of the historicity of Genesis (see Matt. 19:3-6, Matt. 23: 29-37,

and Matt. 24:37-39 and [“Why We Believe in Creation”](#)) and Paul’s clear statement of the creation exhibiting his character in Romans 1:18-20 and it was obvious that something was very wrong with evolution and somehow God’s creative fingerprints are evident in the natural world. That would keep me going. Now the more I have studied and probed, the more bankrupt evolution has become and the reasonableness and scientific integrity of design becomes more and more self-evident.

Hope this helps.

Respectfully,

Ray Bohlin

Probe Ministries

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## **“Your Critique of Sociobiology Makes No Sense”**

Perhaps I have severely misunderstood your [critique on sociobiology](#), but as I interpreted it, it makes no sense. From the sociobiologist proposition that all human nature and behavior is shaped solely by evolutionary necessity (and what promotes reproduction and survival), it does not follow, as you have asserted, that any significant hope and meaning in life is precluded. I don’t know what kind of a faculty member you were talking to, but the question you posed (“What difference does it make if I’ve reproduced once I’m dead?”) is an easy one to answer. The goal of humanity, as believed by sociobiologists, is to pass on its genetic legacy. No single organism is particularly important, but only the collaborative

propagation of a species of its genes. Therefore, the difference of whether or not one has reproduced by the time of death is a crucial one. One who dies and leaves no offspring does not pass on any genetic legacy, and is truly, in an evolutionary sense, dead. Those who do leave offspring and die are able to, in an evolutionary sense, live on vicariously through the genes that they pass on to their young, and the genetic legacy continues.

In response to the philosopher's division of life purpose into 'small letters' (survival/reproduction) and 'capital letters' (ultimate meaning and significance, whatever that means), the sociobiological assertion is that survival and reproduction is the ultimate meaning and significance of life. I think one of your crucial errors is that you assume that knowledge of the cause and origins of human nature actually change the validity of human nature itself, and somehow make our ambitions less "lofty. Well, our nature is what it is and we do what we do. We love our children and spouses with all our hearts, and if we do so only for the sake of evolutionary efficacy, than so be it, but our feelings do not therefore become false and invalid. We at times act selflessly and help others at the expense of ourselves. But if this behavior is ultimately 'genetically selfish,' ostensibly helping others while really benefiting ourselves, than so be it, but these feelings are nevertheless meaningful. A principal proposition of sociobiology is that we have motives to act of which we are not always consciously aware. That does not mean they do not exist, and if they do exist, then following them does not make our lives inherently worthless.

Perhaps the sociobiological argument is not particularly aesthetically pleasing (which I think is really your main objection), but this is not by any means grounds for a scientific rebuttal.

Sincerely and respectfully,

\_\_\_\_\_, Ph.D.

I believe you are the first to question my critique along these lines. I will attempt to answer your objections in the body of your initial message.

*Perhaps I have severely misunderstood your critique on sociobiology, but as I interpreted it, it makes no sense. From the sociobiologist proposition that all human nature and behavior is shaped solely by evolutionary necessity (and what promotes reproduction and survival), it does not follow, as you have asserted, that any significant hope and meaning in life is precluded. I don't know what kind of a faculty member you were talking to,*

He was the head of the department of ecology and evolution.

*but the question you posed ("what difference does it make if I've reproduced once I'm dead?") is an easy one to answer.*

To be clear, my question was "Once I am dead and in the ground (implying that in a naturalistic worldview since there is no afterlife, my life is absolutely over), what difference does it make to me NOW?"

*The goal of humanity, as believed by sociobiologists, is to pass on its genetic legacy. No single organism is particularly important,*

Precisely why I made my question very personal.

*but only the collaborative propagation of a species of its genes. Therefore, the difference of whether or not one has reproduced by the time of death is a crucial one.*

Not to the species but to me, but I no longer exist.

*One who dies and leaves no offspring does not pass on any*



*genetic legacy, and is truly, in an evolutionary sense, dead.*

So what? My genes are not me, they are just molecules. If, as E. O. Wilson summarized in *Sociobiology: The New Synthesis*, The organism is just DNA's way of making more DNA, then I don't really matter anyway. And once I am dead and no longer exist (organism), nothing makes any difference to me since I do not exist. That is why the professor said that "ultimately" it doesn't really matter. He got the gist of my question.

*Those who do leave offspring and die are able to, in an evolutionary sense, live on vicariously through the genes that they pass on to their young, and the genetic legacy continues.*

I don't live vicariously in my genes. They are now part of a new unique creature that combines my genes with a woman's genes in a new and totally unique combination. Even a clone would not be exactly "me" since mutations and recombinations would have occurred, erasing my genetic identity.

*In response to the philosopher's division of life purpose into 'small letters' (survival/reproduction) and 'capital letters' (ultimate meaning and significance, whatever that means),*

Some meaning for existence beyond the mere physical.

*the sociobiological assertion is that survival and reproduction is the ultimate meaning and significance of life.*

But as I state in the article, without some meaning for life that arises outside of ourselves, there is no meaning in small letters. If we are just molecules, then that's it! We are just molecules, nothing more can be said about us. How those molecules get arranged or persist or are annihilated is

totally irrelevant to the ongoing history of the universe. Nothing cares and nothing therefore matters.

*I think one of your crucial errors is that you assume that knowledge of the cause and origins of human nature actually change the validity of human nature itself, and somehow make our ambitions less "lofty."*

How can this not be so? From Darwin to today, evolution is said to be without direction and without purpose and we are mere accidents of history. This is not a conclusion of evidence, but of philosophy. For many it is a specific attempt to remove any form of God from the equation of who we are and where we came from. Once that is done we are free to make our own rules. When Richard Dawkins writes that Darwin made it possible to be an intellectually fulfilled atheist, he means it, at least partially, for the purpose of the freedom from any kind of imposed morality. Dawkin's watchmaker is not only blind, but totally without sympathy to whatever outcome comes about through natural selection. Specifically as to whether I reproduce or not.

*Well, our nature is what it is and we do what we do. We love our children and spouses with all our hearts, and if we do so only for the sake of evolutionary efficacy, than so be it, but our feelings do not therefore become false and invalid.*

Certainly it becomes false and invalid, because I am only being manipulated by my genes which have been formed by thousands of generations. I am not really choosing, just reacting according the program established by natural selection.

*We at times act selflessly and help others at the expense of ourselves. But if this behavior is ultimately 'genetically selfish,' ostensibly helping others while really benefiting ourselves, than so be it, but these feelings are nevertheless*

*meaningful.*

How can they be “meaningful” if they are ultimately selfish and not altruistic at all? That’s why Trivers adds the word “reciprocal” in front of the word because simple altruism no longer exists in a sociobiological world.

*A principal proposition of sociobiology is that we have motives to act of which we are not always consciously aware. That does not mean they do not exist, and if they do exist, then following them does not make our lives inherently worthless.*

Certainly they exist, but their source is crucially important. If I pull the string on a Chatty Cathy doll and she says, “I love you,” does she really love me? Of course not. But we are no different according to sociobiology. We are both complex arrangements of molecules uttering responses based on an internal program conditioned to respond to outside stimuli (pulling a string or gazing at our newborn’s cute and cuddly face).

*Perhaps the sociobiological argument is not particularly aesthetically pleasing (which I think is really your main objection), but this is not by any means grounds for a scientific rebuttal.*

Indeed, it is not aesthetically pleasing, but sometimes truth is hard to take, agreed. But that is not my problem. There is no purpose beyond survival and reproduction which is merely an illusion perpetrated on us by our brains which has been constructed by natural selection to simply aid survival and reproduction, not to recognize truth. And our entire body doesn’t really matter, just our genes which are simply reproducing themselves because that’s just what DNA does. But DNA is just a mindless molecule with no purpose or goal or

direction. How then can we have any?

Respectfully,

Ray Bohlin, Ph.D.

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