Evidence for God's Existence

Romans chapter 1 says that God has planted evidence of Himself throughout His creation so we are without excuse. Sue Bohlin looks at different types of evidence indicating that God really does exist.

A "Just Right" Universe

There's so much about the universe, and our world in particular, that we take for granted because it works so well. But Christian astronomer Dr. Hugh Ross has cited twenty-six different characteristics about the universe that enable it to sustain life. And there are thirty-three characteristics about our galaxy, our solar system, and the planet Earth that are finely-tuned to allow life to exist.{1} I do well to make the meat, potatoes, vegetables, and bread all come out at the same time for dinner; we're talking about fifty-nine different aspects all being kept in perfect balance so the universe hangs together and we can live in it!

Our Earth, for instance, is perfectly designed for life. It's the "just right" size for the atmosphere we need. Its size and corresponding gravity hold a thin, but not too thin, layer of gases to protect us and allow us to breathe. When astronaut John Glenn returned to space, one of the things that struck him was how thin and fragile our atmosphere is (only 50 miles above the Earth). If our planet were smaller it couldn't support an atmosphere, like on Mercury. If it were larger, like Jupiter, the atmosphere would contain free hydrogen, which is poison for us.{2} Earth is the only planet we know of that contains an atmosphere that can support human, animal, and plant life.

The Earth is also placed at a "just right" distance from the sun and the other planets in our solar system. If we were closer to the sun, we'd burn up. If we were farther away, we'd

freeze. Because Earth's orbit is nearly circular, this slightly elliptical shape means that we enjoy a quite narrow range of temperatures, which is important to life. The speed of Earth's rotation on its axis, completing one turn every 24 hours, means that the sun warms the planet evenly. Compare our world to the moon, where there are incredible temperature variations because it lacks sufficient atmosphere or water to retain or deflect the sun's energy.

Speaking of the moon, its important that there is only one moon, not two or three or none, and it's the "just right" size and distance from us. The moon's gravity impacts the movement of ocean currents, keeping the water from becoming stagnant.{3}

Water itself is an important part of a "just right" world. Plants, animals and human beings are mostly made of water, and we need it to live. One of the things that makes Earth unique is the abundance of water in a liquid state.

Water has surface tension. This means that water can move upward, against gravity, to bring liquid nutrients to the tops of the tallest plants.

Everything else in the world freezes from the bottom up, but water freezes from the top down. Everything else contracts when it freezes, but water expands. This means that in winter, ponds and rivers and lakes can freeze at the surface, but allow fish and other marine creatures to live down below.

The fact that we live on a "just right" planet in a "just right" universe is evidence that it all was created by a loving God.

The Nagging Itch of "Ought"

As a mother, I was convinced of the existence of a moral God when my children, without being taught, would complain that something wasn't "fair." Fair? Who taught them about fair? Why

is it that no one ever has to teach children about fairness, but all parents hear the universal wail of “That’s not fa-a-a-a-a-air!” The concept of fairness is about an internal awareness that there’s a certain way that things ought to be. It’s not limited to three-year-olds who are unhappy that their older siblings get to stay up later. We see the same thing on “Save the Whales” bumper stickers. Why should we save the whales? Because we ought to take care of the world. Why should we take care of the world? Because we just should, that’s why. It’s the right thing to do. There’s that sense of “ought” again.

Certain values can be found in all human cultures, a belief that we act certain ways because they’re the right thing to do. Murdering one’s own people is wrong, for example. Lying and cheating is wrong. So is stealing. Where did this universal sense of right and wrong come from? If we just evolved from the apes, and there is nothing except space, time, and matter, then from where did this moral sense of right and wrong arise?

A moral sense of right and wrong isn’t connected to our muscles or bones or blood. Some scientists argue that it comes from our genes – that belief in morality selects us for survival and reproduction. But if pressed, those same scientists would assure you that ultimate right and wrong don’t exist in a measurable way, and it’s only the illusion of morality that helps us survive. But if one researcher stole another’s data and published results under his own name, all the theories about morality as illusion would go right out the window. I don’t know of any scientist who wouldn’t cry, “That’s not fair!” Living in the real world is a true antidote for sophisticated arguments against right and wrong.

Apologist Greg Koukl points out that guilt is another indicator of ultimate right and wrong. “It’s tied into our understanding of things that are right and things that are wrong. We feel guilty when we think we’ve violated a moral

rule, an "ought." And that feeling hurts. It doesn't hurt our body; it hurts our souls. An ethical violation is not a physical thing, like a punch in the nose, producing physical pain. It's a soulish injury producing a soulish pain. That's why I call it ethical pain. That's what guilt is – ethical pain."{4}

The reason all human beings start out with an awareness of right and wrong, the reason we all yearn for justice and fairness, is that we are made in the image of God, who is just and right. The reason we feel violated when someone does us wrong is that a moral law has been broken – and you can't have a moral law without a moral law giver. Every time we feel that old feeling of, "It's not fa-a-a-a-a-air!" rising up within us, it's a signpost pointing us to the existence of God. He has left signposts pointing to Himself all over creation. That's why we are without excuse.

Evidence of Design Implies a Designer

If you've ever visited or seen pictures of Mount Rushmore (South Dakota USA), you cannot help but look at the gigantic sculpture of four presidents' faces and wonder at the skill of the sculptor. You know, without having to be told, that the natural forces of wind and rain did not erode the rock into those shapes. It took the skilled hands of an artist.

William Paley made a compelling argument years ago that the intricacies of a watch are so clearly engineered that it cannot be the product of nature: a watch demands a watchmaker. In the same way, the more we discover about our world and ourselves, the more we see that like an expertly-fashioned watch, our world and we ourselves have been finely crafted with intentional design. And design implies a designer.

Since we live in our bodies and take so much of our abilities for granted, it's understandable that we might miss the evidence of design within ourselves – much like a fish might be oblivious to what it means to be wet. Dr. Phillip Bishop at the University of Alabama, challenges us to consider what would happen if we commissioned a team of mechanical engineers to develop a robot that could lift 500 pounds. And let's say we also commissioned them to design a robot that could play Chopin. They could probably do that. But what if we asked them to come up with a robot that could do both, and limit the robot's weight to 250 pounds, and require that it be able to do a variety of similar tasks? They'd laugh in our faces, no matter how much time or money we gave them to do it. But you know, all we'd be asking them to do is to come up with a very crude replication of former football player Mike Reid.{5}

Probably the greatest evidence of design in creation is DNA, the material of which our genes are made, as well as the genetic material for every living thing on the planet. One of the startling discoveries about DNA is that it is a highly complex informational code, so complex that scientists struggle hard to decipher even the tiniest portions of the various genes in every organism. DNA conveys intelligent information; in fact, molecular biologists use language terms – code, translation, transcription – to describe what it does and how it acts. Communication engineers and information scientists tell us that you can't have a code without a code-maker, so it would seem that DNA is probably the strongest indicator in our world that there is an intelligent Designer behind its existence.

Dr. Richard Dawkins, a professor of biology who writes books and articles praising evolution, said in his book *The Blind Watchmaker,* "Biology is the study of complicated things that give the appearance of having been designed for a purpose."{6} Even those who desperately fear the implications of design keep running into it.

Those who deny the evidence of a designer are a lot like the foolish fisherman. If he fails to catch a fish, he says, “Aha! This proves there are no fish!” He doesn’t want to consider the possibility that it might be he is an inept fisherman. Since science cannot measure the intangible or the supernatural, there are many people who say, “Aha! There is no Creator.”{7} Foolish fishermen deny the evidence that God exists and has left His fingerprints all over creation.

The Reliability of the Bible

Every religion has its own holy book, but the Bible is different from all the others. It claims to be the very Word of God, not dropped out of the sky but God-breathed, infused with God’s power as He communicated His thoughts and intent through human writers.

The Bible was written over a period of 1500 years, by about forty different writers, on three different continents. They addressed a wide variety of subjects, and yet the individual books of the Bible show a remarkable consistency within themselves. There is a great deal of diversity within the Bible, at the same time displaying an amazing unity. It presents an internally consistent message with one great theme: God’s love for man and the great lengths to which He went to demonstrate that love.

If you pick up any city newspaper, you won’t find the kind of agreement and harmony in it that is the hallmark of the biblical books. A collection of documents that spans so much time and distance could not be marked by this unity unless it was superintended by one Author who was behind it all. The unity of the Bible is evidence of God’s existence.

One other aspect of the Bible is probably the greatest evidence that God exists and that He has spoken to us in His holy book: fulfilled prophecy. The Bible contains hundreds of details of history which were written in advance before any of

them came to pass. Only a sovereign God, who knows the future and can make it happen, can write prophecy that is accurately and always – eventually – fulfilled.

For example, God spoke through the prophet Ezekiel against the bustling seaport and trade center of Tyre. In Ezekiel 26:3-6, He said He would bring nations against her: “They shall destroy the walls of Tyre and break down her towers; and I will scrape her soil from her, and make her a bare rock.” Ezekiel 26-28 has many details of this prophecy against Tyre, which would be like Billy Graham announcing that God was going to wipe New York off the map.

Tyre consisted of two parts, a mainland city and an island a half- mile offshore. The first attack came from the Babylonian king Nebuchadnezzar, who laid siege to Tyre for thirteen years. Finally, his battering rams broke through the walls, and he tore down the city’s towers. But the island part of the city wasn’t yet destroyed, because this prophecy was fulfilled in stages. For 250 years it flourished, until Alexander the Great set his sights on Tyre. Even without a navy, he was able to conquer this island city in what some consider his greatest military exploit. He turned the ruined walls and towers of Old Tyre into rubble, which he used to build a causeway from the mainland to the island. When he ran out of material, he scraped the soil from the land to finish the land- bridge, leaving only barren rocks where the old city used to be. He fulfilled the prophecy, “They will break down your walls and destroy your pleasant houses; your stones and timber and soil they will cast into the midst of the waters”(Ez. 26:12).

Fulfilled prophecy is just one example of how God shows He is there and He is not silent. How else do we explain the existence of history written in advance?

Jesus: The Ultimate Evidence

The most astounding thing God has ever done to show His

existence to us is when He passed through the veil between heaven and earth and came to live among us as a man.

Jesus Christ was far more than just a great moral teacher. He said things that would be outrageous if they weren't true, but He backed them up with even more outrageous signs to prove they were. Jesus claimed not to speak for God as a prophet, but to be God in human flesh. He said, "If you've seen Me, you've seen the Father" (John 14:9), and, "The Father and I are one" (John 10:30). When asked if He was the Messiah, the promised Savior, He said yes.{8} He told his contemporaries, "Before Abraham was, I am"(John 8:58). The fact that His unbelieving listeners decided then to kill Him shows that they realized He was claiming to be Yahweh, God Almighty.

When Jesus told His followers that He was the Good Shepherd (John 10:11-18), they would immediately be reminded of a passage in the book of Ezekiel where Yahweh God pronounced Himself shepherd over Israel (Ez. 34:1-16). Jesus equated Himself with God.

But words are cheap, so Jesus backed up His words with miracles and signs to validate His truth-claims. He healed all sorts of diseases in people: the blind, the deaf, the crippled, lepers, epileptics, and even a woman with a twelve-year hemorrhage. He took authority over the demons that terrorized and possessed people. He even raised the dead.

Jesus showed His authority over nature, as well. He calmed a terrible storm with just a word. He created food out of thin air, with bread and fish left over! He turned water into wine. He walked on water.

He showed us what God the Father is like; Jesus was God with skin on. He was loving and sensitive, at the same time strong and determined. Children and troubled people were drawn to Him like a magnet, but the arrogant and self-sufficient were threatened by Him. He drenched people with grace and mercy

while never compromising His holiness and righteousness.

And after living a perfect life, He showed His love to us by dying in our place on a Roman cross, promising to come back to life. Who else but God Himself could make a promise like thatand then fulfill it? The literal, bodily resurrection of Jesus Christ is the final, greatest proof that there is a God, that Jesus is God Himself, and that God has entered our world and showed us the way to heaven so we can be with Him forever. He said, "I am the way, the truth, and the life; no one comes to the Father except by Me" (John 14:6).

God exists, and He has spoken. He made a "just right" universe that is stamped with clues of its Maker. He placed eternity in our hearts, as Ecclesiastes tells us, and all people have a strong moral streak because we are made in the image of a moral God. The evidence of design in our bodies, our world and the universe is a signpost pointing to a loving, intelligent Designer behind it all. The unity of the Bible and the hundreds of fulfilled prophecies in it show the mind of God behind its creation. And we've looked at the way Jesus punched through the space-time continuum to show us what God looks like, and opened the doorway to heaven. Jesus is the clearest evidence of all that God does exist.

Notes

1. Hugh Ross, *Creator and the Cosmos*. (Colorado Springs, CO.: Navpress, 1995), 111-145.
2. R.E.D. Clark, *Creation* (London: Tyndale Press, 1946), 20.
3. The Wonders of God's Creation, Moody Institute of Science (Chicago, IL).
4. Gregory Koukl, "Guilt and God," Stand to Reason Commentary. http://www.str.org/free/commentaries/theology/gultngod.htm.
5. Phillip Bishop, "Evidence of God in Human Physiology." http://www.leaderu.com/science/bishop.html
6. Richard Dawkins, *The Blind Watchmaker* (New York: W.W. Norton & Co., 1986), 1.

7. Bishop.
8. Mark 14:61-62; Matthew 26: 63-65; Luke 22:67-70

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DNA, Information, and the Signature in the Cell

Where did we come from? Heather Zeiger uses Stephen Meyer’s book Signature in the Cell *to logically show that the best answer is an intelligent cause—God—rather than natural causes.*

Where Did We Come From?

Where did we come from? A simple question, but not an easy answer. Darwin addressed this question in his book, *On the Origin of Species*. Although he never really answered how the universal common ancestor first came to life, he implied that it was from natural causes. In this article, we are going to look at Darwin’s method of deducing occurrences in the past based on observations we see today. This is now referred to as the *historical* or *origins science* method. We will find that purely naturalistic causes fall short of explaining what we know about DNA, but intelligent design seems to be a promising alternative. Then we will look at scripture and see how Christians can use these evidences for design to talk about who that designer is. We will be using Stephen Meyer’s new book, *Signature in the Cell,* to guide us on the science and method of approaching this question.

Charles Darwin's book, *On the Origin of Species* discusses his theory on how natural selection acts on living things so that the fittest organisms for a particular environment survive, and how this process eventually leads to novel species and body plans. Implied in his work is the notion that all living things came from nature and from natural causes. So his presupposition is that life must have first come from impersonal things like matter and energy. Because of this, origin-of-life scientists have been trying for years to demonstrate how life may have come from non-life.

Let's try to figure out how a cell could form from purely naturalistic processes. Better yet, since we now know that natural selection acts on random mutations within the genome, let's focus in on DNA, the instruction booklet for the cell. Without DNA, cells would not function.

DNA is part of a complex information-processing systems{1} DNA is a long, helical structure found inside the nucleus and mitochondria of the cell. It is made of a four-molecule alphabet arranged in a very specific order. This sequence is like an instruction book telling the cell what parts to use to build a protein. But this instruction book needs to be de-coded with other proteins. The difficult thing is that proteins are needed to make more DNA, but DNA is needed to make proteins. And the cell cannot function without proteins. This means that the first DNA molecule must have been made differently than how it is made today.

DNA is a very complex information processing system. In fact, Bill Gates has compared it to a computer program but far, far more advanced than any software ever created.{2} DNA is more than just an improbable sequence of bases; it is functional. It tells the cells what to do. So the question we really need to answer is, how can this kind of information arise in the first place?

Origins and Operations Science

We are investigating what science can tell us about the origin of life. Did we just come out of a chemical soup, or was it something else? First, we need to answer this question: How did DNA, the body's instruction book, first get here? In order to answer the question, we need to decide what method to use to investigate this question. Since we are looking at the science, we should use the scientific method. However, we need to make a distinction between approaching something that is a re-occurring, testable phenomenon, and a singular event in the past.

As a scientist, I usually work in the area of *operations science*. This is the type of science we learn in school. You start with a hypothesis, then you conduct an experiment to test your hypothesis. Repeat your experiment several times, collect data, and make conclusions about your hypothesis. Operations science deals with regular, repeatable things that can usually be described by mathematical formulas. Oftentimes, operations science is looking at some kind of naturally occurring process.

But there is another type of science that forensics experts and archeologists use. It is called origins science. Origins science determines what caused a singular event in the past. The role of origins science is to first determine if something was caused by chance, natural laws, or intelligence. For example, one could find a rock formation that looks very similar to a human head. Was this formation caused by chance and natural laws, such as wind and rain wearing away the rock? Or was it caused by intelligence? Did someone carve the rock to look this way?

Origins science operates under a different set of rules than operations science because the event in question has already happened, and it is not a reoccurring, observable phenomenon. The best that we can do is look at clues to give us a

reasonable guess as to what might have happened. In *Signature in the Cell*, Meyer uses origins science to determine if DNA is a result of chance, natural laws, or intelligence:

> *Thaxton and his colleagues argued that inferring an intelligent cause was legitimate in origins science, because such sciences deal with singular events, and the actions of intelligent agents are usually unique occurrences. On the other hand, they argued that it was not legitimate to invoke intelligent causes in operations science, because such sciences only deal with regular and repeating phenomena. Intelligent agents don't act in rigidly regular or lawlike ways, and therefore, cannot be described mathematically by laws of nature.{3}*

DNA replication happens all of the time, but it requires proteins. But proteins are made by instructions from DNA. So the first DNA molecule must have been made in a special, atypical way, meaning it qualifies as origins science. Origins science allows for singular acts of intelligence to explain certain phenomena.

This means we need to investigate, using origins science, how the first DNA molecule with its information-carrying capacity was produced.

What Are the Possibilities?

DNA is the code for life. If we determine where it came from, then we are one step closer to determining the origin of life. Let's look at the typical origin of life theories posed by scientists as our first step in our origins science method, and see where theories are lacking or where they are helpful. Two things these theories all have in common is that they presume no designer, but only natural causes, and none of them can explain the origin of information.

The first option is that DNA might have arisen by chance. When scientists talk about chance, they are not saying that some entity called Chance did something. They mean random chemical shuffling, and out of that came DNA. But it's not good enough to explain how random chemicals came together. Think of scrabble pieces. To say that DNA came about by chance would be similar to saying that someone shook a bag of scrabble pieces and threw them on the floor and it spelled out a sentence. And this would not be just any sentence, but step-by-step instructions on how to build a cellular machine. Chance is not a good explanation for the origin of DNA, because the probability of getting something as specified and complex as DNA is well beyond the accepted probability of zero.

The other option is DNA might have come about because of necessity or natural law. Maybe there is some chemical or natural reason that forced the DNA molecules to form. Two examples of this type of origin of life theory are *self-organization* and *biochemical predestination*. The idea behind both of these is that the molecular alphabet in DNA arranged itself because of chemical properties or environmental factors. Unfortunately, scientists have found that the molecules in DNA do not chemically interact with each other because they are stuck to a phosphate backbone, not to each other.{4} On top of that, there isn't even a chemical attraction between these DNA sequences and the protein parts they code for (known as a *codon*). Since there is not a self-organizing motivation for this, and there is not an environmental factor that would favor certain combinations over others, necessity seems to fall short of explaining the functional information of DNA.

Some scientists propose that it is a combination of chance and necessity. The most popular origin of life models are based on this theory. However, Stephen Meyer shows in his book that the two most popular models, the *RNA-first world* and the *Oparin* model, do not explain how functional information first arose.

Ultimately these theories boil down to claiming that random chance causes functional information.

So if all of the naturalistic theories of origin of life fall short, then perhaps we should expand our options to theories that allow for intelligent agents.

What if We Allow Intelligence?

It seems that all of the naturalistic explanations for the origin of life fall short of accounting for the information-rich molecule, DNA. As Meyer points out, apart from DNA and the machinery in cells, such specified information is not found anywhere in the natural world.{5} The only time we see these properties is in human language and writing. So if DNA has the properties of something that was designed, then why not entertain the idea that it was designed?

Today design is not permitted as an explanation in science. However, historically, this has not been the case. In fact, it was a belief in an intelligible and coherent world created by God that motivated early scientists such as Newton, Boyle, and Pascal.{6} However, after the Enlightenment (mid-1700s), many scientists started operating under different assumptions. They assumed that only natural causes, such as chance and necessity, are permitted to explain observations.

Flash forward to Charles Darwin's time (1860s). Darwin looked at presently acting conditions to extrapolate back to the origin of all living things. He saw that environmental factors select for certain traits, such as beaks on finches. And he saw that things like dog breeding will select for certain desired traits. He therefore concluded that maybe the various animals and body plans came from conditions similar to this. He named this selective force, this breeder, natural selection. This was based on what Darwin knew in the 1850s, and some assumptions about intelligent causes influenced by

Enlightenment thinking. At that time Darwin knew nothing about DNA. It would not be discovered until the 1950s.

Stephen Meyer discusses how presently there are no known natural causes for the kind of functional information we see in DNA. The only place we see this is in human language and writing. So perhaps we cannot assume natural causes. Maybe DNA arose by intelligent design. Furthermore, experimental efforts to try to produce DNA or RNA in the lab show that a chemist or a computer programmer must be involved in the experiment in order to obtain functional information. Natural selection cannot act as a breeder, because it does not have the end goal in mind.

Intelligent Design is a strong possibility for explaining the origin of DNA. It is something that we see in operation today. And it is experimentally justified.

What Does This Have to Do with Christianity?

We have been looking at the properties of DNA and how it has all of the characteristics of a written code. Using the methods of origins science that Stephen Meyer used in *Signature in the Cell*, we can conclude that intelligent design is the best explanation for the origin of DNA. Intelligence is causally adequate to produce a code like DNA. It is observable, in the sense that today intelligent agents produce codes. And any experiments that try to reproduce DNA seem to require the input of information by an intelligent agent to make anything meaningful. This is why Meyer calls DNA the signature in the cell. However, the science alone cannot tell us whose signature it is, so we need to look elsewhere for that. That’s where Christianity comes in.

As Christians we believe that God reveals himself through general and special revelation. General revelation is God

revealing things about himself in nature. Think of it like God's fingerprints on creation. Special revelation is what God has specifically revealed in the Bible. If we want to find out whose signature is in the cell, we need special revelation to inform us on that. And the Bible says this much. Right before Paul says that creation reveals the attributes of God in Romans 1:18-20, he says it is the gospel that brings salvation in verses 16 and 17.

From the science it is reasonable to say DNA first arose by intelligent design. DNA is one of many extra-Biblical clues pointing us to a designer. This evidence, taken with many other extra-biblical evidences such as the fine-tuning of the universe for life, the moral law on our hearts, and even the way that we know gravity works the same today as it did yesterday, makes one suspicious that there must be a designer. Now take the evidences for the authority of Scripture from archeology and the Bible's internal structure and consistency and we have many reasons to believe that this designer is the God of the Bible. As Paul says in Romans 1, "His invisible attributes, namely, his eternal power and divine nature, have been clearly perceived, ever since the creation of the world, in the things that have been made. So they are without excuse" (v. 20). So, even though the science will not bring someone to a saving knowledge of Christ, they are without excuse because it does reveal God's attributes. Maybe when someone sees the Signature in the Cell, they will ask, whose signature is it?

Notes

1. "After the early 1960s advances in the field of molecular biology made clear that the digital information in DNA was only part of a complex information-processing system, an advanced form of nanotechnology that mirrors and exceeds our own in its complexity, storage density, and logic of design." Stephen C. Meyer, *Signature in the Cell* (HarperOne, 2009), 14.

2. Bill Gates, *The Road Ahead* (Viking, 1995), 188; quoted in

Meyer, *Signature*, 12.

3. Meyer, *Signature*, 29.

4. The only time the nucleotides in DNA interact with each other is when they are paired, A-T, C-G, and they do this through hydrogen bonding. However, this pairing is with nucleotides across from each other and serves to protect the DNA molecule. The coding has to do with the sequence of bases next to each other, and there is no chemical reason for one nucleotide to "prefer" being next to another.

5. "Apart from the molecules comprising the gene-expression system and machinery of the cell, sequences of structures exhibiting such specified complexity or specified information are not found anywhere in the natural—that is, the nonhuman—world." Meyer, *Signature*, 110.

6. In the radio transcript, I included James Maxwell in this list. While he is among scientists whose belief in God did influence his work, he lived from 1831-1879 which was after the beginning of the Enlightenment. I chose to take his name out here for clarity, although he is a good example of someone who did not hold to the typical presuppositions of the Enlightenment.

God and CSI:

At our house, conversations about ID usually aren't about "identification." It means "Intelligent Design."

My husband Ray's entire education is in science, including a Ph.D. in molecular biology. Early in his Christian walk,

learning there was evidence against evolution lit a fire under him that has only grown in the 35 years since. Today, he is thrilled by advances in science that on an almost-monthly basis reveal more and more evidence that an intelligence is the only reasonable explanation for many aspects of the natural world.

But that doesn't sit well with people who don't want to be accountable to the God they know perfectly well is there, but spend endless hours and countless books (and YouTube videos) denying it.

The anti-God attitude was well known to the apostle Paul, who said in Romans 1:19-20, ". . .that which is known about God is evident within them; for God made it evident to them. For since the creation of the world His invisible attributes, His eternal power and divine nature, have been clearly seen, being understood through what has been made, so that they are without excuse."

Eventually, it poisoned the very core of most science today. The early scientists like Galileo and Newton made important discoveries about the Creation because their starting point was a belief in an intelligent, orderly Creator who wove orderliness into His creation. They believed that the orderliness and principles of the natural world were knowable because our God is knowable. But then, Darwin's theory of evolution allowed people to embrace science without buying into the "God part" of it. Richard Dawkins (*The God Delusion*) said that "Darwin made it possible to be an intellectually fulfilled atheist." And today, it is now assumed that the very nature of science excludes anything supernatural. This has nothing to do with the evidence and everything to do with people's hearts.

When we "X" God out of our thinking, we feel free to redefine things any way we want, since we no longer feel beholden to His view of reality. I was thinking the other day that if Las

Vegas decided it didn't like its crime statistics, all it needs to do is define crime away. Can you imagine if the city went to the CSI investigators and said, "You know all those dead bodies you deal with? From now on, you need to find a natural explanation for those deaths."

And Gus Grissom would say, "But most of the deaths we investigate aren't naturally caused. They are caused by human beings."

LV: Not any more. If all people die from natural causes, then we've done away with crime. And we are totally committed to doing away with crime in Las Vegas.

GG: But we're committed to following the evidence no matter where it leads. If the evidence implies a killer, we can't say it's a natural death.

LV: Our commitment is eliminating crime. If you can't come up with natural causes for these deaths, we'll bring in CSIs who can.

GG: So when we find someone face down on a desk, with a wound indicating something long and sharp was stabbed from the back of the neck into the victim's mouth. . .?

LV: Keep researching until you find a completely natural explanation. And stop using needlessly prejudicial words like "victim." There is no more crime in this city because we have declared it so. Your findings have to be consistent with the new city policy.

And that's what it's like to be a scientist these days. Don't believe me? Watch Ben Stein's movie *Expelled: No Intelligence Allowed* when it comes out on DVD in a few days.

And go "Arrrrgggggggghhhhhhhhhhhh!!!!!"

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blogs.bible.org/engage/sue_bohlin/god_and_csi on October 7, 2008.

Theology vs. Science or Theology plus Science?

Appendix A: Theology vs. Science or Theology plus Science?

Note: This is one of two appendices for Steve Cable's article Are We Significant in This Vast Universe?

Are science and religion mortal enemies, or collaborating partners, or denizens of different realms with no common ground? Is the ultimate objective of science to unmask the fictitious myths behind all religions freeing mankind to pursue a rational utopia as espoused by Daniel Dennett{1} and other atheist academics? Or should we subscribe to the prevailing Western view of a clear secular vs. sacred split, segregating out thoughts so that science and theology are not allowed to deal with any topics which intersect?{2} Or will unbiased scientific inquiry lead us to a deeper appreciation and understanding of our Creator as espoused by early formulators of the modern scientific method, such as Isaac Newton, as well as many respected researchers, such as leading nanotechnologist, Dr. James Tour, who stated, "I stand in awe of God because of what he has done through his creation. Only a rookie who knows nothing about science would say science takes away from faith. If you really study science, it will bring you closer to God."{3}

The current view promoted as dogma by many in academia is that

acceptable, genuine science is based on a theological presupposition, namely, that any possibility of intervention by a transcendent Creator or other non-physical entity must be excluded from consideration in evaluating possible explanations for any phenomena observed in the physical world. It is ironic that Carl Sagan, one of the popular promoters of this dogma, would take fundamental issue with his own dogma when he wrote,

> A central lesson of science is that to understand complex issues (or even simple ones), we must try to free our minds of dogma and to guarantee the freedom to publish, to contradict, and to experiment. Arguments from authority are unacceptable.{4}

In a similar fashion, a common viewpoint promoted in some theological circles is that theology trumps science in any areas in which they have an intersecting interest, i.e. a viewpoint that looks only at the Bible without allowing its interpretation of Scripture to be informed by the findings of science. From this viewpoint, science is at best a limited field of study looking at only a small part of reality, and at worst is spending large amounts of resources studying an illusion masquerading as reality. It is assumed that science cannot provide insights to help deepen our understanding of theology.

I propose that both of these viewpoints share a common shortcoming of prejudging the result before examining the evidence. Both scientist and theologians should be free to follow the evidence where it leads, whether the evidence comes from observation of the physical aspects of our universe, or from philosophy and logic, or from divine revelation.

One area where this clash of viewpoints is reaching a fever pitch is in the field of Intelligent Design science. Researchers in this emerging field say, let us follow the evidence where it leads. If the makeup of the physical realm

includes evidence of an intelligent designer, let's admit it and pass the information on to the theologians. If the physical makeup is more indicative of the handiwork of random variations and natural processes, let's cite it and pass that information along as well. As demonstrated in the 2008 documentary, *Expelled: No Intelligence Allowed*, these researchers are facing stiff opposition and even persecution from the defenders of the scientific establishment. Ironically, but not unexpectedly, the more we learn about the fine tuning required to support life, the history of our planet, and the complexity of living organisms, the more the evidence aligns with the presence of an intelligent designer rather than the results of random, undirected processes. As one scientist observed,

> [O]n whatever volume scale researchers make their observations – the universe, galaxy cluster, galaxy, planetary system, planet, planetary surface, cell, atom, fundamental particle, or string – the evidence for extreme fine-tuning for life's sake, and in particular for humanity's benefit, persists.{5}

As Christians, we need not fear science. If the Bible is revelation from our actual Creator, it will not crumble in the presence of scientific studies into the nature of our universe. We do need to be concerned about agenda-driven science which is focused on manipulating scientific results and the popular public perception of those results to prove a predetermined theological point, whether it is atheism or a particular interpretation of the Bible.

If God is the Creator of the universe and the Bible is revelation directly from God, then accurate observation of the universe will ultimately prove to be consistent with His revelation. By combining the general revelation of science with the special revelation of the Bible, we should be rewarded with a greater understanding of the nature of our Creator and His intentions for mankind.

Notes

1. Daniel Dennett, *Breaking the Spell: Religion as a Natural Phenomenon* (New York: Viking Press, 2006).
2. Nancy Pearcey, *Total Truth: Liberating Christianity from Its Cultural Captivity* (Wheaton, IL: Crossway Books, 2004).
3. Candace Adams, "Leading Nanoscientist Builds Big Faith," *Baptist Standard*, March 15, 2000.
4. Carl Sagan, *Billions and Billions: Thoughts on Life and Death at the Brink of the Millennium* (New York, Random House, 1997).
5. Hugh Ross, *Why The Universe Is The Way It Is* (Grand Rapids, MI: Baker Books, 2008), 124.

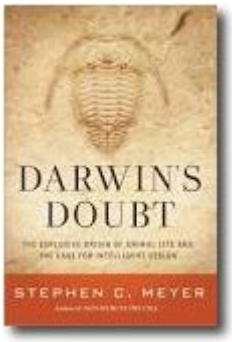
Darwin's Doubt

Dr. Ray Bohlin reviews Stephen Meyer's book Darwin's Doubt, *showing that the sudden appearance of complex animal forms in the Cambrian cannot be explained by evolutionary mechanisms.*

The Essence of the Cambrian Explosion

The fossil record of the Cambrian Period has been known as a problem for evolutionary theory since Darwin's *Origin of Species* in 1859. Darwin was aware of the sudden appearance of complex animal forms in the Cambrian from his own collecting in northeastern Wales. Complex animal forms such as trilobites seemed to appear with geological suddenness with no apparent

ancestors in older rocks below them.



In his 2013 book, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design*{1}, Stephen Meyer quotes Darwin from the *Origin of Species*: "To the question of why we do not find rich fossiliferous [fossil-bearing] deposits belonging to these assumed earliest periods prior to the Cambrian system, I can give no satisfactory answer. . . . The case at present must remain inexplicable; and may truly be urged as a valid argument against the views here entertained."{2}

Meyer provides some of the historical context of this period and Darwin's disagreement with the eminent paleontologist of his day, Louis Agassiz of Harvard. Darwin's solution to his dilemma was to suggest that the fossil record is incomplete and that he fully expected that abundant fossils would be found to indicate the evolutionary origin of these Cambrian animals. However, in the intervening century and a half, the problem has not been resolved. If anything, as we have gained more knowledge of animal life and development and found numerous deposits of periods just prior to the Cambrian, the problem is worse than Darwin perceived.

Early in the 20th century, a rich Cambrian deposit was found in the Canadian Rockies, the Burgess Shale. Entirely new organisms were found exquisitely preserved, many with soft-body parts well preserved. Then in the mid-1980s, an even earlier Cambrian deposit was found in Chengjiang, China. This deposit revealed an even richer diversity of organisms than the Burgess Shale, and even finer soft-body preservation—even down to eyes, intestines, sensory organs and stomach contents.

Later work in different parts of the world had timed the Cambrian explosion to a roughly 5-10 million year time frame around 530 million years ago [with the Cambrian period itself beginning 543 million years ago] in the evolutionary time

frame. Though that's a very long time, even for evolution, it's practically instantaneous when discussing the origin of entirely new body plans. As Meyer faithfully recounts, Darwin's dream of an ever-increasing rise in complexity and diversity is shattered by the geologically abrupt appearance of both complexity and diversity.

What has been referred to as "Darwin's doubt" could be more aptly referred to as "Darwin's headache." In this article I will explore some of the additional problems this sudden explosion of animal body plans poses for evolution. While committed evolutionary materialists pretend to not be disturbed by these developments, those with open minds are questioning this long-held theory and giving new consideration to Intelligent Design.

Evolutionary Explanations of the Cambrian Explosion

Even Darwin recognized the Cambrian as a puzzle for his theory. Darwin hoped that further exploration of fossil-bearing strata would reveal the ancestors of the Cambrian animals.

In the early 20th century, Harvard paleontologist, Charles Walcott, found a new Cambrian deposit in the Canadian Rockies, the Burgess Shale. The Burgess Shale contained new creatures never seen before and was able to preserve some soft-body parts, also never seen before. This proposed an even greater problem than Darwin knew. Older deposits were still not revealing the ancestors of the Cambrian, but now there was even more diversity and novelty than anyone had imagined. The discovery of a predator, the up-to-meter-long *Anomalocaris*, demonstrated there was a well-defined ecosystem with plant producers, plant consumers and carnivores.

The origin of the Cambrian fauna seemed to turn Darwin's theory on its head. Darwin expected all animal life forms to

be descended from a single common ancestor through a lengthy process of descent with ever-so-slight modification. But these Cambrian novelties appeared quite suddenly with no ancestors. That is not evolution as Darwin envisioned it. Walcott suggested two reasons for the disparity. First, he suggested that the immediate Pre-Cambrian deposits containing the Cambrian ancestors were to be found on the ocean floor. Subsequent off-shore drilling for oil provided a unique opportunity to test this hypothesis. But most of the sea floor is much younger than the Cambrian. If there were Pre-Cambrian deposits, they no longer exist.

Walcott also tended to be a "lumper" in taxonomic terms. That means he fit fossils into already existing categories whether they fit well or not. This appeared to minimize the explosive part of the Cambrian. But additional field excavations in the Burgess Shale, as well as in different parts of the world, revealed that many of these Cambrian creatures were unique and that their descendants are not known today—they are extinct. The novelty of Cambrian forms is more pronounced than ever.

The late Stephen J. Gould of Harvard famously described the uniqueness of these Cambrian creatures when he said; "Imagine an organism built of a hundred basic features, with twenty possible forms per feature. The grab bag contains a hundred compartments, with twenty different tokens in each. To make a new Burgess creature, the Great Token-Stringer takes one token at random from each compartment and strings them together. Voila, the creature works—and you have nearly as many successful experiments as a musical scale can build catchy tunes."{3}

Fossils have been found in sediments older or below the Cambrian but these fossils do not appear to be ancestors of the Cambrian creatures. They were also quite unique and most are now extinct. The mystery remains.

Libraries of New Genetic Information Needed: Pronto!

All Darwin had to examine were the unique animals found in Cambrian deposits. He knew nothing of genetics and the need for new genetic information.

Paleontologist James Valentine has gone so far as to say that probably all the living animal phyla had their beginning in the Cambrian period, over 500 million years ago. We do find multi-celled animal fossils 20-30 million years before the Cambrian, but only sponges seem to resemble anything we find in these deposits.

A phylum is an upper level of classification. For instance, all vertebrates are in the same phylum. Insects, crustaceans, and spiders are also in the same phylum. The phylum represents organisms with a distinct body plan though there may be many variations on that theme. In order to have all these new body plans or phyla appear in the Cambrian in a geological instant, you need a lot of new genes or genetic information. Different types of cells are needed. New genes are needed to grow new body plans out of a single-celled fertilized egg. With different cell types come different kinds of functions and cell types each needing specific gene products to give them their unique functions.

When protein sequence and gene sequence comparisons were begun in the late 70s, there was an expectation that comparing gene sequences would solve relational puzzles among living organisms but that by comparing genes from different phyla, it could be determined how phyla were related. The Cambrian fossils offer no such clues since most animal phyla appear at nearly the same time. But several decades of gene sequence comparison studies have revealed no consistent evolutionary scheme. As Meyer summarizes, “Many other studies have thrown their own widely varying numbers into the ring, placing the

common ancestor of animals anywhere between 100 million years and 1.5 billion years before the Cambrian explosion."{4}

Meyer does a great job of articulating why there would need to be an information explosion along with the Cambrian explosion. Accounting for all this new information, in a relatively short period of time, by known processes is a herculean task. If evolution solely depends on a Darwinian model, then mutation and natural selection must be able to account for the explosive rise of new genes and regulatory gene networks during the Cambrian. Meyer spends several chapters working this through. Achieving the extreme specificity of proteins through the slow, plodding, processes of mutation and natural selection appears impossible.

In the next section I address an even greater difficulty of the Cambrian explosion. Darwinism has always needed a slow gradual accumulation of genetic change. However, with the relatively quick appearance of very different forms of animals in the Cambrian, is Darwinism up to the task?

The Exasperating Problem of New Body Plans

Darwin understood nothing about how animal body plans are laid out and built in the early embryo.

Since Darwin's time we have learned a great deal. And none of what we have learned offers any help in deciphering how all these new body plans originated in such a short geological time period in the early Cambrian. The overall structure and shape of an organism is laid out early in embryonic development. Particular genes necessary for development are tightly controlled in when and how they are expressed. These genetic regulatory programs operate only in early development and they limit the possibilities of the final form of the organism.

Biologists use a classification term, phylum, to refer to the largest category of animals and plants. Humans belong to the Phylum Chordata, which includes all the vertebrates. Insects are in the Phylum Arthropoda, which includes crustaceans and spiders. These two phyla possess very different body plans, and the genetic programs to build these plans are very different in the earliest stages, even in the first few divisions of the fertilized egg. The Cambrian demonstrates that these very different body plans arise in less than ten million years of time geologically. Is that possible? All Darwinism has to work with as the source of genetic variation, are mutations.

In 1977, French evolutionist Pierre Paul Grassé noted that mutations don't provide any real evolutionary change. Mutations only seem to provide only a slightly different variety of what already existed.{5} Twenty years later, a trio of developmental biologists noted that modern evolutionary theory explained well how the already fit survive and reproduce. But just how organisms came to be that way, the modern theory seemed silent.{6} Evolutionary biologist Wallace Arthur explained that modern textbooks told the same stories about how finch beaks and the color of moths changed to suit their environment, but nowhere was it discussed how the organism as a whole came to be so integrally functional.{7}

These problems have been further addressed in recent years but nothing seems to propose any clear answers as to how new body plans could have appeared in such a short span of evolutionary time.

Steve Meyer summarizes his review of these difficulties in the light of the Cambrian saying, "The Cambrian explosion itself illustrates a profound engineering problem the fossil data does not address—the problem of building a new form of animal life by gradually transforming one tightly integrated system of genetic components and their products into another."{8}

An Opportunity for Intelligent Design

I have documented how the sudden appearance of new forms in the Cambrian creates mysteries in terms of the fossils, genetics and developmental biology.

In chapter 18, Meyer turns his attention from the observation that modern evolutionary theories do not explain the sudden appearance of all the major animal groups in a short burst of geologic time, to what can explain the Cambrian Explosion. He carefully argues that Intelligent Design has all the causal power to bring about what is needed in the Cambrian.

Initially he summarizes the conclusions of two important evolutionary students of the Cambrian, Douglas Erwin and Eric Davidson. Together these scientists have listed a few of the observations any evolutionary cause must explain. First, whatever the cause of the Cambrian Explosion, it must be able to generate what is referred to as a top-down pattern. That is, the broad general categories of animals appear before there is any refinement in these characters. Second, the cause must be capable of generating new biological forms relatively rapidly. Third, this cause must be capable of constructing, not just modifying, complex genetic regulatory circuits.

They also note, as Meyer reports, that no existing theory of evolutionary change can accomplish any of these necessary events.{9} Davidson and Erwin are quite insistent that the processes operating in the early Cambrian were fundamentally different from anything operating in nature today. That's a tall order. But Meyer adds a few more prerequisites for a cause for the Cambrian Explosion. In addition to the need for rapid development of a top-down pattern, new body forms and creation of new genetic regulatory circuits, Meyer observes that this cause also needs to generate new digital information in the DNA and new structural information that cells use routinely. There also needs
to be the development of new types of information that are

precisely coordinated to specify brand new body plans.{10}

A designing intelligence may be the only sufficient cause that can accomplish all of these events within any time frame, let alone the 5-10 million years of the Cambrian Explosion. Meyer concludes the chapter by writing, "The features of the Cambrian event point decisively in another direction—not to some as-yet-undiscovered materialistic process that merely mimics the powers of a designing mind, but instead to an actual intelligent cause."{11}

Clearly when all the evidence is reviewed as Meyer does, the conclusion of Intelligent Design is nearly impossible to avoid. To ask how a designing intelligence did all this is to insist on a materialistic explanation for an immaterial cause. More is yet to be discovered, but if the pattern holds, Intelligent Design will become even more robust in the future.

Notes

1. Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperCollins, 2013).

2. Charles Darwin, *The Origin of Species*, Chapter X (pp. 235, 252-254), quoted in Darwin's Doubt.

3. Stephen J. Gould, *Wonderful Life: The Burgess Shale and the Nature of History* (New York: W.W. Norton & Co., 1989), p. 217.

4. *Darwin's Doubt*, pp. 105-106.

5. Pierre-Paul Grassé, *Evolution of Living Organisms* (New York: Academic Press, 1977), p. 87.

6. S. Gilbert, J. Optiz, and R. Raff, "Review—Resynthesizing Evolutionary and Developmental Biology," *Developmental Biology* 173 (1996): 361. "The Modern Synthesis (Neo-Darwinism) 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."

7. Wallace Arthur, *Biased Embryos and Evolution*, (Cambridge: Cambridge University Press, 2004), p. 36. "Textbooks of evolutionary biology have for years trotted out the usual old stories about how birds' beaks evolve to match their food items, or how moths' colours evolve to match their background. But where are the equally detailed studies about the importance of one body part matching another."

8. *Darwin's Doubt*.

9. Ibid., p. 355.

10. Ibid., p. 358.

11. Ibid., p. 381.

Darwinist Arguments Against Intelligent Design Illogical and Misleading

I recently attended a debate on "Intelligent Design (ID) and the Existence of God." One of the four debaters was Dr. Lawrence Krauss{1} representing an atheistic, anti-ID position. I was looking forward to hearing what Dr. Krauss would say when speaking in the presence of other knowledgeable members of academia. Would he go beyond the tired, illogical talking points passed on without question by the mainstream

media? Or would he present some thoughtful arguments *against* the validity of intelligent design concepts and/or *for* the current state of Darwinist explanations for life as we know it?

Since I believe there are some thoughtful, interesting arguments that could be raised against intelligent design, I was sorely disappointed to discover that Dr. Krauss did not deviate from the shallow arguments which consistently appear in media coverage of this topic. As one of the other debaters, Dr. David Berlinski {2}, commented after Dr. Krauss' opening statement, "Everything you have said is either false or trivial."

However false and trivial they may be, these arguments are blindly accepted as reasonable by many people. As thinking Christians, we have a responsibility to be prepared to tear down these façades raised up against the knowledge of God. One way to do this is to be able to discuss with others the prevailing arguments in ways that reveal their weaknesses and inconsistencies. To help in that process, the remainder of this article will list several of the standard arguments offered up by Dr. Krauss and examine their reasonableness and validity.

Argument: **Evolution is a proven fact**. Scientific experiments and observation over the last 100 years have conclusively demonstrated that evolution is a fact.

> ***Analysis**: **Faulty logic resulting in false conclusion**. In the context of the debate, "evolution is a proven fact" is implied to mean that random mutation coupled with natural selection is the sole process through which life evolved on this planet. **This meaning of evolution is not a proven fact.** What has been demonstrated through observation and experimentation is that the frequency of certain characteristics in a species will vary over time through random mutations and natural selection. These results provide*

some support to the theory that these undirected natural causes could be responsible for the development of life as we know it, but they do not come close to proving it. In logical terms, we would say that what science has demonstrated is necessary for the premise to be true but not sufficient to prove that it is true. That would be like saying, "Since we can demonstrate that wind and water erosion can produce regular geometric patterns, this proves the Statue of Liberty is the result of undirected natural forces."

Argument: **Origins science is the same as observational science**. Both the study of origins (or other one-time events) and the study of ongoing natural processes are the same because they both look at data that was observed in the past. Therefore we can apply the same criteria to origins science as to observational science. Since observational science depends on repeatable experiments, we should reject out of hand any hypothesis (e.g. ID) that considers intervention by a designer because we cannot recreate it.

***Analysis: False premise resulting in faulty conclusion**. The study of origins is more akin to archaeology and forensic science than to observational science. In these fields, scientists look at the evidence left over by past events to help evaluate hypotheses on what caused the event to determine the ones that are most likely. As an example, consider the question, "Why does the earth have a large moon?" Scientists have a number of different theories on when and how our earth acquired a moon, but they would all agree that we can never be certain what actually happened (apart from the development of a time machine which would allow us to go back and observe the event). It is true that in observational science fields, scientists do look at results from experiments done in the past. But, they can choose to repeat those experiments in the future.*

Regardless of whether one is considering the role of natural selection or the role of an intelligent designer, when you are developing hypotheses for the origins and development of life on earth the best that can be done is to access which processes had the highest probability of contributing to the end results. If you eliminate all options other than random variations in natural processes, you tie the hands of scientists in considering how the evidence best fits all hypotheses.

Argument: Some things that have the appearance of being designed are not. Therefore, we cannot detect the presence of design.

***Analysis: Faulty logic resulting in false conclusion**. Yes, there are things found in nature from the geodesic shapes of carbon structures to the results of erosion that mimic shapes designed by man. Yet, most of us seem to have no problem distinguishing between the remains of ancient civilizations and the results of undirected natural processes. If you search enough beaches and tidal pools, you can probably find every letter of the alphabet produced by the interaction of tides and currents. But, if you come across the words "John loves Mary" in the sand, you will be very confident that these were the result of intelligent intervention.*

Argument: The theory of evolution is a foundation of modern science.

***Analysis: Switching definitions results in false conclusion**. Understanding the processes by which bacteria, viruses, species and societies change in response to changes in their environment are important concepts in modern science. However, whether one believes these processes are solely responsible for the origin and development of life on earth or not has little or no impact on one's ability to make advances in science. To date, I have not been made aware of a*

single positive advance in modern science or engineering that required the developer to fully believe in Darwin's view of the origins of the species in order to make that advance. One's beliefs on origins are foundational to answering the metaphysical questions of life, but don't preclude someone from making contributions in science. Advances in science have been made by Christians, Hindus, Buddhists, Jews, atheists, etc.

Argument: Scientists understand how the bacterial flagellum evolved, disproving the concept of irreducible complexity.

***Analysis: False statement coupled with faulty logic**. The bacterial flagellum is a complex device used to propel some types of bacteria. It is comprised of over 30 different proteins. Not only do these proteins perform different complementary functions, but they must be assembled in the bacteria in exactly the right sequence by other proteins. Since the flagellum will not function without all of these elements in place (i.e., it meets the definition of irreducible complexity established by Dr. Behe in his book Darwin's Black Box), the premise is that all of these parts would have to appear simultaneously in order for natural selection to favor carrying forward any of these mutations in the gene pool.*

Dr. Krauss stated that scientists have shown that the bacterial flagellum is not irreducibly complex. To the best of my knowledge, this is a gross overstatement. The arguments I have seen presented fall far short of developing a plausible explanation for how the flagellum could have evolved{3}. If a plausible argument coupled with experimental evidence exists, I am very interested in having my understanding updated. However, even if such evidence did exist, it would not demonstrate that the concept of irreducible complexity was false or that this unknown

plausible path was the way the flagellum came onto the scene.

Argument: Intelligent Design can never be science because it is not falsifiable. You must have ways to prove a scientific theory is false in order for it to be a valid theory. Any observation that does not agree with the theory can be attributed to supernatural intervention.

> ***Analysis: Arbitrary, inconsistent definition**. Academics in the field of philosophy of science do not agree that the ability to falsify establishes a boundary on what is and is not science. Professor of philosophy and atheist Dr. Bradley Monton {4} pointed this out during the debate. He argued that we should not exclude a potentially valid hypothesis simply on the basis of a narrow definition of science. In addition, origins science cannot meet this standard. Proponents of neo-Darwinism have clearly demonstrated over the last few decades that it is not falsifiable either. Whenever the theory disagrees with the evidence, its proponents claim that natural selection found a way around the problem; we just don't know what it is yet. As Richard Dawkins stated, "Evolution is more clever than we are."*

Hopefully, this summary will help you sort through the smokescreen of "conclusive" arguments offered up by the proponents of naturalistic Darwinism. Perhaps someday they will engage in a genuine discussion where both sides can state: 1) the reasons they believe their theory has merit and, 2) the observations that create problems for their theory. Such a discussion might actually prove helpful to someone trying to sort through the evidence to make an evidence-based faith decision.

Notes

1. Dr. Lawrence Krauss is the Foundation Professor in the School of Earth and Space Exploration and the Physics

Department, Co-Director of the Cosmology Initiative, and Inaugural Director of the Origins Initiative at Arizona State University.

2. Dr. David Berlinski is a lecturer, essayist and a Senior Fellow of the Discovery Institute's Center for the Renewal of Science and Culture. Dr. Berlinski received his Ph.D. in philosophy from Princeton University and was a postdoctoral fellow in mathematics and molecular biology at Columbia University.

3. Additional information from the Reference Guide to Redeeming Darwin available at *RedeemingDarwin.com*.

Example of Darwinist argument: Since design cannot be considered as an explanation, evolutionists maintain that complex structures like flagellum evolved slowly over time from less complex structures performing other functions in the cell. Kenneth Miller states: "At first glance, the existence of the type III secretory system (TTSS), a…device that allows bacteria to inject these toxins through the cell membranes of its unsuspecting hosts, would seem to have little to do with the flagellum. However, molecular studies of proteins in the TTSS have revealed a surprising fact—the proteins of the TTSS are directly homologous to the proteins in the basal portion of the bacterial flagellum…. The existence of the TTSS in a wide variety of bacteria demonstrates that a small portion of the "irreducibly complex" flagellum can indeed carry out an important biological function. Since such a function is clearly favored by natural selection, the contention that the flagellum must be fully assembled before any of its component parts can be useful is obviously incorrect. What this means is that the argument for intelligent design of the flagellum has failed." Response to Darwinist argument: The flagellum is an excellent example of an irreducibly complex function in one of the simplest life forms. Different proteins and structures work together to create a swimming mechanism. This complex interaction cannot be adequately explained by evolutionary

processes. Mutations creating only one piece of the flagellum in a life form without the other pieces would not create any value to be carried on to the subsequent generations. Miller's statement that "the argument for intelligent design has failed" misses the point of irreducible complexity. The fact that one component of an irreducibly complex system may have another useful function does not remove the barrier that the irreducibly complex system requires the simultaneous appearance of multiple cooperating components to perform a function that has not been performed in that way before. In addition, William Dembski points out another problem with Miller's argument:

> *The best current molecular evidence, however, points to the TTSS as evolving from the flagellum and not vice versa…. Miller has nothing more than the TTSS to point to as a possible evolutionary precursor. Behe and the ID community have therefore successfully shown that Darwinists don't have a clue how the bacterial flagellum might have arisen.*

4. Dr. Bradley Monton is a philosophy professor at the University of Colorado at Boulder. His areas of specialization include the Philosophy of Science (especially Philosophy of Physics), Probabilistic Epistemology, Philosophy of Time and Philosophy of Religion. Previously he was on the faculty of the University of Kentucky, an Assistant Professor at The American University of Beirut and a Teaching Assistant at Princeton University. He earned his Bachelor of Arts in Physics and Philosophy at Rice University and his Ph.D. in Philosophy from Princeton University.

Only Science Addresses Reality?

Dr. Ray Bohlin comments on the hubris of Drs. Coyne and Cobb in their op-ed in Nature*, in which they claim that only science addresses reality. Religion, they say, must be silenced. This alarming sentiment has already met reality in California.*

Would it surprise you to hear that churches may eventually be prohibited from teaching any ideas contrary to Darwinian evolution? "No way!" you say. "The Constitution guarantees freedom of speech! The first amendment guarantees that Congress can pass no law restricting or promoting any religious exercise!"

Well, yes the Constitution does that, but be patient with me and I'll show why the answer to the opening question could be "yes."

In the current issue of Nature, probably the most prestigious science journal in the world, a letter to the editor appeared in the August 28, 2008 issue on page 1049. Two well-known evolutionary biologists, University of Chicago's Jerry Coyne and University of Manchester's Matthew Cobb wrote the letter to complain about a previous editorial expressing hope that the Templeton Foundation, which funds research into the relationship between science and religion, might bring about some helpful resolutions.

Coyne and Cobb couldn't disagree more:

> We were perplexed by your Editorial on the work of the Templeton Foundation…. Surely science is about material explanations of the world—explanations that can inspire those spooky feelings of awe, wonder and reverence in the hyper-evolved human brain.

> Religion, on the other hand, is about humans thinking that awe, wonder and reverence are the clue to understanding a God-built Universe…. ***There is a fundamental conflict here, one that can never be reconciled until all religions cease making claims about the nature of reality*** (emphasis added).
>
> The scientific study of religion is indeed full of big questions that need to be addressed, such as why belief in religion is negatively correlated with an acceptance of evolution. One could consider psychological studies of why humans are superstitious and believe impossible things….
>
> …***You suggest that science may bring about "advances in theological thinking." In reality, the only contribution that science can make to the ideas of religion is atheism*** (emphasis added).

Coyne and Cobb clearly state that religion has no authority to make claims about reality. If science is allowed to persist in this audacious distortion of religion and science, then any kind of teaching that is critical of any aspect of naturalistic evolution would be considered a negative influence on society as a whole. Religion is seen as crossing its constitutionally protected borders.

Biology teachers constantly complain now that what they teach about evolution is contradicted by the churches their students attend. This is obviously quite frustrating. If science is the only branch of knowledge that is allowed to make claims about reality, then religious teachings should not be allowed to interfere.

You may still be thinking that I'm taking this too far. Consider though that the California state university system already refuses to give credit for high school science courses that include anything beyond naturalistic evolution. Many Christian private school graduates in California are finding that their science courses are not accepted at state

universities. Essentially that means you don't get in unless you can make those credits up by taking junior college science courses that meet the evolution-only standard.

State governments may easily decide that they need to help these religious school graduates out by requiring that these religious schools not be allowed to teach religious material that contradicts state-mandated standards. It's a violation of the separation of church and state, after all!

If you ever questioned the importance of the evolution/Intelligent Design controversy, I hope you see the point now. Unless we can convince a sufficient minority in the science community that science is limited and the subject of origins is one of those limitations, we may not be able to legally teach students anything about creation or Intelligent Design.

While Coyne and Cobb certainly don't represent all scientists, they are not alone! Trust me. I watched a video recently of Jerry Coyne making a presentation at a scientific meeting where he basically made the very same claim. NO one objected. He was applauded enthusiastically. Watch it for yourself here. While the whole lecture is worth watching, the last eight minutes when he presents a slide with just the word "Religion" is the key segment.

Coyne and others are trying to establish what Nancy Pearcey called the fact/value split in her book *Total Truth*. To Coyne science is based on fact. Only material explanations are allowed in science since religion is based on personal values and have nothing to do with facts. Therefore if you try to inject your personal values (Creation, Intelligent Design) into the world of facts (science) this is a violation of the rules of science. It's not allowed.

According to Jerry Coyne speaking in the video, the only way to increase the acceptance of evolution is to reduce or

eliminate the influence of religion. The two are incompatible! Coyne is unable to see that he also has a worldview, materialism, which influences how he interprets the data of science. He erroneously believes he is being objective about his interpretation.

This is a cultural battle as well as a scientific battle. For more information and resources from Probe to help you educate yourself and others about evolution and Intelligent Design see browse our articles at www.probe.org. If we don't "tear down strongholds" like this, we may find ourselves behind impenetrable, silent walls.

"I'm Interested in Grad School in Intelligent Design"

Dear Dr. Bohlin,

Thank you for your reply to my earlier letter, and yes I am interested in graduate school. I am under a little pressure though, as I am an older student with a wife and two sons. At this time it seems I will have to pursue some type of professional or graduate school in order to use my degree to any extent. I am still trying to decide what I want to be when I "grow up." I am tired of school simply because of the continual attacks on my beliefs. I would very much like to pursue further schooling if I could find a school and professors that are a little more user friendly. I would like to hear more of what you have to say along the lines of Intelligent Design professors. As a matter of fact, I can't wait. I was ready to drop out this week, but between your

letter and my counselor's advice I have managed to hit my last two exams in full stride and I feel renewed about school. Thank you again and I hope that you have more good input for me.

I'm glad to hear that a few things came together to encourage you. If nothing else the list of professors below could better help direct you and fashion your goals. They may also have other suggestions for you.

Here are a few names to research for possible graduate school.

- *Mike Behe is professor of Biological Sciences at Lehigh University.*
- *Scott Minnich is associate professor of microbiology at the University of Idaho.*
- *Dean Kenyon is professor of biology at San Francisco State University.*
- *Paul Chien is professor and Chairman of the Biology department at the University of San Francisco.*

Behe, Minnich, Kenyon, and Chien are fellows of the Discovery Institute's Center for the Renewal of Science and Culture. You can find a short bio for each at www.discovery.org/crsc/fellows/index.html.

I don't know anything about these guys need or desire for graduate students but I do know that Minnich has an active research program utilizing graduate students. Behe has cut back some of his research to focus on promoting intelligent design, so I'm not sure where he is at in being able to support graduate students. If you haven't read Behe's *Darwin's Black Box* you should do so ASAP.

I also understand your plight as an older graduate student with a wife and two kids. I started my Ph.D. program in 1983 when my boys were 1 and 3. It is difficult and you can't

devote the lab time that other single students can but because I knew this was where God wanted me and my wife was fully supportive, God supplied our needs. I also made sure my boys received scheduled time with Dad that I protected almost at all costs. For years I took them out individually for breakfast on Saturday mornings which they loved. We rarely had “important” conversations but time alone with Dad at least every other week helped let them know that they were important to me. In retrospect I could have scheduled a little more time. I also scheduled my nights in the lab. Everybody knew Dad wasn’t home on Tuesday and Thursday evenings. This helped keep me from disappointing them with random evenings away from home. I could schedule long experiments on those days and keep disappointments to a minimum. I also stayed away from the lab on Sundays except for occasional quick trips for maintenance of ongoing experiments. It’s tough but can be done. But total support from your wife is essential. The long term demands on your time put a big strain on her and she needs to believe this is what God wants for you and your family.

Respectfully,

Ray Bohlin
Probe Ministries

Josh McDowell on Using Redeeming Darwin With Expelled: No Intelligence

Allowed

Over the last 50 years, those with a Christian worldview have been the focus of condescension and exclusion in the academic community. As has happened throughout history, these attitudes from the academic community have gradually permeated our mainstream culture. Today, evangelical-bashing is the accepted standard position for all forms of mass media from news reporting to books and movies. Over the last decade, this trend has accelerated to the point that many people believe Christian principles and beliefs should not be recognized in our public policies and culture. We are all experiencing these efforts to relegate the Christian faith to an irrelevant sidelight of American culture.

One of the root causes of this trend is the teaching of naturalistic Darwinism as dogma within our public education system from grade school through our universities. The reasoning is that educated people know that science has proven there is no evidence for a creator. Therefore, there is no place for religion and moral authority in our public life. This attitude directly affects public policies on abortion, euthanasia, education, sexuality, etc.

Although Darwins theory of life originating and evolving to its current forms strictly though random events and natural selection may have seemed plausible 50 years ago, our current understanding of the nature of the universe and the complexity of even the simplest life forms bring up huge issues for which the current state of evolutionary theory has *no* answers. For example, over 700 scientists at our universities and research institutions have signed a statement expressing their doubt that Darwinism can adequately explain our current understanding of life in this universe (See dissentfromdarwin.org for the current list).

In a desperate attempt to protect the dogma upon which their

naturalistic/humanistic worldview is based, the scientific/educational establishment is systematically and viciously attacking those who would dare to research alternative theories that may better explain the current evidence. They have mounted a public relations campaign to paint any scientific research or publications which expose the issues with Darwinism as not science, but rather religiously based dogmatism or creationism. What is absolutely amazing is that while aggressively pursuing their campaign of persecution and spin-doctoring, the Darwinist community steadfastly denies that they are doing any such thing. Sadly, this campaign has been successful to date in keeping our public education system and most of our scientists captive to this worldview-motivated attempt to defend the dogma of Darwinism in the face of all evidence to the contrary.

Expelled: No Intelligence Allowed (starring Ben Stein) is a documentary scheduled to be released in April 2008. It exposes the blatant attempts to squelch academic freedom in defense of outdated Darwinist dogma. By chronicling the stories of well-qualified scientists who have dared to question Darwinism as a comprehensive explanation for life and interviewing people on both sides of these events, this documentary presents a strong case for restoring academic freedom allowing scientists to follow the evidence where it leads. Both the content and the involvement of Ben Stein (who is Jewish) make it clear that this documentary was not created to directly promote the teaching of creationism. This documentary calls Americans to stand up for academic freedom and integrity. It says that we should not allow the misguided notion that science and religion must be in conflict to keep scientists from exploring all reasonable hypotheses to explain the latest evidence.

The producers of *Expelled* are making a large financial investment to create a documentary targeted for wide release in thousands of movie theaters. They are taking this risk because they believe that the American public needs to

understand what is really happening. It is only through public awareness and pressure that the current climate of repression and persecution can be changed. *Expelled* is intended to bring this issue to the forefront of public thought. Promoting an open public debate could well lead to unshackling scientific research in this area and opening the door for students for receive more in-depth education in evolutionary theory including those areas where evolutionary theory currently has no viable explanation.

The content of *Expelled* creates a natural opportunity for Christians to discuss the evidence for a creator and the reasons for our faith in Jesus Christ as Creator and Savior. *Expelled* will draw wide public attention to these issues and will create media attention and controversy even among those who do not see it. It would be a shame for believers to miss this opportunity to promote this public discussion and to engage our friends, neighbors and co-workers in making a defense for our hope in Christ.

So how can we go about doing this?

> *1. Let me encourage you to take the time to review the excellent, cutting-edge materials available through our website and our online store. Make the effort to equip your people with the information and encouragement they need to communicate that the scientific evidence points to a creator and to share the relationship they have with the Creator. Again, this foundational issue is critical and will get more intense in the days ahead. The Redeeming Darwin material from Probe and EvanTell is ideal for this purpose.*
>
> *2. Make sure that they know that Expelled will bring this topic to the forefront in peoples conversation whether they have seen the documentary or not. We need to equip believers to look for opportunities to interact intelligently. You may want to make available the Viewers version of Probes Discovering the Designer DVD/booklet as a cost effective tool*

for your people to share with others (found in our Store).

3. Encourage people to see this controversial documentary:

Expelled does not directly promote a Christian view. In fact, it does not even take the position that Intelligent Design has been shown to be a better theory than Darwinism. This helps establish a non-threatening, neutral starting point to engage in a thoughtful discussion. You are not asking people to watch a Christian film. You are encouraging them to become informed on an important issue.

Expelled is a documentary. It is not for entertainment. It will require the audience to think about what they are watching. Although it includes some humor (how could Ben Stein keep from adding humor?), it is a very serious documentary. Be sure people understand that they are attending for the purpose of learning not for a night out at the movies.

After you view the movie, you may want to think about how you could use the DVD version when it is available. If you are showing Expelled in a small group or some other venue, you can better focus peoples expectations.

4. Plan to offer small group opportunities to learn more about this controversy and how it ultimately points us to Christ. Once again, the Redeeming Darwin material is an excellent resource for this purpose.

“In Redeeming Darwin Are You Saying God Used Evolution?”

I read the description of “Redeeming Darwin” and an email supposedly explaining what you mean by “redeeming Darwin.” Neither explain exactly what you do in this program; are you saying that God used evolution? If so, I find this extremely unbiblical. Or are you saying that Darwinism as it now stands (“molecules-to-man” – i.e., macro-evolution) is true but that it can somehow be used to evangelize? Or are you saying that Darwinism as I described above is NOT valid, but that an actual 6-day Creation by God is what IS true?

I apologize that our description is not clearer. We will take another look at it to see what we can do to increase the clarity.

At Probe Ministries we reject the Darwinian evolutionary mechanism proposed for the origin and diversity of life. The *Redeeming Darwin* curriculum explains a few of the problems with Darwinism and explores the alternative provided by the relatively new Intelligent Design Movement.

Since Intelligent Design principles are used by both young and old earth creationist perspectives we use scientists in the film from both ICR (John Morris) and Reasons to Believe (Fuz Rana) to explain what they like and don’t like about ID.

As a ministry we do not take a position on the age of the earth question.

Respectfully,

Ray Bohlin, PhD