

OLD TESTAMENT SURVEY

Lesson 2 (Part 3)

Genesis: Creation and Evolution

Creationism or evolution – does it really matter? Christians who think so generally give two reasons for concern: (1) a belief that the integrity of the Bible is at stake if Genesis is not accorded a literal meaning; and (2) a belief that creationism means a Creator God; therefore, evolution must mean no God. In other words, some believe that without creationism, atheism must be true. Some take this further and argue the scientific truth of creationism in an effort to “prove” God exists.

Last week, we discussed the first concern over whether an evangelical, inerrantist view of Scripture mandates a view of origins as a literal 24-hour, 7-day process some 6,000 years ago. That lesson set out 4 different options for reading Scripture, all of which are viable under an evangelical/inerrantist perspective. Those views ranged from a literal 24/6 young earth to a historical, contextual reading that would be silent on the science of creation.

This week, we set aside the first issue and concentrate on the second reason:

Does creationism mean God is real, and therefore, does evolution deny God’s existence?

We will suggest that evolution *does not* invalidate the truth of God as set out in Scripture. Our focus will then turn to issues related to various views of origins, principally evolution, but others as well. We will close with two appendices. The first appendix is an annotated bibliography. The second appendix shares some views of class members sent in via email.

GOD’S EXISTENCE AND EVOLUTION

How do we KNOW God exists? Is it something we “feel” or sense? Does God’s indwelling Spirit confirm it? If so, how can we ever convince someone who does not already have the Spirit? Even more difficult, how do we convince someone who claims to have an inner conviction when they worship some other god?

A related question is, how do we know that the Bible is true? How do we know that it expresses God’s message and can be relied upon by those who seek him? It is in the Bible that we read of Jesus – God incarnate, born of the virgin Mary, who suffered, was crucified, buried and physically resurrected, ascending into heaven

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with a promise to return. How can we be confident in our faith as the Scriptures explain it?

A number of approaches have sought to establish both the truth of God's existence and the veracity of Scripture as his words to humanity. Aquinas (ca. 1225 –1274) used natural law and reasoning to set out five proofs for God's existence.¹ Over the centuries, others have made various alternate arguments from philosophy as well as from nature.

The nature arguments have tended to fall into two different camps. One camp views nature as a wondrous creation that reflects the wondrous beauties of its Originator/Creator. A second approach is to take portions of nature that cannot be explained by the current state of knowledge and attribute those portions to "God." We have noted earlier how some term this the "God of the Gaps" theory.

As noted in earlier lessons, a problem arises, however, when we take things that we cannot understand and use them as proof that God exists. As we gain knowledge over time, things that were "proof" of God begin to disappear. History repeatedly shows that what was once considered a "miracle" can sometimes become known as science.

Another way that Christians have tried to "prove" that God exists involves taking the Biblical creation texts and showing that science verifies them. After class last week, a well-educated gentleman came up to me and explained, "It was only after I accepted the literal 6-day, 24-hour days, young earth creation that I accepted God and his existence." Yet, I have also met countless people who have said to me the opposite! I have heard, "I only came to faith and accepted Christ once I concluded that I did **NOT** have to believe in a literal 6-day, 24-hour day, young earth creation."

How do we prove to others that God exists? How do we prove it to ourselves? Is the answer keyed to "creation apologetics"? Some believe we can take modern science and use it to prove that the Biblical account is precisely what happened scientifically in history. They then think that one must logically conclude that only a divine revelation could account for an accurate scientific picture being delivered to a scientifically naïve people who could never have guessed such on their own. Is that right?

Perhaps...but, perhaps not. There will be a number of people that will not look at the scientific evidence and come to a conclusion that the earth is 6,000 years old, or that God created all beings in six days. Some are going to see the fossil records

¹ Aquinas, *Summa Theologica* First Part, Question 2. See also synopsis in lessons 46 and 47 in the Church History series downloadable at www.Biblical-Literacy.com.

and accept that dinosaurs existed and were alive long before humanity. Even if the dating is not to be accepted as accurate, many will not see the fossil record representing that all animals and humanity were created on the same day.

That introduces the second part of our topic: does evolution preclude the existence of God? As explained earlier, being a scientific and theological layman frees me up to use my own terminology and thoughts as I explore the possibilities in science putting them up against the biblical ideas presented in part two of this lesson. Let me set out some basic ideas that are behind certain vocabulary I use.

First, I give you a box that contains “nature” or the “natural world.” Anything beyond the natural, I will call the “super-nature” or the “supernatural.”

Super - Nature

Nature

Everything that is physical, all elements throughout the universe. Every idea, every thought, every feeling. Each strand of DNA, each subatomic particle, each speck of space dust. Every line of poetry, the deepest philosophical thought. Everything that exists subject to the laws of nature, known or unknown.

We note that nature includes not only physical matters, but also emotional matters, matters of the mind, and heart. In short, it is inclusive of all we are. It is in a box to separate it as a system from that which is beyond it.² As a Christian believer, I am not one who thinks that this reality (“Nature”) “is all there is.” I think of it as real; it is a “reality,” but there is more beyond our reality.

A “miracle” for me is the intrusion of the supernatural into the closed box of nature. This can take at least two forms. The first is obvious: God (the “Supernature”) can intrude on nature and perform some action that we would not see otherwise. This would be an action for which no natural explanation would

² In this sense, many use the term “naturalism” to refer to “the view that only this spacetime world exists, and everything in it is in principle open to scientific explanation.” Dowe, Phil, *Galileo, Darwin and Hawking: The Interplay of Science, Reason, and Religion*, (Eerdmans 2005) at 2.

do. A good example is the virgin birth. Unfortunately, many people have historically taken things that happen in the box which science cannot understand and deemed it an intrusion of the supernatural, and hence, a miracle proving God's existence. Over time, a legitimate explanation has often been found within the box itself, revealing a scientific or "natural" explanation.

My concern is that for many people, the only miracles they believe are those where the supernatural creates or intrudes upon the natural in an unexplainable way. In truth, there is a second kind of "miracle" or intrusion of the supernatural into nature. This is the kind where nature is woven together and used as its own resource to find a conclusion or reach an action. In this sense, it is no less a miracle to see God work through a doctor to bring healing as it is for the healing to take place with no natural explanation.

Consider this in another light. We have five incredible children. Science has taught us that creation of children comes from the 23 paternal chromosomes carried by a sperm successfully implanting itself into an ovum containing 23 maternal chromosomes. Now, knowing that natural process does not in any way persuade me that my children are any less a gift from God. I see God's hand in many ways.

Can natural science explain what happened? Yes. But, that is science explaining, to some degree, *how* God went about the miracle. It does not diminish God, it glorifies him as it shows that the intricacies of a system he set up, with his sustaining force behind it, produces the lovable child.

Let me use a legal analogy. Some of our work involves prosecuting patent infringement cases. Some of our clients are inventors who have filed and received patents on their inventions. They have created something that is recognized as new and unique by the government watchdogs over such things. One case we recently finished was a case involving pacemakers. I could give you the inventor; I could give you his pacemaker. I could tell you where he made it, when he made it, even why he made it. I could even quote his declaration that he would make it, that it would exist/be. All of that would be quite different than taking you to the paperwork and showing you the intricate matters behind *how* he made it.

When we look at Scripture and science, we are trying to learn to some degree not simply that God created, spoke, and it came to be, but we are trying to determine *how* he made things. Was it entirely by the super-nature intervening into nature each step of the way? Or, did God use nature as his tools and mechanisms to bring about the Creation he sought?

In this sense, we answer our second question. With creationism, without question, there must be a Creator God. But, the idea that evolution must then deny God's existence is a non sequitur. *If* evolution is the process that brings man into being,

then the question is who created and sustained the universe and its laws that enable evolution?

Let us consider a number of scientific issues in this light. At the outset, I need to expose my bias. While I am not sold that all things in the natural evolved from a cosmic big bang leading to a one-celled organism that eventually led to me, I do NOT believe that one destroys God or the credibility of Scripture if one believes they did. As I set out last week, there are wonderfully rich and fair ways to read Scripture's creation texts in its historical contexts that remove it from the debate over science. By the same token, one can fairly decide that while Scripture speaks of God commanding creation into existence, it does not tell *how* creation did God's bidding!³

Even as a Bible-believing Christian, while I try to read through the science without a horse in the race of the ultimate outcome, I do still read it with a critical eye because I have found that scientists are no different than other humans. They make mistakes, they make assumptions that sometimes turn out false, and they face peer pressure to conform on certain matters. The trial lawyer in me not only wants to give each perspective a fair shake, but it also wants to hold each view to a burden of truth and rigorous inspection.

So, let me work through the strengths and weaknesses I perceive in my readings and studies. I will give my questions and let the readers make their own conclusions. As I stated earlier, this lesson is not the exhaustive answer. The hope is to be the impetus for further study, questioning, and analysis.

EVOLUTION

While I studied evolution in school, it was very limited and a long time ago! Over the years, I have tried to keep up with milestones, but my science background is woefully inadequate! You might remember the Newsweek magazine that had a picture of Adam and Eve on the cover in January of 1998 (the cover has since gained iconic status). The article concerned mitochondrial DNA and its implications for the ancestry of humanity and *Homo Sapiens* (modern humans).

³ We need to note here that Genesis 1:1 speaks of God creating using the Hebrew verb "*bara*." A number of scholars consider that as creation out of nothing (Latin: *creatio ex nihilo*). In contrast, Scripture continues the creation account using a different Hebrew verb (*asa*), which is typically translated "made." The difficulty posed by this argument is that Genesis again uses "*bara*"/create to describe the making of man which we are told, was fashioned from the dust. The arguments get quite complex and a good conservative discussion with citations can be found in Collins's commentary. Collins, C. John, *Genesis 1-4: A Linguistic, Literary, and Theological Commentary* (P&R Publishing 2006) at 50ff.

I read the article when it came out, but did little follow-up research. Over the last year, I have opted to try and get more caught up on the current thoughts in human evolution. Included in the attached bibliography are many of the books I read in an effort to better understand the ideas in this and related fields.

Among the books I read on human evolution was one by Roger Lewin and Robert Foley.⁴ This book is a textbook used at Oxford to teach human evolution, and is the main book I use in this analysis as representing current thoughts. Lewin is a British anthropologist who has written a number of books and journal articles on the subject. Foley is the director of human evolutionary studies at Cambridge, holding both an M.A. and a Ph.D. in anthropology.

Below, I have set out ten questions or issues that I would probe if this were a trial and I was cross-examining the authors on the science of human evolution. In fairness, we should note that Lewin's and Foley's textbook is not an argument for evolution; evolution is assumed. Thus, it does not go through an analysis of many of the questions I pose.⁵ To that degree, we reiterate that these questions are starting points for further discussion, not winning reasons that bring a theory to its knees.

I will also add that these are starting points for my questioning and discussing – not because they are the only issues, nor because they are necessarily the strongest. But they are the ones that occurred to me as I read the book. It is also worth noting that here we are discussing human evolution, and not the evolution of all of nature or the cosmos. Those are separate matters worthy of separate analysis.

(1) What is fact and what is conjecture?

Lewin and Foley candidly recognize that both in evolution and in their book on evolution,

Some of what we study is little more than good conjecture, and the need to seek out solid facts and good logic to determine what really did happen.⁶

⁴ Lewin, Roger and Foley, Robert, *Principles of Human Evolution*, (Blackwell 2004).

⁵ Although I have read and considered books like *The God Delusion* by Richard Dawkins, I found the lack of scientific logic sacrificed in the name of proselytizing to his atheism alarming. It destroyed a lot of credibility I might have assigned to his book, and I have not included books like this in the bibliography. For those interested, Alister McGrath does a wonderful job of dismantling Dawkins's arguments in his responsive book, *The Dawkins Delusion*.

⁶ Lewin at *viii*.

The book then tries to sort out what are the “facts” versus what still needs unraveling. This starting point is worth emphasis as it fairly places into perspective some of the questions framed below.

(2) *Does science show human evolution as just another step in a chain of events?*

The book recognizes that there are certain patterns and mechanisms that apply to all species in the “evolutionary chain.” Yet, even the authors acknowledge that there is something unique about humanity, from an evolutionary perspective. In their words,

Human evolution is a “one-off” event, and so requires special explanations.⁷

Perhaps this is why the British scientists Denis Alexander and Robert White, both gifted scientists⁸ and outspoken Christians have said,

It is often thought that evolution involves a chance process and therefore must be in some way incompatible with a God of order and design. But a moment’s thought will show that such a view is simplistic. Consider, for example, the course of your life until now...God’s providential care has been sovereign over all the details of your life, even from the time before you were born....

The Bible is consistent in its teaching that events that many people would ascribe to chance are within the boundaries of God’s sovereignty and plan...As Proverbs 16:33 so vividly puts the point: “The lot is cast into the lap, but its every decision is from the Lord.”

There is never a hint in the Bible that certain types of events in the natural world are any more or any less the activity of God than other events.⁹

⁷ *Ibid.* at 27.

⁸ Alexander is the chairman of the Molecular Immunology Program at the Babraham Institute in Cambridge. He also edits the journal *Science and Christian Belief*. White is Professor of Geophysics at the University of Cambridge. He serves on Great Britain’s National Committee of Christians in Science. See Alexander, Denis and White, Robert, *Science, Faith, and Ethics: Grid or Gridlock?* (Hendrickson 2004).

⁹ *Ibid.* at 101-102.

(3) Does science give the only fair interpretation to the finding of “variation?”

Let me first provide some conceptual background for my question to make sense. Variation is one of the four conditions that supposedly mandate “natural selection” as a mechanism. “Natural selection” is the “core mechanism of change” that depends on four variables: (1) organisms can *reproduce*; (2) offspring *inherit* traits; (3) in spite of reproduction and inheritance, there is still *variation*; and (4) there is competition for resources and ultimately survival. Lewin then concludes, “If these conditions occur, then evolution must be a consequence.” Natural selection, they assert, is not *evolution*, but the *mechanism* of evolution.¹⁰ While I have a number of challenges to this, the main one I raise here concerns variation.

Lewin explains the history behind the concept of variation as it is used to dispute the idea of a Creator. In ways a bit reminiscent of a debate recently between atheist Christopher Hitchens and Rabbi David Wolpe on the existence of God, Lewin gives the history:

This was in fact also one of the principal lines of evidence employed against the theory of a special creation of immutable types – if God had created a number of types of plant and animal, then unless he or she was incompetent there was no reason why they should vary at all.¹¹

That seems nonsensical, non-scientific, and not very astute for a number of reasons. I will give one here. Variation is at the heart of beauty. French impressionist Claude Monet spent much of his last thirty years painting water lilies in his flower garden at Giverny. There are about 250 paintings in the series. Were the first 249 failures? Was Monet an incompetent painter? Dare we say he took delight in the variations? Could they have served the simple purpose of alternate expressions of what he wished to see and show? How limited and inartistic is the mind if we think the copy machine is the answer to good art!

(4) Does science draw the only reasonable conclusion to a finding of common characteristics?

An underlying assumption to the evolution idea is that because many species share common characteristics (look how many species have noses!), they must have common heritage. Lewin states,

¹⁰ Lewin at 28-30.

¹¹ *Ibid.* at 29. Hitchens uses a similar argument against Rabbi Wolpe. See the Rabbi’s well-handled response at <http://www.onpointradio.org/2010/04/tom-hitchens-and-the-rabbi>.

Typically, when two species share characteristics, it is thought that this reflects shared ancestry.¹²

This certainly could be the case, but it does not have to be the case.

From an analogy perspective, let me add that I type this from my hotel room in New York City. As I gaze out the window, I see a large number of buildings – tall and short. Every building I see has walls and roofs. These common characteristics do not mean they all shared a common ancestor. We of course know they were each constructed individually.

Some might say that they evolved from earlier designs that had those elements, so let's make the analogy a bit tighter. A lot of these buildings are made of bricks, but some are made of stone, glass, or principally steel. Upon further examination, even in the brick buildings, you see some glass. In the steel buildings, you do as well. Does this reflect “shared ancestry?” Or, does glass prove to be a good transparent material that allows one to see out of a building, regardless of the other elements in play?

This analogy, like all analogies, is not airtight, but it is meant to convey an idea, not an absolute truth. The idea is that a creator of a set of buildings can use certain materials over and over in different combinations to put together the desired end result. Put a child in a room with Legos and watch the result. The same Legos will get used to make a number of totally different objects, although each has similar composite parts. In other words, it is not necessarily true that shared characteristics mean shared heritage.

(5) Could there be a distinction between microevolution and macroevolution?

Lewin makes a point about distinctions in “microevolution” and “macroevolution.” Microevolution involves evolutionary mechanisms that “operate at the level of genes and individuals, in populations, over short-term generational periods.” Macroevolution is long-term evolution.

Microevolution was seen in moths that “changed color” in industrial age England. In the days before soot covered industrial area trees, the predominant moths were lightly colored, the color of the tree bark. As soot darkened the bark, the moths that successfully bred and were not so readily consumed by predators were those more darkly colored. This is “microevolution” or evolution within a species. It makes sense that in the short term, moths of a certain color will proliferate and survive to the exclusion of other moths when their color “works” in an environment better. That “microevolution” seems beyond dispute. But, for long-

¹² *Ibid.* at 35.

term changes that move one species to a dramatically different one, more evidence is needed (at least for me!). Lewin does a good job stating my concern:

While natural selection is a powerful mechanism below the level of the species, it does not account for what may be occurring above that level—that is at the macroevolutionary level.¹³

Notwithstanding the issues set out in the quotation above, Lewin asserts that, for many, natural selection is still the mechanism thought responsible for one species evolving into another:

The Modern Synthesis proposes that macroevolution is simply an extrapolation of microevolutionary processes; that is, gradual evolutionary change of a population is driven by natural selection, resulting eventually in a new species.¹⁴

My problem is highlighted later on the same page where Lewin adds,

In principle, this transformation should be evident in the fossil record... However, such occurrences are relatively rare, particularly for very ancient parts of the fossil record. Often the new species appears abruptly, either replacing the parental species or appearing concurrently with it, with no transitional forms present.

It is the lack of transitional forms that has led to the macroevolutionary debate.

We should add that Lewin's "macroevolutionary debate" is not whether macroevolution occurred, but rather "how" it occurred in light of the fossil record (or lack thereof).

(6) How fully is evolution documented?

Lewin gives information about the fossil record that raises several questions. He starts with an explanation that "life first evolved on earth almost 4 billion years ago, in the form of simple, single-celled organisms."¹⁵ Then, supposedly 500 million years ago (give or take), complex, multicellular organisms evolved in a "geologically brief instant" called the "Cambrian explosion." During this creative burst, all plant and animal phyla arose. After giving this information, Lewin then notes:

¹³ Lewin at 47.

¹⁴ *Ibid.* at 50.

¹⁵ *Ibid.* at 73.

In the 530 million years since the Cambrian explosion, 30 billion species have evolved.¹⁶

30 billion? I guess to have all the variations we have today, there had to be a number of intermediate species yet undiscovered in the fossil record. The lawyer in me, however, does the math. 30 billion species in 530 million years – that is 30 billion in 6.36 billion months! In other words, we are evolving, on average, almost five new species a month!

Since no scientist is finding any of these newly evolving species, I suspect one of several arguments will get advanced. Perhaps most of the evolution happened early and once *Homo Sapiens* evolved, the machine shut down for a while. Maybe the argument is that the evolution is occurring in places yet undiscovered. Either way, it seems almost a typo by Lewin!¹⁷

(7) *What is the confidence level on how the human species evolved from other primates?*

Somewhat reminiscent of the opening, Lewin concludes the section on micro- and macroevolution with the note:

We have seen that while all biologists work within an evolutionary framework, and broadly within a Darwinian one, there is still considerable disagreement about the precise mechanism involved.¹⁸

This disagreement is not just in the fine details. There is serious disagreement over where the species “evolved” and which evolved from which.

(8) *How does genetic evidence speak to the issues?*

This comment raises the question of why scientists are unclear on what seems to be a basic, fundamental aspect of this theory. The mitochondrial DNA and genetic information is most interesting. A bit of background is helpful here. Each human cell has DNA that is responsible for the cell’s duplication (human growth). That DNA is found in the cell’s nucleus. In another area of the cell is the “mitochondria.” The mitochondria helps the cell use oxygen to burn food stuff and make ATP, the energy driver for the body. Mitochondria has its own DNA and

¹⁶ *Ibid.*

¹⁷ Lewin explains that mass extinctions have occurred in a mixture of continuous change with “sporadic and spasmodic convulsions.” He then adds that species diversity rebounds quickly after such a rapid collapse. *Ibid.* at 76-79.

¹⁸ *Ibid.* at 83.

it replicates independently from the nucleus and the genetic DNA with which we are more familiar.

A relevant and interesting aspect of this mitochondrial DNA is in its initial formation in a human. Male sperm has mitochondria to help produce the energy needed to swim to the ovum. Once the sperm has reached the ovum, the mitochondria are not part of what normally enters the egg in the impregnation process. As the human develops from one cell to two cells, two to four, *etc.*, the mitochondrial DNA being reproduced each time should be an exact duplicate of only the mother's mitochondrial DNA.

Because of this, geneticists are able to use mitochondria to determine our maternal heritage. Not surprisingly, occasionally (very occasionally) the DNA structure in the mitochondria will mutate at a level. The mutated DNA is then passed on to the next generation. This is what allows the geneticist to chase back the heritage. If my mother had a mutation in her mitochondrial DNA, it will be passed on to all three of her children likely in the exact form of its mutation.

Scientists have taken this knowledge and over the last several decades used it to unravel relations of peoples and races. Using this data, scientists changed perceptions of a number of evolutionists on the ancestry of man. Until the development of mitochondrial DNA analysis, evolutionists debated between the "multi-regional hypothesis" and the "Out of Africa" hypothesis. The multi-regional view thought that in many regions around the globe, *Homo Sapiens* (modern man) evolved in multiple places around the globe from the local *Homo Erectus* population as far back as one million years ago. The Out of Africa theorists thought that *Homo Sapiens* came straight out of Africa in the last 100,000 to 150,000 years and replaced *Homo Erectus* throughout the world.

Mitochondrial DNA was the turning point for many scientists on this issue. Oxford geneticist Brian Sykes explained:

The impact of 'Mitochondrial DNA and human evolution' [an article in *Nature* published in January 1987] was dramatic. It came down very firmly on one side of the argument about a fundamental question of human evolution. For many years there had been an intense and polarized debate on the origins of modern humans, based on different interpretations of fossil skeletons....

What the mitochondrial gene tree did was to introduce an objective time-depth measurement into the equation for the first time. It showed quite clearly that the common ancestor of *all* modern humans lived only about 150,000 years ago. This fitted in well with the 'Out of Africa' theory...but it came as a severe shock to the multi-regionalists. If all modern-humans were related back to a

common ancestor as recently as 150,000 years ago, they could not possibly have evolved in different parts of the world from local populations of *Homo erectus* that had been in place for well over a million years.¹⁹

There are many assumptions that go into the dating by mitochondrial DNA. There are issues of different mutation rates/likelihood in different parts of the gene structure. Some mutations are not readable because the mutation site has already mutated before, hiding the double mutation. Also, there is the problem of continuity of the mutation rate. Scientists assume how frequently the genes mutate, yet, as noted before, scientists also believe that some mutations occur more rapidly in different eras/ages.²⁰ Add to that other underlying assumptions (generations/breeding at age 25) and there is room for considerable fluctuation in the proper time period. Toward that end, there are a number of other genetic tests developed over the past two decades that independently seem to point to a same or similar time range.

Because the idea of all humanity having a common mother is from Genesis, the scholars have labeled this first common ancestor, “Mitochondrial Eve.”

(9) How complete is the fossil record?

The fossil record seems glaringly incomplete. Lewin records that Earth currently has 200 modern species of primates. To get to this 200, there should be about 6,000 species that evolved linking *Homo Sapiens* to the species ancestral to primates.

The 200 modern species represent the remains of that adaptive radiation [a “radiating out” of species, not to be confused with radioactivity!], which, in total, probably gave rise to some 6000 species.²¹

Frequently, the media bombards the public with the latest archaeological find or write up claiming paleontologists have found the “missing link.” This is a popularization that sells papers, but it is not, apparently, factual according to the evolutionists. For there is not *one* link missing in this 6,000 strong chain. There are thousands and thousands of links missing! Lewin gives the numbers:

¹⁹ Sykes at 46-51.

²⁰ Lewin at 120.

²¹ *Ibid.* at 135.

The known fossil record provides only the briefest of glimpses of this radiation, a sketchy outline at best; somewhere between 60 and 180 fossil primate species can be recognized.²²

I do not suggest that we need all 6,000 links for evolution's credibility, but it seems there is a lot of room for alternate realities when 5,820–5,940 links are missing. This no doubt explains why Lewin adds, "A good deal of uncertainty exists over the pattern of primate evolution."²³

It is worth adding that we are looking here only at human evolution, the same issues likely exist between a salmon and a halibut! In other words, this is an issue that likely exists between all species, not simply *Homo Sapiens*.

One of the appeals of evolution is that for the fossil and genetic evidence that exists, evolution as a theory seems to work. Hence, scientists are comfortable using it as their working paradigm, modifying it as new information comes to light.²⁴ That does not mean, however, that it is the only system that accounts for how things came to be.

(10) How is genetic similarity really good proof of evolution?

I have always been intrigued at the usage of comparative gene coding to establish relationship. Lewin gives the statistic that humans share 98.3% in their nuclear, non-coding DNA sequences and over 99.5% in the nuclear coding sequences (genes) with the chimpanzee. Many scientists see this as proof of a close evolutionarily relationship between chimps and people.²⁵ One wonders, though, where the differences are. I can give someone 99 percent identical directions, but if a key difference is turning left at a critical moment instead of right, the difference is huge.

Toward this end, Cal Tech's Roy Britten (Distinguished Carnegie Senior Research Associate in Biology – CalTech; Member, Nat'l Academy of Sciences) published in peer reviewed literature that,

The old saw that we share 98.5% of our DNA sequence with chimpanzee is probably in error. For this sample, a better estimate

²² *Ibid.*

²³ *Ibid.* at 136.

²⁴ Alexander at 96.

²⁵ Lewin at 202ff.

would be that 95% of the base pairs are exactly shared between chimpanzee and human DNA.²⁶

Britten does not write to deny evolution, but he does change the number a bit -- especially when you compute the amount of differences 95% is!

Yet, if we return to the bricks and steel of the New York City skyline for a moment, it helps illustrate that this perspective is no different from that detailed in point four above. If God put humanity together with genetic sequences, many of which produce noses, arms, legs, feet, ten fingers, ten toes, two eyes, brains, sockets that enable the eyes to move, *etc.* Do we not expect there to be genetic similarity?

40 percent of our DNA is the same as that of worms and fruit flies! We are going to have genes that produce digestive systems, senses, *etc.* This is not an argument only for evolution. It is sensible under many scenarios.

Conclusion.

Where does this leave the evolution debate? Well, a number of Christians see God's hand or technique for creating mankind in evolution. As noted in the attached bibliography, some with strong academic qualifications write to defend both evolution and orthodox Christian faith. Typically, these people see creation as God's *act* that brings into being and sustains in being. Evolution is the *process* by which God created.²⁷

Others see evolution as something that displaces God and justifies atheism. This is certainly the case by the atheist Richard Dawkins. There are a great many scientists who line up against this reasoning. One of particular note is Dr. Francis Collins, who until recently, was head of the Human Genome Project as one of the world's leading scientists. Collins made the journey from atheism to faith, writing about the journey, explaining physics, chemistry, and biology as natural fits for faith in God. Collins concluded:

Evolution, as a mechanism, must be true. But that says nothing about the nature of its author. For those who believe in God, there are reasons now to be more in awe, not less.²⁸

²⁶ Britten, Roy J., "Divergence between samples of chimpanzee and human DNA sequences is 5%, counting indels", *PNAS*, October 15, 2002, vol. 99, no. 21, 13633–13635.

²⁷ Poole, Michael, *Exploring Science and Belief* (Hendrickson 2007) at 92ff.

²⁸ Collins, Francis S., *The Language of God* (Free Press 2007) at 107.

Evolutionary teaching is also seen by some to have a profound impact on the ethics of society. In this sense, we should discuss the bitter battle between “Darwinism” and the “Bible” in the famous *Scopes* monkey trial.²⁹ John Scopes was a high school biology teacher on trial for violating The Butler Act, a Tennessee law that made it illegal to teach evolution. William Jennings Bryan was the prosecuting attorney, and Clarence Darrow was the defending attorney.

Bryan was a strong Democrat with faith in the populace over and against the elite represented by the opposition. More than politics, however, were at play in the trial. Bryan was also a lay minister within the Presbyterian Church. He had become convinced that the atrocities of World War I, particularly Germany’s use of gases as a weapon of mass destruction, came about because of human devaluation derived from evolutionary teaching. Bryan is quoted as saying:

The same science that manufactured poisonous gases to suffocate soldiers is preaching that man has a brute ancestry and eliminating the miraculous and the supernatural from the Bible.³⁰

Numbers summarized Bryan’s view as evolution “substituting the law of the jungle for the teaching of Christ.”³¹

Bryan argued against evolution, but surprisingly, Bryan admitted that he believed in an old earth, that the “days” of creation were “ages” and even that evolution was possible for all species but for man.³²

Again, the issue arose in World War II when Nazi Germany relied on evolution to justify creating the superhuman race, eliminating the weak and unfit for survival. Victorian capitalism used evolution to teach cutthroat competition that held no mercy for those unable to compete. The theories behind evolution have been used to justify many wicked actions.³³

²⁹ The trial was made famous by the movie *Inherit the Wind*, but the movie is inaccurate in much of its portrayal and should not be relied upon for what actually happened. Lawyer H. Wayne House gives an overview of the actual background and trial (with actual trial transcripts of testimony) in his chapter “Darwinism and the Law.” House, H. Wayne, ed. *Intelligent Design 101: Leading Experts Explain the Key Issues*, (Kregel 2008).

³⁰ Numbers, Ronald L., *The Creationists: From Scientific Creationism to Intelligent Design* (Harvard Press 2006) at 56.

³¹ *Ibid.*

³² *Ibid.* at 58.

³³ The same can be said about religion, but the heart of Christ, Christians should readily point out, is to love one’s neighbor. The atrocities do not reflect the heart of the faith.

INTELLIGENT DESIGN

A number of scholars have set out another theory for the existence of life. This theory is popularly called “Intelligent Design” or simply “ID.” The last 15 to 20 years have carried ID to the forefront in debate for American teaching policies in public schools. Books have been written, debates held, policies passed, and even a trial held over the concept of ID.

What ID actually is depends, in some measure, on who one talks to. A principal book in the ID movement is the biochemist Michael Behe’s 1996 book *Darwin’s Black Box*.³⁴ Behe believes that all biological life (including humans) derived from a common biological source. Evolution’s mechanism of natural selection, Behe argues, is insufficient to produce the “irreducibly complex systems” found in life today.

Behe uses the example of a mousetrap to explain his theory. A mousetrap has a number of parts (spring, catch, wooden base, *etc.*). Those individual parts would never have worked to catch a mouse; it takes them all working together to do so. Behe then reasons that the pieces would not have evolved separately, for they would have no separate purpose. They only work in concert to achieve their purpose and are, therefore, “an irreducibly complex system.”

Behe believes that some intelligent designer must have been involved to move these complex systems into being. Three of the systems Behe cited as irreducibly complex are the eye, blood clotting, and the workings of the immune system.

A second supporter of a similar version of ID is the mathematician William Dembski.³⁵ Dembski finds “intelligent design” in things that have “specified complexity.” By that, Dembski means that the neither chance, necessity, or a combination of the two could have reasonably brought forth the item.

Another area that some refer to when speaking of ID concerns the physical structure of the universe, as opposed to cellular structures and biology. It is asserted that the fine tuning of the physical requirements that allow for life, the universal laws of nature that make earthly life possible, and all the other small

³⁴ Behe, Michael J., *Darwin’s Black Box: The Biochemical Challenge to Evolution* (Free Press 1996).

³⁵ Dembski, William, *The Design Inference: Eliminating Chance Through Small Probabilities* (Cambridge 1998); *The Design Revolution* (Intervarsity 2004); Dembski and Ruse, Michael, eds. *Debating Design: From Darwin to DNA* (Cambridge 2004).

factors that must exist or all life would fail all indicate the need for a designer. They are beyond happenstance and bear witness to some intelligent designer.³⁶

It is easy to find a number of ID criticisms. Both atheists and believers have taken issue with ID and published on it. Rather than detail the criticisms, we will simply reference the works for those interested in pursuing them.³⁷ There are also a number of strong defenders who have sought to answer the critics. Some of those books are included in the bibliography as well.

I do want to point out a concern of ID that calls for care. ID must avoid falling into the historic God of the Gaps trap. Using Behe as an example, when people point to a complex system like blood clotting as too complex for natural selection, then should science find something to the contrary, it weakens the overall argument, not simply the example. In this vane, one might read the evolutionary explanation of the blood clotting in Alexander's *Science, Faith, and Ethics*.³⁸

LITERAL CREATION

While the ideas behind a literal creation are beyond the scope of this immediate lesson, there are several points that should be put forth. First, literal readings take various forms. Some (albeit a very few) view the literal meaning as including God actually speaking in the Hebrew language as Hebrew is used in the Genesis account. Others view the six creative days as 24-hour days that come one right after the other.

Some view the days as ages, although not necessarily in the order and divided in the manner others suggest is necessary. As mentioned last week, this takes the days of creation and sees them ordered for poetic effect rather than chronology. A key verse to understanding this is Gen. 1:2, "The earth was without form and void." This formlessness is fixed in days one through three where God forms light and dark (1); heaven and earth (2); and, land/vegetation (3). The void is filled on the next days with sun, moon, and stars filling the light/dark (4); birds and fish filling the now formed heavens and seas (5); and, animals and man filling the earth and eating the vegetation (6).

There are more variations on "literal views" because Genesis leaves great flexibility. There is no reason to believe that God made the earth brand new.

³⁶ See Gonzalez, Guillermo and Richards, Jay, *The Privileged Planet: How Our Place in the Cosmos is Designed for Discovery* (Regnery Publishing 2004).

³⁷ In addition to many books listed in the bibliography, one may read Sober, Elliott, "What is Wrong with Intelligent Design?" *The Quarterly Review of Biology* 82:3-8.

³⁸ Alexander at 105.

Trees, for example, did not have to sprout and grow. They would have had growth rings. In other words, someone could have come in and chopped down a newly created tree and determined its age.

Likewise, there is no indication how long man existed before he ate of the fruit. Some believe that Man did not begin aging until after eating the fruit, and the ages assigned in Genesis to Adam *et al.*, are years lived *after consumption*. These people note that Adam and Eve might have lived for millions of years before eating the forbidden fruit in the particular Garden that was Eden.

Some believe that since God showed Adam the animals to find a mate, there must have been females in a species close to Adam perhaps even *Homo Sapiens*, but without the special Spirit that made Adam a unique creation. This indicated to Adam and to us, that only a Spirit-filled woman is appropriate for a Spirit-filled man. Man may have been shown many of the varieties of primates including *Homo Erectus*, early *Homo Sapiens*, *etc.*, but none would do, and God made the mate from Adam. (Some see this as explaining Cain's wife and early cities as well.)

Our purpose in this lesson is not to emphasize one or another. The purpose is to set out the options, showing that each one can come under the umbrella of God's word as God's true revelation to man. The key is to see how the views are compatible and to make one's choice based upon faith and the best evidence.

Our desire is to read God's word with awe and prayer, seeking to understand his message and uphold his words to an unbelieving generation, yet doing so with integrity and not blinded eyes to the knowledge we gain from God's world.

POINTS FOR HOME

1. *"All Scripture is breathed out by God ..."* (2 Tim. 3:16).

Paul understood and taught that God breathed out Scripture. It contains God's message to the world in the form in which God has chosen to give it. We are about holy business as we seek to understand it. We should always do so with humility and eyes open to his Spirit revealing more and more truth within its pages.

2. *"For 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"* (Rom. 1:19-20).

We learn of God from the book of his works just as we do from the book of his words. We need to recognize that studying the world is studying the works of God. In the world's mechanisms and processes, whatever they are, we can see the hand of God moving.

3. *“You knitted me together in my mother’s womb”* (Ps. 139:13).

As the cells grew from united sperm and ovum into the baby born nine-months later, the repeated DNA duplications, the nutrition transfers, the formation of hands and feet, were never done without the hand of God. As sculpture, designer, or “knitter,” the Holy Scriptures give God credit for all we are and all we can be.

WANT MORE?

Attached to this lesson are two appendices. The first is an annotated bibliography, and the second is some emails sent in from last week’s “Want More?” assignment. Out of respect for privacy, we have removed the names of the authors, but they are provided to give some idea of how others in class view the subject.

This week the assignment for those wanting more is different:

Read through the annotated biography and find a book that interests you. Write why the book is worth reading/why it interests you. Email which book and why to wantmore@biblical-literacy.com. We will hold a drawing from those who have written to give away several copies of a number of the books. **TO QUALIFY FOR THE DRAWING, YOU MUST WRITE A LEGITIMATE EXPLANATION OF WHY THAT BOOK INTERESTS YOU!**

APPENDIX A

Here are three of the emails from the “Want More?” last week showing alternate perspectives from class members. Names are omitted to honor privacy.

When it comes to viewing science and creation one of the important aspects to decide is which came first: God, the creation, or science. In my view theories such as evolution or the combination theories of day-age or gap (which are essentially evolution with “hand waving”) seem to presume that the scientific laws we see today applied to God at the time of creation. In reality, the laws that we see binding together nature are a reflection of the order created by God not the “rules of the game” by which God had to create. So to constrain the creation to a set of laws that are only observed after the whole creation was established is not necessarily valid. I know of no scripture to suggest this is a sensible way to view creation. Thus, God has the authority to create, as He wishes and in any manner or “order of events” He pleases. He can also change the laws such as when the Sun was held still during the battle (ie earth rotation stopped...ps, how come no one fell down?, or maybe God moved the Sun itself with the Earth’s rotation) . Did $F=ma$ before creation or did God create $F=ma$. I submit that if one believes nothing existed before except God Himself then the logical conclusion is that God created the order as well (and the relevant scientific relationships, laws, observations).

Strangely enough, many of the simple laws we learn in school are in fact far more complicated once one peels back the academic veil a bit. For example, the mathematics we use are not fully adequate to describe physical things that are non-linear. Nonlinearities and singularities in mathematics are where much of our simplified approximations fall apart. You are a lawyer, that is why designers include “safety factors” in their designs....to account for the things they can't predict, model, or comprehend. Arrogant Man believes he knows more than we really do.

So which came first, the scientific law or the creation...the proverbial chicken and egg? God or the law? As you know, I believe that science reflects his creation not creation reflecting the science. Science shows the unbelievably amazing and inseparably intertwined creation we see today. So complicated and intertwined, in fact, that it is difficult to reconcile with the combination theories. The “combination theories” such as day-age and gap run into fundamental scientific issues as they try to reconcile the theory of evolution and the creation story. Yet simple questions exist...how did the flowers exist for ages without the bees? How did vegetation last without the Sun? Where is the fossil record? How did evolution occur in a pre-death world? As an aside, I can point you to a Christian geologist, Hans Mendaris, who now is with Frontier Camp who can take you to places in Texas where you can find unfossilized fossils. I've done it and have unfossilized prehistoric sea shells in my house. If there were ages or gaps this material simply would have decayed over millions of years, yet it is in my hand. Anyway, suffice it to say that, in my opinion, relatively simple and common sense science makes it a strain to be compelled to believe in an old earth.

Anyway, I appreciate and enjoy your class and hope these philosophical comments challenge your perspective a bit.

An Alternative Perspective on Creation

As we first open the book of Genesis and begin to read about creation let's not forget that this story extends to the universe as we know it. Therefore, the first statement reflects an order in the creative process...first the heavens will be created and then the earth. And to stress the point we are told the earth was without form and void. This means not one speck of matter that could be considered 'earth' or the stars or planets or sun had yet been created. The void was darkness. Not even a spark of energy had yet penetrated the 'deep.'

'And the Spirit of God hovering over the face of the waters,' suggests a prelude to action.

The first creative act was to create light. Most of us are familiar with the relationship scientists use to connect matter and energy: $E=mc^2$, where E=energy, m=mass and c=the speed of light. So God first creates the energy source he will use to develop mass and everything else we know as tangible matter. At this time there is no 'earth' only light and darkness. Nor are there stars or suns and planets. This is more significant than one might think. This is the beginning of what we call the universe. He calls the light day and the dark night but that is not to suggest that at this time we need a definition that relates to the planet we call 'Earth.' He hasn't gotten there just yet. Turns out this is a real convenient convention and will be really useful later when he puts the planets in motion.

Next He creates the heavens. No planets. No Earth, per se. No sun or moon. Just the expanse of space that we see when we look 'up.' There is the basic matter that will become Earth and planets as we know it, which He refers to as the expanse and the waters. These are His basic matter creating elements.

And now He creates our planet Earth. He creates dry land. There is separation between water and land. And He adds plant life. The Earth is not rotating just yet because He has not yet created the sun and moon and other heavenly bodies and without them there are no gravitational forces to initiate rotation. His light provides the energy for the plants to yield seeds and to grow according to their kind. The reference to a 'Day' is just that the creative acts need separation and in our limited perspective each 'day' signifies completion of a creative act. Doesn't necessarily mean the earth is rotating...

Next He creates the planets and suns and moons. And He transfers the source of light from Himself to these heavenly bodies. Particularly the suns. He uses His energy to put things into motion and we get night and day. And all of the good things that come from gravitational forces. Like our laws of physics. So, yes, this model does agree with science. Oooweee and the Big Bang theory? Yep, that was God transferring energy to the planetary masses He had just created.

So a literal translation of 'Creation' actually does work.

There are quotes I used :

1. From Dr. Roboert Jastrow, Founder of NASA's Goddard Institute for Space Studies: *"For the scientist who has lived by his faith in the power of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries."*

"Now we see how the astronomical evidence supports the biblical view of the origin of the world....the essential elements in the astronomical and biblical accounts of Genesis are the same. Consider the enormosity of the problem : Science has proved that the universe exploded into being at a certain moment. It asks: 'What cause produced this effect? Who or what put the matter or energy into the universe?' And science cannot answer these questions."

"This religious faith of the scientist is violated by the discovery that the world had a beginning under conditions in which the known laws of physics are not valid, and as a product of forces or circumstances we cannot discover. When that happens, the scientist has lost control..."

2. From Sir Fred Boyle (prominent evolutionist): *"The chances of the universe happening by chance are about as likely as a tornado blowing through a junkyard containing the parts of a 747 and accidentally assembling the parts, making it ready to fly."*