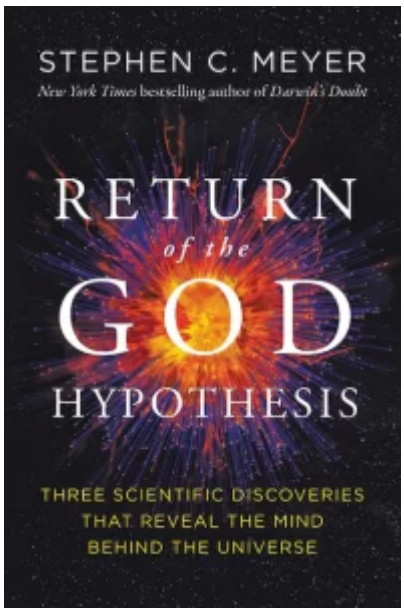
# ‘Return of the God Hypothesis’ for Regular People

*Dr. Ray Bohlin provides an overview of Stephen Meyer’s book* Return of the God Hypothesis, *looking at how recent scientific discoveries provide evidence for an intelligent creator.*

## Was There a God Hypothesis Prior to Scientific Materialism of Today?




In this article I give an overview of Stephen Meyer’s ***Return of The God Hypothesis: Three Scientific Discoveries that Reveal the Mind Behind the Universe*** {1}. The three discoveries are first, the discovery in the 20th century of the Big Bang Model for the origin of the universe, second, the continuing discovery of the extreme fine-tuning of a universe that is friendly toward life, and third, the grand amount of genetic and cellular information needed for the origin of the first life and the Cambrian Explosion, where nearly all animal phyla suddenly appear with no ancestors.

But we need to cover a little history first. Meyer’s title is “Return of the God Hypothesis.” This implies that there was previously an accepted “God Hypothesis” in science. Then it was lost, and the time and evidence are right for that God Hypothesis to return. Early, Meyer quotes Richard Dawkins, “The universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil, no good, nothing but blind pitiless indifference.”{2}

So according to Dawkins, science has shown God to be superfluous.

This has been the position of most scientists since the late 19th century, when two authors detailed a long-standing warfare between science and religion. Most of the scientific community followed along to the present day.

But Meyer goes on to document that most if not all historians of science today agree that the Christian worldview greatly influenced, some say was even necessary for, the rise of modern science. Three key Christian concepts were, first, God's ability to choose what kind of universe He wanted to create. That meant that we can't just reason what nature *should* be like, we had to *discover* it. Second, nature is intelligible. Humans, being created in the image of God, could discover how nature operates (Romans 1:18-20). And last, human fallibility. Humans are sinful; therefore, one man's conclusions about the operation of nature must be subject to review of other scientists to ensure they are accurate. Christianity is the only worldview capable of developing modern science.{3}

So, what happened? Well, the Enlightenment happened where philosophers began to think only human reason is necessary or even proper to use in discovering the nature of humanity and nature around us. In the next section, I begin to investigate the three scientific discoveries that warrant a return of the God hypothesis.

## Scientific Discovery #1: The Big Bang

The subtitle of Stephen Meyer's book, ***Return of the God Hypothesis is "Three Scientific Discoveries That Reveal the Mind Behind the Universe***." Now we will look at the first of these discoveries, the Big Bang.

First, I know that some of our readers don't accept the concept of the Big Bang since they are convinced that our universe is much younger than 13.7 billion years. I understand your position, [please read my article "Christian Views of Science and Earth History at probe.org/christian-views-of-science-and-earth-history/] but let's look at this then as an argument you can use with an atheist to show that his own dating of the universe and the Big Bang requires a Mind.

In the early 20th century, scientists like Edwin Hubble began to observe that the universe was not static as previously accepted, but was actually expanding. It took several lines of evidence, more powerful instruments, and many astronomers and mathematicians to come to this conclusion. The novel result was thinking about running the clock backwards. If the universe is expanding now, if you go back in time the universe gets smaller and smaller. Eventually you get to a point where they say the universe was contained in a "particle" that was infinitely dense and occupied no space.

We know now the universe had a beginning. Astronomers and cosmologists had assumed the universe was static and existed for eternity. This conclusion was disturbing to some astronomers. Some rejected the Big Bang for philosophical reasons not scientific. Mathematician Sir Arthur Eddington said,

> "Philosophically, the notion of a beginning is repugnant to me. . .. I should like to find a genuine loophole."{4} "We [must] allow evolution an infinite time to get started."{5}

Edmund Whitaker wrote what many were thinking: "It is simpler to postulate creation ex nihilo—divine will constituting nature out of nothingness."{6}

And finally, Robert Jastrow wrote, "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."{7} So, God creating matter and energy out of nothing explains the Big Bang, where any naturalistic idea simply cannot explain the evidence.

## Scientific Discovery #2: The Fine-tuning of the Universe for Life

Let us now turn our attention to the second of the discoveries in Stephen Meyer's book, the fine-tuning of the universe for life.

This has also been referred to as the "Goldilocks Universe," meaning a lot of things turned out to be just right for the universe to be friendly to life. For instance, you may be aware that there are four fundamental forces in the universe: gravity, electromagnetism, and the strong and weak nuclear forces. Each of these forces is expressed as an equation that contains a unique constant, and each one could have had a range of values at the Big Bang.

Meyer reveals that the gravitational constant alone is fine-tuned to $1/10^{35}$—that's one chance in 100 billion trillion trillion. The other three constants are also fine-tuned, but even further, the constants are also fine-tuned in relation to each other. This adds another number of at least 1 part in $10^{50}$.

Meyer had the opportunity to hear Sir John Polkinghorne at Cambridge during his doctoral work in the history and philosophy of science. Polkinghorne used an illustration of a universe generating machine with numerous dials and adjustable sliders, each representing one of the many cosmological fine-tuning parameters.  Any slight change in the dials and adjusters of these parameters would render a universe hostile

to life in any form. Polkinghorne would later say in an interview that a theistic designer provided a much better explanation than any materialistic hypothesis.{8}

Later, Meyer shows that including entities such as entropy and black holes, the odds of generating a life friendly universe are in this context 1 part in 10 to the power of 1 followed by 122 zeroes.{9} It would take several lines to write this number. This is an insanely impossible number to be arrived at by chance.

Nobel-Prize-winning physicist Charles Townes said, "Intelligent design as one sees it from a scientific point of view, seems to be quite real. This is a very special universe: it's remarkable that it came out just this way."{10} This intelligence is perfectly consistent with the God of the Bible.

## Scientific Discovery #3: Genetic Information for the First Cell

In this section I'm discussing the third scientific discovery; the need for complex specified genetic information for the first cell and new groups of organisms throughout time.

In Darwin's time, the first microscopes were being used and cells could be seen. Of course, scientists understood little of what they were seeing. Most of the cell appeared to be filled with something called protoplasm, a jelly-like substance that was thought to be easily derived from combining just a few substances. I've often said that if Darwin knew of the amazing complexity and the need for information storage, processing and regulation, evolution would have never been offered as a chance process.

Now we understand that the need for information to compose the first living, growing, and reproducing cell, is enormous. The

first cell needed DNA to store information, specific proteins and RNA to produce additional proteins for the cell to function, and a controlled means to copy DNA accurately.

For instance, life uses 20 different amino acids to link together to form proteins, the workhorses of the cell. The number of combinations of two amino acids is 400. A four amino acid stretch has 160,000 different combinations. A small protein of "just" 150 amino acids has $10^{195}$ possible combinations. But how many of these could be a protein with some function? Just one in every $10^{77}$ sequences.

But also, new groups of organisms appear suddenly throughout the fossil record. Nearly all large groups of animals, or phyla, appear in the Cambrian explosion. Animal and plant phyla rapidly diversified in at least 13 more explosions within phyla and classes into new classes, orders and families with no precursors, from flowering plants and winged insects to mammals and birds. All these explosions would require massive amounts of new genetic and developmental information.

The evidence supports the need for an intelligent designing mind to create all the needed information. Minds create information all the time. Natural processes simply can't do it.

## Do These Three Evidences Point to Theism?

The three discoveries discussed in Stephen Meyer's book, ***Return of the God Hypothesis: Three Scientific Discoveries that Reveal the Mind Behind the Universe*** are the Big Bang, the extreme fine-tuning of the laws of physics to provide a life-friendly universe, and the necessary complex and specified information for the origin of life and the progression of complex life-forms through the fossil record.

But where does that leave us? Do these discoveries warrant a

return of the God Hypothesis? Meyer examines four different worldviews to ask, would the universe we have, be expected by any of these worldviews? He uses a scientific approach called "the inference to the best explanation."

So, given a universe that is not only friendly toward life but contains living organisms, which worldview would best explain this universe? He begins with scientific materialism. Materialism has no explanation for the beginning of the universe. There was no matter or energy before the beginning, so matter and energy cannot account for the beginning of the universe. Moreover, for the origin of complex specified information needed for life, naturalism has no answer. In fact, only theism posits an entity, God, that has the causal power to produce genetic information.

Let's move to pantheism. Pantheism does not propose a personal God but an impersonal god. This "god" is one and the same with nature. Then pantheism suffers the same fate as naturalism in that the beginning can't be explained by what doesn't exist yet, matter and energy.

But what about theism and deism? To explain the notion of a beginning, an entity outside the universe is required. Both theism and deism propose a transcendent, intelligent agent, God. Both can explain the beginning and the fine-tuning. But what about the appearance of complex specified genetic information on the earth? Deism and many forms of theistic evolution require a front-loaded beginning: all the information for life was present at the beginning and natural laws took over from there—God did not intervene. But how was this information retained over billions of years until life arose on earth? And natural laws simply can't produce complex specified information. Deism and theistic evolution won't work. Only theism remains.

On pg. 298, Meyer states, "As one surveys several classes of evidence from the natural sciences—cosmology, astronomy,

physics, biochemistry, molecular biology, and paleontology—the God Hypothesis emerges as an explanation with unique scope and power. Theism explains an ensemble of metaphysically significant events in the history of the universe and life more simply, more adequately, and more comprehensively than major competing metaphysical systems."

## Notes

1. Stephen Meyer, *Return of the God Hypothesis* (New York: HarperCollins, 2021).
2. Richard Dawkins, *River Out of Eden* 133, quoted in Meyer, *Return of the God Hypothesis*, 14.
3. *The Soul of Science: Christian Faith and Natural Philosophy* (Wheaton, IL: Crossway Books, 1994) by Nancy Pearcey and Charles Thaxton.
4. Arthur Eddington, "The End of the World: From the Standpoint of Mathematical Physics" *Nature*, vol. 127 (1931) p. 450.
5. Arthur S. Eddington, "On the Instability of Einstein's Spherical World," Monthly Notices of the Royal Astronomical Society 90 (May 1930): 672. Quoted in Hugh Ross, *'A Matter of Days: Resolving a Creation Controversy*(Kindle Locations 484-485). RTB Press. Kindle Edition.
6. Cited in Robert Jastrow, 1978. *God and the Astronomers*. New York, W.W. Norton, p. 111-12.
7. Jastrow, *God and the Astronomers*. p. 113-114, 116.
8. *Return of the God Hypothesis*, p. 143-144.
9. Ibid., p. 150.
10. Bonnie Azab Powell, "'Explore as Much as We Can': Nobel Prize Winner Charles Townes on Evolution, Intelligent Design, and the Meaning of Life," *UC Berkeley NewsCenter*, June 17, 2005, www.berkeley.edu/news/media/releases/2005/06/17_townes.shtml. Cited in Meyer, *Return of the God Hypothesis,* p. 146.

# The Biology of Human Uniqueness

*Dr. Ray Bohlin demonstrates unique biological attributes that set humans apart because we are made in the image of God.*

## What's So Special About Humans?

As humans we tend to think of ourselves as rather unique in the created order of things. As Christians, we understand ourselves to be created in the image and likeness of God as we learn in Genesis 1:26. But what does this really mean? Certainly being made in God's image does not refer to our physical construction; God is spirit and therefore does not have a physical body. But God's plan from the beginning was to rescue us from our sin through the incarnation, God becoming man. Jesus was and is the Son of God, Messiah, the God-Man. Therefore it is not a stretch to suggest that our bodily make-up is meant to be the unique earthly home of Jesus and His Spirit within us. Therefore, I suggest that our biological make-up is unique in the animal kingdom since no other animal is made in His image.

But what does this really mean? I am going to borrow from several sources, principally Michael Denton's *Nature's Destiny*{1}, to discuss the biological uniqueness of humans. The Discovery Institute is also in the process of producing a film series based on Denton's work, titled *Privileged Species: How the Cosmos is Designed for Human Life.*

We are able to point out numerous qualitative abilities in the human species found nowhere else in the animal kingdom. I will discuss these in detail below, but I'll provide a brief

overview now to whet your appetite.

First, I'll be discussing our unique intelligence. Humans' ability to think abstract thoughts appears to be absolutely unique. It is difficult to arrive at a selective advantage in an evolutionary sense to this type of thinking, so where did it come from?

Second, and related to our intelligence, is our unique language capability. Most animals communicate with their own species, but no other species, including primates, actually use *language*. As toddlers we accumulate language by simply being around it. Chimps and gorillas have to go through painstaking trial and error and still can't communicate as a three-year-old does.

Third, our excellent vision allows us to use our intelligence, language and other capabilities to manipulate our surroundings in precise and advantageous ways.

Fourth, our excellent manipulative tool, the hand, is unsurpassed in other primates. We have both strength and fine motor control in our hands, allowing us to combine a strong grip and delicate finger movements that allow a wide range of movements. This, combined with our upright stance, provides an ability to restructure our immediate surroundings as no other species can.

We are also a highly social species which allows for quick distribution of ideas to everyone's benefit. And all these combine to allow us to be the only species to use and manipulate fire, which brings a host of unique abilities.

## Human Intelligence and Language

As I mentioned above, our intelligence separates us from any other primate species. Our brain is three times the size of the brain of a chimp.  But beyond that, the number of neurons

and connections between neurons far surpasses any other mammal. Michael Denton cites that in each cubic millimeter of the human cortex, are 100,000 cells, about 4 kilometers of axonal wiring and 500 meters of dendrites, and around 1 billion synapse connections between neurons. We have 10 million more of these synapses than a rat brain.

The size and scope is one thing, but our mental capabilities are indeed unique. As mentioned above, humans are capable of abstract and conceptual thought. No other primate exhibits any signs of this capacity. In addition, our mathematical reasoning is completely *other* compared to other animals. You might suspect that some animals can count. But it is a learned response attached to reward. We don't really suspect the rat/horse/chimp knows what they are doing. Comparing calculus to simply counting bananas is just no comparison at all.

When you stop to consider our appreciation of the arts, there is no place to go but humans. James Trefil is a physicist fascinated by biology and evolution. But when considering the arts he says, "No matter how hard I try, I can't think of a single evolutionary pressure that would drive the ability of humans to produce and enjoy music and dance. . . . This has always seemed like a serious problem to me—perhaps even a more serious problem than that perceived by most of my colleagues."

When we turn to language, our uniqueness is informed even further. Plants and animals all communicate in one form or another, but not by language as humans communicate. We communicate both new information and abstract concepts, something other species don't even approach. We possess the proper equipment to both produce and receive language and speech. And by proper equipment I mean both the brain processes and the anatomical necessities for actual speech (e.g., teeth, tongue, voice box, etc.). There is also a social ability that can utilize these upper levels of communication.

But we've heard about chimps and gorillas learning language.

Kanzi, a bonobo chimpanzee, learned words and even symbolic use of a keyboard. Kanzi also learned through hearing the use of new words. But that is where it stopped.

To quote James Trefil again, “If we take the claims being advanced for Kanzi at face value, where are we? We have a member of the most intelligent primate species, a veritable Shakespeare of non-human animals, raised under special and unusual conditions, performing at the level of a human child of two and a half. But remember that in humans, real language begins just after this age. . . . Then we have to conclude that even in this optimal case, animals other than humans cannot learn real human language.”

## Human Vision and the Hand

Now I’d like to introduce two features we can easily take for granted, our hands and our eyes.

Ordinarily we don’t think of our hands as being anything special. But just try to think of any other creature that can do the many and diverse things we can do with our hands. The closest match is the hand of a chimp. But
chimp hands are larger, stronger, and even clumsy. Simple things like using all ten fingers to type, peel an apple, or tie a knot are beyond what chimps can do.

The strength in our fingers comes from larger muscles in the forearm and the fine manipulative control comes from much smaller muscles in the hand itself. Our ability to manipulate our environment with our hands is unparalleled. Using our intelligence we even devise additional tools for our hands to further extend our mastery of the world around us. Full use of our hands comes about from our upright and bipedal gait, allowing our hands the freedom not found in any other mammal.

In his book *Nature’s Destiny* Michael Denton asks about the human hand “whether any other species possesses an organ

approaching its capabilities. The answer simply must be that no other species possesses a manipulative organ remotely approaching the universal utility of the human hand. Even in the field of robotics, nothing has been built which even remotely equals the all-around manipulative capacity of the hand."

But in order to even use our hands well, we need exceptional vision to be able to detect all the little things our minds notice to manipulate. Given the physics of visible light and the dimensions and molecular process of detecting light in our eyes, the resolving power of the human eye is close to the optimum for a camera-type eye using biological cells and processes.

Some animals such as high-flying hawks and eagles detect motion from far greater distances that we can, and some organisms see much better in the dark than we do, but for all-around color vision, detail and resolution, our eyes seem to be the best there is. Combined with our highly interconnected brain, our upright gait for easily seeing straight ahead, a swiveling neck to see side to side, and our overall size, our eyes open the world to us as for no other species.

Developing science and technology, communicating to thousands and even millions through the written word, and simply exploring the world around us, are only possible through an integrated use of our unique intelligence, social structure and speech, hands and vision.

## The Use of Fire

As I have explored the biology of human uniqueness, I have focused on some of our individual capacities such as our intelligence, speech, our marvelous hands, and our unique all-around color vision. I have used throughout, the wonderful book by Michael Denton, *Nature's Destiny*. Now I'm looking at

one of our key distinguishing characteristics which combine all of these. Humans are the only biological creatures that have mastered the use of fire. If you think for a minute, every other animal has nothing but fear when it comes to fire. We are also fearful of fire and the damage it can do, but we have also managed to harness it and use it.

There are a couple of obvious advantages for the use of fire. First it provides additional light after sundown that extends our activity into the evening. Second, fire provides additional warmth in the evening and allows us to venture into colder climates. Third, fire allows us to cook food, particularly meat which is a very significant source of fat calories and protein. Cooking our food certainly distinguishes us from any other creature and has allowed us to add the necessary energy to fully use that big brain of ours which is a major drain on our energy stores, even at night.

But beyond these, if we never harnessed the energy and power of fire, we would not have been able to develop tools involving metal. Using heat to forge ever more powerful hand tools and weapons revolutionized human culture. Without fire we could not have developed any form of chemistry and especially the use of electricity. Electricity has revolutionized human existence in the last 100 years. Fire is an influential and powerful tool indeed.

But how have we been able to do this? First, we need to take advantage of our intelligent capability for abstract thought and reasoning. As I said earlier, we too fear fire, but we need to be able to think about it and be curious enough to not only rationalize that we might be able to harness its power, but that it would also be useful. This ability to deduce the control and use of fire requires high-level reasoning.

Denton also points out that for a fire to be sustainable it needs to be at least 50 centimeters across (or about a foot and a half). To create a fire of this size we need our upright

stance to walk the distance to gather the right amount and size of branches. That means that our upright stance, free arms, the manipulative tools of our hands, and our discerning vision work together to allow us to create a sustainable fire.

Therefore, the control and manipulation of fire requires a combined use of most of our unique biological capacities. Think about this the next time you sit around a campfire or grill your supper on a warm summer day. It’s part of what makes us human!

## Human Anatomy and Genome

In this article I have been focusing on aspects of human biology that make us unique in the universe of living organisms. I discussed in some detail our unique intelligence, allowing us complex and abstract thought. We have a unique ability to communicate audibly and through a symbolic written word. These combine with our stereo vision and unique manipulative tool the hand, to allow us sole possession of the ability to use and manipulate fire. All of these capabilities are made possible by several unique aspects of our anatomy.

Humans have the largest brain of any primate species. Whales, dolphins, and elephants have larger brains, but size is not the main distinctive. Our human brain is structured like no other. If you were to open up just one cubic millimeter of our brain you would find over 100,000 cells with 4 kilometers of cell wiring and 1 billion connections between neurons. The structure and organization of our brain is definitely without parallel. Studies of our entire genome compared to chimpanzees indicate vast differences in non-coding sequences that influence the production of brain proteins. These changes are in the thousands.

In 1999, famous MIT linguist Noam Chomsky, reflected that “Thus, in the case of language, . . . (new research) is

providing interesting grounds for taking seriously an idea that a few years ago would have seemed outlandish: that the language organ of the brain approaches a kind of optimal design, that it is in some interesting sense an optimal solution to the minimal design specifications the language organ must meet to be usable at all." Without our unique brain structure, our language ability would not be forthcoming.

When comparing our skeletal structure to those of our supposed closest ancestors according to an evolutionary explanation, there are major changes that would have been needed to be accomplished in a relatively short time. Casey Luskin from the Discovery Institute does an admirable job digging into these differences and makes some sweeping conclusions. Numerous studies indicate that between the lineage of *Australopithecus* and *Homo* there would need to be significant changes in shoulders, rib cage, spine, pelvis, hip, legs, arms, hands and feet. But of these major transitions, the fossil record is silent.

Luskin also refers to a study by Durrett and Schmidt in 2007 that estimates that a single-nucleotide mutation in a primate species would take 6 million years to become fixed. But what is needed are multiple mutations in multiple segments of the skeletal system and in the physiology of the brain. *Homo sapiens* are far more unique than many have suspected. The more we learn, the more unique we become.

Since humans are created in the image of God, we expect human biological uniqueness. Even more significantly, bearing His image indicates an affinity for humans by the Creator we cannot fully comprehend.

## Notes

1. Michael Denton, *Nature's Destiny: How the Laws of Biology Reveal Purpose in the Universe* (New York: The Free Press, 1998).

# The Star of Bethlehem from a Christian View

*Dr. Ray Bohlin looks at the familiar story of the star of Bethlehem and provides several possible ways that God created this sign announcing the birth of the Christ. From a Christian worldview perspective, we know a bright light in the sky was able to lead the magi to the Christ child. Dr. Bohlin considers several ways God may have chosen to announce the coming of the Christ.*

## The Magi and the Star of Bethlehem

*O, Star of wonder, star of night*
*Star of royal beauty bright*
*Westward leading, still proceeding,*
*Guide us to thy perfect light.*

This familiar and haunting chorus from the Christmas carol, "We Three Kings of Orient Are," introduces us to what seems to be the only ubiquitous biblical symbol during the Christmas season, the star of Bethlehem.

This Christmas, as you look over the Christmas cards in the stores or in your own burgeoning collection from family and friends, you will see one very constant element. Whether the scene depicts the nativity, a backyard nature scene, a Christmas tree, or just Santa making deliveries, if the nighttime sky is included, somewhere in the picture, eliciting warm and happy emotions, is a star. The star dominates the

nighttime sky with its size and brightness and its long tail pointing to the earth. The star has almost become the signature which says, “This scene reflects a Christmas theme.”

At first, this may seem quite unusual for something which doesn’t even get mentioned in Luke 2, the more familiar account of our Lord’s birth. The star is featured only in Matthew’s brief description of the visit by the magi shortly after Jesus’ birth. I think the prevalence of the star stems from its mysteriousness. For example, what kind of star convinces a group of Gentile wise men to search for the new King of the Jews and actually leads them to Him? Before we explore this puzzle, let’s look at Matthew’s account beginning in Chapter 2 verse 1:

> Now after Jesus was born in Bethlehem of Judea in the days of Herod the king, behold, magi from the east arrived in Jerusalem, saying, “Where is He who has been born King of the Jews? For we saw His star in the east, and have come to worship Him” (Matt. 2:1-2, NASB).

A couple of things to note: first, these events take place after Jesus’ birth; second, this was in the days of Herod the king; third, the magi arrived from an area east of Jerusalem (probably in the vicinity of Babylon or Persia); fourth, they already knew they were looking for the newborn King of the Jews, but the exact location eluded them; and fifth, it was viewing His star from their home in the east that led them on this journey.

After consulting with King Herod and finding out from chief priests and teachers that the Messiah was to be born in Bethlehem, the magi set out for the 5 mile trip south to Bethlehem. We pick up Matthew’s narrative in verse 9:

> And having heard the king, they went their way; and lo, the star, which they had seen in the east, went on before them, until it came and stood over where the Child was. And when

> they saw the star, they rejoiced exceedingly with great joy. And they came into the house and saw the Child with Mary His mother; and they fell down and worshiped Him; and opening their treasures they presented to Him gifts of gold and frankincense and myrrh (Matt. 2:9-11, NASB).

Here we see that Matthew appears to describe the star as moving, as leading the magi to Jesus. There is clearly more than one magi, but only tradition holds that there were three—presumably because of the three gifts. These Gentile wise men worship the King whom the star has led them to. In the rest of this essay, we will explore the nature of this strange star and what it could have been.

## What Was the Star of Bethlehem?

The Gospel of Matthew states that the star informed the magi of the birth of the King of the Jews and actually led them to Bethlehem once they had arrived in Jerusalem. The star of Bethlehem has been the subject of scholarly discussion ever since the first centuries after Jesus' birth. Some believed it was a supernova explosion, others a comet or a conjunction of planets associated with specific constellations that would herald the birth of a king in Israel. Some have suggested that none of these astronomical events can adequately account for all that Matthew tells us within the context of his worldview. In this discussion, I will be investigating the more common explanations to see if we can come to some understanding as to just what the magi saw 2,000 years ago.

When Matthew quotes the magi as telling Herod that they observed the new King's star rising in the east, this can be interpreted as a new star, something never observed before. This has led some scholars to believe that the star of Bethlehem was a nova or supernova. A nova is a white dwarf star that literally explodes. The explosion may increase the brightness of the star a thousand to a million times its

previous brightness, making a previously invisible star, visible. A nova, however, does not last very long. The initial blast of the explosion may only be observed for a few months before the star shrinks to a remnant of its previous brightness and disappears altogether.

There are numerous problems with this view. First, although there was a "new star" recorded by the Chinese in the constellation Capricorn in March-April of 5 B.C. that lasted only 70 days, there is nothing to connect this event with the birth of a King in Israel. Second, and perhaps most troublesome, nova do not move.

This leads to a discussion of a different astronomical event that may be associated with the "new star" (a comet) recorded by the Chinese in 5 B.C. The Chinese would not have distinguished a comet from a nova since all they recorded was something new in the sky that was temporary. A comet has the advantage of a tail that can appear to be pointing in a direction which may have guided the magi. In addition, a comet moves! A comet can even disappear as it moves behind the sun and reappear as it comes out from behind the sun. A major objection is that the Chinese make no mention of the "new star" moving. Another problem is that comets are cyclical with a predictable periodicity. For instance, Halley's comet appears every 76 years. If the star of Bethlehem were a comet, we would most likely have observed it again and been able to extrapolate back to the time of Christ to see if there is a match. Unfortunately, the only one to come close is Halley's comet which appeared in 12 B.C., a date that is impossibly early.

One could always claim that the comet was one with a very long periodicity or one that has since disappeared from our solar system. This is certainly possible, but it does not really help the discussion. One might as well appeal to a purely supernatural occurrence that cannot be verified scientifically. There is no difference. And though comets were

usually interpreted as heralding sweeping changes, the changes were usually for the worse and there is no way, once again, to connect these events to the birth of a king in Israel. Next, I will look at planetary conjunction, the most popular suggestion at planetarium shows during the Christmas season.

## Did the Star of Bethlehem Result from a Triple Conjunction of Saturn and Jupiter?

The bright star usually seen hovering over Nativity scenes depicted on numerous Christmas cards actually dominates nearly every nighttime Christmas panorama. As I stated earlier, the Star of Bethlehem is just about the only ubiquitous biblical symbol associated with Christmas. The reason probably has to do with the mystery surrounding what this star was. Earlier, I showed the unreasonableness of the star being a comet or supernova explosion. If you were to attend a planetarium show concerning the star of Bethlehem, they would most likely present the idea that the star was a triple conjunction of the planets Jupiter and Saturn in the year 7 B.C. followed by a massing of Jupiter, Saturn, and Mars in 6 B.C. Realizing that planetarium shows view Scripture as something less than historically accurate, it is still necessary to ask if this indeed could have been the Star of Bethlehem.

In the early 17th century the great astronomer and Christian, Johannes Kepler, calculated that a triple conjunction of Jupiter and Saturn had occurred in 7 B.C. While Kepler did not believe this to be the actual Star of Bethlehem, it may have alerted the magi to the coming star. 7-4 B.C. have become the usual dates for fixing the birth of Christ since Herod the Great’s death, the Herod mentioned by both Matthew and Luke in their birth narratives, is well established in 4 B.C. Therefore, Jesus had to have been born in the few years prior to 4 B.C. since He started his three-year public ministry around the age of 30 (Luke 3:23) and His death is usually

fixed between 27-30 A.D.

So just what is a triple conjunction, and why would it be significant to the birth of a King in Israel? A planetary conjunction is what happens when two planets come in close proximity to one another. A triple conjunction refers to when three separate conjunctions of the same two planets occur within a one year period. Triple conjunctions can be predicted, but they do not occur with regularity. There have been only 11 such triple conjunctions since 7 B.C. and the interval between them varies between 40 and 338 years.

The triple conjunction of Jupiter and Saturn in 7 B.C. was seen in the constellation Pisces in the months of May, September, and December. This provides sufficient time for the magi to see the first conjunction, begin their trip west to Judea, visit Herod by the second conjunction or at least soon afterwards, and perhaps not reach Bethlehem until the third conjunction when it is said to have appeared in the southern sky, and Bethlehem is just south of Jerusalem. Remember how the magi rejoiced to see the star again as they departed Jerusalem for Bethlehem. Ancient astrologers associated Jupiter with royalty or even a ruler of the universe. Saturn was associated with Palestine or even with the deity who protected Israel. And Pisces was associated with the nation of Israel. Later a massing of Jupiter, Mars, and Saturn occurred again in Pisces in 6 B.C. It seems feasible then that this triple conjunction followed by the massing of the three planets in Pisces could indicate to the magi that a King of Israel and a Ruler of the Universe was about to be born in Israel.

While this seems to wrap things up rather nicely, there are significant problems. First, Jupiter and Saturn never were close enough to be confused as a single object. Matthew definitely describes a singular star. Perhaps more importantly, the use of astrology is necessary to interpret these astronomical signs properly. The Old Testament,

particularly, mocks astrologers in Isaiah 47:13-15 and several times in Daniel (1:20, 2:27, 4:7, and 5:7). Jeremiah 10:1-2 seems to forbid astrology outright. The use of astrology is clearly outside the worldview of Matthew as he penned his gospel. It seems woefully inconsistent for the Lord to use astrology to herald the incarnation and birth of His Son into the world.

## Was the Star of Bethlehem the Planet Jupiter?

In this discussion, I have considered a nova, a comet, and a triple conjunction of the planets Jupiter and Saturn as the Star of Bethlehem between 7 and 4 B.C., and none have seemed to be satisfactory. In 1991, Ernest Martin published a book titled, *The Star That Astonished the World*. His major thesis is that Herod died in 1 B.C. and not 4 B.C. If 4 B.C. is the wrong date for Herod's death, then everything must be reevaluated.

While there are many lines of evidence that Martin uses to make his point, a critical issue is a lunar eclipse that occurred just prior to Herod's death. According to the Jewish historian, Flavius Josephus, on the night of a lunar eclipse, Herod executed two rabbis. Herod himself died soon afterwards, just before Passover. Martin points out that the lunar eclipse of March 13, 4 B.C., was only a 40% partial eclipse and barely visible. Also he reconstructs the events between the eclipse and Herod's death, about 4 weeks, and determines there was not enough time for all these things to take place. However, Martin has located a total lunar eclipse on January 10, 1 B.C., twelve and a half weeks prior to Passover.

If we assume that Martin's date for the death of Herod is correct, then the years 3 and 2 B.C. can be added to the search parameters for the Star of Bethlehem. Martin points out that the planet Jupiter passes through a series of

conjunctions over the course of these two years indicating that Jupiter is the star of Bethlehem.

Remember that Jupiter is considered the royal star. Well, in 3 B.C., Jupiter came into conjunction with Regulus, the star of kingship, the brightest star in the constellation of Leo, the first of several such conjunctions over the next year. Leo was the constellation of kings, and it was also closely associated by some with the Lion of Judah. This is beginning to look interesting. “The royal planet approached the royal star in the royal constellation representing Israel.”(1) In addition, on September 11, 3 B.C., Jupiter was not only very close to Regulus, but the sun was in the constellation Virgo. Hmmm, the royal planet in conjunction with the royal star while the sun is in a virgin. September 11, 3 B.C., is also the beginning of the Jewish New Year. There seems to be an awful lot coming together here.

But what about the star appearing to stop over Bethlehem? Planets will actually appear to do just that as they reach the opposite point in the sky from the sun as they travel east across the sky. They will stop, reverse directions for a few weeks, stop again, and head east once again. It’s called a retrograde loop. Jupiter performed a retrograde loop in 2 B.C. and was stationary on December 25, during Hanukkah, the season of giving presents.

Just in case you are ready to proclaim the mystery of the Star of Bethlehem solved, remember that this whole scenario rests on Herod dying in 1 B.C. rather than in 4 B.C. The majority of historians and biblical historians can’t accept this critical revision. If Herod indeed died in 4 B.C., all of these coincidences I just reviewed are just that, coincidences. Also, as I mentioned earlier, the use of astrological meanings is contrary to the worldview of Matthew. There is another option that has become very popular, and I’ll discuss it next.

# The Shekinah Glory as the Star of Bethlehem

So far in this essay, I have discussed several naturalistic explanations for the Star of Bethlehem: a nova or exploding star, a comet, a triple conjunction of the planets Jupiter and Saturn in 7 B.C., and the planet Jupiter as it traveled in the constellation Leo in 3-2 B.C. Each of these astronomical events represents a natural occurrence that God used to announce the birth of His Son. One of the major problems has been that in order to interpret any of these signs, one would have to use astrological meanings for these events and their locations in the night sky to reach the conclusion that a new King of the Jews has been born—something that is foreign to the biblical worldview. Perhaps there was a physical "star" that gave off real light but indeed was new but not reflected by any astronomical event.

Remember that Jesus' birth was the ultimate coming of the presence of God in the midst of His people. How was God's presence manifested elsewhere in the Bible? Moses saw a burning bush that was not consumed and God spoke to him from the bush. Again in Exodus, Moses was allowed to see God's backside and afterwards his face shone with light so bright that the other Israelites could not look on his face. The Israelites were led through the desert by a cloud by day and a pillar of fire by night. When Jesus was transfigured He shone with a light as bright as the sun. When Jesus appeared to Saul on the road to Damascus, Saul was blinded by the light which the others with him saw as well. When God was imminently present, a bright light was associated with His presence.

The Shekinah Glory denotes the visible presence of God. This presence was real, and the physical manifestation was real. Remember that Saul was blinded by the light. The Lord often announces His presence by a very physical manifestation of bright light. What better way to announce the coming of Jesus,

God’s Son, the second Person of the Trinity than by a special light that is not some mere improbable astronomical event, rather an expression of the Shekinah glory, God’s divine presence among men?

Astronomer Sherm Kanagy and theologian Ken Boa advance this thesis in their as yet unpublished manuscript, *Star of the Magi*. One of their strong emphases is the necessity to try to interpret the text of Matthew from first century Jewish perspective. They reject the idea that any astrological meaning could have been on Matthew’s mind concerning this star. It is certainly fair to wonder, therefore, what this star was and how the magi interpreted it as a star signifying the birth of the King of the Jews. Kanagy and Boa reveal that Kepler concluded that the star was not some astronomical event and was a light that appeared in the lower atmosphere and therefore was not visible to everyone. But how did the magi interpret the star? This admittedly is the weakest part of the interpretation. The text gives no real hints. Magi were simply wise men of the east, not necessarily astrologers. They were Gentiles whose presence in the context of Matthew’s Messianic gospel hints at the eventual spread of the gospel beyond the Jews. But how did they know what the star meant? We can only assume there was selective revelation. Only Paul understood the voice from the light, though all who were with him saw the light. Only Moses was allowed up on Mt. Sinai to receive the Law. Only Peter, James, and John were present at the transfiguration, and they were told to keep it to themselves until Jesus rose from the dead. Manifestations of God’s presence with men often were accompanied by selective revelation. Perhaps the meaning of the “star” was only revealed to the magi though others could actually see the “star.”

Well, what was it, an astronomical event or the Shekinah Glory, manifesting God’s presence among men? In my mind the mystery remains. Perhaps that is how God intends it to be.

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# The Professor: Why Are You a Christian? – When Challenged, Can You Defend Your Faith in Christ

*Are our adults ready to give a defense of the gospel? When challenged, can they give a reasonable explanation of their faith? Dr. Bohlin presents a sobering view of this question based upon years of experience questioning high school and college-age students on the basis for their belief in Christ. By exposing their lack of cogent answers to questions they may be asked, he challenges them to spend time exploring the questions and developing biblical worldview-based answers.*

## The Professor

Over the last ten years, I have used a very effective technique to help teens realize their unpreparedness for the step toward college. It seems our young people are heading into public and even Christian colleges thinking they are ready for the challenge to their faith that higher learning can be.

Probe Ministries has sponsored a college prep conference since 1991 that was designed to help young people gain some insights and even some knowledge on how to address the intellectual challenges that college will provide.

If you remember the thousands of college radicals who

protested and picketed in the ‘60s and ‘70s, they found their push for change was not very effective. Instead, many of them stayed in college, obtained Masters Degrees and PhDs. After all, it was easier than getting a real job! As a result, they are now your children’s professors!

The college campus was an anti-Christian breeding ground several decades ago and now it is even worse. Christianity is not so much openly mocked as it is marginalized and deemed a false and mischievous mythology.

If you haven’t already heard some of these statistics, you need to hold onto your hat.

In 2007, LifeWay surveyed 23- to 30-year-olds and found that seventy percent had taken at least a one year break from church during their college years.{1} Now, almost two-thirds of these return to some level of church attendance, but mainly to please family or friends who encouraged them to return. That means that most of our churched youth are making many of their life decisions, including marriage and career, apart from a church context. Even many who return carry numerous scars from bad choices during those years.{2}

With this statistical background, it’s plain our young people need some preparation before going on to college or the military. But as most parents of teens know, just telling them they need this is less than likely to be convincing.

Enter the Professor. The technique I mentioned at the beginning is to impersonate an atheistic college professor doing research on the religious beliefs of young people. Sometimes the students know I am playing a role with them, but occasionally I play the professor and the students are none the wiser.

## A Simple Question

When I step to the front of the room, I introduce myself as Professor Hymie Schwartz (a name borrowed from my late colleague Jerry Solomon who played this role far better than I do). I tell the group that, since I am conducting research on the religious beliefs of young people, their youth pastor, counselor, principal, teacher—whatever, has allowed me to visit with them.

I begin the conversation something like this: “Since this is a church or Christian school I presume you are all Christians. Is anyone not a Christian?” Of course no one raises their hand. But I am always aware that some may indeed not be believers and may not appreciate my questioning so I am always paying attention.

At this point I simply call on someone, usually someone who isn’t really paying attention or is engrossed in conversation with a neighbor. “You! Are you a Christian?” No one has ever answered no. Upon receiving an affirmative answer, with hands casually stuck in my pockets, I demand, “Why?”

Students are paying attention now. This is for real. Now consider my question for yourself. If Peter warns us to always be ready to give an answer to anyone who asks to give a defense for the hope that we have, this is a pretty basic question. In our highly secular culture, if someone finds out you’re a Christian, they may indeed ask you why. Peter says you ought to have an answer.

But this simple question why is usually something our young people, and even their parents, have never really considered. Their Christian faith is certainly something they would claim is central to their lives, but the dumbfounded looks on their faces tells me repeatedly that this question is a new one.

It’s usually about this time that any parents sitting in the

back are suddenly quite relieved I'm not talking to them!

By asking such questions, I can get them pretty riled up and confused. The point is not to have fun but to help them see that they need to be prepared and think a little about why Christianity is important to them and why they think it's true.

## "I Asked Jesus into My Heart!"

Having their Christianity questioned usually comes as a surprise and even shock. Rather than directly answering the question, they try to tell me *how* they became a Christian. It usually takes the form of confidently saying they asked Jesus into their heart.

The professor quickly fires back, "You asked Jesus into your heart?! That sounds pretty gross, really. What's he doing in there with all that blood? Yuck!" That always gets a surprised reaction and a little befuddlement. The student typically tries to recover by saying something like, "No, I mean it's like I trusted Jesus as my Savior."

Again the professor will fire back quickly with a question like, "Why did you do that?" or "Savior? What did you need saving from?" I think you can see where this is going. It really is not difficult to pick something from what he or she said and challenge it. I either pretend I don't understand what they said, forcing them to better explain themselves (which is rare), or I deliberately ask them why they think that way, or how they know that.

In answer to "How do you know that?" I am often told that "It says so in the Bible!" They usually can't tell me where the Bible says that. I also ask if the Bible is true, and they say it is. But when I ask, "How do you know it's true?" the blank stare reemerges.

Sometimes a student will say, “Because it’s the word of God!” Now I can really dig a little deeper. In response to further questioning, they usually can’t tell me where the Bible says it’s the Word of God nor can they tell me why the Bible is different from The Book of Mormon or the Qur’an. If there is a youth pastor or chaplain present there is usually an embarrassed look on their face or a head buried in their hands.

By this time the class is very tense and full of nervous laughter. When I reach a dead end with a student—for instance when they say, “I don’t know” with a very resigned and defeated voice—I look for one of the laughing students and ask, “What about you?” Of course that gets everybody’s attention again and off we go.

While I admit I have a little fun playing this role, it never ceases to break my heart at how ill-prepared our young people are to follow Peter’s advice to always be prepared with an answer. I have yet to find a student in ten years who is willing and able to go toe-to-toe with the professor.

## “You’re a Narrow-Minded, Self-Righteous Bigot!”

Here are three other directions our conversations have frequently taken.

When I have challenged students to tell me why they think or believe Christianity is true, some will turn to their own subjective experience. Technically, there is nothing wrong with this, specifically when speaking to a Christian audience. But someone who doesn’t even believe in God will frequently find ways to truly make fun of this element.

A student may describe that Jesus speaks to them in their prayer time, to which I quickly ask what His voice sounds like

or how they know it was Jesus and not indigestion. The blank stares usually resume at this point. We have become so comfortable in our Christian bubble sometimes that we frequently don't see how unintelligible our language is to those outside the community of faith. It's tough to share the gospel that way.

Sometimes a student will interject that they believe in Jesus because that's what their family has taught them or it's what they learned in church. I usually pounce on that pretty quickly and repeat that this student believes Christianity is true because their parents told them so. The student usually agrees. After commending them for honoring their parents I tell them that's really pretty stupid. Pausing a second for the shock to register, I go on about the boy raised in India whose parents are Hindu and he respects his parents and believes Hinduism is true, so the boy in India and this student are both headed to heaven because they trusted their parents!

One time a student stammered around and eventually agreed with my statement as his youth pastor put his head in his hands.

Finally in talking about salvation I ask what happens to those who don't believe in Jesus. Most will hesitatingly say they go to hell. The professor predictably rants, "Just because I don't believe the same fairy tale as you, I'm going to hell?" When they predictably shake their head yes, I get down eye to eye and spit out, "You're a narrow minded, self-righteous bigot!"

## Always Be Ready to Give an Answer, with Gentleness and Respect

Students enjoy the interactive nature of this routine even though they are routinely embarrassed by their inability to handle the challenge. When Peter admonished all of us to

always be ready to give an answer to everyone who asks us for a reason for the hope that we have, yet with gentleness and respect (1 Pet. 3:15), they fail miserably. Perhaps as a parent, you may be glad that I don't do this with adult groups.

Often students will try to turn the conversation in their favor by asking the professor a question. I quickly dismiss that idea by simply answering that *I'm* asking the questions. But when we're done, if time allows I attempt to leave them with hope by quickly summarizing how I, Dr. Ray Bohlin, Vice-President of Probe Ministries, would answer the same question.

Here's the outline of my response. In a calm voice I quickly assert that I know there is a God. As a scientist I look principally at how marvelously our universe, galaxy, solar system, and planet are designed for complex life here on earth. The number of highly improbable coincidences rules out chance and strongly implies design. This is reinforced by the evidence from biology of the incredible complexity of life, particularly the coded information in DNA. This remarkable molecule with its accompanying system of transcription and translation screams for intelligence.

The fact that all people have some sense of right and wrong, even though we may disagree sometimes, tells us we are comparing our morality to some invisible standard outside ourselves that must come from a supreme Law Giver. I am convinced there is a supernatural God.

If this God exists, then has He spoken to man? I quickly tell about the uniqueness of Scripture, written by forty authors from eight countries over fifteen hundred years in three languages and all with a consistent and unique message of a God of love who ransomed us from our sins. Where we have archaeological evidence it consistently confirms the accuracy of biblical events. I am convinced the Bible is the true and unique Word of God.

The Bible throughout is about Jesus, who repeatedly claimed to be the unique divine Son of God and offered his death and resurrection on behalf of mankind as proof. That Jesus bodily rose from the dead is the only rational conclusion of the evidence of the empty tomb. On top of that, my personal experience of the last thirty-seven years has shown me again and again the unique love and power of God.

So what about you? Why are *you* a Christian?

**Notes**

1. "LifeWay Research Uncovers Reasons 18 to 22 Year Olds Drop Out of Church," 2007, www.lifeway.com/article/165949/, accessed May 15, 2010.
2. Youth Transition Network has researched this problem over the last ten years and has excellent resources, videos, research, and books and DVDs for purchase. Take a look at www.ytn.org.



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# Climate Change

*Dr. Ray Bohlin looks at the science behind climate change alarmism and encourages you to be skeptical of what you hear from much of the media.*

## Are Human Beings Threatening All We Hold Dear through Climate Change?

The phrase "climate change" can mean very different things. It can be a rallying cry against the shameful practice of burning fossil fuels that will cause supposedly imminent worldwide

disaster. The climate change bandwagon is a way to bring about global cooperation as we fight against the danger of too much carbon dioxide in our atmosphere. OR, the climate change agenda is a way for scientists who are becoming increasingly political to push for a more socialistic policy on generating electricity. In this article I examine what's really going on with the science and make an argument for not believing anything you read or hear in the regular media.

There is no longer much of a middle ground. I have addressed global warming or climate change before, and I am becoming increasingly convinced that the entire enterprise of human-induced climate change is a monumental and brazen attempt to hoodwink the global public into thinking we have jeopardized our future, and drastic action is necessary.

Essentially, a group of climate scientists have used the power of the United Nations and their own reputations as scientists to proclaim that we must cut back severely on the use of fossil fuels, such as coal, oil, and gas. This will prevent the rising levels of carbon dioxide in our atmosphere from generating a runaway global warming that will lead to droughts, flooding, hurricanes, tornadoes, rising sea levels, etc., that will endanger our future on the earth.

This apocalyptic vision can seem quite threatening. Scientists are objective, right? They are not going to promote something the evidence doesn't support, are they? Well, scientists are human, and their worldview will affect their conclusions and I am convinced that some scientists are presenting a scenario of human-induced global warming that the scientific evidence simply does not support.

The supposed villain in this scenario is the gas carbon dioxide.  You might not know that this natural and necessary gas is such a bad guy according to the doomsayers!

In this next section, I investigate the history of carbon dioxide in our atmosphere and the potentially negative and positive effects of increasing its concentration in the air we breathe.

## What's all the Fuss about Carbon Dioxide?

In this article I am discussing the possibility that humans, through the excess burning of fossil fuels, are jeopardizing the future of the entire planet. Previously this has been referred to as Anthropogenic (meaning human) Global Warming but is now referred to simply as Climate Change.

The evil villain in this scenario is carbon dioxide—what you get from burning coal, oil, and gas products. Carbon dioxide is known to be a greenhouse gas. No one disputes this. The relevant question remains, are humans putting too much carbon dioxide into the atmosphere, producing a warming that may not stop until the planet exceeds a livable temperature?

As I mentioned, carbon dioxide is a greenhouse gas. This means that when sunlight hits the earth's surface, some of that energy is radiated back into the atmosphere and captured by carbon dioxide. The carbon dioxide then remits this radiation as heat, warming the atmosphere. This is a good thing. Water, $CO_2$, methane and a few other gases allow the earth to keep enough of the sun's radiation and provide a cozy temperature for life around the earth.

But as we all know, there can be too much of a good thing. Many climate scientists are exclaiming that we have added too much $CO_2$ over the last 150 years too fast, and the resulting warming is jeopardizing the greenhouse balance.

The earth has warmed over the last 150 years by about 1 degree Celsius or 1.5 degrees Fahrenheit. But is carbon dioxide to blame? $CO_2$ levels rose from around 280 parts per million in

1900 to 400 parts per million today. There does seem to be a correspondence. However, we can obtain temperature data for the last 4,000 years from various sources deemed quite reliable in published documents.

The data show that the peak temperature around 1500 BC was 2 degrees Celsius warmer than today. Around 200 BC temperatures were 1.5 degrees Celsius warmer than today, and around AD 1100, temperatures were a full degree Celsius warmer than today. Those warmings could not have been induced by the burning of fossils fuels.

## Carbon Dioxide – Part 2

Certainly, carbon dioxide levels have been increasing due to the burning of fossil fuels over the last 150 years. And the average global temperature has risen by 1 degree Celsius or nearly 1.5 degrees Fahrenheit. But are the two linked in any way? Has the increase in atmospheric carbon dioxide caused the temperature increase?

First, carbon dioxide is a trace gas in our atmosphere. 78% of our atmosphere is nitrogen gas and 21% is oxygen gas. The remaining 1% is mostly argon gas and $CO_2$ comprising only 0.04%. So, when we are told that carbon dioxide has risen from 280 parts per million around 1900 to 400 parts per million today, that means the level of $CO_2$ has risen from about 3 parts per 10,000 to 4 parts per 10,000. That's not a lot of $CO_2$.

Second, carbon dioxide is plant food. Photosynthesis takes carbon dioxide from the air and water from the ground and uses the energy from sunlight to make the sugar glucose, the foundation of nearly all plant and animal life. The terrific book, *Inconvenient Facts: The Science That Al Gore Doesn't Want You to Know*{1}, tells us the increased $CO_2$ means more plant growth, more food production, and increased soil

moisture since the plants don't need to keep their "pores" open as long and therefore lose less moisture through their leaves, leaving more moisture in the ground.

Third, if we use the age of the earth as estimated by the climate change community, we learn that our current level of carbon dioxide is as low as it has ever been. I don't know how they arrive at these estimates, but published data say that carbon dioxide levels have been as high as 20 times what they are now, and temperatures were certainly not 20 times higher.

To sum up what I have reviewed above: carbon dioxide is necessary for plant growth, carbon dioxide is a trace gas and simply doesn't have the power to alter climate by itself, and carbon dioxide has been many times higher in the past.

In the next section I address the far-fetched predictions of climate catastrophe coming our way and look at what the data says.

## Hurricanes, Tornadoes and Droughts, Oh My!

One of the tactics of the climate change community is to publish and threaten that increased global temperatures will result in more severe and more frequent extreme weather events. Droughts will become more frequent and severe, local flooding will become more frequent and severe. Catastrophic storms like tornadoes and hurricanes will become more frequent and severe. Basically, any form of severe weather will only get worse.

One source said that "the impacts of climate change are expected to increase the frequency, intensity, and duration of droughts."{2} So, let's look at a few. The EPA's own drought index shows far more severe droughts in the 1930s and 1950s than we have experienced in the last 60 years. Even globally,

the frequency and severity of droughts has declined as global temperatures and $CO_2$ increase.

Another form of severe weather that is supposed to increase are tornadoes. In 2011, Paul Epstein said in *The Atlantic* that "The recent trend of severe and lethal tornadoes is part of a global trend toward more storms."{3} Well, guess what? The actual trend of severe tornadoes at F3 or above is decreasing, and overall the number of tornadoes is decreasing. In fact, 2016 saw the fewest tornadoes in the United States ever recorded. So once again, the models and extremists are wrong.

Concerning hurricanes, you need to be careful. The U.S. National Climate Assessment of 2014 stated that the intensity, frequency, and duration of North Atlantic hurricanes . . . have all increased since the early 1980s."{4} That's true! But if you look at the long-term trend going back to 1920, instead of just the last few decades, the trend is downward. If you look at the frequency and severity of hurricanes for the whole earth, the trend is slightly downward. And the period between 2006 and 2017 saw no major hurricanes make landfall in the United States.

Whenever a severe weather event occurs in the United States, you can be sure the media will seize the opportunity to exclaim about how climate change is increasing storms overall. Just don't believe it.

## Rising Sea Levels, Antarctic Ice and Polar Bears

In this article I've been talking about the threats of increasing extreme weather as a result of human-caused global warming or climate change. As I've tried to show, all these threats have no basis in the scientific evidence.

You have probably heard that because of the excessive warming,

glaciers will melt, and sea levels are expected to rise and inundate low lying island chains and coastal communities. Simply put, NO. Sea levels have been rising for a few thousand years and the rate of increase went up way before humans began burning fossil fuels. Sea levels are rising about one inch per decade and the rate of rise is not changing.

So, what about glaciers, the Arctic ice and Antarctica? Well, Arctic ice has been receding over the last 30 years, but that will not cause sea levels to rise since that is floating ice. Some glaciers indeed have been receding, but they began doing so before humans began burning all that fossil fuel. But even as some of these glaciers recede, they are revealing remnants of forestation, proving that they had receded previously—with no help from humans. Lastly, some Antarctic ice is receding but overall, Antarctica is gaining ice, not losing it. And polar bears are doing just fine, increasing in numbers, not declining.

In closing, let me offer a few words of advice. First, disregard almost everything you read and hear in the regular media outlets. Most of these journalists or reporters have little scientific training and they are simply repeating what they have heard from extremist environmental groups whom they trust.

Second, ignore what you hear from most government officials, elected or appointed. They have bought the narrative for their own political gain and don't likely understand the science involved.

Last, let me suggest you research two organizations for more balanced information. First, the Cornwall Alliance, a group of evangelical Christian who are concerned about the environment and accurate information. Second is a group known as CFACT and their website Climate Depot. They repeatedly attend various climate change conferences around the world and consistently stump climate change extremists.

Bottom line: I encourage you to be skeptical concerning just about anything you encounter when it comes to climate change.

Notes

1. Gregory Wrightstone, *Inconvenient Facts: The Science That Al Gore Doesn't Want You to Know* 2017, Silver Crown Productions, LLC.
2. Ibid, p. 65.
3. Ibid., p. 89.
4. Ibid., p. 93.



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# Theistic Evolution – Part 2

*Dr. Ray Bohlin reviews a second science critique of Theistic Evolution, asking if universal common descent is real. The evidence says no.*

## The Fossil Record and Universal Common Ancestry

In a previous article, I examined the failure of neo-darwinism on the basis of the landmark book ***Theistic Evolution: A Scientific, Philosophical, and Theological Critique.***{1}

In this article, I'm reviewing the second science critique of theistic evolution. This section asks whether universal common descent or UCD is real. Universal common descent simply states that all organisms today are descended from one or a few early organisms by Darwinian evolution. UCD is usually if not always vigorously defended by theistic evolutionists, or, as

they now prefer, “evolutionary creationists.” UCD is considered beyond question. And doubters of UCD are compared to flat earthers and those who believe the sun and planets revolve around the earth. In this section I’ll review the first chapter in this section by Gunter Bechly and Stephen C. Meyer.

Bechly and Meyer simply ask if the fossil record records this smooth transition from a single common ancestor to all life forms today. They survey numerous gaps in the fossils where certain large groups appear suddenly again, and again, and again. When a variety of new forms appear, the fossil record is full of gaps. In an old earth perspective, which theistic evolutionists adopt, one of these gaps goes back to the earliest life on earth. Fossils of bacteria show up 3.8 billion years ago right after the Late Heavy Bombardment of the earth by asteroids from 4.1 billion years ago to 3.8 billion years ago. This leaves virtually no time for the origin of that first life.

Let’s jump ahead to the Cambrian Explosion where nearly all animal Phyla show up in the fossil record suddenly, with no ancestors, 450 million years ago. Arthropods, Mollusks, Annelids, Chordates, and many others just show up, already fully differentiated from each other, with few
clues of which phyla are most closely related to other phyla.

Then there is the Silurian-Devonian Radiation of Terrestrial Biotas. Here vascular land plants show up suddenly with no clue as to how and when they transitioned from marine plants to land plants.

Then there are the flowering plants. Charles Darwin called their sudden appearance in the Cretaceous period “an abominable mystery.”

There are more problems in the animal kingdom. All the orders of mammals with placentas suddenly show up in a narrow time

window, too narrow to have evolved from earlier animals. A paleontologist said, “Within approximately 15 million years of dinosaur extinction most of the 20 orders of placentals had appeared.” And last, the orders of modern birds show up all at once in the fossil record around the same time. Whew, more tomorrow.

## Universal Common Descent: A Comprehensive Critique (Part 1)

In this section I’m reviewing Casey Luskin’s chapter called “Universal Common Descent: A
Comprehensive Critique.”

In this chapter, Luskin covers four main topics:

- evidence against common descent from biogeography,
- the fossil record,
- molecular phylogenies, and
- embryology.

Since I covered the fossil record in the above section, I’ll focus on biogeography here and molecular phylogenies in the next.

Why would biogeography even be considered by theistic evolutionists as evidence of common ancestry? Well, it was used by Darwin, when he saw that the fossil mammals in South America resembled the animals living on the continent today. Luskin looks at a most glaring example of a severe problem in this category, Platyrrhine monkeys. Two families have prehensile tails, which
can grasp things like tree branches while their four limbs perform other tasks. While some old-world monkeys have tails, they are not prehensile.

The new world monkeys are said to have arrived in South America about 30 million years ago. At that time however,

Africa and South America were at least 600 miles apart. So how did the platyrrhine monkeys, supposedly recently evolved from old-world monkeys, cross the ocean? The usual response is to suggest that a group or even a single pregnant female rafted on some fallen trees and brush.

This seems incredibly improbable. First, it would require these branches or shrubs to provide food for at least one pregnant female. This drifting pile of branches would take several weeks or most probably months to drift from Africa to South America. This incredible hypothesis is offered because these two groups of monkeys are supposedly related by common ancestry, but on different sides of the ocean. So, there must be a way to preserve common ancestry of these two groups of monkeys no matter how improbable.

Biogeography hurts UCD far more than it helps.

## Universal Common Descent: A Comprehensive Critique – (Part 2)

In this section on Casey Luskin's chapter on Universal Common Descent, my focus is on evidence from molecular phylogenies, where molecules like genes and proteins are compared to create trees based on molecules, not anatomy. Scientists can now determine the amino acid sequence of
proteins and the nucleotide sequence of the gene that codes for the protein.

Previously, Darwin's tree of life was constructed by comparing anatomical similarities and differences to determine where a species or group of species belonged in the tree. And since it was thought that genes determine the anatomical structure of an organism, a tree constructed by
comparing the gene sequences of a protein should give the same tree as the anatomical tree. This was the expectation of numerous scholars.

However, there has been no agreement between anatomical and gene sequence trees except with very closely related species. Molecular phylogenies for different proteins reveal contradictory trees. Now, many scientists have abandoned Darwin's tree of life. In 1999, W. Ford Doolittle offered that "Molecular phylogenists will have failed to find the 'true tree' . . . because the history of life cannot properly be represented as a tree." The problem has only gotten worse. Several authors over the last 25 years are quoted by Luskin{2}: one said that "Different proteins generate different trees" (1998); another said, "Evolutionary trees from different genes often have conflicting branching patterns," (2009). A third author wrote, "The problem was that different genes told contradictory evolutionary stories" (2009). And finally, a fourth author said, "Evolutionary trees constructed by studying biological molecules often don't resemble those drawn up from morphology."

Many evolutionists have abandoned the tree model altogether, which leaves Universal Common Descent in grave trouble.

## Missing Transitions: Human Origins and the Fossil Record

Theistic evolutionists agree that humans show clear evidence of having a common ancestor with chimpanzees. But if humans evolved from an ape-like ancestor, was there a real Adam and Eve? Was there an actual fall? Many evolutionary creationists would say no. They hold that humans evolved from a population of at least 1,000 individuals, not two, and that humans were already sinful and therefore never fell into sin.

Casey Luskin explores whether the fossil record documents a steady series of fossils transforming an ape-like ancestor into humans over the last 6-7 million years.

Luskin focuses on three critical questions about the hominin

fossils: first, are there candidates for something very close to the common ancestor of humans and chimps; second, are the australopithecines intermediates between our ape-like ancestor and us; and last, is there a series of fossils linking australopithecines and humans?

Fragmentary fossils of three possible candidates for a common ancestor between chimps and humans have been found between 6.6 to 4.4 million years ago. But all three were eventually dismissed as simple apes or too fragmentary to draw any conclusions. All these fossils would easily fit inside a child's shoe box.

The second question is, were the australopithecines intermediates between our ape-like ancestor and us? The australopithecines ranged from 4 to 1 million years ago and have long been advertised as on the road to humans. But paleoanthropologists cannot agree about the roles, if any, the australopithecines had in human origins.

The third question asks, is there a series of fossils linking australopithecines and humans?

Homo erectus, the first species in the genus *Homo*, appeared about 1.8 million years ago, but we haven't found *any* potential intermediates between australopithecines and *Homo*. "Although the transition from *Australopithecus* to *Homo* is usually thought of as a momentous transformation, the fossil record bearing on the origin and earliest evolution of *Homo* is virtually undocumented." The so-called evolution of the human species is fragmentary and blotchy.

## Evidence for Human Uniqueness

Most evolutionary creationists believe that humans and chimpanzees share a common ancestor around 6-7 million years ago. Above, I addressed the lack of fossil evidence for the human descent from this common ancestor. But equally,

evolutionary creationists claim there is powerful evidence linking humans and chimpanzees, that there is only a 1-2% difference of our DNA, indicating humans and chimps are closely related. Ann Gauger, Ola Hossjer, and Colin Reaves deal with this claim in their chapter, *Evidence for Human Uniqueness*.

This chapter uses an abundance of technical terminology. I will be avoiding many of those terms to save time needing to define them for you. I will be generalizing their discussion as much as possible.

If you simply compare the individual building blocks of DNA called nucleotides, where the sequences match up between human and chimp DNA, there is only a 1.23% difference between humans and chimps. But when you begin to include insertions, deletions, the number and location of repeated elements, as well as the extreme differences between the Y chromosomes of humans and chimps, the difference rises to at least 5%.

It’s estimated that there are about 60 genes found in humans that have no similar genes in chimps. It’s difficult to get just one unique gene in 6 million years, but 60? Impossible!! There are differences in non-coding DNA, how chromosomes are arranged in the nucleus in cells of different tissues, how genes are regulated, etc. Many of these differences are found in genes expressed in brain tissues.

These genetic differences bring about dozens of anatomical and physiological differences. Our brains are larger and constructed differently; our feet, necks, and location of the skull on the spine are different.

We think about past and future, we play, dance, make music, communicate through language, use symbolic logic, we write novels and poetry, use math and art, and show empathy for others. There are so many more differences. We do not share a

common ancestor with chimps. There is not enough time for evolution bring about all these differences.

I hope that now you are convinced that evolutionary creationist insistence that Universal Common Descent be fully accepted is not based on evidence, just a belief that evolution is true.

**Notes**

1. J.P. Moreland, Stephen C. Meyer, Christopher Shaw, Ann K. Gauger, and Wayne Grudem, Editors. *Theistic Evolution: A Scientific, Philosophical, and Theological Critique.* Wheaton, IL: Crossway, 2017.

2. Pp. 380-382.



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# Theistic Evolution: The Failure of Neo-Darwinism

*Dr. Ray Bohlin provides an overview of the first section of a landmark book on theistic evolution, showing why evolution doesn't hold up to scrutiny.*

## Three Good Reasons for People of Faith to Reject Darwin's Explanation of Life

In this article I'm discussing the first of four sections in the book, ***Theistic Evolution: A Scientific, Philosophical, and Theological Critique***.{1} I'll be covering five chapters from the section, "The Failure of Neo-Darwinism." First we'll look at Doug Axe's chapter titled, "Three Good Reasons for People

of Faith to Reject Darwin's Explanation of Life."

I need to let you know from the start that I totally disagree with any theistic evolutionary perspective. As a biologist, I see no reason for any accommodation since Darwinism should be rejected on purely scientific grounds.

But moving along, Axe makes three points in this chapter. First, that there is a cost to any theistic evolution position. Second, Darwin's view of life is false. Third, the reasons for the accommodation are confused. I want to focus on his first point that accommodating Darwin's view of life within traditional faith is costly. He begins with a familiar quotation from the Book of Job 39:26-27. "Is it by your understanding that the hawk soars and spreads his wings toward the south? Is it at your command that the eagle mounts up and makes his nest on high?" Eventually, Job was appropriately humbled as he responded later in Job 42:3, "I have uttered what I did not understand, things too wonderful for me, which I did not know." And if you *don't* agree, then *you* should try to make an eagle. Oh, we can create flying toys with flapping wings and all, but these don't come close to an actual eagle or hawk. These toys must be made on an assembly line with humans adding parts until the "eagle" is complete. With only the yolk and white of the egg as its nutrition, true eagles are formed within the egg by a seamless automated process. No human interference needed.

If a part breaks in the flying toy, it must be replaced by a human. Eagle's bodies can mostly heal themselves and true eagles reproduce on their own. No flying toy will ever reproduce itself. Job's response was correct. He didn't respond, saying "Actually, God, hawks and eagles could have appeared by accident over millions of years." As Doug states, "I see no way around the fact that the arresting awe we're meant to have for the maker of the majestic eagle is lost the moment we accept that accidental physical processes could have done the making instead Neo-Darwinism and the Origin of

Biological Form and Information Now we turn to discussing Stephen Meyer's chapter on the origin of biological form and genetic information.

## Neo-Darwinism and the Origin of Biological Form and Information

Before we begin, I need to discuss what a body plan is. The body plan of an animal is the overall structure of the body. For instance, the butterfly and the polar bear have very different body plans. The butterfly has its skeleton on the outside, what's known as an exoskeleton. The polar bear has an endoskeleton; the skeleton is on the inside of the body. Butterflies have wings, polar bears don't. In fact, all the major organs, limbs and other body parts are arranged very differently. So, each of these animals will need to form along very different pathways to arrive at the final product. The question becomes, "How does the evolutionary process form such different body plans from similar beginnings?"

Studies in developmental biology, the study of how organisms develop from fertilized egg to final product, show that changes in biological form require attention to the timing, especially those steps involved in developing the body plan. Also, there is a need for careful choreography in the expression of genetic information, not just when, but how much, how long lived, the proper sequence.

There are real problems here for Neo-Darwinism. Major evolutionary change requires changes in the body plan which is formed very early in embryonic development. So, mutations need to occur early. Mutations that may occur late have no effect on body plan. But numerous studies have shown that early mutations are inevitably lethal. Late mutations don't produce body plan changes. As Meyer puts it, "The kind of mutations we need, we don't get. The kind we get, we don't need."

There isn’t just a need for new genes and proteins for new functions of the organism. Polar bears can endure freezing temperatures, butterflies can’t. But new regulatory pathways are needed. Early development is controlled by developmental gene regulatory networks, or dGRNs. These networks regulate the time and perform the choreography. Any mutations here are always inevitably lethal. Neo-Darwinism can’t explain the origin of new animal body plans.

## Are Present Proposals on Chemical Evolutionary Mechanisms Accurately Pointing toward First Life?

Now we will review Dr. James Tour’s discussion on the origin of life. Dr. Tour is the foremost authority on organic chemical synthesis. That is, he makes chemical products based on the element carbon. This background makes him just the scientist to critique the chemical origin of the first life, since life is also based on the element carbon.

Tour begins by describing the start and stop necessity of making something as simple as a carbon-based car and a car that also contains a motor and then an even better motor. These nano cars take many steps to build. Usually Tour and colleagues run into a roadblock necessitating, before moving to the next step, that they back up several steps and redirect the process. He also documents that each stage usually requires different chemical requirements. This makes it necessary to purify your product. What he demonstrates is that making something comparably simple as a nano car requires intelligent input at every step. This will not happen by chance. Tour emphasizes that the undirected chemical synthesis to make useful biological molecules, and even a cell, is far more complex with no opportunity to start over again when you hit a dead-end.

After walking the reader through the many and enormous roadblocks a prebiotic chemist faces in trying to form the building blocks—sugars, amino acids, fatty acids, and nucleotides—and then the macromolecules; carbohydrates, proteins, lipids, DNA and RNA, and *then* trying to assemble these very different parts into a functioning, reproducing cell, Tour comes to a final conclusion.

"Those who think scientists understand how prebiotic chemical mechanisms produced the first life are wholly misinformed. Nobody understands how this happened. Maybe one day we will. But that day is far from today. It would be more helpful (and hopeful) to expose students to the massive gaps in our understanding. Then they may find a firmer—and possibly a radically different—scientific theory."

## Why DNA Mutations Cannot Accomplish What Neo-Darwinism Requires

Now we discuss Jonathan Wells's chapter on why DNA mutations are insufficient to account for the arrival of new organisms through evolution. Mutations acted on by Natural Selection are what provides the variation, when given enough time and continued mutations with selection, to provide new types of organisms.

Dr. Wells begins his chapter by making sure we understand what is meant by the "Central Dogma." It goes something like this: DNA makes RNA, makes protein, makes us. It was thought that all the instructions for building organisms was in the sequence code of DNA. But DNA never leaves the nucleus. The sequence of DNA that codes for a protein is transcribed into a molecule of RNA. The messenger RNA then leaves the nucleus and enters the cell, where molecular machines called ribosomes, translate the RNA code into protein code. Proteins are made of long chains of amino acids. Proteins are the workhorse of the cell. They speed up necessary chemical reactions the cell

needs and provide structure and support. Our bodies are composed of organ systems, which are made up of organs, which are composed of tissues, and tissues are composed of cells that perform their functions through the proteins each cell makes. Therefore, DNA makes RNA, makes protein, makes us.

Over the last few decades, this analogy has fallen apart. Initially, a stretch of DNA that coded for a single protein was called a gene. One gene, one protein. We now know that the RNA transcribed from a gene can be split up into two or more segments and these segments put back together in several different ways. The RNA then doesn't match the original sequence of DNA. About 95% of human genes can be spliced into more than one RNA and more than one protein. Proteins can also be modified with sequences of sugar molecules that are specific to a particular tissue. What controls the splicing and the addition of sugar molecules is still not fully known. But for various reasons, it's not the DNA alone that determines these variations on a central theme.

## Evidence from Embryology Challenges Evolutionary Theory

Finally, I'll cover the final chapter for this article, "Evidence from Embryology Challenges Evolutionary Theory." Sheena Tyler states early that Darwin thought that "Embryology is to me by far the strongest class of facts in favor of change of form."{2} Tyler goes on to indicate that in Darwin's time, embryology was largely a black box of which little was known.

The section I'll be covering is titled "Development is Orchestrated." Tyler makes a comparison to a mystery novel where the author plans to ensure the different characters come together at the right place and time to resolve the mystery. Embryological development is very much like that. She mentions a four-dimensional pattern of stored information. The first

three dimensions of this pattern revolve around being in the right place, the fourth dimension is time. So embryological proteins, chemicals and even electrical fields need to be available at the right time and place. Any deviation and the structures are ill-formed, or the embryo could even die.

Skeletal development in vertebrates starts with an electrical field that begins the process. And from there she quotes an embryologist indicating that the size and shape of skeletal elements in the embryo are "exquisitely regulated." Another word used to describe the sequence of events is "precise." This doesn't sound like something that was cobbled together by chance over a few million years. There is a definite plan and prepattern that *must* be followed.

The central nervous system requires, again, a "precise and exquisitely regulated gene expression." Another expression used is "intricately orchestrated." Each developing neuron anticipates where a connection with another neuron will need to be before contacting the other neuron.

Last, she mentions the heart and circulatory system. One embryologist reports that cardiac transcription factors (small proteins that help initiate the expression of a gene) *choreograph* the expression of *thousands* of genes at each stage of cardiac development. Every blood vessel ends up in the right place every time along with the proper architecture for veins or arteries. Just amazing!

## Notes

1. J.P. Moreland, Stephen C. Meyer, Christopher Shaw, Ann K. Gauger, and Wayne Grudem, *Theistic Evolution: A Scientific, Philosophical, and Theological Critique*. Wheaton, IL: Crossway, 2017.

2. Quoted in Sheena Tyler, Evidence from Embryology Challenges Evolutionary
Theory, in *Theistic Evolution: A Scientific, Philosophical,*

*and Theological Critique*, Moreland, J.P., Meyer, S.C., Shaw, C., Gauger, A. K., and Grudem, W., editors.



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# Redesigning Humans: Is It Inevitable?

*Is genetic technology just the next step in human discovery about ourselves, or does it mean the end of humanity as we know it? Could we literally redesign humanity out of existence? On the other hand, there are those who maintain that we are headed down a disastrous technological and ethical road.*

*This article is also available in Spanish.*

## The People Are Restless

There is a general unease in the wind. People are a little squeamish concerning the coming revolution in biotechnology. There is a sort of stand-offish fascination where we wonder at the possibilities for curing genetic diseases and even for making ourselves smarter, prettier, or stronger. Yet we shrink from the potential horror of the world we might create for ourselves with no hope of turning back.

We have faced such forks in the road before. Every new technology has presented fantastic benefits and uncertain costs. Gunpowder, electricity, the combustion engine, atomic energy, etc., have all offered tantalizing either/or tensions. Some of these tensions we still live with, such as the threat of

nuclear weapons and encroaching pollution from combustion engines.

But for the most part we have been able to develop a stable coexistence between the potential for good and the potential for evil. Weapons have become more precise, minimizing unnecessary collateral casualties, the combustion engine has become cleaner and more efficient, and atomic weapons so far have been remarkably harnessed.

But what about genetic technology? Is this just the next step in human discovery about ourselves, or does it mean the end of humanity as we know it? Could we literally redesign humanity out of existence? There are voices in our culture today that will tell us that indeed we can and we will and it is inevitable and "you'd just better get used to it."

On the other hand there are those who maintain that we are headed down a disastrous road, and that we have a small opportunity to harness the benefits of the new technologies while minimizing and corralling the hazards.

I recently spent several days at the United World College in New Mexico developed by the late Armand Hammer, one of several upper high schools around the world for the best and brightest. The occasion was a student-led conference organized for discussing the ethics of human genetic engineering and cloning. Three other invited guest speakers and I spent two days with the 200 students from around the world and the UWC faculty and staff.

About fifty of the students were from a variety of backgrounds from here in the U.S., and the other 150 were from almost ninety countries. Their knowledge and perspectives on human genetic engineering ran from those who saw few problems and were perplexed by those with reservations to those who held all such technologies at arm's length and couldn't understand why anyone would want to do such things.

Who's right? Beyond that, What have we done already? And is there any opportunity for science and society to meet together to figure this out? In this program we will hear from several voices and see if we can navigate the coming genetic mine fields.

## Is There a Posthuman Future?

One of participants at the UWC conference designated himself a "transhumanist." Transhumanists are among those who welcome with open arms the possibilities of genetic engineering to alter who and what we are. They scoff at the reluctance of others to step into this coming Brave New World. They relish the possibilities of double and triple average life-expectancy, designer babies, and the elimination of genetic disease. They aren't troubled by the necessity of costly mistakes and failures. That's just the price of research and progress. We accept risk all the time, they say. Why should genetic research be any different? They apply rather consistently a naturalistic worldview which sees human beings as just another species. We certainly aren't made in the image of God, they say, so why is our current genetic structure sacred?

Gregory Stock opened his 2002 book, *Redesigning Humans: Our Inevitable Genetic Future*, this way: "We know that *homo sapiens* is not the final word in primate evolution, but few have grasped that we are on the cusp of profound biological change, poised to transcend our current form and character to destinations of new imagination."{1}

Stock rightly points out that we have already started down the road of genetic manipulation of our species. Several fertility clinics in the U.S. already offer preimplantation genetic diagnosis or PGD. This procedure screens newly created embryos by in vitro fertilization for a few genetic diseases such as Tay Sachs, cystic fibrosis, and hemophilia. You can also have the embryos screened for sex selection. Some clinics even

offer sex selection as the sole purpose of your visit to the clinic.

One couple from Wyoming had fourteen embryos created by in vitro. Seven were male, seven were female. They chose three females to be implanted to ensure their fourth child was a girl after three boys. The technique is virtually 100% effective. Less efficient sperm selection techniques are only 91% effective for girls and only 76% effective for boys.{2} But should we be selecting the sex of our children?

Over one million IVF babies have been born worldwide, around 28,000 in the U.S.—roughly 1% of newborns. This may soon become the "natural" way once more procedures become available to design our own babies. We may recoil today at the thought of designer babies, but we also recoiled twenty-five years ago against the thought of test-tube babies.

Stock closes his book by saying, "We are beginning an extraordinary adventure that we cannot avoid, because, judging from our past, whether we like it or not this *is* the human destiny."{3} But is it?

## What's So Wrong With Tinkering With Our DNA?

Couples are already being given the power to choose the sex of their child, even at the cost of simply rejecting the embryos that are the wrong sex. But our technology is advancing rapidly to allow a far broader array of genetic choices.

Gene therapy, the ability to transfer a normal human gene into the affected tissues of a person affected by a single gene disease, has been pursued for over ten years. So far results have been disappointing. That is partly the reason why many are looking for improved ways to add genes to the earliest one cell stage embryo so the gene can be spread to all tissues at once. This process is also rather inefficient in animals,

successful only about 1% of the time.

But this does not deter some because they already view the embryo, before fourteen days after conception, as little more than reproductive cells and not yet worthy of being declared human. If this definition holds, embryos can be wasted as long as a supply of human eggs is readily available. In addition to preimplantation genetic diagnosis (PGD) for sex selection and selection of embryos that are free of cystic fibrosis, Tay Sachs, hemophilia, and other genetic diseases, other genetic technologies are on the near horizon.

Researchers have already devised artificial chromosomes. These chromosomes pass on stably over several generations in mice. They have been tested successfully in human tissue culture, and have remained stable over dozens of cell divisions. No one has added foreign genes to these chromosomes, but that is the plan: to provide a safe and effective means of adding genes to embryos and have them distributed to all tissues and to succeeding generations.

Genetic futurist Gregory Stock summed it up when he said, “Breakthroughs in the matrixlike arrays called DNA chips, which may soon read thirty thousand genes at a pop; in artificial chromosomes, which now divide as stably as their naturally occurring cousins; and in bioinformatics, the use of computer- driven methodologies to decipher our genomes—all are paving the way to human genetic engineering and the beginnings of human biological design.”{4}

Some may scoff at these projections, but people seem quite willing around the world to consider taking advantage of technologies that can genetically enhance themselves or their offspring. “In a 1993 international poll, Daryl Mercer, director of the Eubois Ethics Institute in Japan, found that a substantial segment of the population of every country polled said they would use genetic engineering both to prevent disease and to improve the physical and mental capacities

inherited by their children. The numbers ranged from 22 percent in Israel and 43 percent in the United States to 63 percent in India and 83 percent in Thailand."{5} So what's the problem?

## What's Our Next Step?

I believe that being able to genetically redesign human beings is far closer than most people realize. Not only is the technology developing at an ever-increasing rate, but people are also far more willing to consider using such technologies than most would want to think.

I hope my tone in this article has indicated that I have deep reservations about this seemingly inevitable future. But why do I say this is inevitable? And why would I have reservations about taking this next step?

I believe that at least trying to alter ourselves genetically is inevitable because the technology is developing rapidly using animal models. And whatever we have done in animals, we eventually do in humans. The naturalistic worldview says quite strongly that we are just another animal species. If our understanding of our own genetics continues to increase and we gain the technology to correct our defects and faults, the naturalist says, Why not?!

Society and governments have put few barriers in the way of scientists and researchers from simply taking the next logical step. So far, we have been unwilling to say that there are some experiments we will not do. Even though most will say they are against human cloning—even scientists—that figure is changing, and we have few reasons for our objections besides the fact that it is not yet safe. If it does become safer, the public will have little room to say no. We've painted ourselves into a bit of a corner.

In regard to genetic engineering, we are easily swayed by

appeals to eliminate genetic diseases without considering how difficult it is to delineate between curing genetic disease and producing genetic enhancements. James Watson, co-discoverer of the structure of DNA and Nobel Laureate, exposes our difficulty with two penetrating statements. Concerning curing genetic disease he said, “What the public wants is not to be sick and if we help them not to be sick, they’ll be on our side.”{6}In another context Watson would have left most people dead in their tracks when he said, “No one really has the guts to say it, but if we could make better human beings by knowing how to add genes, why shouldn’t we?”{7}

Leon Kass, chairman of President Bush’s Council on Bioethics, put it quite succinctly when he said, “The first thing needful is a correction and deepening of our thinking.”{8} When I speak to young people in particular, I almost plead with them to pay attention in biology class. These genetic choices will probably begin to be available to today’s high school students as they marry and begin their families. They and we need to be better prepared.

## How Will the Church Be Challenged?

There are just a few voices warning of the coming challenges and opportunities of the developing crisis over human dignity as the diesel engine of human genetic technology gains momentum and steam. Some fear it may already be beyond the point of no return and believe we’d better figure out how we are going to cope with our inevitable future of redesigned humans.

Leon Kass’s book, *Life, Liberty, and the Defense of Dignity,* is a good place to start. Though not a Christian, Kass dances around the edges of a Christian or theistic worldview that at least acknowledges that there is a human design in place that we need to be mindful of before we head out at breakneck speed to change who and what we are.

Kass sees that our efforts to redesign humans challenge our very dignity and identity as human beings. If parents have constructed the best child for them using the best available technology they can afford, are they still parents, or creators and owners with additional rights and privileges? A child becomes a commodity to be designed, manufactured, and even sold. Love and nurture will turn to management and stimulation.

Gregory Stock is the director of the Program on Medicine, Technology and Society at the UCLA School of Medicine. His book, *Redesigning Humans: Our Inevitable Genetic Future*, will sober you up quite quickly. Stock is a naturalist and has little patience with those who would hold back our genetic future. He is knowledgeable and unflinching about the possibilities. One commentator wrote; "This is the most important book ever written about what we could do to make better people. I could not put this book down because it challenged everything I knew about human nature." I would agree.

In my travels I have found the church to be largely unaware of how close we are to Stock's vision of redesigning humans. Within a few short decades our children will be pressured to alter their children genetically to keep up with society. Scientific research may well make use of human embryos as matter of fact research subjects. This may likely extend to developing fetuses, and it will all in the name of furthering health and eliminating disease.

How will we react? The Barna Research Group tells us over and over again that the Christian community does not think or act in an appreciatively different manner than society at large. That means these genetic technologies will find their way into the church. There will be a new source of discrimination to deal with. No longer will churches be segregated by economic status and race but by genetic pedigree as well.

Do we really think we can improve on or maybe at least recover the original design? There may be a new Tower of Babel on our horizon. We must take seriously this threat to our future, both of humanity and the church.

**Notes**

1. Gregory Stock, *Redesigning Humans: Our Inevitable Genetic Future* (New York: Houghton Mifflin, 2002).
2. Claudia Kalb, "Brave New Babies," *Newsweek,* 26 January, 2004, 45-53.
3. Stock, 197.
4. Ibid., 13.
5. Ibid., 58.
6. Quoted in Leon Kass, *Life, Liberty, and the Defense of Dignity: The Challenge of Bioethics* (San Francisco: Encounter Books, 2002), 7.
7. Quoted in Stock, 12.
8. Kass, 8.



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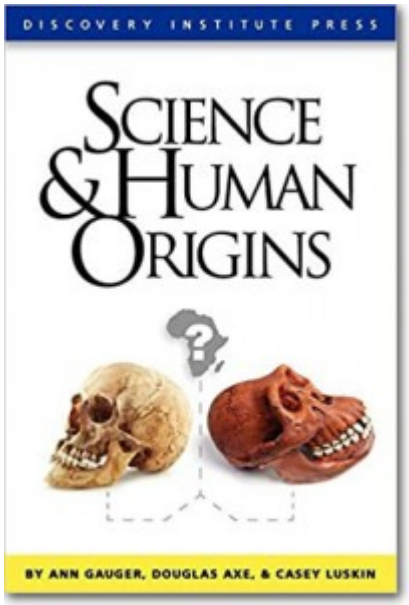
# Science and Human Origins

*Dr. Ray Bohlin explains how the Discovery Institute's book "Science and Human Origins" reveals why evolutionary theory cannot account for human origins.*

## Just What Needs to be Accomplished From Ape-like Ancestor to Humans?

In 2012 the Discovery Institute published an edited volume discussing the possibilities of human evolution from an ape-like ancestor by Darwinian evolution mechanisms. In this article I will offer an overview of the book, *Science and Human Origins*{1} and investigate the state of research into human origins from an evolutionary perspective.




First I'd like to discuss the first chapter by Ann Gauger. Ann is a research scientist with Biologic Institute with laboratory experience at Harvard and the University of Washington. Initially Ann points out two things that are necessary for there to be a link by common ancestry between humans and some ape-like ancestor. First there must be a step-wise adaptive path to follow. Neo-Darwinism depends on a slow, gradual path between two forms, genes or proteins. Rapid large jumps are likely to be too disruptive to the organism's state of being. Either survival or reproduction will be compromised.

Second, standard unguided Darwinian mechanisms such as mutation, selection, random drift and genetic recombination have to be sufficient for the task. Modern evolutionary theory is quite insistent that only natural unguided processes are necessary for evolution to occur no matter what the transition being considered.

To better understand the problem, the book discusses the numerous types of biological changes needed to transition from a primarily arboreal monkey adjusted to life in the trees to a walking, running, hunting gathering, intelligent, talking human being. Compared to the other great apes, humans possess longer legs, shorter arms, different pelvis and rib cage, refined muscles for fingers, lips and jaw, eyes that can focus straight ahead and still see where we are walking, larger and

unique brain structures, a head that sits directly on top of the spine and a spine that will support upright walking and running. Now add to that our unique capacities for language, art and abstract thought and you can easily understand that a lot needs to happen.

The usual series of fossils links together Lucy, the australopithecine closest to humans and Turkana Boy (*Homo erectus*), the first full member of our genus Homo. Lucy is said to have lived 3.2 million years ago (mya) and Turkana Boy about 1.5 mya. This is indeed a very short time span in evolutionary terms, especially considering all that must change. One recent paper from the journal *Genetics* suggested that it would take about 6 million years for a single mutation to be fixed in a primate lineage. This transition probably needs tens of mutations. If you need two mutations, forget it. That would require 216 million years.

It's not too hard to see that standard evolutionary processes are wholly insufficient to cause the transition between australopithecines and humans.

## The Earliest Fossils Leading to Humans

Now I want to discuss the evidence for human evolution from the fossils. Study into ancient humans is called paleoanthropology. Casey Luskin breaks down his discussion into two parts, Early Hominin Fossils and Later Hominins: The Australopithecines. Let's start with the early hominins. As the story goes, humans and chimpanzees share a common ancestor about six million years ago. The fossil record of six million years ago has been pretty stingy. Not much to choose from for a human/chimp ancestor until the last twenty years.

The Toumai Skull (*Sahelanthropus tchadnesis*) was first reported in 2002 and is widely referred to as the oldest fossil in the hominin line. But when you dig a bit deeper as

is always necessary when discussing human evolution, not everyone agrees. Some suggest that the Toumai Skull has far more in common with apes than anything resembling a human. All this skull really shows is how complex the evolutionary story has become.

A second fossil known as "Orrorin" (*Orrorin tugenensis*) or "original man" in a local Kenyan language was designated as the earliest human link in 2001.{2} But it was little more than a few bone fragments from an arm, thigh, lower jaw and a few teeth. As usual, there were some saying that Orrorin walked on two feet and others who said there isn't enough information to determine how this organism moved. Another fossil found on the island of Sardinia is truly an ape but had some indications that it too was bipedal. But Oreopithecus is thought to have arrived at its bipedal gait independently. This would clearly indicate that just because an ape-like fossil had bipedal adaptations doesn't mean it was ancestral to humans.

Last is the curious story of "Ardi" (*Ardipithecus ramidus*). Ardi is a 4.4 million year old fossil announced in 2009. Ardi quickly rose in fame and attention, being hailed by some as the oldest human ancestor found and the key to understanding how human bipedalism evolved. But Casey Luskin informs us that Ardi was originally found in the early 1990s. It took over a decade to piece the fossil together because it was found literally crushed and extremely brittle. How did they know how it all really fit together? Within a year other paleontologists indicated Ardi had little to do with human evolution and was simply overhyped. That's become a familiar story. So much change to cover and so little evidence.

## From "Lucy" to "Turkana Boy"

We now turn to the appearance and nature of a very important fossil category. If humans have evolved by a Darwinian process

from an ape-like ancestor, then there must be some species or group of species that show clear signs of being intermediate between fossil apes and humans. For many years that position has been occupied by the "australopithecines." More specifically a particular species (*Australopithecus afarensis*) has been represented for decades as that ancestor, represented by a fossil known as "Lucy."

As Casey Luskin carefully documents, Lucy is a fossil that represents about 40% of the original organism so it is very incomplete, although far more representative that any earlier fossils. He also notes that the original fossil was found scattered over a hillside and may not truly represent a single individual. But significantly, Lucy is not necessarily closely related or descended from the Toumai Skull, Orrorin, or Ardi that I discussed above. There is much about Lucy that is very ape-like, and many anthropologists even question whether Lucy can be considered as truly ancestral to humans.

Most significant about Lucy is the contention by some that she possessed a form of bipedalism that was very much or at least similar to human locomotion. But even that is highly contested by the evolutionary experts. Lucy's skull is small and quite ape-like. The chest cavity is shaped in a way that would make upright walking difficult and her arms are long like apes and her legs are short like apes. Much is made about the shape of her pelvis. But as Luskin points out, the shape may have been an error in reconstruction since that part of the skeleton was found severely crushed.

Even more to the point, Lucy shows numerous characteristics that require significant reworking compared to the earliest human-like fossils (*Homo erectus*) usually represented by "Turkana Boy." This two-million-year-old fossil shows itself to be entirely human. Even its small brain is within the range of modern humans and the brain architecture is also entirely human and nothing like Lucy. As Luskin points out there needs to be a sort of "Big Bang" between Lucy and Turkana Boy.{3}

What we have then is a large gap between apes and Lucy, and a large gap between Lucy and humans. So even though the fossil record could be interpreted to show a modest progression from apes to humans over time, there are no true transitional forms to document how this important transition took place.

## DNA Doesn't Lie

In a well-documented chapter, Casey Luskin examines the claims of evangelical scientist, Francis Collins, that there is explicit and undeniable genetic evidence that humans and chimps evolved from a common ancestor. Collins has earned a stellar reputation as a medical geneticist for first discovering the gene responsible for cystic fibrosis, leading the Human Genome Project for over a decade, and then in 2009 being named by President Obama as the head of the prestigious National Institutes of Health (NIH). In between Collins's role as head of the Human Genome Project and his current role at NIH, he founded an organization, BioLogos, dedicated to convincing the church in America that evolution is indeed is a fact and we need to adjust both our science and preaching to reflect that fact.

In preparation for BioLogos he published a book titled *The Language of God*.{4} In this book, Collins presents a two-fold line of evidence that humans and chimps evolved from a common ancestor. First he appeals to what are known as repetitive elements in our DNA. All mammalian genomes have relatively short sequences that can be very specific to species and groups of species, spread throughout the genome. It appears as if these sequences make copies of themselves and randomly insert the copy elsewhere in the genome. These repetitive elements are frequently found in the same place in the genome in distant species such as mice and humans. These are referred to as Ancient Repetitive Elements (ARE). These AREs are assumed to have no functional significance in the organism. This renders them as what is referred to as "selfish DNA"

which exists only to survive and reproduce.

Some AREs are found in the same chromosomal location in mice and humans as well as humans and chimps. This sure seems like evidence of common ancestry, as Collins claims. But the assumption I just mentioned, that these sequences have no function, has been widely disproved in just the last ten years. As a result of the Human Genome Project that Collins led, we can now search all DNA sequences for some kind of function. Relying on work published by Richard Sternberg, Luskin lists twenty newly discovered functions for different types of repetitive elements in mammalian and human genomes.{5}

The chapter discusses two other now disproven evidences for common ancestry of humans and chimps. I hope you can see that new and mounting evidence is making the common ancestry of humans and chimps even more difficult to defend.

## How Many Humans at the Start?

In the final chapter of *Science and Human Origins*, Ann Gauger discusses a bit more of an academic argument for humans having evolved from an ape-like ancestor. Some evolutionary geneticists have described an argument that the level of genetic variation for particular human genes could not have arisen from a beginning of just two people. They state that standard genetic equations indicate that the human population most likely descends from a population of around 100,000 individuals. Just two people could not have generated this much variation in 100,000 years, let alone less than 10,000 years. If their analysis is true, then the Biblical account of Adam and Eve becomes a theological story with no historical significance. So let's take a look.

Gauger investigates in detail the most variable gene in humans. This gene codes for a protein involved in the immune

system. One section of this gene is what geneticists call “hypervariable.” Evolutionist Francisco Ayala and others researched this gene in the mid-1990s. Ayala’s conclusion was that the original human population that separated from the line that evolved into chimps contained at least 32 copies of the gene in its population. Each of us has only two copies of each gene, so 32 copies requires at least 16 people. But since, over time, different gene copies are lost, Ayala estimated a human population of at least 10,000 individuals with an average closer to 100,000.

Gauger points out that Ayala misused several assumptions. He assumed a small mutation rate and he assumed no selection. When Gauger corrects for these errors and examines the studies of others, she determines that the equations, when the proper assumptions and mutation rates are used, the original human population could have had as few as 4 copies of this gene. Let’s see, two copies per person, four copies, only needs two people. How about that!

Obviously in this short article I have intentionally glossed over the technical details. Ann Gauger gives you the details as well as more non-technical summaries along the way. I strongly encourage you to purchase the book. At 122 pages, it’s readable in a Saturday. Considering all I have covered this week, my doubts about human evolution have only been strengthened. It becomes even more obvious over time that Darwinian evolutionary mechanisms are proving less and less adequate.

**Notes**

1. Gauger, Ann, Douglas Axe, and Casey Luskin, *Science and Human Origins* (Seattle: Discovery Institute Press, 2012).
2. Ibid., p. 51.
3. Ibid., p. 65-70.
4. Francis Collins, *The Language of God: A Scientist Presents Evidence for Belief* (New York: Free Press, 2006).

5. Gauger, Ann, et al., *Science and Human Origins*, p. 87-88.



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# The Five Crises in Evolutionary Theory

*Dr. Ray Bohlin discusses five crises in evolutionary theory: 1) the unsubstantiation of a Darwinian mechanism of evolution, 2)The total failure of origin of life studies to produce a workable model, 3) The inability of evolutionary mechanism to explain the origin of complex adaptations, 4) The bankruptcy of the blind watchmaker hypothesis, and 5) The biological evidence that the rule in nature is morphological stability over time and not constant change.*

 *This article is also available in Spanish.*

## The Case of the Missing Mechanism

The growing crisis in Darwinian theory is becoming more apparent all the time. The work of creationists and other non-Darwinians is growing and finding a more receptive ear than ever before. In this discussion I want to elaborate on what I believe are the five critical areas where Darwinism and evolutionary theory in general are failing. They are:

1. The unsubstantiation of a Darwinian mechanism of evolution
2. The total failure of origin of life studies to produce a workable model
3. The inability of evolutionary mechanism to explain the origin of complex adaptations

4. The bankruptcy of the blind watchmaker hypothesis
5. The biological evidence that the rule in nature is morphological stability over time and not constant change.

Much of the reason for evolution's privileged status has been due to confusion over just what people mean when they use the word evolution. Evolution is a slippery term. If evolution simply means "change over time," this is non-controversial. Peppered moths, Hawaiian drosophila fruit flies, and even Galapagos finches are clear examples of change over time. If you say that this form of evolution is a fact, well, so be it. But many scientists extrapolate beyond this meaning. Because "change over time" is a fact, the argument goes, it is also a fact that moths, fruit flies, and finches all evolved from a remote common ancestor. But this begs the question.

The real question, however, is where do moths, flies, and finches come from in the first place? Common examples of natural selection acting on present genetic variation do not tell us how we have come to have horses, wasps, and woodpeckers, and the enormous varieties of living animals. Evolutionists will tell you that this is where mutations enter the picture. But mutations do not improve the scenario either. In speaking of all the mutation work done with bacteria over several decades, the great French zoologist and evolutionist Pierre-Paul Grasse' said:

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

When I speak of evolution or Darwinism, it is the origin of new biological forms, new adaptive structures, morphological and biochemical novelties that I am referring to. This is precisely what has not yet been explained. When people question the popular explanations of the origin of complex

adaptations such as the vertebrate limb, or sexual reproduction, or the tongue of the woodpecker, or the reptilian hard-shelled egg, they are usually given a litany of reasons why these structures are beneficial to the organisms. More precisely, the selective advantage of these structures is offered as the reason they evolved. But this begs the question again. It is not sufficient for an evolutionist to explain the function of a particular structure. What is necessary is to explain the mechanistic origin of these structures!

Natural selection does explain how organisms adapt to minor changes in their environment. Natural selection allows organisms to do what God commanded them to do. That is to be fruitful and multiply. Natural selection does not, however, explain the crucial question of how complex adaptations arose in the first place.

## The Origin of Life

We have been led to believe that it is not to difficult to conceive of a mechanism whereby organic molecules can be manufactured in a primitive earth and organize themselves into a living, replicating cell. In fact, the ease by which this can (allegedly) happen is the foundation for the popular belief that there are numerous planets in the universe which contain life. Nothing could be further from the truth.

Early experiments suggested that it was relatively simple to produce some of the building blocks of life such as amino acids, the components of proteins. However, the euphoria of the Miller- Urey experiment of 1953 has given way to a paradigm crisis of 1993 in origin of life research. The wishful, yet workable atmosphere of ammonia, hydrogen, methane, and water vapor has been replaced by the more realistic, but stingy atmosphere of nitrogen, carbon dioxide, carbon monoxide, hydrogen sulfide, and hydrogen cyanide. This is the stuff that volcanoes belch out. This atmosphere poses a much more difficult challenge. Molecules relevant for life

would be much rarer. Even more damaging is the possibility of the presence of molecular oxygen in the atmosphere from the break-up of water vapor. Molecular oxygen would poison any reaction leading to biologically significant molecules.

Coacervates, microspheres, the "RNA world," and other scenarios all have serious flaws obvious to everyone in the field except those who continue work with that particular scenario. Some have privately called this predicament a paradigm crisis. There is no central competing model, just numerous ego-driven scenarios. Even the experiments in which researchers try to simulate the early earth have been severely criticized. These experiments generally hedge their bets by using purified reactants, isolated energy sources, exaggerated energy levels, procedures which unrealistically drive the reaction toward the desired product and protect the products from the destructive effects of the energy sources which produced them in the first place.

The real situation was summed up rather well by Klaus Dose:

> More than 30 years of experimentation on the origin of life in the fields of chemical and molecular evolution have led to a better perception of the immensity of the problem of the origin of life on earth rather than to its solution. At present all discussions on principal theories and experiments in the field either end in stalemate or in a confession of ignorance." [From *Interdisciplinary Science Review* 13(1988):348-56.]

But all of these difficulties together, as staggering as they are, are not the real problem. The major difficulty in chemical evolution scenarios is how to account for the informational code of DNA without intelligence being a part of the equation. DNA carries the genetic code: the genetic blueprint for constructing and maintaining a biological organism. We often use the terms of language to describe DNA's activity: DNA is "transcribed" into RNA; RNA is "translated"

into protein; geneticists speak of the “genetic code.” All these words imply intelligence, and the DNA informational code requires intelligent preprogramming, yet a purely naturalistic beginning does not provide such input. Chemical experiments may be able to construct small sequences of nucleotides to form small molecules of DNA, but this doesn’t make them mean anything. There is no source for the informational code in a strictly naturalistic origin of life.

## The Inability to Account for Complex Adaptations

Perhaps the single greatest problem for evolutionary biologists is the unsolved problem of morphological and biochemical novelty. In other words, some aspects of evolutionary theory describe accurately how existing organisms are well adapted to their environments, but do a very poor job of explaining just how the necessary adaptive structures came about in the first place.

Darwinian explanations of complex structures such as the eye and the incredible tongue of the woodpecker fall far short of realistically attempting to explain how these structures arose by mutation and natural selection. The origin of the eye in particular, caused Darwin no small problem. His only suggestion was to look at the variety of eyes in nature, some more complex and versatile than others, and imagine a gradual sequence leading from simple eyes to more complex eyes. However, even the great Harvard evolutionist, Ernst Mayr, admits that the different eyes in nature are not really related to each other in some simple-to-complex sequence. Rather, he suggests that eyes probably had to evolve over forty different times in nature. Darwin’s nightmare has never been solved. It has only been made 40 times more frightening for the evolutionist.

In his 1987 book, *Theories of Life*, Wallace Arthur said:

> One can argue that there is no direct evidence for a Darwinian origin of a body plan—black *Biston Betularia* certainly do not constitute one! Thus in the end we have to admit that we do not really know how body plans originate.

In 1992, Keith Stewart Thomson wrote in the *American Zoologist* that:

> While the origins of major morphological novelties remain unsolved, one can also view the stubborn persistence of macroevolutionary questioning…as a challenge to orthodoxy: resistance to the view that the synthetic theory tells us everything we need to know about evolutionary processes.

The ability to explain major morphological novelties is not the only failing of evolutionary theory. Some argue that molecular structures are even more difficult to explain. The molecular architecture of the cell has recently described by molecular biologist Michael Behe as being irreducibly complex systems which must have all the components present in order to be functional. The molecular workings of cilia, electron transport, protein synthesis, and cellular targeting readily come to mind. If the systems are irreducibly complex, how do they build slowly over long periods of time out of systems that are originally doing something else?

While publishing hundreds of articles pertaining to molecular homology and phylogeny of various proteins and nucleic acids over the last ten years, the *Journal of Molecular Evolution* did not publish one article attempting to explain the origin of a single biomolecular system. Those who make molecular evolution their life's work are too busy studying the relationship of the cytochrome c molecule in man to the cytochrome c molecule in bacteria, rather than the more fundamental question of where cytochrome c came from in the first place!

Clearly then, whether we are talking about major morphological

novelties such as the wings of bats and birds, the swimming adaptations of fish and whales, the human eye or the molecular sub- microscopic workings of mitochondria, ribosomes, or cilia, evolutionary theory has failed to explain how these structures could arise by natural processes alone.

## The Bankruptcy of the Blind Watchmaker Hypothesis

In his 1986 book, *The Blind Watchmaker*, Richard Dawkins states, "Biology is the study of complicated things that give the appearance of having been designed for a purpose." He explains that

> Natural selection is the blind watchmaker, blind because it does not see ahead, does not plan consequences, has no purposes in view. Yet the living results of natural selection overwhelmingly impress us with the appearance of design as if by a master watchmaker, impress us with the illusion of design and planning.

Darwinism critic, Philip Johnson, has quipped that the watchmaker is not only blind but unconscious!

Dawkins later suggests just how this process may have brought about the development of wings in mammals. He says:

> How did wings get their start? Many animals leap from bough to bough, and sometimes fall to the ground. Especially in a small animal, the whole body surface catches the air and assists the leap, or breaks the fall, by acting as a crude aerofoil. Any tendency to increase the ratio of surface area to weight would help, for example flaps of skin growing out in the angles of joints…(It) doesn't matter how small and unwinglike the first wingflaps were. There must be some height, call it h, such that an animal would just break its neck if it fell from that height. In this critical zone, any improvement in the body surface's ability to catch the air

> and break the fall, however slight the improvement, can make the difference between life and death. Natural selection will then favor slight, prototype wingflaps. When these flaps have become the norm, the critical height h will become slightly greater. Now a slight further increase in the wingflaps will make the difference between life and death. And so on, until we have proper wings.

This can sound rather seductively convincing at first. However there are three faulty assumptions being used.

The first doubtful assumption is that nature can provide a whole chain of favorable mutations of the precise kind needed to change forelimbs into wings in a continuous line of development. What is the larger miracle, an instantaneous change or a whole series of thousands of tiny changes in the proper sequence?

The other assumption is “all things being equal.” These mutations must not have secondary harmful effects. How is the creature’s grasping ability compromised while these wingflaps grow? These little shrew-like animals may slowly be caught between losing their adaptiveness in the trees before they can fully utilize their “developing” wings. Or there might be some seemingly unrelated and unforeseen effect that compromises survivability.

A third faulty assumption is the often used analogy to artificial selection. “If artificial selection can do so much in only a few years,” so the refrain goes, “just think what natural selection can do in millions of years.” But artificial selection works because it incorporates foresight and conscious purpose, the absence of which are the defining qualities of the blind watchmaker. In addition, artificial selection actually demonstrates the limits to change since an endpoint in the selection process is usually reached very quickly.

The blind watchmaker hypothesis, when analyzed carefully, falls into the category of fanciful stories that are entertaining—but which hold no resemblance to reality.

## The Prevalence of Stasis over Mutability

Rather than observing organisms gradually evolving into other forms, the fossil record speaks of "sudden appearance" and "stasis." New types appear suddenly and change very little after their appearance. The rarity of gradual change examples in the fossil record were revealed as the trade secret of paleontology by Steven J. Gould of Harvard. Gould also refers to stasis as "data" in the paleontological sense. These are significant observations.

Darwin predicted that there should be innumerable transitional forms between species. But the reality of paleontology (the study of fossils) is that new forms appear suddenly with no hint of the "gradual" change predicted by evolution. Not only that, but once these new forms have appeared, they remain relatively unchanged until the present day or until they become extinct.

Some animals and plants have remained unchanged for literally hundreds of millions of years. These "living fossils" can be more embarrassing for the evolutionist than they often care to admit. One creature in particular, the coelacanth, is very instructive. The first live coelacanth was found off the coast of Madagascar in 1938. Coelacanths were thought to be extinct for 100 million years. But most evolutionists saw this discovery as a great opportunity to glimpse the workings of a tetrapod ancestor. Coelacanths resemble the proposed ancestors of amphibians. It was hoped that some clues could be derived from the modern coelacanth of just how a fish became preadapted for life on land, because not only was there a complete skeleton, but a full set of internal organs to boot. The results of the study were very disappointing. The modern coelacanth showed no evidence of internal organs preadapted

for use in a terrestrial environment. The coelacanth is a fish—nothing more, nothing less. Its bony fins are used as exceptionally well-designed paddles for changing direction in deep-sea environment, not the proto-limbs of future amphibians.

Nowhere is the problem of sudden appearance better demonstrated than in the Burgess Shale found in the Canadian Rockies. The Burgess Shale illustrates that in the Cambrian period (which evolutionists estimate as being over 500 million years ago) nearly all of the basic body plans (phyla) of animals existing on earth came into existence in a geological instant (defined as only 20-30 million years), and nothing that new has appeared since that time. The Cambrian explosion as it is called is nothing less than astounding. Sponges, jellyfish, worms, arthropods, mollusks, echinoderms, and many other stranger-than-fiction creatures are all found to suddenly appear in the Cambrian without a hint of what they descended from nor even how they could all be related to each other. This is the opposite expectation of Darwinism which would have predicted each new body plan emerging from pre-existing phyla over long periods of time. The Cambrian explosion is a direct contradiction of Darwinian evolution.

If Darwin were alive today, I believe he would be terribly disappointed. There is less evidence for his theory now than in his own day. The possibility of the human eye evolving may have caused him to shudder, but the organization of the simplest cell is infinitely more complex. Perhaps a nervous breakdown would be more appropriate!