

Transhumanism and Artificial Intelligence

Kerby Anderson provides an overview of transhumanism and AI, considering its impact on us and our families.

Over the last few years, we have heard more pundits and futurists talk about transhumanism. What is this philosophy? How will it affect our families and us? How should a Christian think about transhumanism?

Transhumanism is an intellectual and cultural movement that seeks to transform the human condition. The leaders of this movement want to use the developing technologies to eliminate aging and enhance human potential (physical, psychological, and mental).

Nick Bostrom explains that transhumanism views human nature as a “work-in-progress, a half-baked beginning that we can learn to remold in desirable ways.” He goes on to explain the transhumanist vision: “Transhumanists hope that by responsible use of science, technology, and other rational means we shall eventually manage to become posthumans, beings with vastly greater capacities than present human beings have.”[\[1\]](#)

Two primary ways they want to do this is through genetic engineering and artificial intelligence. They want to genetically create “the new man,” and they want to use technology to merge humans with machines.

The genetic part of this equation claims that we can use gene splicing and other genetic modification techniques so that genes can be easily transferred between species. But we should be concerned about geneticists who want to create a superhuman race. Leon Kass warned that “Engineering the engineer seems to differ in kind from engineering the engine.”[\[2\]](#)

The other part of the equation concerns technology. The leaders of transhumanism believe we are on the cusp of a technological threshold in both artificial intelligence and human-machine technology.

The “humanism” in transhumanism reminds us that this is a philosophy rooted in Enlightenment humanism. But it is different. Whereas the goal of humanism was to develop the ideal human, the goal of transhumanism is to transcend what we have traditionally considered human.

The Transhumanist Declaration provides eight key points to describe what the signers believe should be the future of humans.^{3} It begins with this claim: “Humanity stands to be profoundly affected by science and technology in the future. We envision the possibility of broadening human potential by overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet Earth.”

Two Principles of Transhumanism

Now I would like to look at the two foundational principles of transhumanism.

The first principle is “metaman.” Futurists predict that our current human condition will evolve into being a cyborg (short for *cybernetic organism*). Our bodies will be joined to machines as we “evolve” through technological progress.

Transhumanists believe we will have immense knowledge and information because of the rapid advances in artificial intelligence and computing power. These advances will eventually exceed human intelligence. Meanwhile, advances in genetic engineering will allow scientists to modify the human body to keep pace with these technological advances.

This is the two-fold hope of the transhumanists: artificial intelligence and genetic engineering. One represents biological change through mixing and matching genes. The other

presents the merging of human intelligence with artificial intelligence.

In fact, the hope is to create a superorganism through the transference of genes between species. This may even eradicate the differences between species. One scientist even suggested that tampering with the genetic codes of all plants and animals on this planet would cause the “definition of human beings to drift.”^{4} Humans would merge with the rest of nature, thereby creating a planetary superorganism he calls “Metaman.”

In essence, transhumanists would like to erase any distinction between human, other forms in nature, and machines. Humans would now control the future direction of evolution and merge all forms of life and non-life together in one enormous superorganism.

The second principle is “the singularity.” Transhumanists wait for the arrival of a technological threshold that will be achieved through artificial intelligence. Futurists predict that sometime in the middle of this century, we will achieve what transhumanists call “the singularity.”^{5} The current distinction between humanity and nature and machine will fade and there will no longer be any barriers between the natural world and artificial world.

This utopian view assumes that humans will be able to transcend the limitations of our biological bodies and brains. There will no longer be any distinction between humans and machines. And this, say the transhumanists, will allow humanity to no longer be resigned to death as the end. All of this, they predict, will usher in a technological millennium.

History of Artificial Intelligence

The term artificial intelligence was coined in 1956 by the American computer scientist John McCarthy. He defines it as

“getting a computer to do things which, when done by people, are said to involve intelligence.” Unfortunately, there is no standard definition of what constitutes AI. Part of the problem is the lack of agreement on what constitutes intelligence and how it relates to machines.

McCarthy proposes that “Intelligence is the computational part of the ability to achieve goals in the world. Varying kinds and degrees of intelligence occur in people, many animals, and some machines.”[\[6\]](#) This would include such capabilities as logic, reasoning, conceptualization, self-awareness, learning, emotional knowledge, planning, creativity, abstract thinking, and problem solving.

Researchers have for decades hoped to build machines that could do anything the human brain could do. Progress was slow for many decades but has accelerated in the last few years. A significant breakthrough occurred in 2012, when an idea called the neural network shifted the entire field. This is a mathematical system that learns skills by finding statistical patterns in enormous amounts of data.

The next big step came around 2018 with large language models. Companies such as Google, Microsoft, and OpenAI began building neural networks trained on vast amounts of text including digital books, academic papers, and Wikipedia articles. Surprisingly, these systems learned to write unique prose and computer code and to carry on sophisticated conversations. This breakthrough has been called “generative AI.”

These AI algorithms are based on intricate webs of neural networks and allow for what is considered “deep learning.” These advanced AI systems collect huge amounts of data and can correct mistakes and even anticipate future problems.

The benefits are significant. Factory automation, self-driving cars, efficient use of resources, correlating massive amounts of data, and fewer errors in medical diagnoses are just a few

of the many ways in which AI will improve our lives in the 21st century.

Unfortunately, AI poses dangers to us.

Dangers of Artificial Intelligence

Although artificial intelligence offers some significant benefits, it also poses many dangers. The authors of the open letter on AI warn that human beings are not ready for a powerful AI under present conditions or even in the foreseeable future. What happens after AI becomes smarter than humans? That is a question that bothered Eliezer Yudkowsky. In his opinion piece for *Time* magazine, he argued that “We Need to Shut It All Down.”[\[7\]](#)

He warned that “Many researchers steeped in these issues, including myself, expect that the most likely result of building a superhumanly smart AI, under anything remotely like the current circumstances, is that literally everyone on Earth will die.” He doesn’t think this is merely a possibility but believes it is a virtual certainty.

He uses this illustration to drive home his point: “To visualize a hostile superhuman AI, don’t imagine a lifeless book-smart thinker dwelling inside the internet and sending ill-intentioned emails. Visualize an entire alien civilization, thinking at millions of times human speeds, initially confined to computers—in a world of creatures that are, from its perspective, very stupid and very slow.”

Bill Gates understands both the benefits and dangers of AI. He explains that the “development of AI is as fundamental as the creation of the microprocessor, the personal computer, the Internet, and the mobile phone.” While these changes in how we work, learn, and communicate are good, there is also “the possibility that AIs will run out of control.”[\[8\]](#)

He asks, “Could a machine decide that humans are a threat,

conclude that its interests are different from ours, or simply stop caring about us?" He recognizes that "superintelligent AIs are in our future" and that they "will be able to do everything that a human brain can, but without any practical limits on the size of its memory or the speed at which it operates." However, these "strong AIs" will "probably be able to establish their own goals." Those would likely conflict with our best interests.

Notice the number of dystopian movies where the machines have taken over. That would include movies like *2001: A Space Odyssey*, *Avengers: Age of Ultron*, *I, Robot*, the *Matrix* series, and the *Terminator* series. That is why many people fear how AI will be used in the future.

Biblical Perspective

How should Christians respond to transhumanism? We should begin by looking at the philosophical foundation of this movement. It begins with a belief that there is no God and we are responsible for our own destiny. It also is based upon an evolutionary foundation that assumes that we are the product of millions of years of chance process.

The leaders of transhumanism see genetic engineering as a tool to be used to speed up the process of evolution. We can use genetics to enhance and improve the human race. If we believe that humans are merely the product of the undirected force of evolution, then certainly intelligent scientists can "improve on nature."

The evolutionary argument goes like this. Humans die due to some technological glitch (e.g., heart stops beating). Therefore, "Every technical problem has a technical solution. We don't need to wait for the Second Coming in which to overcome death. A couple of geeks in a lab can do it. If traditionally death was the specialty of priests and theologians, now the engineers are taking over." [\[9\]](#)

The leaders of transhumanism believe we should use technology to improve the human race so that we are perfect and immortal. In many ways, this technological imperative harkens back to the Tower of Babel (Genesis 11). Instead, we should use technology wisely as we exercise dominion over the world (Genesis 1:28).

Here are a few biblical principles. First, we begin with the reality that each human being is created in God's image (Genesis 1:26-27, Psalm 139:13-16, Isaiah 43:6-7, Jeremiah 1:5, Ephesians 4:24). We have been given dominion and stewardship over the creation (Genesis 1:28, Colossians 1:16) and should reject any form of technology that would usurp or subvert that stewardship responsibility.

Second, humans are created as moral agents. Computer technology can aid us in making moral decisions because of its powerful ability to process data. But we can never cede our moral responsibility to those same computers. God will hold us responsible for the moral or immoral decisions we make (Roman 2:6-8, Galatians 5:19-21, 2 Peter 1:5-8). We should never give computers that authority.

We should reject the vision of transhumanism that looks forward to the day in which man and machine become one in the singularity. We must reject the idea that this is the next step in human evolution. We should reject the worship of technology and reject the idea that AI will make us more human. And we should reject the false utopian vision of a world when machines are given co-equal value to humans created in the image of God (Genesis 1:26-27).

Notes

1. Nick Bostrom, "Transhumanist Values," *Ethical Issues for the Twenty-First Century* (2005): 3-14.
2. Kass, Leon. "The New Biology: What Price Relieving Man's Estate?" *Science*, 19 November 1971, 779.
3. Transhumanism Declaration,

www.humanityplus.org/the-transhumanist-declaration.

4. Gregory Stock, *Metaman: The Merging of Humans and Machines Into a Global Superorganism*, NY: Simon and Schuster, 165.
5. Ray Kurtzweil, *The Singularity Is Near*, NY: Penguin, 2005.
6. John McCarthy, "What is AI/Basic Questions," jmc.stanford.edu/artificial-intelligence/what-is-ai/index.html
7. Eliezer Yudkowsky, "Pausing AI Developments Isn't Enough. We Need to Shut it All Down," *Time*, March 29, 2023.
8. Bill Gates, "The Age of AI has Begun," March 21, 2023, www.gatesnotes.com/The-Age-of-AI-Has-Begun.
9. Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow*, London: Penguin, 2016, 23.

For Further Reading

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Kerby Anderson, *Technology and Social Trends* Cambridge, OH: Christian Publishers, 2016, chapter 3.

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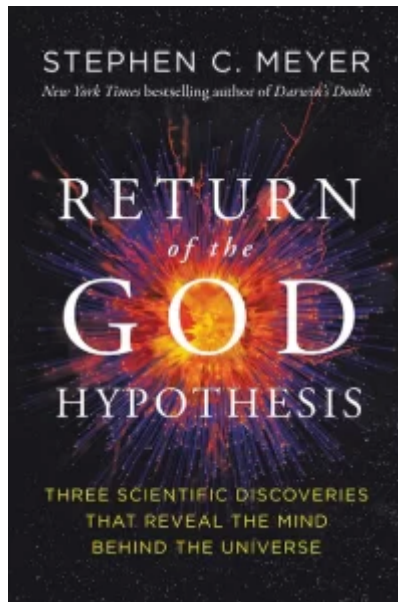
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'Return of the God Hypothesis' for Regular People

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.
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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 Eclipse Declares the Glory of God, v. 2024

Sue Bohlin is very excited to be in the path of the upcoming total solar eclipse, where God shows off once again.

“The heavens declare the glory of God,” Psalm 19 tells us. On April 8, 2024, millions of Americans will have an incredible opportunity to see His heavenly glory in a way most of us never have: through a total solar eclipse. On a path running from Texas to South Maine, observers on the ground will see the moon slip in front of the sun, blocking out all its light and dropping the temperature drastically (about 10 to 15 degrees Fahrenheit) and suddenly.

I am thrilled beyond words that by the grace of God, our home in Dallas, Texas is in the path of totality. All I have to do is go out in our back yard to experience this once-in-a-lifetime event! :::doing the happy dance:::

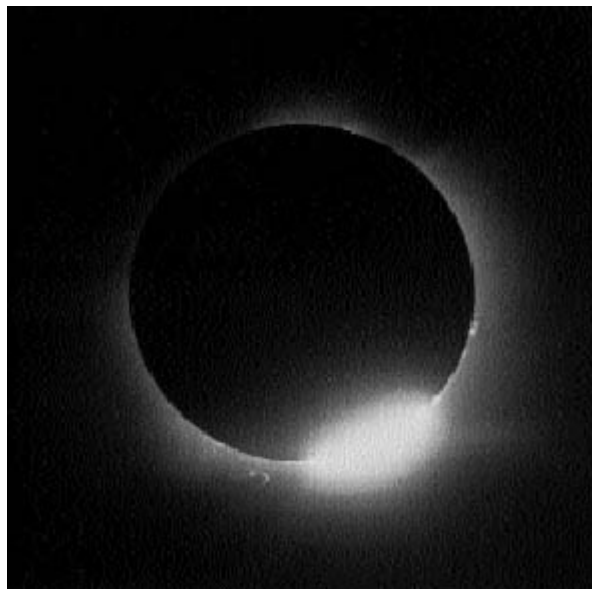
The glory of God isn't just seen, it's *felt* as well. Eclipse-chasers, and even those who have only experienced one total eclipse, report that at the moment of totality (when the moon completely covers the sun, plunging the land into an eerie darkness), people break out with yells and shouts and applause. Many report the hair on the back of their necks standing up. And both locals and visiting astronomers are equally in awe—and often in tears. Like one's first in-person look at the Grand Canyon, it is deeply emotional to be thrilled by something much, much bigger than oneself.

Illustra Media's wonderful DVD *The Privileged Planet*, based on the book by the same name by Guillermo Gonzalez and Jay Richards [\[1\]](#), exposed me to the magnificence of a total solar eclipse. I will never forget the goosebumps at learning that the sun is 400 times farther away than our moon, but it's also

400 times larger. This means that both of these heavenly bodies appear to be the same size to us on Earth. This phenomenal “coincidence” also makes a total eclipse possible.

During an eclipse, *the heavens declare the glory of God* by

allowing us to see things about the sun we wouldn't be able to observe any other way, beautiful and gloriously resplendent. Just before totality we can see “Baily's Beads.” Only seen during an eclipse, bright “beads” appear at the edge of the moon where the sun is shining through lunar valleys, a feature of the moon's rugged landscape. This is followed by the “diamond ring” effect, where the brightness of the sun radiates as a thin band around the circumference of the moon, and the last moments of the sun's visibility explode like a diamond made of pure light. After the minutes of totality, the diamond ring effect appears again on the opposite side of the moon as the first rays of the sun flare brilliantly. These sky-jewelry phenomena are so outside of mankind's control that witnessing them stirs our spirits (even on YouTube!) with the truth of Romans 1:20—“God's invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, so that people are without excuse.”



A total solar eclipse offers so much more, though, than Baily's Beads and the Diamond Ring. At the moment of totality, the pinkish arc of the sun's chromosphere (the part of the sun's atmosphere just above the surface) suddenly “turns on” as if an unseen hand flips a switch. I knew God is very fond

of pink because of how He paints glorious sunrises and sunsets in Earth's skies, but those fortunate enough to see a total eclipse can see how He radiates pinkness from the sun itself! ***The heavens declare the glory of God!***

But wait! That's not all! Along with the flare of the sun's pink chromosphere, a rainbow-like band called the "flash spectrum" appears when the sun is viewed through a prism! (You can google this to see pictures. The best ones are copyrighted so I can't show them to you here.) ***The heavens declare the colorful glory of God!***

For the few minutes of totality, the naked eye can see the sun's lovely corona (Latin for crown) streaming out from the sun. We can't see the corona except during an eclipse because looking straight at the sun for even a few seconds causes eye damage, and because the sun's ball



of fire overwhelms the (visually) fragile corona. This is another way that an eclipse allows us to see how ***the heavens declare the glory of God.***

Astronomer Guillermo Gonzalez noticed details about eclipses that got him excited:

- During a total solar eclipse, the moon is just large enough to block the large photosphere (the big ball of fiery gas), but not so large that it obscures the colorful chromosphere.
- The moon and the sun are two of the roundest measured bodies in the solar system. (Some moons are potato-

shaped!) So when the round disk of the moon passes in front of the equally round disk of the sun, the shapes match perfectly.

- He studied all 65 of the moons in our solar system and discovered that ours are the best planet and best moon for studying the sun during an eclipse. Because the moon fits so perfectly over the sun, its blinding light is shielded, providing astronomers with a view of the sun's atmosphere. We can discern finer details in its chromosphere and corona than from any other planet.
- Being able to study the flash spectrum during a total eclipse enables astro-scientists to determine the chemical makeup of other, distant stars without leaving Earth.

These facts of ***the heavens declare the glory of God!***

Michael Bakich wrote of the 2017 eclipse in *Astronomy Magazine* blog,

This eclipse will be the most-viewed ever. I base this proclamation on four factors: 1) the attention it will get from the media; 2) the superb coverage of the highway system in our country; 3) the typical weather on that date; and 4) the vast number of people who will have access to it from nearby large cities.[\[2\]](#)

I think this is true of the 2024 eclipse as well. Whether you are fortunate enough to be in the path of the total eclipse like me, or will only get to see 75% of the sun's surface covered by the moon (with eclipse glasses, of course!), this extremely important sky event will be proclaiming to everyone that ***the heavens declare the glory of God***. May it make a lasting impression on us all that teaches us more about God's glory!

1. Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet* (Washington, D.C.: Regnery Publishing, 2004)

2.

<http://cs.astronomy.com/asy/b/astronomy/archive/2014/08/05/25-facts-you-should-know-about-the-august-21-2017-total-solar-eclipse.aspx>

This post originally appeared at

blogs.bible.org/the-eclipse-declares-the-glory-of-god-v-2024/

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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).

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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 re-emits this radiation as heat, warming the atmosphere. This is a good thing. Water, CO₂, 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 CO₂ 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? CO₂ 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 fossil 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 CO₂ 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 CO₂ has risen from about 3 parts per 10,000 to 4 parts per 10,000. That's not a lot of CO₂.

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 CO₂ 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 CO₂ 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.

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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Are We Significant in This Vast Universe? – The Evidence Supports Belief in God

Steve Cable considers the question of why could we possibly be important in such a vast universe. Current research shows that there are reasons why God needed such a vast universe to house life on this planet. Understanding this idea can make it an apologetic for our faith rather than a fact which detracts from our faith. Science is the study of God's creation and the more we delve into it the clearer the hand of God becomes.

Why Is the Universe So Vast? Are We Truly Insignificant?

What do you feel when you look at the night sky? Awe? Insignificance? Adoration? Recently, my wife and I took three Ph.D. students from China for an overnight outing at a lake in West Texas. One of the things that impressed them most was the opportunity to view the night sky on a moonless night. Due to "light pollution," people in most cities can only make out a few hundred stars with the naked eye. These young women had never seen the night sky as King David did when he declared, "The heavens declare the glory of God!" (Psalm 19:1, NASU).

They were so taken by the stars and the Milky Way that they spent several hours lying on the dock, looking up at the night sky.

These students were not Christians, and I was glad to have an opportunity to use what we know about the stars to talk to them about the overwhelming evidence for a Creator who is intensely interested in humans. However, another host may have used the same night sky to argue that if there is a God, we must not be very significant to God. Which view is correct? In this article, we will look into the Bible *and* into current scientific theories to better equip us to answer this important question.



According to the Bible, the transcendent Creator of this universe made humans in His own image as the focal point of His creation. Skeptics of a biblical worldview often point to the vastness of the universe as evidence that humans cannot be the focal point of a theistic creation. The famous astronomer, author, and television personality Carl Sagan put it this way:

Our posturings, our imagined self-importance, the delusion that we have some privileged position in the Universe, are challenged by this point of pale light. Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity, in all this vastness, there is no hint that help will come from elsewhere to save us from ourselves.[{1}](#)

Famous physicist Stephen Hawking wrote, “Our Solar System is certainly a prerequisite for our existence but there does not seem to be a need for all these other galaxies.”[{2}](#)

In other words, why would God create this huge universe, if He was primarily interested in His relationship with one species occupying a tiny planet?

I think this is a reasonable question. After all, based on observations from the Hubble Telescope, the current best

estimate for the number of stars in the observable universe is 5 times 10 to the 22nd power; that is a 5 with 22 zeros after it. How many stars is that? Well, if you were to count one star every second, it would take you only fifteen hundred trillion years to count them. These stars are spread over billions of light years. Amazingly, all of these stars account for only about 1% of the total mass of the universe. Why did God create such a vast universe, placing us on a single small planet with no reasonable hope of ever traveling beyond our solar system? Does the size of our universe run counter to a biblical worldview?

A Biblical Perspective of Humankind and the Vast Heavens

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

First let's consider what God's special revelation for us, the Bible, has to say about the vastness of the universe. The Bible often refers to God's creative work in "stretching out the heavens" and filling it with stars (e.g. Job 9:8, Zechariah 12:1). A review of Bible passages on the stars and the heavens reveals a number of reasons why a vast universe is consistent with humans being the most significant part of creation.

We need to realize that creating a vast universe is not harder for God than creating a smaller universe. God brought the universe into existence out of nothing. He had no limits on

the amount of matter and energy created. Consequently, it is meaningless to say that it would be a tremendous waste for God to create so many lifeless galaxies. The concept of waste only applies when there is a limited supply. When there is an unlimited supply, you can use all you desire; there is plenty more where that came from.

Within this vast universe, God placed earth in potentially the only place in the universe capable of supporting advanced life. There are many aspects of the universe that are hidden from the casual observer, but the vastness of the heavens is not one of them. God created the earth and positioned it in an ideal place so that humans could observe the vastness of the heavens and the enormous number of stars. The Bible points out at least five purposes for humans observing this vast universe:

1. *To reveal His majesty and power.* Job refers to this understanding as he reflected on his sufferings stating,

Who commands the sun not to shine,
And sets a seal upon the stars;
Who alone stretches out the heavens
And tramples down the waves of the sea;
Who makes the Bear, Orion and the Pleiades,
And the chambers of the south;
Who does great things, unfathomable,
And wondrous works without number.
Were He to pass by me, I would not see Him;
Were He to move past me, I would not perceive Him.
Were He to snatch away, who could restrain Him?
Who could say to Him, "What are You doing?" (Job 9:7-12).

Later, God confronts Job with His lack of understanding the full power and majesty of His Creator:

Where were you when I laid the foundation of the earth?
Tell Me, if you have understanding,

Can you bind the chains of the Pleiades,
Or loose the cords of Orion?
Can you lead forth a constellation in its season,
And guide the Bear with her satellites?
Do you know the ordinances of the heavens,
Or fix their rule over the earth? (Job 38:4, 31-33).

As we see in this passage, God intentionally did creative, wondrous works without number so that we could glimpse His greatness.

2. *To emphasize our insignificance without God.* The vastness of the heavens highlights how insignificant humans are apart from God's concern for us. The primary lesson that Job learned through his experience was that we are in no position to critique God's actions over His creation. God's creation is so vast that any significance we have comes solely from God's choice to be concerned with us. Job stated it this way: "Behold, I am insignificant; what can I reply to You?" (Job 40:4)

King David was the most significant person in Israel during his reign, but when he considered the vastness of God's creation he acknowledged our insignificance:

When I consider Your heavens, the work of Your fingers,
The moon and the stars, which You have ordained;
What is man that You take thought of him,
And the son of man that You care for him (Psalm 8:3-4)?

3. *As a measure of His loving kindness toward us.* God uses the vastness of the heavens to help us understand the magnitude of His love for us, stating, "For as high as the heavens are above the earth, So great is His loving kindness toward those who fear Him" (Psalm 103:11).

God's love for us is greater than the billions of light years which separate us from the most distant galaxies.

4. *As a picture of His faithfulness and forgiveness.* In a similar way, God uses our inability to completely grasp the breadth and depth of the universe to emphasize spiritual truths. Through Jeremiah, God promised a new covenant where He will remember our sins no more. God used the vastness of the heavens to convey His promise to never cast those in the new covenant away from Him with these words,

Thus says the LORD, "If the heavens above can be measured
And the foundations of the earth searched out below,
Then I will also cast off all the offspring of Israel
For all that they have done," declares the LORD (Jeremiah 31:37).

Even today astronomers recognize that the universe we can observe is much smaller than the state of the universe as it exists today. Due to the finite speed of light, it is impossible to directly observe the current size of the universe or count the exact number of stars. Just as the heavens can never be measured, God will never cast us off from His presence.

5. *As a reminder that our understanding is limited.* Our Creator understands the universe from one end to the other and from the beginning of time to its end. As humans, we are just beginning to probe its mysteries. So, God reminds us, "For as the heavens are higher than the earth, So are My ways higher than your ways And My thoughts than your thoughts" (Isaiah 55:9).

It is clear that God intended us to observe and study the stars and the heavens. As a part of God's general revelation, the magnitude of the universe speaks to His greatness. Through God's special revelation, we see God using the vastness of His creation to teach us lessons about who we are and how we relate to Him. For a Creator who was willing to sacrifice His only Son on the cross for our redemption, it would be child's play to create a vast universe solely for our instruction.

With this understanding, the vastness of the universe becomes a testament to our importance to God rather than evidence of our insignificance.

A Scientific Perspective of Humankind and the Vast Universe

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

In his book *Why the Universe is the Way It Is*^{3}, Hugh Ross points out a number of areas where combining the latest observations of astronomy and physics with biblical theology provides us with fuller answers for some of the tough questions of life. One area he focuses on is the question we have been examining: “Does the vastness of this universe mean that we are insignificant and/or accidental?”

If we assume, as most skeptics and seekers would, that the physical laws of this universe have remained constant from the beginning of the universe until now, then the current state of scientific knowledge points to three reasons why the universe must occupy the mass and volume that it does in order for advanced carbon based life to exist on this planet.

1. *The exact mass of the universe was necessary for life supporting elements to exist.* Life requires heavier elements such as oxygen, carbon, and nitrogen. These elements are produced in the nuclear furnaces of stars. If there were less mass in the universe, only lighter elements such as helium would be produced. If there were more mass, only heavier elements, such as iron, would be produced. In fact, the amount of mass and dark energy in the universe must be fine tuned to

less than one part in 10 to the 60th power, or one part in one trillion trillion trillion trillion trillion, to have a universe that can create a life supporting solar system and planet.

2. *The exact mass of the universe was required to regulate the expansion of the universe to allow the formation of the sun and the solar system.* Amazingly, it turns out that the same total mass that results in the right mix of life supporting elements also results in the right amount of gravity to dampen the expansion of matter across the surface of the space-time continuum to allow the formation of stars like the sun which are capable of supporting a planet like earth. If the universe were expanding faster, stars and solar systems would not form. If the universe were expanding slower, giant stars and black holes would dominate the universe. Once again the total matter in the universe is fine tuned to support life. And what an amazing coincidence: the number that creates the right mix of elements also creates the right expansion rate. This dual fine tuning is much less likely than achieving the financial returns guaranteed by [Bernie Madoff!](#)

3. *The vast volume of the universe is required to give the earth just the right amount of light and other electromagnetic radiation to support life and not destroy it.* Life not only requires a planet with the right mix of elements orbiting the right kind of sun in just the right solar system; it also requires a “just right” galactic environment. Astronomers has discovered what they call “the galactic habitable zone” for our Milky Way galaxy at a distance of about 26,000 light years from the center of the galaxy. Any planet closer to the center will experience deadly radiation levels. Any planet further away from the center would lack the mix of heavy elements necessary for advanced life. But the vast majority of this habitable zone is inside one of the uninhabitable spiral arms of the galaxy. Since stars revolve around the galactic center at a rate different than the spiral arm structure based on

their distance from the center of the galaxy, most solar systems pass through deadly spiral arms over the course of time. Our solar system occupies a very special place as Hugh Ross points out: "The solar system holds a special position in the Milky Way . . . the one distance from the core where stars orbit the galaxy at the same rate as its spiral arm structure does." [\[4\]](#)

Once again we are faced with a divine "coincidence": the same fine-tuned distance required to safely place a habitable planet is also the exact distance required to keep that planet out of the deadly spiral arms.

Not only must the earth be located far from the center of the Milky Way, the Milky Way must be located far enough away from other galaxies to maintain the stability of its spiral structure. Many aspects of the Milky Way appear to be very rare or unique in the universe.

As you can see, a logical application of current scientific orthodoxy based on the Big Bang and constant natural laws overwhelmingly supports the view that the vastness of the universe does not imply that human life is unremarkable and insignificant. On the contrary, the most reasonable conclusion from the evidence is that life on this planet is the primary purpose behind the vastness of our universe. Both the Bible and the results of scientific observation agree: our vast universe is the work of a Creator who considers life on earth as very significant.

Consequently, we don't have to convince a seeker that the world is much younger than it appears in order to answer the question, "Are we significant to our Creator?" We can say, "Whether you look to the teaching of the Bible or you look at the current prevailing models from the scientific community, the answer is definitely yes!" The important question is, "Is it possible to know more about my Creator and have a relationship with Him?" Beginning with the death and

resurrection of Jesus, we can explain how to have an eternal relationship with God and why we believe the Bible is the reliable source of information about our Creator and our universe.

- Check out our article "[The Answer is the Resurrection](#)" at Probe.org for more information on using the resurrection to respond to key questions from seekers.
- For more information on topics related to the origins of our universe and other science topics, check out our [Faith and Science](#) section.
- For further discussion on the age of the universe see "[Christian Views of Science and Earth History](#)" in our Faith and Science section.
- For further discussion of how the age of the universe debate relates to this discussion see [Appendix A: Theology vs. Science or Theology plus Science?](#) and [Appendix B: Apologetics and the Age of the Universe](#).

Notes

1. Carl Sagan, *Pale Blue Dot: A Vision of the Human Future in Space* (New York: Random House, 1994).
2. Stephen Hawking, *A Brief History of Time: From the Big Bang to Black Holes* (New York: Bantam, 1988).
3. Hugh Ross, *Why The Universe Is The Way It Is* (Grand Rapids, MI: Baker Books, 2008).
4. Ross, *Why The Universe Is The Way It Is*, 66.

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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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Probe Live Presents “Climate Change and the Green New Deal”

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and the Green New Deal”

Dr. Ray Bohlin is Vice-President of Vision Outreach for Probe Ministries.

A lifelong conservationist with a deep commitment to a biblical perspective on environmentalism, Dr. Bohlin has been closely following the Climate Change issue for over 20 years. In this public lecture he presented lots of charts and graphs showing there’s no reason to be worried about a climate catastrophe.

PDF of Dr. Bohlin’s Slides:

[Climate Change – Green New Deal PDF](#)

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.