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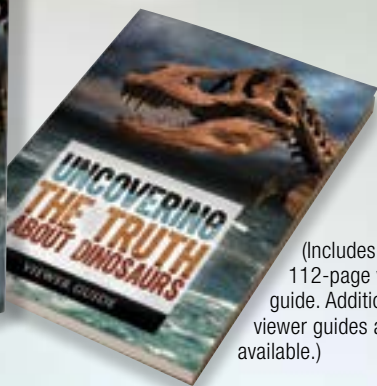
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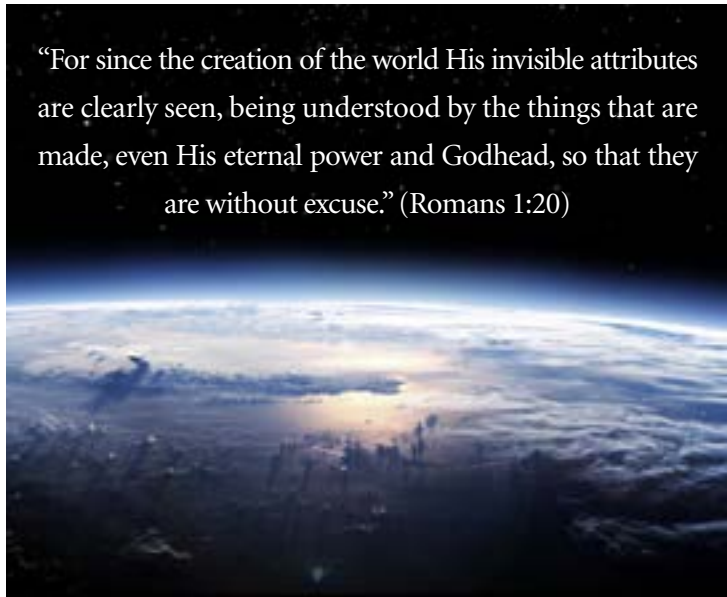
# Creation Matters

**H**ave you wondered what all the fuss is about when it comes to creation? You may hear things like “But that’s not a salvation issue” or “Just focus on the gospel and don’t get sidetracked with creation debates.” Many well-intentioned pastors and Christian teachers admonish their congregations and students to stick to evangelism and discipleship and to “stay away from controversial topics like creation.” But there’s a big problem with that approach to Christianity. When we ignore or reject what the Bible says about the beginning of everything, we call the rest of Scripture—including the gospel—into question.

In this issue, we look at the foundational principles of creation. ICR’s founder, Dr. Henry Morris, said “Many Christians, who either ignore or compromise the biblical doctrine of creation, have urged creationists just to ‘preach the gospel—not creation.’ But this is impossible because the saving gospel of the Lord Jesus Christ is squarely founded on creation” (“Creation Is the Foundation,” page 7).

What we believe about origins impacts our understanding of the Bible and the way we interpret scientific evidence. In our Impact article, “Gravitational Waves and the

Space-Time Continuum” (page 10), nuclear physicist Dr. Vernon Cupps tells us how a “recent scientific discovery seems to confirm the Bible’s implication that space is a real entity with measurable properties.” He notes that “God designed each aspect of reality to function in very specific ways that sustain life on Earth, and we are only beginning to understand the space-time continuum—the



curtain God stretched out in the beginning.”

Brian Thomas’ article “Fast-Changing Killifish Swim Past Evolution” (page 15) demonstrates the importance of creation and evolution questions. In discussing the origin of the killifish’s ability to tolerate polluted waters, he says, “The Creator revealed in the Bible...has an infinite intelligence—He warrants the most consideration.”

Dr. Randy Guliuzza describes how embracing evolution denounces the Bible’s teaching of human accountability: “Evolutionary psychologists suggest that even when destructive, a human’s unconscious reactions—not choices—are practically inevitable” (“Evolutionary Psychology for Serious Tabloid Readers,” page 17).

What’s the running theme through all of these articles? What we believe about creation matters. ICR exists to build your confidence in the Bible’s answers to these questions of faith and science—to show that God’s Word can be trusted from beginning to end.

We may not understand all of the details of God’s marvelous design in creation, but what we can see confirms a magnificent Creator: “For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead, so that they are without excuse” (Romans 1:20). We pray the research and information offered in this issue will strengthen your faith and cause you to marvel at the work of our all-powerful God.

*Jayme Durant*

**Jayme Durant**  
EXECUTIVE EDITOR



# CREATION IS THE FOUNDATION

**I**t's time that people in general, and Bible-believing Christians in particular, recognize the foundational significance of special creation—the creation of a fully functional universe by God's direct involvement. Creation is not merely a religious doctrine of only peripheral importance, as many people (even many evangelical Christians) seem to assume. Rather, it is the basis of all true science, of true American ideology, and of true Christianity.

Evolutionism, on the other hand, is actually a pseudo-science masquerading as science. As such, it has been acclaimed as the “scientific” foundation of atheism, humanism, communism, fascism, imperialism, racism, laissez-faire capitalism, and a variety of cultic, ethnic, and so-called liberal religions, by the respective founders and advocates of these systems. The creation/evolution issue is, in a very real sense, the most fundamental issue of all.

### Foundation of True Science

Evolutionist presuppositions permeate the writings of modern scientists. Stanley D. Beck said, “No central scientific concept is more firmly established in our thinking, our methods, and our interpretations, than that of evolution.”<sup>1</sup>

But it was not always this way. Beck himself, after defining and discussing the basic premises of science (that is, the existence of a real world, the capability of the human mind to understand the world, the principle of cause-and-effect, and the unified nature of the world), admitted that “each of these postulates had its origin in, or was consistent with, Christian theology.”<sup>2</sup> That is, since the world was created by a divine Creator, and man was created in God's image, then nature makes orderly sense, man is able to decipher its operations, and true science becomes possible.

If the world is merely the chance prod-

uct of random forces, on the other hand, then our human brains are meaningless jumbles of matter and electricity and science becomes nonsense. Consequently, the great founding fathers of true science (Kepler, Galileo, Pascal, Newton, Boyle, Brewster, Faraday, Linnaeus, Ray, Maxwell, Pasteur, Kelvin, etc.) were almost all creationists and believed they were glorifying God as they probed His works. Yet today such scientists would not even be considered scientists at all, because they believed in the primeval special creation of all things by God!

### Foundation of American Ideology

Although not all of America's great founding fathers were Bible-believing Christians, almost all of them were true creationists, believing that God created the world and man and all natural systems. The colonies were settled and developed largely by Christian people who came to this conti-

ment to gain freedom to believe and do what the Bible taught, and they all acknowledged that the foundational belief was belief in special creation. The historian Gilman Os-trander reminds us:

The American nation had been found-ed by intellectuals who had accepted a world view that was based upon Bib-lical authority as well as Newtonian science. They had assumed that God created the earth and all life upon it at the time of creation and had continued without change thereafter.<sup>3</sup>

Note that these great pioneers were in-tellectuals, not ignorant emotionalists. They laid great stress on education and science, founding many schools and colleges, in con-fidence that true learning in any field must be biblically governed. Christian historian Mary-Elaine Swanson said:

In colonial times, the Bible was the primary tool in the educa-tional process. In fact, according to Columbia University Professor Dr. Lawrence A. Cremin, the Bi-ble was “the single most primary source for the intellectual history of co-lonial America.” From their knowledge of the Bible, a highly literate, creative people emerged.<sup>4</sup>

In a July 4 address in 1783, Dr. Elias Boudinot, then president of the Continen-tal Congress, stated that his reason for ad-vocating an annual Independence Day ob-servance in the United States was the great precedent set by God Himself.

No sooner had the great Creator of the heavens and the earth finished His almighty work, and pronounced all very good, He set apart—not an anni-versary, or one day in a year, but—one day in seven for the commemoration of his inimitable power in producing all things out of nothing.<sup>5</sup>

The fact of creation was also clearly implied several times in the Declaration of Independence itself: “endowed by our Creator,” “created equal,” “Nature’s God,” etc. Attorney Marshall Foster pointed out that at least the first 24 state constitutions recognized Christianity as the religion of

their states.<sup>6</sup>

Yet today the Bible, Christianity, and creationism have been banned from schools of the states that were founded to teach these very truths. All this was done in the name of a gross distortion of the First Amendment. The amendment, which was intended to prevent the establishment of a particular national denomination (e.g., Catholic, Anglican), has instead been so twisted as to establish evolutionary humanism as the quasi-official religion of our pub-lic institutions.

### Foundation of True Religion

True religion must necessarily be based on worship of the world’s true Creator. Other religions may deify great men, or man-made systems, or the world itself, but these are all

The creation/evolution issue is, in a very real sense, the most fundamental issue of all.

merely variant forms of humanism as men “worshiped and served the creature rather than the Creator” (Romans 1:25). It is sig-nificant that all such religions and religious books begin with the creation rather than the Creator, *except the Bible!* That is, they all start with the universe already in existence, and then try to delineate how the primeval space/matter/time universe somehow de-veloped into its present array of complex systems. This attribute characterizes both ancient paganism and modern humanism; these and all other atheistic, pantheistic, or polytheistic religions are merely various forms of evolutionism. Only in Genesis 1:1—the foundation of all foundations—is there a statement of the creation of the uni-verse itself. Without this foundation, true religion is impossible.

Now although creation is the foun-dation, it is, of course, not the complete structure. Orthodox Judaism and Islam, like Christianity, believe in one eternal Creator, as revealed in Genesis 1:1, but they have rejected Him as Savior. In addition to the

general revelation seen in the creation, God explicitly revealed Himself through both His Word and His Son. Those who reject either or both, even though they believe in one God as primeval Creator and, like Christi-anity, are monotheistic, cannot know God in His fullness. He must be known as gra-cious Redeemer as well as omnipotent, but offended, Creator. Thus, biblical Christi-anity is the only truly creationist religion.

### Foundation of Christology

By the same token, neither can one know Christ as He really is if one knows Him only as Redeemer. Faint-hearted Christians often justify their lukewarm attitude toward creation by saying that it is more important merely to “preach Christ.” They forget that we are preaching “another Jesus” (2 Corin-thians 11:4) if we do not preach Him as He really is, along with His com-plete work. The threefold aspect of the Person and work of Jesus Christ is beautifully outlined in the majestic declaration of Colossians 1:16-20.

1. Past Work, Creation: “By Him all things were created,” Colossians 1:16.
2. Present Work, Conservation: “In Him all things consist,” Colossians 1:17.
3. Future Work, Consummation: “By Him to reconcile all things,” Colos-sians 1:20.

The great scope of this threefold work is “all things in heaven and in earth.” Jesus Christ was Creator before He became the Sustainer (or Savior) and Reconciler, and the awful price of reconciliation, “the blood of His cross,” is the measure of mankind’s terrible offense against our Creator. That of-fense, furthermore, consists essentially of re-jecting His Word and thus denying that He is really the Creator.

One truly “preaches Christ” only when he first presents Him as the Almighty Creator, from whom man was alienated when he repudiated God’s veracity in His Word. Only when this is first understood is it meaningful to speak of God’s forgiving grace and saving love, His incarnation and redemptive sacrifice as Son of man.

## Foundation of Faith

The great message of Christianity is that “the just shall live by faith” (Hebrews 10:38), speaking of “those who believe to the saving of the soul” (Hebrews 10:39). But exactly what is this living faith—this saving faith? Faith in the abstract is only naïve sentimentality; it must be faith in something and/or someone to have any substance.

The faith of which the apostle speaks, of course, is outlined in the verses immediately following, in the great Faith Chapter, Hebrews 11. It is the faith of Abel, offering an acceptable sacrifice; it is Enoch’s faith, pleasing God in obedient witness; it is Noah’s faith, believing and acting on God’s word; and Abraham’s faith, stepping out on God’s promises.

But, *first of all*, it is the foundational faith of Hebrews 11:3, the faith by which “we understand that the worlds were framed by the word of God, so that the things which are seen were not made of things which are visible.” This affirmation clearly tells us that any meaningful faith for salvation and the Christian life must be founded, first of all, on faith in God’s special creation of all things, not out of already existing materials but solely by His omnipotent Word!

One truly “preaches Christ” only when he first presents Him as the Almighty Creator, from whom man was alienated when he repudiated God’s veracity in His Word. Only when this is first understood is it meaningful to speak of God’s forgiving grace and saving love, His incarnation and redemptive sacrifice as Son of man.

## Foundation of the Gospel

Many Christians, who either ignore or compromise the biblical doctrine of creation, have urged creationists just to “preach the gospel—not creation.” But this is impossible because the saving gospel of the Lord Jesus Christ is squarely founded on creation. The wonderful threefold work of Christ (creation, conservation, consummation) as outlined in Colossians 1:16-20 is identified as “the gospel” in Colossians 1:23. The very last reference to the gospel in the Bible (Revelation 14:6-7) calls it the everlasting gospel (thus, it could never have been any different) and its message is to “worship Him who made heaven and earth, the sea and springs of water.”

While it is surely true that the central focus of the gospel is on the substitutionary atonement and victorious bodily resurrection of Christ (1 Corinthians 15:1-4), it also includes His coming kingdom (Matthew

4:23) and His great creation. Any other gospel is “a different gospel” (Galatians 1:6) and is not the true gospel.

Without the creation, a supposed gospel would have no foundation; without the promised consummation, it offers no hope; without the cross and empty tomb, it has no saving power. But when

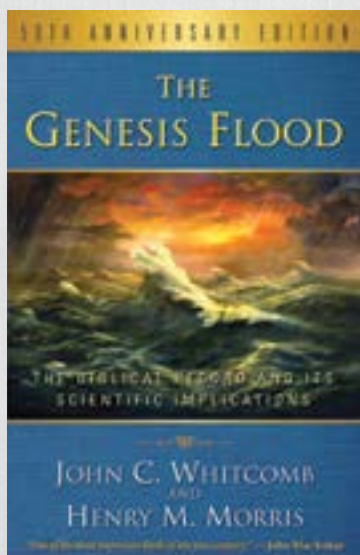
we preach the true gospel, with the complete Person and work of the Lord Jesus Christ as they really are, we build on a “sure foundation,” can promise a “blessed hope,” and have available “all authority in heaven and on earth” through Christ who, in all His fullness, is “with [us] always, even to the end of the age” (Isaiah 28:16; Titus 2:13; Matthew 28:18). ✎

### References

1. Beck, S. D. 1982. Natural Science and Creationist Theology. *Bioscience*. 32: 738.
2. Ibid, 739.
3. Ostrander, G. M. 1971. *The Evolutionary Outlook, 1875-1900*. Clio, MI: Marston Press, 1.
4. Swanson, M.-E. 1983. Teaching Children the Bible. *Mayflower Institute Journal*. 1: 5.
5. Address in New Jersey to the Society of Cincinnati, July 4, 1783.
6. Foster, M. 1983. *Mayflower Institute Journal*. 1:1.

Adapted from Dr. Morris’ article “Creation Is the Foundation” in the December 1983 edition of *Acts & Facts*.

Dr. Morris (1918-2006) was Founder of the Institute for Creation Research.



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# Monkey Business in the Chimp Genome



Evolutionists continue to contend that genetic studies have proved humans and chimpanzees share a common ancestor. But many people don't realize the current chimpanzee genome has not been constructed on its own merits.<sup>1</sup> When genomes (a complete set of chromosomes for a given creature) are sequenced, the initial DNA is obtained in very small pieces and then assembled—essentially “stitched” together—with the aid of a computer. The DNA sequence assembly process can be a very difficult endeavor, especially if it's a new genome from a creature that hasn't been previously sequenced and lacks a good genetic framework to help guide the process.

Over the past 20 years, a variety of different chemistries produced individual DNA sequences, called *reads*, of about 100 to 1,500 bases in length. Considering the chimpanzee genome is about three billion bases in length, it's a daunting task to assemble these short reads into contiguous regions that represent large sections of chromosomes. The task is even more formidable when funding is limited and a good genetic framework is unavailable, as was the case for the chimpanzee genome project.

Given a lack of resources and a strong evolutionary bias that humans evolved from a chimp-like ancestor, how do you suppose scientists assembled the chimpanzee DNA sequences? If you guessed they used the human genome as a guide, you're absolutely correct.<sup>2</sup> But there's even more monkey business involved in producing the chimp genome.

DNA sequencing has greatly advanced over the years, and, as in any human en-

deavor, you have to make improvements to a process based on past mistakes. Not long ago, it became apparent that human DNA contamination from laboratory workers was making its way into many DNA sequencing projects. In a 2011 publication, researchers searched non-primate genomic databases and found that 28.5% of them contained significant levels of *human* DNA.<sup>3</sup> In fact, it was discovered that large stretches of both the zebrafish and frog genomes were assembled solely from contaminating human DNA! And now, a new study in 2016 found even more evidence of widespread human DNA contamination in the genomes of many creatures found in public databases.<sup>4</sup>

A biased method of chimpanzee genome assembly combined with the potential of human DNA contamination may have produced a flawed chimp genome that would appear to be far more human-like than it actually is. Therefore, I recently completed and published a research project investigating this issue.<sup>5</sup> My research involved the analysis of over 2.5 million raw chimpanzee DNA sequences from 101 different DNA sequencing data sets that I then compared to both the human genome and the current version of the chimp genome.

When comparing the chimp sequences to human, the analysis indicated that two distinct groups of data sets existed. Those completed early in the chimpanzee genome project—ones that contributed to the initial version and publication of the chimp genome—were considerably more similar to human than those produced later in the project by a difference of about 7% in over-

all data set similarity. Amazingly, the DNA sequences from later in the project also produced 6% fewer matches with the human genome. These results imply that early efforts in the chimp genome project contained higher levels of human DNA contamination during a period of time in which the contamination problem in genome sequencing projects wasn't well recognized. Human DNA contamination would also contribute greatly to the assembly of a chimpanzee genome that was much more human-like.

An analysis of the seemingly less-contaminated data sets indicate that the chimpanzee DNA sequences are no more than 85% identical overall to human. When the chimpanzee DNA sequences that did not have matches with the human genome were compared to the chimpanzee genome, the matched regions were very short and full of unexplainable gaps. For the chimp DNA sequences that matched onto the chimp genome assembly, they were only 85% identical on average.

If the current chimpanzee genome were an accurate representation, these chimp DNA sequences should have been matching up on the chimp genome at a level of 99.9% similarity. These results clearly show that many regions of the chimp genome are mis-assembled and therefore can't be used to support human evolution. ☞

## References

1. Tomkins, J. P. 2011. How Genomes Are Sequenced and Why It Matters: Implications for Studies in Comparative Genomics of Humans and Chimpanzees. *Answers Research Journal*. 4: 81-88.
2. The Chimpanzee Sequencing and Analysis Consortium. 2005. Initial sequence of the chimpanzee genome and comparison with the human genome. *Nature*. 437 (7055): 69-87.
3. Longo, M. S., M. J. O'Neill, and R. J. O'Neill. 2011. Abundant Human DNA Contamination Identified in Non-Primate Genome Databases. *PLOS One*. 6 (2): e16410.
4. Kryukov, K. and T. Imanishi. 2016. Human Contamination in Public Genome Assemblies. *PLOS One*. 11 (9): e0162424.
5. Tomkins, J. P. 2016. Analysis of 101 Chimpanzee Trace Read Data Sets: Assessment of Their Overall Similarity to Human and Possible Contamination With Human DNA. *Answers Research Journal*. 9: 294-298.

Dr. Tomkins is Director of Life Sciences at the Institute for Creation Research and earned his Ph.D. in genetics from Clemson University.





It is He who sits above the circle of the earth,  
 and its inhabitants are like grasshoppers, who  
 stretches out the heavens like a curtain, and  
 spreads them out like a tent to dwell in.

.....

( I S A I A H 4 0 : 2 2 )

# *Gravitational Waves and the Space-Time Continuum*

**W**hen God stretched out the heavens, did He stretch out space itself? If so, what exactly is space? Is it a field, a fabric, or a structure we can measure?

Have you ever stood by a pond and tossed stones into the water, or stood on the seashore and watched

waves crash against the rocks? Both are examples from everyday life of wave phenomena. The impact of the stone on the water causes waves to radiate from where the stone impacted the water. Similarly, our ability to listen to a Mozart symphony, a bird's song, or conversations with those around us depends on waves created in the air by vibrations of matter.

Earthquakes generate waves within the earth, p-waves that propagate along the direction of the wave, and s-waves that propagate transverse (or perpendicular) to the direction of the wave. All these are examples of what are generally classified as *mechanical waves*, i.e., waves that result from the oscillation (rhythmic movement) of matter. This type of movement transfers energy through space occupied by matter.

A second general wave classification is the *electromagnetic wave*, which does not require the presence of matter in order to transfer energy through space. Rather, it is the result of vibrations in the electrical and magnetic fields. Electromagnetic waves, unlike mechanical waves, can propagate through the apparent vacuum of outer space (i.e., space not occupied by matter) as well as through matter itself. When propagating through outer space, electromagnetic waves vibrate in planes perpendicular to the direction of motion. These are transverse waves. Electromagnetic waves familiar to our everyday experience include visible light, microwaves, and radio waves. Less familiar are gamma rays from radioisotope decay and high-energy cosmic phenomena in the earth's upper atmosphere.

A third general wave classification is the *gravitational wave*. These waves are literally “ripples” (see Figure 1) in the space-time continuum caused by some of the most violent and energetic processes in our universe. This type of wave oscillates in the transverse plane like an electromagnetic wave, but its possible polarization states are not described by a transverse vector like electromagnetic waves but are rather described by a transverse second rank tensor. Analogous with electromagnetic waves, which are generated by the acceleration of electrical charges, gravitational waves are generated by the acceleration of massive objects, and these waves are believed to travel at the speed of light.

Since the early 20th century when Albert Einstein formulated his general relativity hypothesis, the possibility for gravitational waves propagating through the space-time continuum has been a topic of great interest and much discussion in mainstream science. The first observational evidence for the veracity of general relativity came from

an expedition led by Sir Arthur Eddington to observe the total solar eclipse of May 29, 1919. Eddington confirmed the general relativity prediction that starlight would be deflected by the sun's gravity.

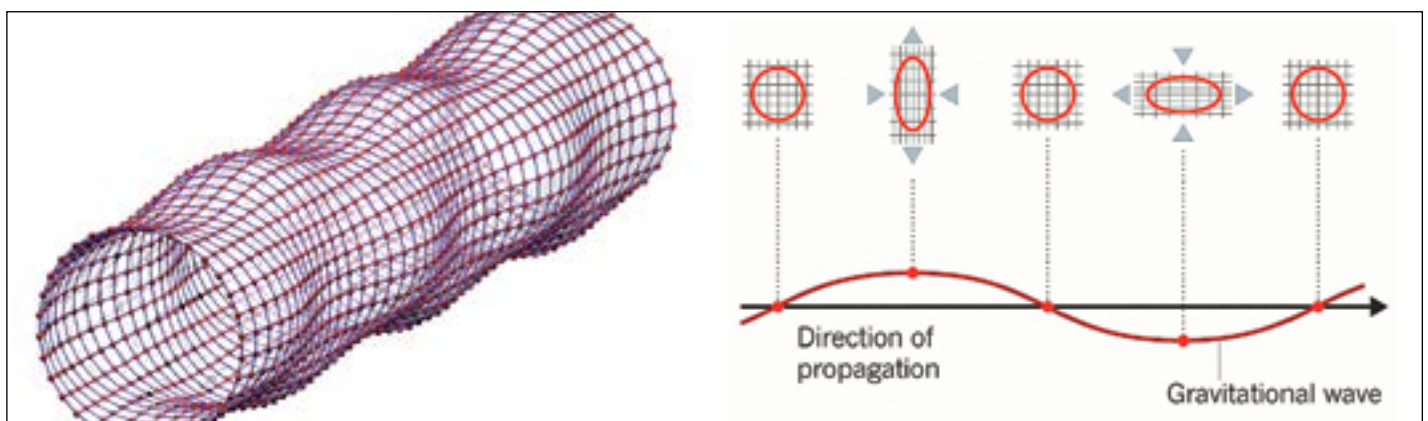
Indirect evidence supporting a prediction of general relativity was observed and documented by astrophysicists Russell Hulse and Joseph Taylor in 1974.<sup>1</sup> They discovered that the orbital decay of a binary pulsar they were studying matched the predictions of general relativity. Recently, another prediction of general relativity that gravity should propagate energy via wave phenomena when massive objects are accelerated was experimentally observed—thus adding more supporting evidence to the general relativity hypothesis and creating much excitement in the scientific community.<sup>2-4</sup>

All waves have four characteristics that describe their propagation through the space-time continuum.

1. The first is *amplitude* ( $h$ ), which describes the size or strength of a given wave. If the wave is passing through a medium, it describes the stretching or squeezing of that medium as the wave passes through it.
2. A second characteristic is *frequency* ( $\nu$ ), which describes how the wave oscillates in the medium it passes through.
3. *Wavelength* ( $\lambda$ ) is the third characteristic. It's the spatial distance between maximum points of stretch or compression in the wave.
4. Finally, *speed* ( $v$ ) is the velocity with which a given point on the wave travels through space.

The last three characteristics are related, and this relation is expressed as  $v = \lambda\nu$ .

Gravitational waves have some characteristics that are similar to those of electromagnetic waves. They can propagate through an apparent vacuum, they travel at the speed of light, and they are transverse waves in structure. In fact, Henri Poincaré first suggested in 1905 that accelerating masses should produce gravitational waves much like accelerating electrical charges produce electromagnetic waves. Gravitational waves are constantly passing through Earth, but the amplitudes of even the strongest are minuscule when they arrive



**Figure 1.** The gravitational wave, a ripple through space. As a wave passes through space at the speed of light, it compresses space in one direction and stretches it in the other direction—both at right angles to the wave's direction.

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here, and thus they are extremely difficult to detect.

For example, the gravitational waves from the cataclysmic final merger of GW150914 (a binary black hole) reached Earth, after traveling over a billion light-years, as a ripple in space-time that changed the length of the 4-km LIGO (Laser Interferometer Gravitational-Wave Observatory) arm by only one ten-thousandth the width of a proton—proportionally equivalent to changing the distance from our solar system to the nearest star by one hair’s width. This is the measurement problem that LIGO faced and solved on September 15, 2015, when black holes having solar masses<sup>5</sup> of 36 and 29 were observed merging into a black hole with a solar mass of 62 at an approximate spatial distance of 1.3 billion light-years. This ultra-precise measurement marked a phenomenal scientific achievement.

Several questions arise from this observation. How much energy was released by the massive merger, and what was the frequency and wavelength of the gravitational wave? First, we can estimate the energy released by calculating the energy equivalent of the missing mass after the merger. Before the merger, the total mass of both black holes was 36 + 29 solar masses, or approximately 65 solar masses. After the merger, a single black hole with a solar mass of 62 remained. What happened to the missing three solar masses? It was turned into the energy transported by the subsequent gravitational wave throughout the universe.

Using Einstein’s famous equation  $E = mc^2$ , where  $E$  is the energy equivalent of the missing mass and  $c$  is the speed of light, we can estimate the energy released as gravitational waves.

$$E = mc^2 = 3 \times (1.989 \times 10^{30}\text{kg})(2.99792 \times 10^8\text{m/sec.})^2 \approx 5.4 \times 10^{47} \text{ kg m}^2/\text{sec}^2 = 5.4 \times 10^{47} \text{ joules}$$

This is approximately  $10^{21}$  more energy than the total electromagnetic radiation given off by our sun.

Wavelength from Graph (mm)	Frequency from Graph (sec <sup>-1</sup> )	Approximate Energy (x10 <sup>-34</sup> joules)	Derived Wavelength (x10 <sup>6</sup> meters)
23	32	212	9.38
21	35	232	8.57
19.5	37	245	8.11
17.5	42	278	7.14
15.5	47	311	6.38
12.5	58	384	5.17
10	73	484	4.11
5.5	133	881	2.26
3.5	209	1384	1.44

*Table 1. Extracted Gravitational Wave Data<sup>1</sup>*

According to classical general relativity, gravitational waves propagate with a velocity equal to the speed of light, i.e.,  $v = c$ . This allows us to make some interesting inferences concerning the frequency and wavelength of the observed black-hole merger. We can extrapolate the data presented in reference 1, Figure 12, into a table (Table 1) from which we can estimate the frequency and wavelength of the gravitational wave generated at the instant of merger. The first

thing to note about Table 1 is that the wavelength extracted directly from the experimental data would be in great error since  $c = \lambda\nu$ . This is because the arms of the LIGO detector will vibrate with the frequency of the gravitational wave but the wavelength recorded is a function of the experimental apparatus and *not* the gravitational wave per se. So, if we substitute the Table 1 frequency into the  $c = \lambda\nu$  formula and solve for  $\lambda$  we get:

$$c = \lambda\nu \rightarrow \lambda = \frac{c}{\nu} = \frac{3 \times 10^8 \text{ m/sec}}{209 \text{ /sec}} \approx 1.5 \times 10^6 \text{ meters}$$

Thus, the approximate wavelength for the gravitational wave generated by the black hole merger is 1,500 kilometers.

While gravitational waves possess many properties similar to electromagnetic waves, they are an intrinsically different type of phenomena. If gravitational waves possess a quantum particle (the graviton) as its *force carrier*, it is expected to be massless (i.e., the associated force has infinite range), and unlike the electromagnetic photon it is believed to be a spin-2 boson.<sup>6</sup> However, to date, no “force carrying” particle has been observed as a mediator of gravitational interactions, and therefore no reconciliation currently exists between general relativity theory and the Standard Model that describes all other fundamental forces. This is still a substantial mystery.

Many other questions remain. Scientists still do not understand all the nuances of space and time. So what exactly is this space-time continuum that oscillates like an electric quadrupole when mass is accelerated? How can gravitational waves transport massive amounts of energy through an apparent vacuum? In the biblical record, the Lord declared He stretched out the heavens like a curtain.<sup>7</sup> Does

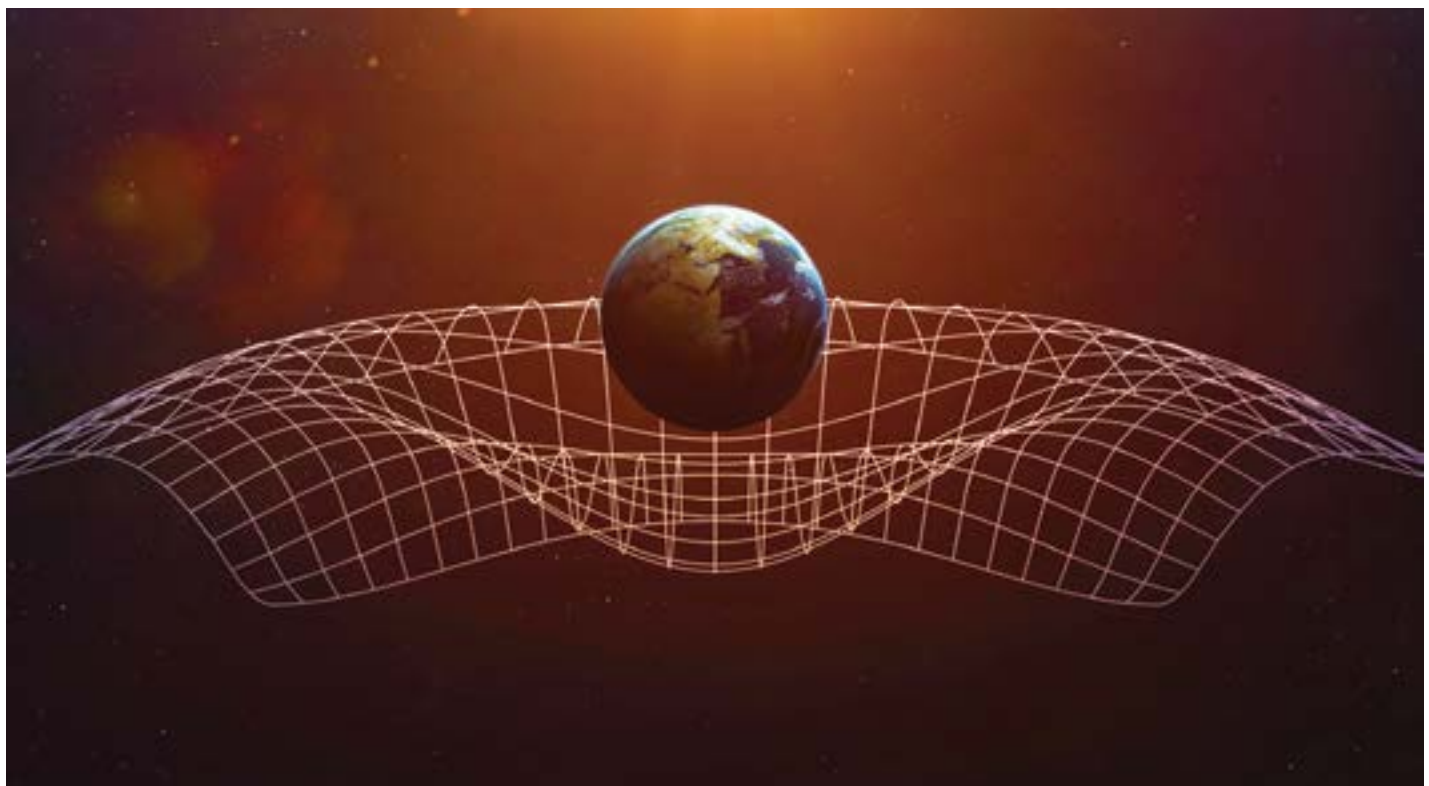
this indicate that the apparent vacuum of outer space actually has a structure, fabric, or field we have yet to discover—that even empty space is “something” rather than “nothing”? Does the space-time continuum provide a transport mechanism for the natural phenomena we observe such as gravitational waves? This recent scientific discovery seems to confirm the Bible’s implication that space is a real entity with measurable properties.

God designed each aspect of reality to function in very specific ways that sustain life on Earth, and we are only beginning to understand the space-time continuum—the curtain God stretched out in the beginning. ✨

#### References

1. Taylor, J. H. and J. M. Weisberg. 1982. A new test of general relativity-Gravitational radiation and the binary pulsar PSR 1913+16. *Astrophysical Journal*. 253 (2): 908-920.
2. Abbott, B. P. et al. 2016. Observation of Gravitational Waves from a Binary Black Hole Merger. *Physical Review Letters*. 116 (6): 061102.
3. Abbott, B. P. et al. 2016. GW151226: Observation of Gravitational Waves from a 22-Solar-Mass Binary Black Hole Coalescence. *Physical Review Letters*. 116 (24): 241103.
4. Ohanian, H. C. and R. Ruffini. 1994. *Gravitation and Spacetime*, 2nd ed. New York: W. W. Norton & Company.
5. A solar mass is simply the mass of our solar system’s sun—i.e.,  $1.989 \times 10^{30}$  kilograms. Astronomers typically express the estimated masses of very large objects in the universe in multiples of this number.
6. In general relativity, the stress-energy tensor  $T^{\mu\nu}$  describing the gravitational field is generally a second order tensor (meaning it has magnitude and two directions rather than a magnitude and one direction as for a first order tensor, or what we generally know as a vector). The lowest allowed multipole solutions to the linearized general relativity equations is the quadrupole ( $l = 2$ ). Monopole solutions are forbidden as a result of mass conservation, and dipole solutions are absent as a result of momentum conservation. Thus, the lowest order solutions to the general relativity equations (gravitational waves) must be second order tensors—i.e., spin 2 solutions.
7. Psalm 104:2; Job 9:8; 26:7; Isaiah 44:24; 45:12; 51:13; Jeremiah 10:12; Zechariah 12:1.

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**H**ow do we know that God exists and the Bible is His Word? Many people think God's existence is just like any other truth claim—a hypothesis we can confirm or falsify by proper reasoning from more certain knowledge. Commonly, people start with the things they know for sure by their own experiences and then reach a conclusion about God's existence. Perhaps their experience with cause-and-effect leads them to reason that the universe must have a cause and maybe that cause is God. Perhaps the intricate design of the human body prompts some to believe in the biblical God. In all such cases a person begins with what he *knows* to be true from his observations of the world and then applies his rational faculties to draw a conclusion about God's existence.

But there is a problem for skeptics. If God did not exist, there would be no reason to trust that our observations correspond to reality or that the human mind is capable of rational thought. After all, if our sensory organs were merely the unplanned result of evolution, then there would be no reason to presume that they truly sense the universe. If the human brain were simply the accidental result of mutations—errors in DNA—then there would be no reason to suppose that the brain is capable of discerning truth from error. After all, why trust a mindlessly produced accident to be right about anything? So, if God did not design us, then we would have no rational reason to think that our own reasoning is rational.

On the other hand, if God created us in His image, after His likeness (Genesis 1:26), then we would have a very good reason to expect that our minds are capable of rational reasoning (Isaiah 1:18). We have a good reason to trust that our sensory organs perceive reality since God designed them to do just that (Proverbs 20:12). We can

# The Beginning of Knowledge

God is not simply the **conclusion** of a chain of reasoning; rather, He is the **foundation** for all reasoning.

have knowledge of things if, and only if, the Bible is true in what it says about God.

God is the source of all knowledge (Colossians 2:3), and He revealed some of His knowledge to us in profound ways. He designed our sensory organs to probe the external world and our minds to make rational deductions. God placed knowledge

of Himself and His moral standard in the core of our being (Romans 1:18-20; 2:14-15). But apart from Him, we could know nothing. Therefore, God is not simply the conclusion of a chain of reasoning; rather, He is the foundation for all reasoning. So, the existence of God is not a mere hypothesis to be tested but is the foundational truth that makes it possible for us to test hypotheses about anything else. The fear of the Lord is the *beginning* of knowledge (Proverbs 1:7).

God graciously gives some knowledge even to those who rebel against Him. The secularist suppresses His knowledge of God (Romans 1:18-19). Yet, he uses his God-given sensory organs and his God-given mind to argue against God. It's a strange conundrum. If the atheist were successful in arguing against God, he would lose the only rational basis for trusting his own thoughts and perceptions.

The situation is analogous to someone who argues against the existence of air. The critic of air must *use* air to voice his argument. The fact that he is able to state his position demonstrates that it is wrong. Likewise, the atheist uses his God-given mind and God-designed senses to argue against God. But if God didn't exist, then there would be no reason for the atheist to trust his own senses or his own mind. There can be no doubt that God exists; any alternative is self-refuting. ✎

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# Fast-Changing Killifish Swim Past EVOLUTION

Industrialists dumped potent pollutants into Atlantic bays in the 1950s and 1960s, killing all kinds of fish.

Even today, few fish brave those waters. A team of scientists led by Andrew Whitehead of University of California, Davis recently sequenced and analyzed the genomes of almost 400 Atlantic killifish to try to find out how these fish survive the polluted waters while other kinds don't. They found good, scientific answers but framed them in wildly unscientific terms.

The researchers discovered that killifish survive by using their elaborate array of genes, including some that help them manage poisons. Like having Swiss army knives instead of flint knives, these fishes' genetic gizmos enable them to solve more environmental challenges than other fish can handle. *UC Davis News* gave this finding a strong evolutionary spin:

- “While environmental change is outpacing the rate of evolution for many other species, Atlantic killifish living in four polluted East Coast estuaries turn out to be remarkably resilient.”
- “The more genetic diversity, the faster evolution can act.”
- “Most species we care about preserving probably can't adapt to these rapid changes because they don't have the high levels of genetic variation that allow them to evolve quickly.”
- “At the genetic level, the tolerant populations evolved in highly similar ways.”
- “This study shows that different populations of Atlantic killifish exposed to toxic pollution evolve tolerance to that pollu-



Atlantic killifish have adapted to highly toxic levels of pollution.

tion through changes in one molecular pathway.”

- Finally, the genomes offered clues that suggest “these fish already carried the genetic variation that allowed them to adapt before the sites were polluted.”<sup>1</sup>

But if the fish already possessed, in the beginning, the genetic variation required for them to cope with toxic pollution, then what does their use of those pre-existing genetic tools have to do with evolution?

An evolution that supposedly transformed fish into philosophers should cause significant change.<sup>2</sup> But these fish didn't change. They were killifish before and after encountering pollution. They didn't even acquire new or broken genes. These fish used absolutely no evolution to pioneer polluted waterways—they simply used their onboard genes.

If one man can build a stick hut five times faster using a Swiss army knife than another man can using his sharp-edged rock, who in their right mind would say that he “evolved” more quickly? Evolution had nothing to do with the faster hut—it was all about the tools.

Since killifish genes made the differ-

ence, the originator of those genes deserves the credit. Where did those genes come from? No scientist witnessed or measured their origins, but the genes reveal enough information for rational thinkers to clearly see that the Creator is the answer. The reasoning goes like this:

1. Killifish genetic information anticipates and meets future environmental challenges.
2. All information systems that can anticipate and meet future challenges arise from intelligent people who can imagine and anticipate new scenarios.
3. Therefore, killifish genetic information arose from an intelligent, imaginative person.

Evolution's unthinking natural processes invoke no intelligence and thus fail to meet this minimum requirement for genetic toolkit origins. The Creator revealed in the Bible, on the other hand, has an infinite intelligence—He warrants the most consideration. Jesus, “through whom also He made the worlds,”<sup>3</sup> made these fish and their genes. He who can rescue humanity from spiritual pollution deserves all the credit for providing Atlantic killifish with genetic solutions to physical pollution. ☞

**References**

1. Kerlin, K. Against the Tide: A Fish Adapts Quickly to Lethal Levels of Pollution. *UC Davis News*. Posted on ucdavis.edu December 8, 2016, accessed December 11, 2016.
2. “It may seem strange that humans have evolved from fish.” Mosley, M. Anatomical clues to human evolution from fish. *BBC News*. Posted on bbc.com May 5, 2011, accessed December 11, 2016. See also Lemonick, M. D. We Are All Fish. *Time*. Posted on time.com May 14, 2014, accessed December 11, 2016.
3. Hebrews 1:2.

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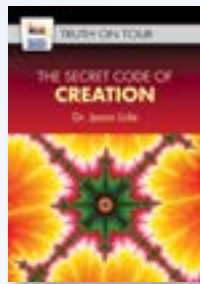
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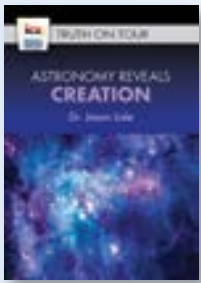
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# Evolutionary Psychology for Serious Tabloid Readers

R A N D Y J . G U L I U Z Z A , P . E . . , M . D .

**G**rocery shopping can be enlightening in many ways. While waiting to check out, a shopper can read why someone has a crush on their alien abductor, or loves their talking poodle's poetry, or enjoys daily encounters with Elvis. Tabloid papers thrive on wild headlines. Some people find them believable, while others laugh. Interestingly, a report on several surveys found that compared to irreligious college students, evangelical Christians were far less likely to believe in superstitions such as ghosts, palm readers, and psychics.<sup>1</sup> That's likely one reason evangelicals generally avoid tabloid-style stories.

Tabloid journalism isn't alone in supplying dubious or salacious stories. Consider headlines based on evolutionary psychology regarding why certain behaviors happen: "It's evolution: Nature of prejudice, aggression different for men and women"; "Some STIs Are Beneficial, and May Have Boosted Evolutionary Promiscuity"; "There's an Evolutionary Reason Guys Like Curves"; "Female animals look drab to avoid sexual harassment, study shows"; "How make-up makes men admire but other women jealous"; "Does Postpartum Depression Serve an Evolutionary Purpose?"; "Whether It's a Peacock Or a Porsche, Men Like to Show Off, Study Finds"; "Lady Liaisons: Does Cheating Give Females an Evolutionary Advantage? A 17-year-long study upends the most common evolutionary explanation of female infidelity."

Can these stories be taken seriously? Or are they another major evolutionary blunder that, in this case, should be laughed off just like tabloid-style headlines?

Evolutionary psychology explains human behavior as a legacy of preprogrammed adaptive actions that emerged from our alleged evolutionary struggle to survive. It applies evolutionary biology to daily living. However, does either field have scientific merit? The opinion amongst evolutionists is split. One study advocating for indoctrinating medical students with evolution claims that "evolutionary biology is a unifying principle that provides a framework for organizing medical knowledge from other basic sciences."<sup>2</sup>

Yet, evolutionary authority Jerry Coyne disagrees. He says:

In science's pecking order, evolutionary biology lurks somewhere near the bottom, far closer to phrenology than to physics.



For evolutionary biology is a historical science, laden with history's inevitable imponderables....The latest deadweight dragging us closer to phrenology is "evolutionary psychology," or the science formerly known as sociobiology, which studies the evolutionary roots of human behavior.<sup>3</sup>

Determining who's right requires some knowledge of evolutionary psychology. Does this field prompt the kind of vivid imaginative extrapolations that are aligned with Darwin's look-imagine-see explanatory method?<sup>4</sup> If yes, then evolutionary psychologists may be prone to embrace mystical explanations in which nature exercises agency over creatures to shape their behaviors as well as their physical forms.

## Evolutionary Psychology Sees Behavior as Survival Adaptations

The belief that behaviors result from evolutionary adaptation is fundamental. Per Mary Jane West-Eberhard, "The use of 'adaptation' by evolutionary biologists" differs from other biologists. "To be considered an adaptation a trait must be shown to be a consequence of selection for that trait" in "what Darwin called 'the struggle for existence.'"<sup>5</sup>

Thus, specific behaviors previously believed to be vital for survival now function in us more like instincts.

Evolutionary psychology rests on several key premises....The first premise states that the complexity of human behavior can only be understood by taking into account human evolutionary history and natural selection. Second, behavior depends on *evolved psychological mechanisms*. These...process specific information and generate as output specific behaviors....Third, evolved psychological mechanisms are functionally specialized to perform a specific task....Finally, the *numerousness* premise states that human brains consist of many specific evolved psychological mechanisms that work together to produce behavior.<sup>6</sup>

The study containing the above insight clarifies that though evolutionary psychologists "often frame hypotheses in terms of the costs and benefits to an organism of performing a particular behavior," "these terms carry no moral or ethical meaning and are used only in terms of naturally selected biological functioning."<sup>6</sup>

## Evolutionary Psychology Projects Animal Behavior on Humans

Evolutionary psychologists definitely use Darwin's practice of look-imagine-see methodology. Researchers observe similar animal and human behaviors, then study animal interrelationships to make their best guess about why their behaviors happen, and finally project that explanation onto humans.

This projection links animal actions with what is thought to be instinctive human behavior. One BBC story, "Why bullying is such a successful evolutionary strategy," states: "It is not just people that bully the vulnerable. Many animals do it too, and in evolutionary terms it may even work."<sup>7</sup> This article notes bullying behavior amongst birds, fish, hyenas, and especially the primates. After observing this similarity, the search for an evolution-based motive starts.

[The chimp's bullying actions] suggest that bullying your way to the top has a long history, and may even be innate.... "Chimps are 'natural bullies' and I have seen it often," says Richard Wrangham of Harvard University.... In fact, [bullying] is often unprovoked, says Dario Maestriperi of the University of Chicago, Illinois. "Dominants attack subordinates out of the blue, for no apparent reason." This unsolicited harassment may serve a useful purpose. Maestriperi argues that bullying helps dominant animals to intimidate their subordinates, and that this has clear evolutionary benefits. It ensures that the dominant individuals have better access to food and to the opposite sex. "The more a female is bullied by a particular male, the more that male gets to mate her. Sad but true," says Wrangham.<sup>7</sup>

Finally, a projection to instinctive human behavior happens.

This seems to suggest a bleak conclusion. If so many creatures bully, perhaps bullying is innate in us, something we cannot escape.... "Human bullying is both the product of tendencies inherited from our chimp-like ancestors, and of competitive social environments like those of chimps and rhesus monkeys," says Maestriperi.<sup>7</sup>

If our behaviors spring from evolved psychological processing of specific information that reflexively generates specific behaviors, then what does this indicate about human volition? Only the boldest advocates of evolutionary psychology publicly state the logical implication—that we actually have no choice in how we act.

## Free Will vs. Evolutionarily Inherited Compulsory Behavior

Evolutionist William Provine, the late Cornell professor and author of the essay "No Free Will," astutely understood the clash of evolutionary ideas with God's revelation-based behaviors. In a recap of his interview with Provine, one journalist wrote, "With the destruction of the argument for design, there is no going back to a world in which our ethics can be based on a revelation of what God demands of us."<sup>8</sup> He added:

Nor can we reasonably expect people to behave morally by exercising free will, because free will simply doesn't exist. Genetics and environmental factors do not merely influence our moral

decisions—they determine them.... Free will, Provine argues, is not simply a myth. "It is a destructive myth, one of the meanest, nastiest, most divisive ideas we've developed in all our cultural history. We use it," he says, "to blame people for their actions and to justify mistreating [i.e., punitively incarcerating] people."<sup>8</sup>

Thus, evolutionary psychologists suggest that even when destructive, a human's unconscious reactions—not choices—are practically inevitable.

In her catalog of published evolutionary psychological theories, Denyse O'Leary sums up how they explain all—and even contradictory—behaviors "that are now assumed to be encoded in our genes through natural selection. Thus our brains enact programs whose true nature we do not understand. But the evolutionary psychologist does."<sup>9</sup> She elaborates how:

This encoded behaviour can be shopping, voting, or tipping at restaurants. It can also be: Why children don't like vegetables (nothing to do with young 'uns preference for sweet things); why hungry men prefer plump women (not just because they probably know where the kitchen is); why we have color vision (mainly to detect blushing); why we are sexually jealous (not fear of abandonment, but "sperm competition"); why toddlers are Neanderthals (not just immature); why we don't stick to our goals (evolution gave us a kludge brain); why women prefer men with stubble (except for those who don't); why gossip is good for you (despite wrecked relationships)....<sup>9</sup>

And on goes her intriguing litany of our presumed compulsory behaviors.

## Uh-Oh...Evolutionary Psychologists Explain Rape

Evolutionists tolerate evolved psychological mechanisms that compel us to, say, shop for shoes. But some revolt when these mechanisms explain humans shopping for mates, or worse, of men shopping for women who aren't on the market. In 2000, MIT Press published *A Natural History of Rape: Biological Bases of Sexual Coercion*.<sup>10</sup> A furor arose over the way this book applied evolutionary psychology to rape.

One backlash was over people who seem to mitigate rape's moral dimension by envisioning nature as beneficially selecting behaviors that bypass free will and simply "happen." In response, the authors amended their book's preface. They highlighted how their writings clearly stated that "there is no connection here between what is biological or naturally selected and what is morally right or wrong."<sup>11</sup>

Their conclusion for rape itself remained divisive even in the amended preface.

We argue that a *desire for sexual stimulation*, not a desire to produce offspring, is a proximate cause of raping and is the common denominator across human rapes of all kinds. Men's sexual ardor is, in ultimate terms, a product of past selection pressure that favored it because it increased sexual access to many females of reproductive age.... Women are evolved to choose mates care-

fully...Rape is one of the many behaviors that result from this evolved difference in male and female sexuality.<sup>12</sup>

Other evolutionary psychologists agree that rape is a selected adaptation.

For rape to be produced by evolved psychological mechanisms, it must have recurrently generated reproductive benefits for ancestral rapists....There is evidence that rape may have increased the number of women with whom ancestral men copulated and, therefore, the reproductive success of rapist males.<sup>13</sup>

“And that is why we carry rape genes today. The family trees of prehistoric men lacking rape genes petered out,” reports science writer Sharon Begley. She lampoons evolution-based stories explaining men’s behavior and women’s looks. “Men attracted to young, curvaceous babes were fitter because such women were the most fertile; mating with dumpy, barren hags is not a good way to grow a big family tree.”<sup>14</sup>

Naturalists claim to love science, but they hate science when evolutionary models deliver undesirable conclusions. Applying evolution to rape wasn’t controversial, but concluding that rape happened “for sexual stimulation” was. This claim was taken to be anti-feminist per “gender feminism’: feminism that is based on inter-gender conflict, with virtually all that is male denounced as domineering, evil, untrustworthy, out-group, and enemy.”<sup>15</sup> Gender feminists declare that male-over-female domination motivates rape, not sexual gratification. These evolutionary psychologists threatened feminism’s view, and they furthered the angst by adding, “That a woman’s manner of dress may affect her risk of rape is eminently reasonable in view of what is known about certain sexual adaptations of men.”<sup>15</sup>

## Evolutionist Critics of Evolutionary Psychology Indict Themselves

Begley reports:

Over the years [evolutionary psychology] arguments have attracted legions of critics who thought the science was weak and the message (what philosopher David Buller of Northern Illinois University called “a get-out-of-jail-free card” for heinous behavior) pernicious. But the reaction to the rape book was of a whole different order. Biologist Joan Roughgarden of Stanford University called it “the latest ‘evolution made me do it’ excuse for criminal behavior from evolutionary psychologists.”<sup>16</sup>

“Weak science” criticisms center on non-testable claims that a maladaptive behavior today like rape was once long ago a useful adaptive behavior. But how does one know if a behavior is truly an adaptation or some non-adaptable trait that evolutionarily “rides along” with adaptable ones?

Coyne seized on this ambiguity. “In keeping with the traditions established early in the evolution of sociobiology, [the *A Natural History of Rape: Biological Bases of Sexual Coercion* book’s] evidence comes down to a series of untestable ‘just-so’ stories.”<sup>17</sup> He added later:

The problem is that evolutionary psychology suffers from the

scientific equivalent of megalomania. Most of its adherents are convinced that virtually every human action or feeling, including depression, homosexuality, religion, and consciousness, was put directly into our brains by natural selection....Unlike bones, behavior does not fossilize, and understanding its evolution often involves concocting stories that sound plausible but are hard to test.<sup>18</sup>

When it served him, however, Coyne made the same selectionist claim. “The theory of natural selection has a big job—the biggest in biology. Its task is to explain how every adaptation evolved...not just body form....Selection has to explain behaviors, both cooperative and antagonistic.”<sup>19</sup> Coyne unwittingly accentuates how ambiguity and “just-so” stories epitomize evolution itself.

Fittingly, in practice “evolutionary psychology is empirically unwarranted and conceptually incoherent to such an extent that it is a matter of professional sociological concern why it has come to achieve such a degree of popularity,” concludes the evolutionist who penned “The Darwinian Cage.” He alludes to why evolutionists will contentedly live in their cage of imaginative tabloid-style stories. It’s not evolution but a compelling “commitment to naturalistic explanation.... Since no one wishes to keep company with the creationists, the evolutionary psychological programme [*sic*] appears irresistible.”<sup>20</sup>

Biblical truth exposes the evolutionary psychologist’s expectation as futile and blame-shifting “evolution made me do it” stories as foolish. “The heart is deceitful above all things, and desperately wicked; who can know it? I, the LORD, search the heart, I test the mind, even to give every man according to his ways, according to the fruit of his doings” (Jeremiah 17:9-10). ☞

### References

1. Hemingway, M. Z. Look Who’s Irrational Now. *The Wall Street Journal*. Posted on wsj.com September 19, 2008, accessed November 18, 2016.
2. Nesse, R. M. et al. 2010. Making evolutionary biology a basic science for medicine. *Proceedings of the National Academy of Sciences*. 107 (suppl 1): 1800-1807.
3. Coyne, J. A. Of Vice and Men—The Fairy Tales of Evolutionary Psychology. Printed in *The New Republic* April 3, 2000, reposted on business.highbeam.com, accessed November 11, 2016.
4. Guliuzza, R. 2016. Major Evolutionary Blunders: Haeckel’s Embryos Born of Evolutionary Imagination. *Acts & Facts*. 45 (11): 16-18.
5. West-Eberhard, M. J. 1992. Adaptation: Current Usages. In *Keywords in Evolutionary Biology*. E. F. Keller and E. A. Lloyd, eds. Cambridge, MA: Harvard University Press, 13.
6. McKibbin, W. F. et al. 2008. Why Do Men Rape? An Evolutionary Psychological Perspective. *Review of General Psychology*. 12 (1): 86-97. Emphasis in original.
7. Hogenboom, M. Why bullying is such a successful evolutionary strategy. BBC Earth. Posted on bbc.com August 23, 2016, accessed November 11, 2016.
8. Liles, G. The Faith of an Atheist. *MD*. March 1994, 59-64.
9. O’Leary, D. Dissecting the caveman theory of psychology. *MercatorNet*. Posted on mercatornet.com August 10, 2009, accessed November 12, 2016.
10. Thornhill, R. and C. T. Palmer. 2000. *A Natural History of Rape: Biological Bases of Sexual Coercion*. Cambridge, MA: MIT Press.
11. Thornhill, R. and C. T. Palmer. 2002. Rape and Evolution: A Reply to Our Critics. *Psychology Evolution & Gender*. 4 (3): 283-296.
12. *Ibid*, emphasis added.
13. McKibbin, Why Do Men Rape?, 88.
14. Begley, S. Can We Blame Our Bad Behavior on Stone-Age Genes? *Newsweek*. Posted on newsweek.com June 19, 2009, accessed on November 12, 2016.
15. Thornhill, Rape and Evolution, 12.
16. Begley, Can We Blame Our Bad Behavior on Stone-Age Genes?
17. Coyne, J. A. and A. Berry. 2000. Rape as an adaptation. *Nature*. 404 (6774): 121-122.
18. Coyne, Of Vice and Men.
19. Coyne, J. A. 2009. *Why Evolution Is True*. New York: Viking, 119. Emphasis in original.
20. Hamilton, R. 2008. The Darwinian Cage: Evolutionary Psychology as Moral Science. *Theory, Culture & Society*. 25 (2): 105-125.

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# Q: Why Do Kangaroos Live Only in Australia?

**A:** About a dozen basic marsupial kinds live across Australia and New Guinea, with a handful in South America. How did they get isolated to those locations? Evolutionists insist that they evolved there, but certain fossils suggest a different answer.

Marsupials include familiar-looking kangaroos and koalas, plus lesser-known betongs and marsupial moles. Instead of developing in wombs, their young grow inside a mother's special pouch. What evidence has convinced researchers that marsupials evolved from a single marsupial ancestor in Australia or New Guinea over millions of years?

Whatever the answer is, it's not fossils, which show just the opposite of this evolution-

ary story. The lowest and oldest marsupial fossils, found in Cretaceous system rocks, "are exclusively from Eurasia and North America."<sup>1</sup> If Australian marsupials evolved in Australia, then why were their supposed ancestors buried in the opposite (Northern) hemisphere? The "oldest" marsupial fossil, which looks remarkably like an opossum, comes from China.<sup>2</sup> A 2003 review admitted, "This geographical switch remains unexplained."<sup>1</sup>

What's worse for this tale is that *placental* mammal fossils occur in Australian Cretaceous deposits. Australia has long maintained its marsupial populations with very few placentals. But according to the fossils' locations, marsupials should have evolved far outside of Australia, and placentals should have evolved within Australia—the opposite of evolution's story.

Overall, fossils show no evidence for marsupial evolution. We see fully formed marsupials or fully formed placentals. Since these marsupial fossils appear only where marsupials do not live today, they must have moved around. But where and when?

Neither a creation-based nor an evolution-believing scientist was there to observe and record when marsupials actually got to Australia, so both must suggest and test scenarios. Some say that Cretaceous marsupials went extinct with the dinosaurs, only for evolution to replace them with exact duplicates millions of years later in Aus-

tralia! That's like evolving an opossum once, it going extinct, then natural forces crafting virtually the *same* creature a second time. Very imaginative, but not very scientific. Fortunately, a Bible-friendly scenario accounts for the fossils without resorting to tales of duplicate evolution.

First, Cretaceous marsupials died in Noah's Flood. They must have lived in pre-Flood areas that Flood-related events separated into North America, Europe, and Asia.<sup>3</sup> The Bible's eyewitness record of the Flood ensures readers that two of every land-dwelling, air-breathing animal entered Noah's Ark.<sup>4</sup> That included kangaroos, koalas, thylacines, and therizinosaurs.

The Flood caused the Ice Age, which lasted for several centuries.<sup>5</sup> Back then, the sea level was about 350 feet lower than it is today.<sup>6</sup> Lower seas provided land bridges between many of today's islands.<sup>7</sup> Animals and men could have literally walked from the mountains of Ararat to New Guinea. Some may have rafted on storm debris or swam from islands like New Guinea to Australia.<sup>8</sup> If marsupials arrived while the world's ice was thickest and the sea level was lowest, then melting ice toward the end of the Ice Age would have raised the sea level enough to isolate them on ancient land bridge highlands that became islands.<sup>9</sup>

Kangaroos and koalas did not evolve in Australia. They did not evolve at all. God made them marsupials from the beginning. Many of them died along with dinosaurs and other creatures in the Flood. Those that survived the Flood on the Ark had descendants that may have migrated ahead of many placental mammals. They probably made it to Australia before rising sea levels virtually stopped placentals from going all the way Down Under. This solution fits the fossils and Scripture. ❧

## References

1. Cifelli, R. L. and B. M. Davis. 2003. Marsupial Origins. *Science*. 302 (5652): 1899-1900.
2. Luo, Z.-X. et al. 2003. An Early Cretaceous Tribosphenic Mammal and Metatherian Evolution. *Science*. 302 (5652): 1934-1940.
3. Clarey, T. 2013. Hot Mantle Initiated Ocean and Flood Beginnings. *Acts & Facts*. 42 (8): 15.
4. "[Genesis 10:1] is the fourth *toledoth* of the book of Genesis (previously noted at Genesis 2:4; 5:1; and 6:9), presumably marking the signatures of Shem, Ham and Japheth after completing their narrative of the Flood and the immediate post-Flood years." Morris, H. 2012. *The Henry Morris Study Bible*. Green Forest, AR: Master Books, 45.
5. Hebert, J. 2013. Was There an Ice Age? *Acts & Facts*. 42 (12): 20.
6. Gornitz, V. Sea Level Rise, After the Ice Melted and Today. *Science Briefs*. NASA GISS. Posted on [giss.nasa.gov](http://giss.nasa.gov) January 2007, accessed November 18, 2016.
7. Clarey, T. 2016. The Ice Age and the Scattering of Nations. *Acts & Facts*. 45 (8): 9.
8. Even evolutionists have long invoked migration on floating debris mats to explain animal transportation to islands. Similar plant kinds on different continents, flourishing right where ocean currents would have carried them, support rafting.
9. Possibly, placentals out-competed marsupials for resources, so marsupials kept migrating to habitats with less competition.

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# Pushy Parasites and Parental Passwords



In this fallen world, even bird households have troubles. One family problem encountered by many bird parents is the nest-security issue of *brood parasites*, a sneaky form of fowl “home invasion.”

Brood parasitism does not involve parasitic worms or bugs. Rather, it features a different kind of parasite—a freeloading bird family that imposes its baby upon a “host” family. The host family is thereafter burdened with the costs of nurturing the uninvited freeloader. Worse, the invasive guest often competes aggressively with legitimate nestlings for food and shelter.<sup>1,2</sup>

Consider how the superb fairywren of Australia defends against the brood parasitism habits of the Horsfield’s bronze cuckoo (*Chrysococcyx basalus*). It enacts a marvelous solution to this problem.

In an avian version of identity fraud, the Horsfield’s bronze cuckoos deposit rust-speckled eggs into fairywren nests. Their eggs look like fairywren eggs, confusing nesting fairywrens regarding the eggs’ true biogenetic identity. The upside-down, dome-shaped nest is often dark inside, so visual confusion is common regarding which eggs really belong there. Horsfield’s bronze cuckoos often get by with their “change-

ling” deceptions, tricking fairywren parents into raising cuckoo eggs. After hatching, the imposters become bullies, often ejecting fairywren eggs from the nest, displacing the rightful heirs.

However, female fairywrens teach their offspring vocal “passwords” to use to prompt being fed by their mother. The fairywren mother communicates with her child before the chick has even hatched!

Diane Colombelli-Négrel, Sonia Kleindorfer, and colleagues from Flinders University in Australia discovered a remarkable way one bird fights back against brood parasites. Female superb fairy-wrens teach their embryos a “password” while they’re still in their eggs. Each female’s incubation call contains a unique acoustic element. After they hatch, fairy-wren chicks incorporate this unique [pass-code] element into their begging calls to ask for food....[The] chicks whose begging calls most resembled their mothers’ incubation calls received more food. But the brood parasites of the fairy-wren, Horsfield’s bronze-cuckoos, produced begging calls that did not so closely resemble the parental password.<sup>1</sup>

Furthermore, if fairywren mothers observe cuckoos in the neighborhood, they become more diligent (i.e., more frequent)

in teaching the “please feed me” passwords to their unhatched progeny. This increases the likelihood that their incubated babies will successfully beg for food using the vocal password after hatching, when they are nestling chicks. Even audio recordings of cuckoo vocalizations can trigger this response.

Researchers conducted a playback experiment at 29 nests...broadcast[ing] either the song of Horsfield’s bronze-cuckoo or a neutral bird. After the cuckoo calls, but not after the neutral bird calls, female fairy-wrens made more incubation calls to their embryos....[showing that] female fairy-wrens that heard a cuckoo near their nest increased their efforts to teach their password to their embryos.<sup>1</sup>

Who but God would provide such ingenious home-security strategy and skills to protect fairywren families from the parasitic perils of cradle-crashing cuckoos? ☞

#### References

1. Bates, M. To Beat a Parasite, Birds Teach Their Young a Secret Password. *Wired*. Posted on wired.com June 10, 2014, accessed December 2, 2016. The strategic use of a properly pronounced password, called a *shibboleth*, derives from the military incident recorded in Judges 12:5-6.
2. Stokes, D.W. and L. Q. Stokes. 1983. *A Guide to Bird Behavior*, Vol. 2. Boston: Little, Brown and Company, 213.

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# Senior Advantages with Charitable Gift Annuities

With a healthy economic outlook and the stock market soaring, this may be a wise time to consider safer havens for some of your resources. This is especially true for seniors living on fixed incomes who need to protect their assets. But rates for traditional sources of guaranteed income, such as certificates of deposit and savings accounts, are woefully low and simply are not an attractive option. A much better alternative for senior supporters age 65 or older can be found in ICR's Charitable Gift Annuity program.

Charitable gift annuities, also known as CGAs, are planned giving instruments that involve a simple contract between ICR and the donor. But unlike other financial arrangements, these special annuities offer additional benefits unmatched by other secure investments. In exchange for a gift of cash or stock, ICR provides a partial income tax deduction and a guaranteed fixed income stream for life—a portion of which is paid tax free.

The amount of the fixed income stream is determined by several factors, but the donor's age plays the biggest part. The older you are, the higher the rate—just one of many benefits to growing older! The maximum number of annuitants per contract is two, and payments can begin immediately or can be deferred to some future date. And once the donor passes, ICR keeps the remainder of the gift and applies it to our ministry.

Charitable gift annuities could be right for people who desire to do any of the following.

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investments.

- Avoid capital gains tax on appreciated stock or mutual fund shares while generating more predictable income.
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- Gain peace of mind knowing payments for a surviving spouse will continue without the delay of probate.
- Help an elderly parent, sibling, or other person in a tax-advantaged manner.

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Mr. Morris is Director of Donor Relations at the Institute for Creation Research.

Donor Age(s)	One Life CGA				Two Life CGA			
	Annuity Rate	Estimated Charitable Deduction	Tax-Free Portion	Overall Effective Rate	Annuity Rate*	Estimated Charitable Deduction	Tax-Free Portion	Overall Effective Rate
65	4.7%	\$3,490	69.6%	5.6%	4.2%	\$2,776	69.1%	4.9%
70	5.1%	\$4,099	72.8%	6.1%	4.6%	\$3,227	71.8%	5.5%
75	5.8%	\$4,577	75.4%	7.1%	5.0%	\$3,890	74.5%	6.0%
80	6.8%	\$5,021	77.9%	8.4%	5.7%	\$4,400	77.4%	6.9%
85	7.8%	\$5,660	81.8%	9.8%	6.7%	\$4,879	80.5%	8.3%
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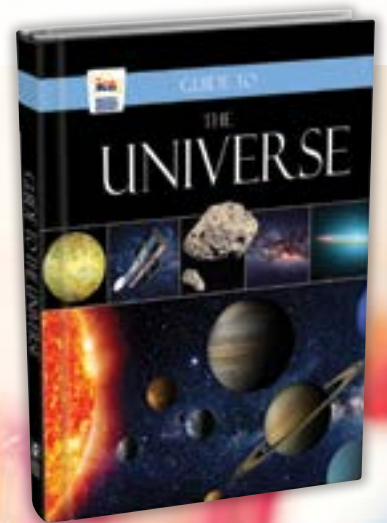
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