
Creation Answers

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Who does this newsletter?

This newsletter is produced by Wayne Spencer on a Quarterly basis. Its purpose is to bring creation research within the reach of Christians and provide up-to-date reliable information on creation issues. Wayne Spencer is a creation author and former teacher who has presented papers at the International Conference on Creationism and has published in various creation publications, such as the Creation Research Society Quarterly, Creation magazine, the Journal of Creation, and Origins (from the Biblical Creation Society, UK).

This newsletter is meant to help people plug into creation resources and get informed about creation and evolution. It is provided free of charge on request. Using the free Adobe Acrobat Reader is necessary for viewing the newsletter. There are no restrictions in copying this newsletter or passing it on to others. To request to be placed on the e-mail list, send a request to wspencer@creationanswers.net.

More information on Wayne Spencer's education and publications can be found on the creationanswers.net web site. You'll also find many other resources. <http://creationanswers.net>
Also see the [AnswersBlog](#)

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A Personal Note from Wayne Spencer

Greetings,

I would like to thank people who have recently requested this newsletter. I try to comb through new creationist research and make it available on a less technical level.

In this issue I have an article on mutations, DNA, and evolution. This is my attempt to summarize some important recent research. There is much more that could be said about mutations, DNA, and genetics. Those who would like more detail can go to my website and find the same article (a few days after the newsletter goes out). The webpage version will have a list of sources. I hope you'll read the article on spider silk and webs. Some fascinating things have been discovered about spider silk that shouts out about a Creator.

Recently I started something new on my website, my own blog. I call it the [AnswersBlog](#). The blog will be a place I can write short articles in between when my newsletters are published. I won't really post on any kind of schedule. Perhaps at least once per month. I would like to get comments from readers of this newsletter. The last short article in this newsletter on "Faith versus NASA" is a short version of my most recent blog posting. Anyone can go and put in a comment on the blog, but I have to approve the comment before it is posted. Please take a look. I may cover a broader variety of topics on the blog also, than in this newsletter.

Wayne Spencer, M.S., Physics

Mutations and Creation

Genetics has always been a very important field of study related to evolution. When Charles Darwin wrote the *Origin of Species* in 1859, little was known about Genetics. Scientists of that time had no idea of the complexity of the cell. Today, significant resources have been put into Genetics research because it has important medical applications. Modern science always tends to assume evolution as an explanation for how life came to be as it is. However, sometimes research discovers things surprising to scientists that no one expected to find. Scientific research sometimes leads to discoveries that demand viewing things from the point of view of intelligent design, even though that was not the perspective that motivated the research. I think this is especially true in genetics. Creationists have had limited resources often compared to evolutionary research. Creationists in the sciences face challenges just being able to have a career because of the widespread discrimination against them. But, today there is some important research related to genetic mutations that is done by creationist scientists. There are today vast amounts of genetic data available that is studied not in a laboratory, but at a computer. The lab work has reached the level of sometimes being automated, such as the mapping of the genomes of humans and other life forms. There is much going on in genetics and molecular biology. Scientists in a certain specialty sometimes become so engrossed in the details of their specialty that they fail to stand back and see the big picture. The advances in genetics and molecular biology have been so great that many scientists seem to have not fully caught up with the implications.

First, to review some basic concepts from biology. The primary mechanisms of evolution, according to theory, are mutations and natural selection. Natural selection is what Darwin wrote so much

about. Evolution is the concept that all life on Earth has a common ancestor and all living kinds have come about by changes in prior forms. The cause of the changes is mutations, random changes in the genetic code in the DNA of the organism. Mutations are essentially copying errors in DNA. In what is called transcription, the RNA molecule is made from the DNA molecule and then RNA is used to create a copy of DNA. It is believed that some mutations have beneficial value to the organism, helping them produce more offspring in the long run. It was assumed by Darwin that small changes would accumulate and produce major changes over many generations. Natural selection has often been referred to as "survival of the fittest." It is essentially a competition process, where the animals (or plants) that are stronger or better adapted to their environment will become more numerous in the population. Those that are not well adapted die out over time. In the Arctic, selection drives animals to adapt to extremely cold temperatures (by increasing fur thickness and subcutaneous fat stores, etc.). In a hotter dryer climate, selection will drive animals to adapt in the other direction. Thus, in the Arctic you have Arctic forms of the rabbit and the fox with special fur and adaptations that help them live in a cold climate. In hotter and dryer areas, these same animals live on less water, have different colors, and have a different body-mass index. These are survival advantages in that particular environment.

From a creation perspective, what gives living things their particular characteristics is a combination of God's intelligent design and the animal's adapting to their environment. Arctic rabbits and foxes have changed since Noah's Flood to adapt to a cold climate, but this does not show any major changes, as is required in evolution. Animals may be able to adapt to their environment without mutations. Here, the normal process of reproduction, which includes assortment and recombination of

existing genes, produces variability within each group. This variability is what selection acts upon. Even though living things do not have to mutate in order to adapt to their environment, there is a limit to how much living things can change, apart from genetic changes. Added input through mutation does not, according to what we observe, produce anything radically new. We don't observe the dramatic gross changes in living things that evolution says would happen over long periods of time. We observe limited change within the basic "kinds." I will use the biblical term "kind" to keep things simple here. But remember "kind" does not correspond to the term "species" in biology. It is something broader than "species."

Creationists do not deny actual facts about mutations and natural selection, but they may have a different view of their significance. Most creationists accept natural selection, though some would argue it is a rather idealized concept that does not always represent the real world. For instance, competition to survive is not the only principle at work in populations of living things. There is also symbiosis and cooperation among animals. There are animals that live together in beneficial ways, such as the oxpecker bird and the giraffe mentioned in the December 2011 issue of *Creation Answers*. There are also times when even carnivorous animals seem to allow other animals to live in peace, though they could become their prey in a different situation. Life on Earth was marred by mankind's sin in the beginning. Somehow at the Fall of Man described in Genesis chapter 3, there were changes in living things that made life more difficult for mankind regarding obtaining food. It also made the world more dangerous. Since the beginning many mutations have occurred that have introduced diseases to mankind and to other living things.

God built into the genetic code a limited ability to change, so that when the environmental conditions change, creatures

will not go extinct. God's design not only gives various living things their own unique abilities, it also includes a designed-in ability for the organism to change over generations, in order to adapt to changing conditions. We see the same kinds of animals that existed at creation, but the creatures we are familiar with may be somewhat different than their own kinds were in the beginning. We can't be sure how different they are now than how they were at creation. (The majority of fossils we see of these groups were produced about 1,600 years after the initial creation, during Noah's Flood.) Some animals live only in a few places in the world today, such as the penguin for instance. But there are fossils in Peru of penguins much larger (6 feet!) than today's penguins. In addition, many fossils exist of animals that have gone extinct. These are examples of how life has changed since the beginning. Much variety in the animal world has been lost since God created in the beginning. Noah's Flood and the various climate changes after the Flood undoubtedly were major factors in the loss of some of the variety among living things.

DNA is a Multicode

DNA is the famous double-stranded, helical-shaped molecule that encodes information about an organism. Within DNA, letters make up words, words make up sentences, and sentences make up paragraphs. You might think of a gene as like a sentence, or perhaps like a recipe. The individual words are made up of nucleotide bases. Only four of these bases are used, chemicals usually referred to by the letters A, T, C, and G. Base A (for adenine) on one DNA strand always matches up with T (thymine) on the other strand. Base C (cytosine) always matches up with G (guanine). The sequence of nucleotide base pairs is one kind of information in DNA but there are kinds of information as well, in the three dimensional way it coils, and even in the changes in it over time. I think there are many interesting parallels between the cell

and how a computer program works. Bill Gates of Microsoft once said, 'DNA is like a computer program but far, far more advanced than any software ever created.' Some of DNA seems to be essential data (that codes for proteins) and some seems to regulate how the data is used, like a computer program controlling a process.

DNA is a very efficient, compact, and complex information storage device for the cell. The decoding of the genome done by scientists is about mapping the sequence of DNA. Though scientists have mapped the sequence for some organisms, including humans, that does not mean that the sequence is fully understood. It has always been a challenge to the naturalistic atheistic mindset of many in science that there is information coded into DNA – lots of information. Just the 3% which codes for proteins is a lot of information (90 million letters worth). But the use of data, as in a computer program, requires instructions about what, when, and how to use that data. This is sometimes called meta-information. If the information in DNA is evidence for an intelligent Creator, and I think it is, then the meta-information in DNA is even greater evidence for an intelligent Creator. The instructions about the data do not have any use without the data. Scientists were failing to realize what they were seeing for a long time because they didn't know how the data in DNA was organized (there is probably still a long way for scientists to go in this). Scientists seriously underestimated the complex organization of the information in DNA. There is not just one code, like one simple sentence. DNA represents multiple codes interleaved together and as a result deciphering the code is complex. I will quote creationist Alex Williams from a paper in the Journal of Creation [from 21(3) 2007, pp 111-117]. *"DNA information is overlapping-multi-layered and multi-dimensional; it reads both backwards and forwards; and the 'junk' is far more functional than the protein code, so there is*

no fossilized history of evolution." (emphasis his) I have an illustration below of what an interleaved code is. The box has a series of letters that may look like nonsense, but there is actually four different messages in the series of letters. One of the messages reads from right to left. At the end of the newsletter and on my website will be an explanation of the four messages.



Figure 1 Example of four interleaved messages.

The multiple codes in DNA is powerful evidence of God's existence to me, because only an intelligence far beyond our own could devise such an incredible information code. In my simple example there are four messages in the sequence. But in DNA there can be up to five or even seven interleaved codes in the sequence. One segment of DNA will often affect multiple functions also. There are other aspects of it I am not attempting to explain here. So it is really vastly complex. Random mutations and chemical processes cannot explain how

such a complex code could come about. Evolutionists seem to ignore the problem of dealing with how a complex code like DNA could come to exist. Moreover, there must be the molecular machinery in the cell that can use and maintain the DNA molecule, or it would do nothing but break down. The complex nature of the DNA code shouts out for purposeful design.

Mutations are often Repaired

The process of the transcription of DNA is amazing enough, but today there is so much more known that makes the complex design in the cell far beyond what was imagined in the past. I think an important point to make is that there are many processes in the cell which either prevent mutations from causing problems for the organism, or which repair mutations as they happen. There are many different quality control checks in the cell that can detect various kinds of mutations and correct them. If a mutation is so serious that it can't be corrected, there are also processes to revert the sequence back to a form where it can be recycled, or the sequence of bases can even be destroyed. There are also processes for destroying a seriously mutated cell, so that the errant cell will not reproduce and become an unmanageable problem. This is one way our bodies fight cancer. There's no doubt that it's valid to describe these processes as "quality control checks." We have to describe the cell in engineering terms, because that's just how it works. The cell is a divinely-engineered chemical factory.

It has also been said that the genome is buffered. That is, some mutations can be tolerated because there are redundancies and alternate processes that keep some mutations from affecting the organism, even when they are present and not corrected. For instance, some mutations can be carried as a recessive trait that does not affect the health or well-being of the individual (having two copies of the

genome is a brilliant design aspect). But, if that individual married someone with the same mutation, it could put their children at risk because they would be more likely to inherit two bad copies of that trait. Some mutations affect the individual with the mutation but don't affect their offspring, because the mutation does not affect the sex cells that pass on the genetic information (sperm or egg). In fact, this includes nearly all mutations that occur during the life of an individual. If a mutation is very serious, it may kill the individual or prevent them from having offspring at all. These are all mechanisms that prevent mutations from being passed on in the population, though they can be tragic for the individuals affected.

There are also examples where multiple genes seem to code for the same characteristic in such a way that the organism can function just fine even if there is a mutation. An example would be where multiple gene sequences code for the same protein. For example, a group of three DNA bases called a codon codes for an amino acid; amino acids in turn make up proteins. The codon for glycine can be any of four different combinations, GGU, GGC, GGA, or GGG. Thus, if the last base in the sequence were mutated it is unlikely it would prevent the glycine from being made normally. If mismatched chemical bases accidentally bind together there are processes that can detect this and correct it. There are dozens of enzymes that are used in proofreading and DNA repair in humans. DNA seems to be deliberately designed to be hard to corrupt by mutations. All these checks and repair processes would work against there being random mutations that really effect changes in an organism like in evolution. The DNA copying mechanism is quite robust. It is estimated that in the replication of the 100 trillion cells in the human body, which involves about six billion chemical base pairs being copied each time, there are only about three errors produced – an error rate of about 1 in one billion.

Beneficial Mutations do not help Evolution

Evolutionists believe that over long periods of time, as mutations happen, a very small percentage of mutations happen to be beneficial to the organism in some way. These beneficial mutations provide new "raw material" in DNA. Because they have benefits to the organism, they would help the organism survive better and produce more offspring. Thus, over time, the animals with the good mutations would come to dominate in the population since they would outpace the others in reproducing. There are a number of factors that complicate this picture, however, and cause problems for biological evolution. As it turns out, though there can be rare examples of mutations that give some benefit, the numbers are always against beneficial mutations becoming the norm in a population. An important point to understand is that mutations always cause some form of damage in the genome. This is true for all mutations, good, bad, or neutral. The very idea of a "good" or "beneficial" mutation as evolutionists conceive of it, is questionable. A mutation is almost always harmful or at best neutral to the individual. The theoretical "good" mutation is rare by definition, and many "good" mutations are actually due to the destruction of some function and are thus only "good" in a certain context.

But for new abilities and new body parts to form, an increase of information is required. Evolution needs new information that could not somehow come from the DNA of a creature that lived prior to the new form. Mutations are random and have no relationship to the needs or the abilities of the organism. So they are essentially random copying errors in the genetic machinery. Random errors are not a realistic source for new information leading to something new, like the first bird that could fly, for instance. Because of the way one gene can affect many different systems

in an organism, sometimes one mutation can have devastating negative effects in multiple ways at once. Information is one of the most serious problems with biological evolution theory. Evolutionists cannot explain a realistic source of the biological information. For an organism to survive with a mutation to one body system, multiple other body systems may also have to change so that they work together. For birds to survive with the ability to fly for instance, they need lighter bones, different muscles in the right places, and a different respiratory system. They also had to radically change their basic metabolism, as the reptile ancestors from which they supposedly evolved are cold blooded. So it is not enough merely for them to mutate to get feathers, for instance. Multiple simultaneous mutations would be necessary for significant changes as in evolution. Some have turned to suggesting aliens from space had some role in the process of the information changes in living things. Apparently, sometimes scientists would rather put their hope in space aliens than in a Creator.

In evolution theory, scientists have much debated the issue of rates of mutations. How frequently mutations happen and how frequently beneficial mutations happen are very important questions to evolutionists. If all mutations happen too frequently, it would cause so many health problems for the organism that it may go extinct. But if mutations are too infrequent, evolution won't happen because there won't be new forms that can out-compete their peers. There are also random events from the environment that can keep an animal from reproducing, and this would keep mutations from passing to their offspring. The animal may get sick and die or it may be killed by a predator before it can reproduce, or it may simply never find a mate. If a mutation has more significant effects, it is likely to be that much more rare in how often it happens. Thus many mutations, even if they are beneficial, will not make much real

difference to the organism, so they would not make that individual stand out in the population. If a mutation really does have a significant advantage for the individual, it's likely to happen so rarely that it would be weeded out of the population. If there are not enough individuals that can get the new beneficial trait over a few generations of time, the new beneficial trait may just disappear due to random events. Genetics and the competition to survive in environmental conditions tend to strongly prevent unusual individuals from becoming the norm. Beneficial mutations tend to be only really beneficial in limited circumstances anyway, but there are fantastic odds against beneficial mutations becoming widespread norms in the entire population. It seems to me this makes evolution impossible. The low frequency of mutations, coupled with the likelihood of a new trait surviving in the population, just doesn't work out as evolutionists hope.

These are just a few things to show why mutations are a serious problem for biological evolution. There are a number of great sources related to these topics from creationist researchers with much more background than myself in biology, genetics, biophysics, and molecular biology. I think we all need to consider what kind of Creator would put so much design into how life functions, into our planet, and into how unique human beings are in the living world. We have reason to want to know this Creator personally. I believe Christians can have a relationship with this Creator by faith in Christ.

Spider Silk and Webs

People have often wondered at spider silk and spider webs. The silk is so strong for its weight and spiders just innately know how to make complex webs that serve their purposes very well, though they are unintelligent creatures. I think it is evidence of an intelligent Creator. The capabilities of

spider silk and the apparently intelligent engineering being discovered in spider silk is amazing scientists today. Scientists have been studying spider silk at the atomic level. Also, it is not just biologists doing this research, but others such as mechanical engineers and chemists.

Spider silk is made up of a combination of different components, some of it soft amorphous materials and some stronger crystalline fibers. The soft material and strong crystalline material alternate in a particular way that makes the silk strand elastic and yet strong and light. Spider silk has been described as tougher than steel or kevlar by weight. How spiders make their silk is largely a mystery, though some chemists in Germany have been making progress in beginning to figure out some of the process. Apparently the formation of spider silk is a very carefully controlled chemical process where the acidity must be controlled, as well as adding the right amount of salt and potassium phosphate in order to control the type of proteins that make up the silk.

There are two main types of spider silk, one type is sticky and stretchy and the other is stiff, dry, and strong. The first type is called viscid silk (sticky) and the other is known as dragline silk (strong). A spider web will have a combination of both types. So the dragline silk makes the radially outward fibers that create the overall organized structure of the spider web, and the sticky viscid silk makes it a trap for unfortunate prey. One of the most amazing things to me was something an engineering team at MIT found. They found that as you put more stress or force on a spider's silk thread, it has four distinct phases it goes through in its mechanical properties. This allows it to sort of step up its strength to tailor it to the type of stress on it. It was described this way in an [article on Sciencedaily.com](#): *"When a filament is pulled, the silk's unique molecular structure--a combination of amorphous proteins and ordered, nanoscale crystals--unfurls as stress increases, leading*

to a stretching effect that has four distinct phases: an initial, linear tugging; a drawn out stretching as the proteins unfold; a stiffening phase that absorbs the greatest amount of force; and then a final, stick-slip phase before the silk breaks."

The MIT engineers were also impressed by how a spider web breaks. When it breaks, it doesn't usually break in a way that makes the whole web fail. The break is always confined to a limited region of the web, so even if one part fails the rest of the web will still function. One other really surprising fact comes from researchers at Iowa State University. A mechanical engineering professor and his team found that spider silk conducts heat more than aluminum, silicon, or even copper! This is astonishing for an organic material. Also, when the silk is stretched, its heat conduction increases, which is very unusual. This could have interesting applications for the benefit of people.

Does all this sound like something that came about by random mutations? There is clearly engineering principles at work in spider webs. Enough to teach MIT engineers. The engineering specifications of spider webs represents information that evolution does not explain. I think we should thank God for the many clever things he made that give us tangible examples of his wisdom. Engineers and medical researchers are getting ideas for very useful applications of spider web science.

Faith versus NASA

Recently there was news about David Coppedge. Coppedge was an employee for NASA at the Jet Propulsion Laboratory (JPL). JPL manages many solar system exploration missions, so I am very interested in what they do. Coppedge was first demoted and then laid off in what appears to be an unfair discrimination against his Christian faith. I wrote a blog

entry about this on March 17. [Click here to go to my blog](#) and read this. Find out more about what happened. There was a court case that convened this month (March 2012) but is not finished. I ask the question of what would happen if famous scientist Isaac Newton were trying to get a job for NASA today? David Coppedge has written articles for the Institute for Creation Research and has promoted Intelligent Design.



Figure 2 Colors show the separate messages in the code.

Key to the four interleaved messages:

- 1) **Black**, L to R - BIOLOGICAL INFORMATION
- 2) **Blue**, L to R - GOD IS GREAT
- 3) **Red** Underline, L to R - LOGICAL MAN
- 4) **Green** Italic, R to L - JESUS SAVES