
Creation Answers

Who writes 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 and Happy Easter,

I would like to thank everyone who has recently signed up for my email newsletter. I welcome suggestions for topics, or feedback on my articles. I normally send out the email newsletter in the form of an Acrobat file first, then put the article in HTML form as a webpage on my website soon after. I do not list sources in my newsletter but I often do when I make the webpage version.

In January I made a ministry trip to Denver to speak to the Rocky Mountain Creation Fellowship. I really enjoyed the opportunity and received many good comments. I spoke on "*Rethinking Planetary Science from a Creation Perspective*." There was a video made of the talk and the video was very well done. If anyone would like to get a copy of the video DVD, email me and I can put you in touch with the people in Denver. The RMCF group has a very healthy ministry in Denver, which was very encouraging. I also made a trip to Wichita, KS to speak to a group of kids and adults on Saturday and to an adult Sunday School class on Sunday. It was at an Evangelical Free Church. There were over 50 people in each group (mostly different people). Both sessions went well. These sessions were about basics on Biblical and scientific creation and covered many different topics.

In this issue I begin a series on the Big Bang. My goal is to provide a up-to-date explanation of the Big Bang and how to think about it.

Wayne Spencer, M.S., Physics

Big Bang Theories and the Christian World View

Most people have some familiarity with the Big Bang theory. How should Christians understand it and should Christians believe it? This article will be the first in a series on Big Bang theories. I find Christians are often confused by Big Bang theories and often are unsure how to deal with Big Bang ideas. There have been multiple Big Bang theories, as scientists have attempted to work out the details in different ways. The details of cosmological theories can be quite technical, but the fundamental assumptions of cosmological theories are an important means of evaluating them. Thus this article will address not scientific aspects as much as philosophical assumptions and Biblical information.

First, what is the Big Bang theory? To give a general overview, it is the proposal that the universe arose from an initial event that occurred approximately 14 billion years ago. The energy and matter started in some dense state (there are various ideas on this). Time started at this event and space began to expand. Today, galaxies and stars are believed to be carried along by the expansion of space that started in the Big Bang. The universe began as a high energy "fireball" of sorts. The high temperatures made particle formation depend on the cooling and expanding of space. Nuclei of atoms formed in a few minutes but stable atoms required hundreds of thousands of years. After the early expansion, the first stars and galaxies began to form. Multiple generations of stars went through their entire multi-billion year "lifetimes," burnt up all their nuclear fuel and exploded before our star formed. It is from the supernovae explosions of past stars that scientists believe many of the elements of the periodic table formed. Thus our Sun and solar system, including Earth, would have formed billions of years after the

beginning of the universe. The Big Bang has always relied on principles of physics about known natural processes to explain how the universe formed.

The Fine-Tuning of the Universe

Today there are a number of scientists who are Christians or perhaps non-scientist Christian apologists who argue that the universe is "fine-tuned" for life to exist and this is an argument that God exists. Various quantities from physics are then suggested as being "fine-tuned." Examples of some of the quantities brought up include the strength of gravity, the speed of light, the charge on the electron, or perhaps the conservation laws in physics. I generally agree with fine-tuning but I do not always agree with how it is presented. For example some Christians accept the Big Bang theory and argue that there is fine-tuning in how the Big Bang took place. They will say that if gravity were much stronger or much weaker, the Big Bang expansion would not allow stars, galaxies, or planets to form and thus we would not be here.

The Big Bang is related to fine-tuning this way. They will say that the rate of expansion of the universe in the Big Bang was extremely special and if it were different by even a small degree then stars, planets, and life would never have formed. This "rate of expansion" depends on the relative strengths of the fundamental forces, such as gravity and the strong nuclear force. (The strong nuclear force holds the nucleus of the atom together essentially.) So, since the rate of expansion was so unlikely to be just right by chance, there must have been a Creator guiding it in some way. I think this is the wrong conclusion to draw. Many scientists are aware of this problem but they merely shrug off there being a Creator and say, "Wasn't the Big Bang amazing!" The Big Bang theory does not involve God directing it. There are many people who add God to the Big Bang but that was never the theory. If the rate of expansion has to be so critically

tuned to high precision, that is actually a reason to conclude that the Big Bang would not work. It is not an argument for God because God was never intended to be part of the theory.

I would say reasoning from science alone you cannot be conclusive about how the universe formed. The study of origins does not work like experimental science because you are dealing with events that happened once and are not repeatable. Even if you try to do an experiment to simulate something about Big Bang theory, there is no way of truly verifying that what you did in the experiment really matched the conditions in the beginning. However, we can be sure about some things on how the universe and Earth formed because we have in the Bible the word of the Creator. Science is not the only means of knowing things. We also have God's revelation.

Therefore I would take the view that a fine-tuning argument is only valid if it is framed in a manner that does not depend on a particular "model" of how the universe formed. This means that it would have to relate to the stability of the universe, or of matter, or the conditions necessary for life as we know it. It is improper to insert the Big Bang into an argument for the fine-tuning of the universe. But it is valid to say God fine-tuned the universe so that we could be here.

What would be valid quantities from physics to use for the fine-tuning argument? I think some arguments sometimes presented are careless and not wise to use. For instance, I would not use the speed of light. It is defined as a constant and shows up in many definitions. So how we view it is largely determined by our definitions. I also would not use the conservation laws, such as conservation of energy for example. My reason is that we cannot be sure what the differences are between now and the way the universe was first created. It could be possible that conservation of energy was not in place at creation but started at the

Fall of Man. I'm not saying this was the case, but it may be an option to consider. Or perhaps not, but clearly mankind's sin affected matter and apparently affected the whole universe in some way. We also cannot be sure how changes in conservation laws might have affected life.

So what would be the best constants or parameters from physics to use for a fine-tuning argument? I would pick the following:

1. Relative strengths of the four fundamental forces.
2. The elementary charge
3. Planck's constant
4. The stability of the electron and proton

The four fundamental forces are gravity, electromagnetism, the strong nuclear force, and the weak nuclear force. The weakest of these forces is gravity. Nuclear processes, including the processes stars use to generate energy and light depend on the strong force. ([CLICK HERE](#) to read an article on particles and the four forces I wrote for Answers in Genesis.) Planck's constant has to do with the amount of energy in light. If Planck's constant were much less it could make it impossible for photosynthesis to work in plants, for example. If Planck's constant were much greater, radiations from the Sun could kill living things.

Many atomic and electrical processes depend on the elementary charge. This is a number for the amount of charge on fundamental particles like the electron. Charge comes in multiples of this number. Living things use electrical charge in many ways. For example our nervous system is made up of cells called neurons that transmit electrical signals. They must maintain an electrical potential across the neuron membrane. The way this is done is by what is called the Sodium/Potassium Pump. If the elementary charge were greater, it would require more energy to pump the sodium ions out and the potassium ions into the neuron. Thus the process could be disrupted

or disabled if the elementary charge were very different.

Note that there are many uncertainties in trying to quantify how much these quantities could change before it would adversely affect life. The stability of the atom is something that life obviously depends on though, and thus I mention the stability of the electron and proton. There are many subatomic particles other than the electron, proton, and neutron. Neutrons decay in a few minutes if they are outside the atom but inside the atom they are stable. Considering all the particles that exist, most of them decay. Only a few seem to be totally stable. The electron and proton are stable. If they were not, it is hard to imagine how life would be possible. Thus these are a few physical parameters that could be designed to make life possible. This is not meant to be a complete list. Other quantities from physics might be used. The fine-tuning argument does not explain why a certain constant is the particular value we measure it to be. But fine-tuning says that there is a range of values that make life possible and says the reason the constant is within that range is intelligent design.

Usually the fine-tuning argument is only made regarding the numerical values of the physical constants, such as the elementary charge mentioned above. But these constants are part of mathematical relationships that make up the laws of physics. To limit "fine-tuning" to the constants is to not address the entire problem. The physical laws themselves should also be explained. I think the physical laws should be considered part 1 of the fine-tuning argument and the constants should be part 2. The universe we live in is mathematical, it follows predictable mathematical laws. The existence of physical laws is also affirmed by the Bible (see **Jeremiah 33:25** for instance). But, Biblically the laws themselves are from God, so nothing in the created universe exists in

an autonomous manner. The universe is not a machine that can run itself without God sustaining it.

It is important to deal with the existence of the laws, not just the physical constants. For example this is not the approach in Dr. William Lane Craig's book, *Reasonable Faith* (pp 159-160). In the book, he says "*we need only concern ourselves with universes governed by the same equations in order to determine the probability of the existence of a life-permitting universe. . . . Because the equations remain the same, we can predict what the world would be like, if say, the gravitational constant were doubled.*" Dr. Craig is following an approach here that implies we need to be able to quantify our arguments with probability calculations in order to be clear that we have a valid point. If we deal with the possibility of the laws of the universe being different, he seems to see this as something atheists might use to avoid the problem. But atheists cannot avoid the problem this way.

I suggest we look at this from another perspective. Many physicists have written about the fact that they have no explanation for the existence of the laws themselves. Even more is the question of why are we able to figure out the laws and apply them so well? Albert Einstein made an interesting statement about this. He said "*The most incomprehensible thing about the world is that it is comprehensible.*" Look at all we have accomplished to benefit mankind with science. The laws of the universe can be written concisely in the equations of physics, or they can be explained in books. Physics and engineering students will testify that it takes a very large book to explain the meaning of Maxwell's four equations of electromagnetic theory, for example. Thus, **the mathematical laws of the universe constitute information.** Mathematics has symbols and syntactical rules very much like a language. What is the source of the information in the mathematical laws if not a

Creator? The Big Bang cannot explain the origin of this information any more than biological evolution can explain the origin of the information in DNA.

There is a caveat here I should point out. Man's "mathematical laws of physics" are human conceptions. Thus, I do not believe we should think that our conceptions or our equations are perfect representations of reality. Yet, when they allow us to predict what happens in experiments and to build working machines, they must have real significance. They must represent something correctly about reality if they work experimentally.

Eugene Wigner was the Nobel Prize winner in physics in 1965. He wrote an essay called, "The Unreasonable Effectiveness of Mathematics in the Natural Sciences." He said, "*The miracle of the appropriateness of the language of mathematics for the formulation of the laws of physics is a wonderful gift which we neither understand nor deserve. We should be grateful for it and hope that it will remain valid in future research . . .*"

Big Bang theorists vary on how they deal with the origin of physical laws. Many would say that the Big Bang actually produces many many universes, referred to with the term "multiverse." If we could compare the many many universes, the laws and the constants vary randomly from one to the other. (Why randomly? Because God is not involved or does not exist.) This is how many scientists today try to work around the problem of the fine-tuning of the universe. In their minds, our universe is like a lucky roll of the dice. It's as if there is a great cosmic lottery game and in our universe with our nice blue planet we just happened to be lucky enough to win. Theorists generally do not want to allow for the possibility that the universe is made for a purpose and designed for us. They would point out that if you inject God into the Big Bang, that changes the whole thing because then the universe had to be a

certain way. Big Bang theorists resist the idea that the universe had to turn out right for us.

In Big Bang theory, there is much detailed theoretical physics on the early periods and how the four fundamental forces begin to operate. But there is no explanation in that theory for why the laws take the exact form they do. Being able to calculate a force does not mean we really understand what it actually is or where it came from.

The Biblical way to understand this is that the laws of the universe in some sense came from the mind of God. He put them into the fabric of the universe at creation. Then he created man in his own image so that man could understand and take advantage of the order that God created. Man's conceptions and "models" of the laws of the universe are undoubtedly imperfect, but man's scientific models are not meaningless. God is the source of the information that man imperfectly figures out by his investigation of the natural world. God also made the physical constants the proper values so that the universe is stable and safe for life. Thus both the physical laws, and the physical constants are "tuned" for our benefit.

Assumptions in Big Bang Theory

All the above discussion about the fine-tuning argument makes up one aspect of a Christian worldview. A Christian worldview based on the Bible implies the universe, the Earth, and our own lives all have a purpose. So we could say that intelligent design by God is an important principle in a Christian worldview. Purposeful design is even alluded to in Scripture regarding the Earth I believe, in **Isaiah 45:18**, where it mentions God creating the Earth to be inhabited.

The Big Bang has two fundamental presuppositions that it is built on. These may sound scientific coming from scientists, but they are really just unprovable assumptions. The first is what's called the Copernican Principle. This idea gets its name from long ago when Copernicus proposed the idea that

Earth orbited the Sun, rather than what was the prevailing idea then that the Sun orbited the Earth. Copernicus' idea became controversial because it seemed to demote the importance of Earth (and us) in the scheme of things. In Big Bang theory the Copernican principle says that the universe is approximately the same density in all directions and that we have no special place in the universe. This concept says that if you look at portions of the universe that are big enough, the universe has about the same density of galaxies in every direction. If it is left as a mathematical statement on the uniformity of the universe then it may be relatively harmless. But it often is taken to have philosophical implications about our importance in the universe.

Some take the Copernican principle to mean that humans on Earth have no special place or role in the universe in any sense. Not only are we not the center of the universe (as people thought before Copernicus) but there is no center to the universe. The universe is conceived of as an unbounded multi-dimensional surface. It has no edge or center and we are somewhere on this surface. The universe is believed to be still expanding from the Big Bang event billions of years ago. Many things happened in the universe for approximately 10 billion years before our Sun or solar system ever formed, in the Big Bang history of the universe. The appearance of our Sun and our home planet Earth is something that just happened by natural processes. It was not directed to happen. Known physical processes accomplished it, but it is by chance that conditions turned out right for life to exist on Earth.

Let's contrast this with Genesis chapter 1. In Genesis, the first thing God created was Earth in an incomplete state. Stars and galaxies and even the Sun and Moon, were created on the fourth day, not the first day. So, Biblically there was no long process of stars and galaxies forming

and dissipating before Earth formed. The only "process" described in Genesis 1 is God's commands. Thus in the Bible, creation was supernatural.

The Bible implies that regardless of where Earth is physically located in the universe, it has a special importance to God. This special importance of Earth is also clear if you consider **Revelation 21** where it describes the new heavens and new Earth that God will create in the future. If you consider Revelation 21, the end of the universe will be determined by what happens in human history on planet Earth. Why would the fate of the entire universe hinge on how history unfolds on Earth? This implies I think that humans are the only intelligent life in the universe and that our planet has a very special priority to God. As it turns out there now seems to be scientific evidence against the Copernican principle, but that is a topic for a later article.

There is another cosmological principle, called the Anthropic Cosmological Principle. It is put forward in two ways, one called the Weak Anthropic Principle (WAP) and the other the Strong Anthropic Principle (SAP). The WAP says that in a universe where life exists, the physical constants will naturally be conducive to life because life evolved that way. The WAP principle presumes biological evolution explicitly and says the universe appears fine-tuned because if it were not conducive to life, we simply wouldn't be here to talk about it. This really isn't much of an explanation of anything.

A more useful principle to think about is the Strong Anthropic Principle from a book by physicists John Barrow and Frank Tipler. They say the universe must have properties that allow life to develop within it. They see one of three implications of this.

1. There is only one possible universe intelligently designed to sustain observers (us).

2. Observers are necessary to bring the universe into being.
3. An ensample of many different universes is necessary for the existence of our universe.

The three options above are helpful for understanding how different worldviews lead to different concepts about the universe and our place in it. I would argue that the Christian worldview holds to option 1 above. Note that some scientists who believe the Big Bang may not agree with Barrow and Tipler's SAP concept. There are different ways scientists interpret the implications of Big Bang ideas. Some would say it is just an amazingly fortunate accident that the universe exists and that we are here to talk about it. Others would say the universe essentially designed itself or that the presence of intelligent observers somehow caused the universe to be as it is. This latter idea relates to option 2 above, and would be referred to as reverse causation. The view that seems most prevalent today among real Big Bang experts in physics and cosmology is option 3.

Duane Gish 1921 - 2013

On March 6, 2013 Dr. Duane Gish died. This is a sad milestone in the creation movement. Dr. Gish is now with Jesus. Duane Gish did much ministry with the Institute for Creation Research. He is known particularly for the many debates he did with evolutionary professors and scientists. I remember hearing him speak while I was a student at Kansas State University. As young Christian and relatively recent convert at the time he made a major impression on me. Gish was an accomplished debater. He also did many lectures on college campuses and in churches. He endured many insults from

unbelievers over the years but he kept plugging away at his ministry. The memorable ones to me are his talks on fossils, dinosaurs, and the Big Bang. He had a Ph.D. in biochemistry so he did a great job on the issue of the evolution of life from chemicals. But he seemed pretty versatile and able to cover many topics and speak to any audience. His knowledge of science was absolutely encyclopedic, which served him well in debates.

Dr. Gish, like me, was born in Kansas. He died at age 92. But he traveled widely and had an important role in the formation of the Creation Research Society in 1963. Some don't know he had a career with the Upjohn Company in Michigan prior to joining the faculty at ICR in 1970. He often accompanied the late Henry Morris. He has been a great tireless example for a long time. I look up to him very much.

The Privileged Planet

To see a good video related to the fine-tuning of the universe I would recommend *The Privileged Planet*. It is well done. It also makes a lot of good points about Earth, the Moon, and about extrasolar planets compared to Earth. Young age creation organizations sometimes sell this video but it may be a little hard to find. I'd recommend going to Randolph Productions to purchase it. Their website is <http://www.go2rpi.com>.