

Appendix A Science and Christianity

Who? What? Where? When? Why? How?

These questions are fundamental to journalism, but much more they are common to all of us.

Why am I here? How did I get here? Who am I? What am I? Where am I going? How should I live?

This appendix attempts to answer some of the common questions about science and the Bible.

Worldview

A persons worldview is what they believe to be reality. We interpret everything we see, hear, feel, touch and smell (our environment) in terms of the information we receive from our five senses. Our brains use the information from our senses and our memories to interpret what is real and how to respond.

Fire burns, burns hurt. Drop that hot potato, now! We learn from what has happened to us, from our life experiences. We attempt to understand what caused a particular effect so we can get the effects we want.

But, we don't have to experience something to learn about it. We can learn from other people, from what we have been taught, read, seen, or heard. Language, the ability to communicate our thoughts and experiences to others is a great blessing. However, like most blessings it comes with a problem. The information others tell us may not be true. How do we know what is truth? Some people deliberately lie while others may be honestly mistaken. If our worldview's underlying assumptions are wrong we too may misinterpret reality.

Materialism.

The materialistic worldview is that our past, present, and future universe is composed entirely of things that can be explained by the laws of nature. If something happens that we can't explain, we should investigate to find which of the laws of nature caused it and how they did it. This search for answers has led to many advances in science and technology.

Materialism's explanation of how we got here is based on Charles Darwin's Theory of Evolution. Life is supposed to have evolved from a single cell, which developed a self replicating feature. Those cells which couldn't reproduce died off. The ambient radiation present caused gradual changes in the cell's DNA. DNA is what determines a cell's characteristics. The changes in the cell's DNA led to

the copies of the cell gradually evolving into new species. Nature (Natural Selection, the survival of the fittest) weeded out those changes that weakened the cell. The strongest and fittest thrived and replaced the parent cell with ever more complicated cells. Gradually, over a lot of time, the single cell evolved into the plethora of complex flora and fauna which we see on our beautiful planet today.

Those who do not believe in the supernatural, atheists, embrace the Theory of Evolution, because it enables them to answer the question of where we came from without admitting that there was a designer/creator, God. However, to say that the Theory of Evolution disproves Christianity is not logical. We Christians believe that God created the universe and created the human race, but we aren't sure how. We have no idea how long the "days" in Genesis 1 were. If God wanted to, he could have used evolution create humans.

Christianity

The Christian worldview is based on the all powerful, all wise, ever present God who loves all mankind, his children. He placed us in this world to glorify him, to help him take care of the world and the people he created for him and to share a wonderful eternal companionship and future with him. He loves us so much that he gave us the choice to be with him or not. The choice is up to us. He gave us a book, an operator's manual, for life in this world. We call this book the Bible and regard it as the word of God. An explanation of why we believe this is included in Appendix B.

God designed this beautiful complex world with intelligence far beyond our comprehension. Consider the complexity of the DNA molecule which defines genetic structure. To say that all DNA evolved by "random chance" requires more faith than to just simply conclude that "God did it". We are the product of an intelligent designer, God, not random chance.

Implications of the Materialistic worldview.

The net effect of materialism is to regard people as superior animals, and to ignore morality, love, beauty, art, literature, weaknesses which do not contribute to our survival. The logical thing to do is to weed out inferior people, helping natural selection along, pushing forward to the super race. That's what Hitler's Nazis did. The defective, those which disagreed with them, and the Jews were targeted for elimination. The victim's property helped finance Hitler's war plans and they were unpopular with many of the people who wanted a scapegoat to blame for their poverty. Sadly some German Christians, ignoring Christ's commands to love and forgive and not take vengeance, blaming the Jews for Christ's crucifixion stood idly by while Hitler implemented his evil plans. A few did try to stop him and were killed.

Implications of the Christian worldview.

God created a beautiful world with no pollution, no sin and no death. He placed our ancestors, Adam and Eve, in a garden with good fruit to eat and pleasant work to do taking care of the garden. They even had access to the tree of life (immortality). But they wanted to be wise like God, so they chose to disobey God, to sin, and brought down the curse of death on all mankind.

God, is so holy that he cannot stand sin but He loves us so much that he paid the penalty for our sin by sending his son, Jesus, to live as a human and to die for our sin. Jesus rose from the dead overcoming sin and death for all of us. Then Jesus ascended to Heaven to be with God and he is coming back to reward us and to judge each one of us.

All of us humans are sinners, but we Christians are forgiven sinners. We look forward to an eternal home with God in a wonderful place called heaven.

Christianity is not foolishness or a lie promulgated on the illiterate and uneducated. Our faith is not blind, it is a well documented fact with a great deal of confirming evidence.

New Discoveries

Let's look at some new scientific details and see how they impact the materialistic worldview

Big Bang,

Darwin assumed a static universe, one that had always been and always would be. That way there would be plenty of time for evolution to take place. However, since Darwin's time several discoveries have been made which Darwinists are unable to explain.

Astronomers have been aware of the "red shift" for many years. Most of the red lines in the optical spectra from signals received from outer space indicate that their sources are moving away from us and from each other. Using the net Doppler shift one can compute the velocity of a star or galaxy relative to our earth. By computing the relative directions of motion of the different sources, astronomers have concluded that the universe started from a Big Bang, a huge explosion at a point in space many years ago. The universe has been expanding ever since.

But this sets a definite time as to the age of the universe, a large but finite number.

Age of the Universe

If the universe has an age, it had to have a beginning.

"In a series of papers appearing from 1966 to 1970, three British astrophysicists, Stephen Hawking, George Ellis, and Roger Penrose, extended the solution of the equations of general relativity to include space and time. [1]-{197} The result was called the space-time theorem of general relativity. [1]-{198}" - - - "This theorem is true under all possible physical conditions given that the universe contains mass and that its dynamics are reliably described by the equations of general relativity. Recent efforts to escape the theological consequences of the theorem has led to the discovery that its conclusions are valid over even broader conditions." [1]

Even Steven Hawking, the famous atheist, has concluded from the theory of general relativity that time had to have a beginning.

"The theorems state that space and time must have originated in the same cosmic bang that brought matter and energy into existence. In Hawking's words, time itself must have a beginning. [1]-{200} Proof of the beginning of time may rank as the most theologically significant theorem of all time, assuming validity of the theory of general relativity. [1]

Not enough time has passed since the Big Bang for life to evolve.

The accuracy of our estimate of the age of the universe is not critical to the probability of life evolving given favorable conditions without supernatural input.

If one took the simplest living cell and broke every chemical bond in it the odds of it's reassembling under natural conditions are so small that if all the matter in the visible universe were converted into the building blocks of life and if the assembly of these building blocks was attempted every microsecond for the age of the universe the odds would still e infinitesimally small. Years ago, molecular biophysicist Harold Morowitz calculated the size of this gulf.

If one were to take the simplest living cell and break every chemical bond within it, the odds that the cell would reassemble under ideal natural conditions (the best possible chemical environment) would be one chance in $10^{100,000,000,000}$. [1]-{398} The size of the universe is of no consequence either. If all the matter in the visible universe were converted into the building blocks of life, and if assembly of these building blocks were attempted once a microsecond for the entire age of the universe, then instead of the odds being 1 in $10^{100,000,000,000}$, they would be 1 in $10^{99,999,999,916}$. [2]

To say that the Theory of Evolution disproves Christianity is silly. A God who transcends time could have easily stretched the days of Genesis 1 into millions or billions of years if he wanted to. I believe that God created the universe and all life in it, I don't know how he did it. If the process he chose was evolution, that's OK with me.

THE COSMOS ITSELF HAS PHYSICAL CHARACTERISTICS IMPLYING INTELLIGENT CHOICE

The preceding discussion showed that random chance has not had enough time since the beginning of the universe for life to evolve. This logically leads to the need for an intelligent interferor causing life to be, we Christians believe that this is God.

A number of the physical constants which define the characteristics of the known universe had to come out in such a way which indicates that they are not the product of random forces and events. The physical parameters of our universe appear to have been fine tuned in order for carbon based life to exist.

R. Totten outlines a statistical mathematical proof that the cosmos is intelligently designed to be compatible for life. Here is a brief summary of his excellent article.[3]

Eight separate independent factors are necessary to have been fine tuned in order for life to exist.

1. The "Big Bang"

In order for life to be possible in the universe, the explosive power of the Big Bang needed to be extremely closely matched to the amount of mass and balanced with the force of gravity, so that the expansion-speed is very precise. If the force of the bang was slightly too weak, the expanding matter would have collapsed back in on itself before any planets suitable for life (or stars) had a chance to form. If the bang was slightly too strong, the resultant matter would have been only hydrogen gas that was so diffuse and expanding so fast, that no stars or planets could have formed at all.

2. The Force of Gravity

If the force of gravity were any weaker, stars would not have compacted tight enough together for nuclear fusion to occur and produce the heavier elements upon which life depends (such as carbon, nitrogen and oxygen). Without fusion, there would only be hydrogen and helium in all the universe.

If gravity were any stronger, stars would burn so hot that they would burn up in about a year or so. The gravitational force is so finely tuned, that the average star is capable of burning in a stable fashion for about 80 billion years.

3. The Strong Nuclear Force

binds protons and neutrons together in atomic nuclei. If it were weaker by one part in 10,000 billion billion billion billion, then protons and neutrons would not stick together, and the only element possible in the universe, would be

hydrogen. There would be no stars, no planets, no life in the universe.

If the strong nuclear force were too strong by the same fractional amount, protons and neutrons would tend to stick together so there would only be heavy elements, with no hydrogen at all. If this were the case, then life would not be possible, because hydrogen is a key element in water and in all life-chemistry.

4. The Weak Nuclear Force

controls the rates at which radioactive elements decay. If this force were slightly stronger, matter would decay into the heavy elements in a relatively short time. However, if it were significantly weaker, all matter would almost totally be the lightest elements, especially hydrogen and helium. There would be virtually no oxygen, carbon or nitrogen, which are essential for life.

5. The Electromagnetic Force

If the EMF exerted by electrons was somewhat stronger, electrons would stick to atoms so tightly that atoms could not share electrons with each other. The sharing of electrons between atoms is what makes chemical bonding possible so that atoms can combine into molecules (e.g., water) so that life can exist.

6. The Ratio of the Electromagnetic Force to the Gravitational Force

If the EMF relative to gravity were increased by just one part in 10^{40} , only large stars would form. If it were decreased by just one part in 10^{40} , only small stars would form. But for life to be possible in the universe, both large and small stars must exist. The large stars must exist because only in their thermonuclear furnaces are most of the life-essential elements produced. The small stars like the sun must exist because only small stars burn long enough and stably enough to sustain a planet with life." [4] & 4-303

7. The Ground State Energies of Carbon, Oxygen, Helium & Beryllium.

In the years around 1980, Fred Hoyle discovered that the ground state energies of carbon, oxygen, helium and beryllium had to be within 4% of each other, or else the universe would not have enough carbon or oxygen for life to exist.

8. The Number of Electrons Compared to Protons

Astronomer Hugh Ross explains that "a precise number of electrons must exist. Unless the number of electrons is equivalent to the number of protons to an accuracy of one part in 10^{37} or better, electromagnetic forces in the universe would have so overcome gravitational forces that galaxies, stars, and planets never would have formed. [5]

Calculating Multiple Independent Probabilities

In order to calculate the chance that two independent probabilities could happen together, we multiply the probabilities. For example, the chance of flipping a two-sided coin so that we get "heads," is one chance out of 2. So the chance of flipping two heads in a row, is the product of the two flips, or one out of 2 times 2, or one chance out of 4. R. Totten calculates that the chance of all eight cosmological attributes randomly happening together and thus permitting life to exist, is 1 chance out of 10^{125} . The actual number is many times slimmer than this, since our probability estimates were so conservative.[3]

What Does This Mean?

How remote is 1 chance out of 10^{125} ?

The known cosmos is made up of about 10^{84} sub-atomic particles (such as electrons, protons and neutrons), therefore, 10^{125} is about the number of sub-atomic particles contained in 10^{41} universes the size of our cosmos.[3]

Thus, this chance of the properties of our present cosmos happening at random, would be equivalent to marking one single sub-atomic particle in 10^{41} of our universes, mixing it in thoroughly, and then successfully finding that marked particle by one totally random selection.

In light of this vanishingly small probability, we can quite confidently say that the attributes of the cosmos (described above), which make it possible for life to exist, did not occur together as a random chance combination of events.

If it was not a chance occurrence, then the other rational and logical option is that purposeful intentionality caused the cosmos to originate as it did, and to have the attributes that it does, so that life may exist.

PRELIMINARY CONCLUSIONS

1) The universe had a definite starting time. There has not been enough time from the start until now for even a simple cell to have evolved, much less intelligent life.

2) At least eight of the physical factors which determine the characteristics of our universe appear to have been fine tuned in order to make conditions suitable for life to exist.

3) The probability of either evolution or fine tuning occurring is so small that we have no choice but to look for another cause besides random chance.

OTHER TIDBITS OF INTEREST

DID WE COME FROM OUTER SPACE?

One prominent atheist has proposed that life on earth was seeded by aliens from outer space. This does not explain where the aliens came from or how the "fine tuning" of our universe came to be.

"Francis Crick, one of the scientists who discovered DNA's structure, has even proposed that life is too intricate to have arisen here on planet Earth and so must have been deliberately seeded by some extraterrestrial civilization.' {19} Though regarded as wildly implausible by many, his theory still falls within the bounds of science." [6]

ARE THEY SUPPRESSING EVIDENCE THAT MIGHT LEAD TO INTELLIGENT DESIGN?

One of the discoverers of DNA recommends that scientists not consider the possibility of evolution implying they ignore it.

Francis Crick, one of the scientists who discovered the winding staircase structure of DNA, the molecule that stores genetic information, urged biologists to "constantly keep in mind that what they see was not designed, but rather evolved." {23} [7]

A QUESTION THE MATERIALISTS CAN'T ANSWER

"Materialism assumes that the correct explanations for everything in nature will turn out to be purely material explanations, blind forces. However, to prove this they must show that clearly all features of the universe were caused by such material forces. Why this burden of proof? Because if it's even reasonably possible that a creative intelligence played a role in the origin of certain things in nature, then refusing to consider the possibility amounts to willed blindness." [8]

WHAT'S NEXT?

One of the fundamentals taught in our universities is that the speed of light is constant and the energy contained in a mass M of matter is $E = M C^2$. However recent experiments indicate that the speed of light is a variable. "In an experiment in Princeton, New Jersey, physicists sent a pulse of laser light through cesium vapor so quickly that it left the chamber before it had even finished entering. The pulse traveled 310 times the distance it would have covered if the chamber had contained a vacuum." [9] The implications of this are that light may have traveled faster or slower during the past. So measuring the age of the universe using the speed of light may not be correct. The "New Earth" proponents who claim that the universe is only a few thousand years old are saying that light may have traveled much faster in the past than it does now. I do not know. It looks to me like there is a lot of work yet to be done in theoretical physics to explain our universe, but I am firmly convinced that God is the creator.

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