

# CREATION AND SCIENCE

## Introduction

I believe the Spirit motivated me to prepare this sermon for a number of reasons. One is to witness. As a sceptical and broadly rational person, I found learning about consistency of scientific discoveries with the Bible helped me powerfully in becoming a Christian. Thus, what I hope and pray is that the material will be useful for sceptics who might feel a barrier owing to the belief that science and Christianity are incompatible. As I once erroneously did. Furthermore, I hope that you who are Christians will yourselves find the account interesting and that it will increase your awe in our creator's divine power. Even seasoned Christians can feel doubts at imagined conflicts between science and faith.

Having been led to address this crucial and controversial subject, let me confess upfront that I am not a scientist. In the time available I can only scratch the surface and invite you to investigate the books I used such as Ross "The creator and the cosmos" and Schroeder "The science of God". The authors are active research scientists themselves. Moreover, I am conscious that there are different views among Christians about some of the topics – such as the Big Bang. I hope to talk in a non prescriptive way and not seek to lay down the law in any of these matters. Please take it as such. Even if you disagree, consider that it may help you understand how the world thinks today, when you witness.

## 1 Scientists and Christianity

A major misconception is that scientists are typically non-Christian. Most of the great scientists of the past were strong Christians including Copernicus, Galileo, Newton and Kepler, and even Darwin. Their inspiration is that the Bible itself points to God's creation as something worthy of study. Think of Proverbs 4: 7-8 "Though it cost all you have, get understanding. Esteem her, and she will exalt you; embrace her, and she will honour you." Nature tells us who we are – God's creation, and who he is – our divine maker. Today even Stephen Hawking, an agnostic, admits, "It would be difficult to explain why the universe should have begun in just this way, except as an Act of God who intended to create creatures such as us".

Some of the historical conflicts of science and the Bible arise from a misreading of the latter. For example, nowhere is it said in the Bible that the sun revolves around the earth. But also Christians may need to accept that God uses natural processes for his purposes, as well as direct miracles. As indeed he did with the wind to part the Red Sea, or the Egyptian plague of frogs. Science – and especially popular understandings of science - may at times make unwarranted assertions, as we shall see. And the issue of scientific abuse of nature and of man was covered this morning. I just want to say I agree totally with David's comments.

## 2 A baseline

Let us start by giving a broad overview of what is currently believed and taught in schools and universities. This can then be compared with a view informed by the Bible. The received view suggests that the universe began - by chance - from a concentrated point or singularity around 15 billion years ago. This initially consisted of pure energy in infinitely rapid expansion. As its expansion slowed and the universe cooled, matter separated from energy, in the form of hydrogen and helium – by chance, and "light separated from darkness".

Gravity took hold of much of the matter to form galaxies and stars. Once the matter was sufficiently compacted by gravity in stars, nuclear reactions began and stars shone. In large stars this process gave rise to heavier elements including carbon, the basis for life – by chance. Large stars would explode when their fuel was exhausted as supernovas, scattering

heavy elements across their galaxy. Such material would be captured by new stars forming such as our own sun, giving rise to rocky planets orbiting them. On one planet - by chance - amino acids combined to give rise to life around 3.5 billion years ago. This life - by chance - was able to develop by natural selection and evolution from single celled organisms into the way we are now.

We are going to see there is some truth in this account but much that is misleading. One difficulty is that the account conflicts with some of the latest discoveries. But more important, by study of new discoveries we shall see that the probability of the coherence in the universe, the planet and life we see happening by chance is utterly remote. Rather the sense of a caring divine purpose is overwhelming. We shall even see that science is converging on a number of views in the Bible.

### **3 Genesis and the age of the universe**

Let's first look at the age of the universe and the six days of Genesis. An age of the universe of around 15 billion years is increasingly well established by scientists. Evidence includes as the speed with which galaxies move away from each other (the red shift) and the detection of cosmic background radiation from the Big Bang. Theorists such as Hawking confirm through the space-time theorem of general relativity that the universe, and time itself, had to have a beginning.

Does confirmation of the Big Bang supports Christianity or atheism? The Bible has always maintained that the universe had a beginning. Scientists long believed that the universe was eternal – and only fell wholly in line with the Bible thirty or forty years ago. To me, the implication is that God acted to create the universe before time began, but is not part of it himself, as Hebrews 11:3 states “By faith we understand that the universe was formed at God's command, so that what is seen was not made out of what was visible”. I am not alone. The atheist astronomer Geoffrey Burbidge has complained that his peers were “rushing off to join the First Church of Christ of the Big Bang”.

The six days of creation in Genesis, giving an age of the earth of around 6000 years, seem on the face of it to conflict with the scientific age of the universe of around 15 billion years. It may be that God did indeed create the earth only in BC 4400. In that case he left clues to an older age, such as fossils and cosmic background radiation, for purposes we do not understand. But there are other possibilities. One is that God's time is simply not like our time, as stated in Psalm 90:4 “For a thousand years in your sight are like a day that has just gone by, or like a watch in the night.”

Schroeder goes deeper. He points to the fact that the first six days of Genesis are written differently from the rest of the Bible, from the point of view of an external observer. There may thus be grounds to assess them differently. Scientists know by general relativity that time passes at different speeds depending on the position of the observer. This is due to varying gravity and velocity. On a massive planet, or moving close to the speed of light, time would pass more slowly than here on earth. Using this insight, one could measure “universal cosmic time”. This is as God himself would measure it from the beginning of the universe, instead of on earth. The wavelength of cosmic background radiation was millions of times shorter, and its energy higher, at the Big Bang than it is now. The wavelength – and space itself - as been stretched as the universe expands and time slowed down. This is hinted at in Isaiah 44: 24 “I am the Lord, who has made all things, who alone stretched out the heavens, who spread out the earth by myself,” Using this alternative “clock”, it would indeed be the case that the first day would be equivalent to 7 billion years on earth as we perceive it now. Time would slow

exponentially to be consistent after 6 days with our current earth time, 15 billion years having elapsed. The table shows this.

Let me note something interesting in Genesis. Repeatedly it states “there was evening and there was morning”. The Hebrew word for evening has as its root “chaos” and morning, “order”. Thus God was bringing order in each case. This is an action entirely contrary to the second law of thermodynamics, which states that chaos (entropy) always increases. Romans 8:21 indeed refers to the “hope that the creation itself will be liberated from its bondage to decay”.

Moving on, I think there are at least three areas where we can look at God’s wonderful provision even through the eyes of hard science. All three show the idea that our current situation arose by chance is laughable. The evidence of purposeful Creation is overwhelming.

#### **4 The characteristics of the universe**

The first is the way the universe was formed, from galaxies to atoms. On the side of galaxies, as said in Psalm 19:1 “The heavens declare the glory of God; the skies proclaim the work of his hands.” On the side of atoms, as stated in Colossians 1:16-17 “all things were created by him and for him. He is before all things, and in him all things hold together”. The evidence suggests that the Big Bang was anything but an uncontrolled explosion that its popular title suggests. It was rather a finely tuned event whose control and care exceeds human capability immeasurably. This is apparent when we look at the way the universe is calibrated to be a cradle for life.

For life, we need the right atoms of various sizes. – 40 elements at least it to exist. The existence of such a variety of elements needs incredibly fine tuning of the constants of physics. If the strong and weak nuclear forces, which hold atoms together, were slightly different, the universe would consist solely of hydrogen or solely heavy elements, while for life we need both. Without finely tuned gravity, the nuclear fusion in stars which generates heavier elements could not occur, and nor could a planet orbit a star stably as the earth does. The ratio of electromagnetic force to gravity has to be calibrated to an accuracy of 10 to the power 40 for large and small stars to coexist. The accuracy of the tuning is equivalent to finding a single coin, blindfolded, in a pile covering the United States and reaching to the moon. The speed of expansion of the universe is just right for galaxies, stars and planets – slower and we would be a super dense lump, faster and the universe would be just dust. I will spare you quantum tunnelling, but that too is finely designed – and vital for our blood to carry oxygen, among other things.

Fred Hoyle, an atheist astronomer, states that “A superintellect has monkeyed around with physics as well as chemistry and biology”. Roger Penrose, Professor of Maths at Oxford, suggested that the overall likelihood of the initial conditions producing the universe we have by chance is 10 to the power 10 to the power 123. Just to speak out such a number needs more time than the universe has existed.

Atheist scientists are seeking ways out of the obvious conclusion of God’s design. They hypothesise an infinite number of universes – but a purposeful creator is still needed, especially if they are all supposed to be different. The idea of an eternally and stably oscillating cycling universe as in Hindu mythology has been shown to be physically impossible according to the second law of thermodynamics. The conclusion, I suggest, should rather be that of Psalm 33:6 “By the word of the Lord were the heavens made, their starry host by the breath of his mouth.”

Still, just saying that God created the universe may leave open a “Deist” conclusion, that God set in motion the cosmos then left it alone. His individual care for his creation comes to the fore when we look at our planet and the basis of life.

## **5 Our “just right” planet**

Consider Psalm 24:1 “The earth is the Lord’s, and everything in it, the world, and all who live in it; for he founded it upon the seas and established it upon the waters.” Then consider the following so-called random chances:

Unlike most others, our galaxy is isolated, avoiding intergalactic collisions that could destroy life. Only 5 % of galaxies are spiral, thus allowing protection from radiation for selected stars. The supernovas occurred in great numbers early in the life of our galaxy, creating heavy elements for life but are rare now, so dangerous radiation is low. There are sufficient binary white dwarf stars to create fluorine, which is also vital for life. The sun is in a unique position between the spiral arms, avoiding harmful radiation. The position of our solar system in the galaxy also helps us to understand the vastness of God’s creation. As we are permanently outside the ‘spokes’ of the galaxy, we have a majestic grandstand view of the universe that would be impossible from most other points.

Our stable burning star is essential for life. The planet’s distance from the sun is just right for life – water can exist in solid, liquid and gaseous form. Due to the distance, atmosphere and speed of rotation of the planet our climate avoids runaway heat and cold. Gravity and surface temperature are such that harmful gases such as methane and ammonia (atomic weights 16 and 17) are expelled while the vital water (weight 18) is retained. Our massive planetary companion Jupiter’s gravity protects us from comets that could destroy life. The earth’s molten core, while it generates dangers such as earthquakes and volcanoes, also provides a strong magnetic field, deflecting harmful rays from the sun.

In Ross’s book there are listed 128 unique characteristics of this planet (up from 41 in his previous 1995 edition due to new discoveries) that make it suitable for life. To get them all would need a probability of one in 10 to the power 144. Without divine intervention, there can be no other planets like earth, in other words.

## **6 The miracle of life**

The third topic is the way life is constructed. Atheist scientists clung to a belief of an eternal and infinite universe so that there could be a chance for spontaneous generation of life. That is why they hate the Big Bang. Even given infinite time, the odds remained very low that chance combinations of molecules could give rise to DNA. Ilya Prigogine, recipient of a Nobel Prize for chemistry, stated that “the idea of a spontaneous generation of life is improbable, even on a scale of billions of years”. A colourful expression for this – again from the atheist Fred Hoyle - is that we have to conceive that a whirlwind hitting a junkyard would spontaneously build a 747. But in fact, billions of years were not available. Life appears to have emerged almost at once after the earth cooled from an inhospitable molten crust and as water formed, in a mere 40 million years. This is as set out in Day 3 of Genesis where the earth is said to have brought forth life, after the sea was created. The chance that this was spontaneous in such a short time rather than the work of God is close to zero.

Let me now talk briefly about evolution and natural selection. First, the evidence for the theory as popularly taught is weak, according to fossil evidence. At most, the evidence is only available for microevolution – such as different breeds of dogs. There seem to be sudden jumps in development of species in time periods too small for natural selection to operate.

There are no “missing links”, just species that suddenly emerged and lived unchanged for millions of years. This suggests divine intervention.

Second, fossil evidence now shows that the earth was populated by single celled animals and plants for 3 billion years, and then suddenly highly complex animals (with eyes, jointed limbs and stomachs) emerged in a very short space of time about 550 million years ago. This was the “Cambrian explosion”. It is as in Genesis 1:20 “And God said, "Let the water teem with living creatures”. Since that period, no new phyla (groups of species) have emerged. I believe this is evidence of direct creation. Otherwise we have to believe that genes for complex organs developed in the DNA of the preceding single celled creatures – by chance – although they were of no use to them.

In this context, why is the eye of the octopus identical to that of man, although there is no conceivable evolutionary link? Could identical and immensely complex structures emerge by chance? No. Even the journal *Science* has stated “the concept that the eyes of invertebrates evolved completely independently of the vertebrate eye has to be re-examined”. The concept of divine intervention is strongly supported.

What about creation of man? Genesis says God “created” something from nothing at only three points – the universe and animal life (as we discussed already) and humans. The implication is that elsewhere he “made” his creation from raw materials. How then did he create man? We know that it was a marvellous process, as shown by Psalm 139:14 “I praise you because I am fearfully and wonderfully made; your works are wonderful, I know that full well.” One possibility is of course that we were created from nothing. But another possibility is that God indeed “made” man using existing genetic material from animals. Man would still be unique in the sense of Genesis if we understand that God’s creation was to breathe the human spirit into Adam – the *neshama* in Hebrew – as is stated in Genesis 2:7.

I would stress that man’s emergence is utterly improbable if we follow evolution and natural selection. Genetic differences between apes and men are such as to require 40 million generations of random mutations – whereas fossils suggest man actually emerged only a few million years ago!

## **7 Dimensions beyond space and time**

I want to talk finally about dimensions. We have seen that before the universe began there was no time. (This means that the question “who made God?” has no meaning, as cause and effect only operate within time.) God’s independence from time is consistently taught by the Bible, as in 2 Timothy 1:9 “This grace was given us in Christ Jesus before the beginning of time” and John 17:24 “You loved me before the creation of the world”.

So-called string theory in cosmology suggests that the universe at its beginning must have had ten dimensions. Only four expanded and are apparent to us today – width, height, depth and time. But God created the extra dimensions – and could make others at will. He can use them to transcend space and time, thus making sense of Biblical concepts that are otherwise puzzling and to some, a stumbling block. These include the Trinity, predestination along with free will, God’s nearness to us, his ubiquity and invisibility, Jesus’ appearance to his disciples in the locked room, and Jesus promise never to leave us. Extra dimensions also give a realm in which “powers and principalities” operate, suggesting we should take them very seriously.

I personally found the concept of God transcending our dimensions helpful. I had a powerful feeling of his presence next to my bedside, waiting patiently when I turned to him and became

a Christian. I know he is always with me and waiting for all mankind. If only they would turn to him!

### **Conclusion**

We have seen that scientists are increasingly astonished at the revealed order of creation. The provision for us specifically on earth and not just for the universe in general underlines the personal care God has for us. New discoveries indeed suggest that science is converging on the Bible's unchanging worldview. As his colleagues measured the cosmos, the agnostic Robert Jastrow stated "For the scientist who has lived by his faith in the power of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries".

God's infinite wisdom is increasingly apparent in the flood of discoveries – consonant with the Bible – that we are witnessing. See Jeremiah 10:12 "But God made the earth by his power; he founded the world by his wisdom and stretched out the heavens by his understanding." Ross suggest that the reason why we are subjected to such a deluge of new evidence of God's wisdom, power and care of his Creation is that he provides evidence to generations in proportion to our resistance to truth. For our sceptical, self satisfied and materialist generation, he has granted a multiple portion. Let us go further with Psalm 19 "The heavens declare the glory of God; the skies proclaim the work of his hands. Day after day they pour forth speech; night after night they display knowledge. There is no speech or language where their voice is not heard. Their voice goes out into all the earth, their words to the ends of the world."

The puzzle is how these words can still be disregarded by so many people. For most of us it's partly information – so I encourage you to read and learn! Don't stick with what you learnt in school! This is why I commend books such as Ross's and Schroeder's to you all. Don't be like many scientists, for whom pride and "unwillingness for old dogs to learn new tricks" are a key. Remember 1 Corinthians 1:20 "Where is the wise man? Where is the scholar? Where is the philosopher of this age? Has not God made foolish the wisdom of the world?" The atheist scientists are like gamblers, convincing themselves a coin is fair although it has shown heads 10,000 times.

To conclude, we have seen that nature and science tell all mankind that they have a benevolent creator. But nature and science alone are not enough. The Bible tells us nature and life have a purpose which science does not. The Bible clarifies how God bridged the gulf between us and him in Jesus Christ for a personal and everlasting relationship, if we are ready in submission and humility. Nevertheless, I think that contemplating the awesomeness of what God created through the eyes of science may help us reach this position of submission and humility.