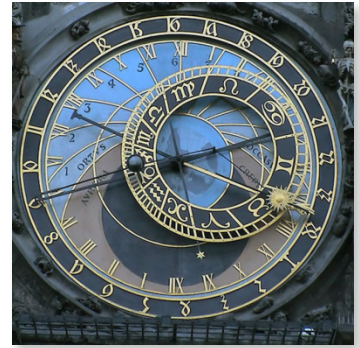


3 Genesis and the Origins of the Universe¹

Psalm 8

Well, we missed an entire week, and it's easy to forget all the fun things we've learned, so let's recap things.

Here is the Story of Science and Christianity thus far...



1. The story of Christianity and Science being in a perennial conflict is a myth. Like everything else, the real story is more complex.
2. It is the Christian understanding of the know-ability of the world, the intelligibility of the world, its relationship to our intelligence which, in turn, is given to us by God who is Intelligent, that creates the foundations for modern science. to develop and flourish
3. It was the key ideas surrounding the Reformation under Luther and Calvin which provided the foundation for the explosion of science we find in the Scientific Revolution (though many of the key figures were Catholic)
4. A radical re-interpretation of the universe and our place in the universe took place through the influence of Copernicus, Kepler, and Galileo which initially *seemed* to contradict Scripture. And yet, the new view of the universe could be accepted as true without compromising the truth of the Word of God.
5. This re-interpretation is rooted in the approach called **accommodation**, that is recognizing that revelation takes place in culturally and anthropologically conditioned forms with a specific audience in mind and therefore Scripture needs to be interpreted accordingly.
6. The Newtonian view of the world changed the controlling metaphor for God and His world to that of a Clockmaker/clock, Grand Designer/mechanism.
7. The Scientific Revolution of the 17th-18th-Centuries affected not just how we viewed the heavens and the earth, it also began to shape how we understood our own humanity, and our relationship with the physical world around us.
8. The ideas of Charles Darwin, Charles Lyell, and others challenged many of the traditional ways of seeing God and His role within Creation.
9. Historically, there have been (at least) four main responses to the challenges that Darwin's ideas bring about: Young-Earth Creationism, Old-Earth Creationism, Intelligent Design, Theistic Evolution.

¹ See Deborah & Loren Haarsma, *Origins: Christian Perspectives on Creation, Evolution, and Intelligent Design* (Grand Rapids: Faith Alive Publishing, 2011), Chapters 5 & 6.

10. Ideas have consequences.

With that in mind, let's play a game:

Let's Play: *Science, Not Science, or Both*

1. *How far is Jupiter from the earth?*
2. *May I eat that fruit?*
3. *Should we try to clone humans?*
4. *Is a human infant worth more than a fully-grown chimpanzee?*
5. *Why am I here?*
6. *Why is the sky blue?*
7. *Why do you love me?*
8. *How do you feel?*
9. *Why can we explain the universe mathematically?*
10. *What makes children bully each other?*
11. *Why is the kettle boiling?*

How does the Book of Genesis relate to our understanding of the Origins of the Universe?

Biblical Teaching of Origins in the New Testament

What does the New Testament say about how things all began?

Discuss: Look at John 1:1-3; Colossians 1:15-20; Hebrews 1:1-4; and Hebrews 11:3. What can we learn about origins from these passages?

1. Jesus Christ, in the mystery of the Trinity, plays a key role in creation and the sustaining of all things.
2. God created everything.
3. God didn't have to create, but He does..
4. God sustains all things.

Biblical Teaching of Origins in the Old Testament

Here are some key passages to consider: Psalm 104; Genesis 2:4-25; Genesis 1:1-2:3.

Order of Creation in Genesis 1 and 2

Genesis 1:1-2:3

Heavens, earth, waters (1-2)
Light (3)
Sky (6-8)
Dry Land (9-10)
Plants (11-12)
Sun, moon, stars (14-17)
Sea Creatures and birds (20-21)
Land animals (24-25)
Human beings (26-27)

Genesis 2:4-25

Dry land, rivers (5-6)
Man (7)
Plants (8-9)
Land animals and birds (19)
Woman (20-22)

Now, over the centuries, Christians have wrestled with how the two Genesis chapters fit together. Some argue that Genesis 1 deals with global creation, whereas Genesis 2 refers to a local event. Or, some argue that Genesis 2 is an extension of Day 6 of Creation. OR some argue that these chapters are non-sequential, but rather are more concerned with conveying theological truths.

The point is that right from the get-go, there is a big challenge if you want to read Genesis 1-2 as a straight historical account about how things came to be.

So, how ought we read the Genesis account?

Concordist Interpretations of Genesis:

Young Earth Interpretation

This interpretation argues that roughly 6000 years ago, creation occurred in SIX 24-hour days.

Bishop James Ussher (1581-1656)

- In the 17th century, calculated the age of the earth as beginning on October 23rd 4004 BC. He also calculated the date of the Fall as Oct. 28th.

Gap Interpretation

This interpretation became popular back in the 1840s. This view focuses on two verses in Genesis in particular. In Genesis 1, we read, "In the beginning, God created the heavens and the earth (v. 1) and "Now the earth was formless and empty...(v.2). Those who follow the Gap Interpretation claim that Genesis 1:1 offers a complete statement on God's creative act. Millions or even billions of years ago, God made the entire universe.

The earth then became "formless and empty" (Gen. 1:2) because of a more recent catastrophe that destroyed life on the planet. And so, the remaining verses in Genesis 1 are the *recreation of creation* just a few thousand years ago.

Day-Age Interpretation

This view was introduced around 1700 AD and it argues that the days of Genesis 1 refer to long period of time. In fact, each day can be stretched out over billions of years, and provides the time needed for long astronomical, geological, and biological processes to occur. In this Concordist approach, the seventh day of creation doesn't end in the creation account in Genesis, and this indicates that we are currently still living in the midst of the "seventh day".

Now, this interpretation does solve the problem of the time required for the processes to take place, where it falls short is **the order of creation described in each of the really long days.**

Appearance of Age Interpretation

This interpretation argues that Creation occurred about 6000 years ago during 6-24-hour days, BUT it was created in such a way so as to *look* as though it was billions of years old. This may solve all the astronomical, geological, and biological problems, but it certainly raises a significant *theological* issue.

Non-concordist Interpretations

Historical Context of Gen. 1

1. Who wrote it?

We don't know. Literary genius and incredibly prophetic voice. Ancient author. Possibly Moses?

2. Who received it?

Ah, this is key, for we recall that the Bible is not written to us, but it is written for us.

The recipients of Genesis 1 were the People of God in the Wilderness. How would they have been feeling?

- Fear
- Whose world is this?

What questions would they be wrestling with?

- How shall we live?: Origins are the basis on which to build their lives - ethical worldview
- How are we to be different from those around us?: Acts to polemicize other ANE Worldviews
- Had to make sense to them. God did not hide nuggets of truths in the texts that we were meant to discover.

3. Why was it written?

- To encourage God's people and to teach them *theological* truths
- A polemic against other Creation stories. Let's look at one in particular:

Genesis 1

There is one God

God created an ordered world by the authority of His Word

No part of the physical world is divine

God declared all parts of creation Good

God created men and women in His image as the culmination of the Story and declared them very good. God gave them responsibility to be stewards of creation

Enuma Elish (Babylonian creation story)

There is a pantheon of gods

The world was formed as the result of battles among the gods

The sun and moon and other physical objects are gods that control fate of humans

Some physical structures are related to good gods, others to bad gods

Humans are made as an afterthought at the end of the story from the flesh of a defeated god, to be slaves to the gods

So, could it be that Genesis is structured poetically in order to convey some deep theological truths about who God is? If you look closely at Genesis, you'll see that it is intentionally and beautifully structured.

Structure in Genesis 1

Forming what was formless		Filling what was empty
Day 1: light	→	Day 4: lights
Day 2: waters & sky	→	Day 5: fish & birds
Day 3: ground & vegetation	→	Day 6: animals & people

Three Theological Take Aways from Genesis 1:

i. The Earth is sacred space.

ii. What is the meaning of 'resting'?

God's resting means His rule. Taking charge of His temple and running things.

Give you rest. Moving from slaves to rulers.

Before you rule, you must establish your Kingdom

From slaves to rulers

"What a piece of work is a man, how noble in reason, how infinite in faculties, in form and moving how express and admirable, in action how like an angel, in apprehension how like a god."

William Shakespeare

iii. What is the role of humans in God's Cosmic Temple?

What does this make humans?

All temples need priests and that's what humans are. We do the work of God in His temple. This is what it means to be made in the image of God. Dignity and value to do His Kingdom work. We have a vocation - to mimic God. We are to image God in all His doing. We are to be co-regents over God's good creation.

God, in fact, gives human beings two key things: ***an identity and a mission.***

Identity: *Who am I?*

Mission: *What am I supposed to do?*

- All human beings rule - we are all **kings** (Genesis 1:25)
- We are all **priests** - priests mediate ("to work it and take care of it..." Genesis 2:15)
- We are called to service and keep the Garden - this is all religious language - reverence the earth, to keep the earth, to conserve it. Not a lording over creation; it is a sacrificial looking-after of creation.
- Involves the maintenance of three sets of relationships:
 - With God (unbroken communion)
 - With other humans (naked and unashamed)
 - With the rest of creation

When these relationships are right, then all of creation will experience **shalom** - fulness of life, well-being and flourishing

So, our human vocation is to be kings and priests, to be bringing *shalom* to our lives and to this world.

Discuss: Look at the differing Interpretations of Genesis 1-2 (Concordist or non-Concordist). Which interpretations resonate with you? Which don't? Why? What questions are raised?

THE FINELY TUNED UNIVERSE²

"[We are] the product of a mindless and purposeless natural process which did not have us in mind." George Gaylord Simpson, biologist

"As we look out into the universe and identify the many accidents of physics and astronomy that have worked together to our benefit, it almost seems as if the universe must in some sense have known we were coming." Freeman Dyson, physicist

"I cannot believe that our existence in this universe is a mere quirk of fate, an accident of history, an incidental blip in the great cosmic drama. Our involvement is too intimate... We are truly meant to be here." Paul Davies, physicist

What can we say about the universe that we find ourselves in?

1. The Universe is Intelligible

"The most incomprehensible thing about the universe is that it is comprehensible."
Albert Einstein

2. The Universe is not chaotic

"You find it strange that I consider the comprehensibility of the world (to the extent that we are authorized to speak of such a comprehensibility) as a miracle or as an eternal mystery. Well, a priori, one should expect a chaotic world, which cannot be grasped by the mind in any way...the kind of order created by Newton's theory of gravitation, for example, is wholly different. Even if man proposes the axioms of the theory, the success of such a project presupposes a high degree of ordering of the objective world, and this could not be expected a priori. That is the 'miracle' which is being constantly reinforced as our knowledge expands."
Albert Einstein

Not only is the universe intelligible, but there is a remarkable mathematic characteristic to this reality. But why should the universe be mathematically intelligible? Why should the relationship between the laws of physics and mathematics be so deep?

"Science does not explain the mathematical intelligibility of the physical world, for it is part of science's founding faith that this is so."
John Polkinghorne

² Key information for this section is drawn from John Lennox (again!), *God's Undertaker: Has Science Buried God?* (Oxford: Lion Hudson Publishing, 2007), 57-75.

3. The Universe is there

4. The Universe is Vast

5. The Universe has a beginning

“The more we get to know about our universe, the more the hypothesis that there is a Creator God, who designed the universe for a purpose, gains in credibility as the best explanation of why we are here.” John Lennox.

6. The Universe is finely-tuned

We live in a universe whose fundamental forces and laws are incredibly, intricately, and delicately fine-tuned to sustain life. Make slight changes to any of these laws or forces and life would cease to exist.³

- **Carbon is an essential element for life.** The strong nuclear force holds the particles that make carbon together. If the strong nuclear force were any weaker, carbon would never form. If it were any stronger, all the carbon would turn into oxygen. As it is, this balance is tuned exactly so that both elements are present
- **The number of dimensions in our universe is right for life.** You can only have planets with stable orbits if you have three dimensions in space. Any more than three and things would become very unstable, and we could not survive
- **The amount of matter and energy present at the time of the Big Bang had to be very finely balanced.** If this balance had not been exactly right, the universe would either have collapsed as soon as it began because of the strength of gravity or it would have blown apart too quickly. The amount of matter and energy present had to be correct to an accuracy of 1 in 10 to the 60 (one with sixty zeros after it)
- **In the universe, disorder always increases.** The universe must have been much more ordered when it began in order for it to be as organized as it is now. The chances that our universe would have this amount of order randomly is one in ten to the power of 10 to the 123. This number is so large that if you were to write a zero on every atom in the visible universe, you would run out of atoms before you ran out of zeros.
- The cosmological constant, often called “dark energy,” acts as kind of anti-gravity force, pulling the universe apart. It has to have a very small value, very close to what is observed. If it were much greater than it is, the universe would fly apart so rapidly that no stars or planets could form

³ The following info in this section is quoted from Ruth Banciewicz, ed., *Test of Faith: Science and Christianity Unpacked, Leader’s Guide* (Eugene, OR: Wipf & Stock, 2010), 103.

- **Atoms are made up of protons and electrons.** The mass of a proton must be almost exactly 1840 times the mass of an electron in order for the building blocks of life, such as DNA, to exist and be stable
- Stephen Hawking's flatness problem: If there was a " ... reduction of the rate of expansion by one part in 10^{12} at the time when the temperature of the Universe was 1010 K would have resulted in the Universe's starting to re-collapse when its radius was only $1/3000$ of the present value and the temperature was still 10,000 K." *M. S. Longair, "The Anisotropy of the Universe at Large Times,"*
- **The Strong Nuclear Force:** Calculations indicate that if the strong nuclear force, the force that binds protons and neutrons together in an atom, had been stronger or weaker by as little as 5%, life would be impossible. (*Leslie, 1989, pp. 4, 35; Barrow and Tipler, p. 322.*)
- The discovery of anti-matter being necessary for having very fast objects and very small objects interact, which is necessary for understanding atomic and subatomic particles
- **Calculations show that if gravity had been stronger or weaker by 1 part in 10^{40} , then life-sustaining stars like the sun could not exist.** Stronger and stars would all be short lived super giants. Weaker and stars would all be small long lived stars. This would make life as we know it impossible because heavy elements are created in super giants and small stars (like the sun) burn long enough for life to develop. *Davies, 1984, p. 242.*
- The resonance energy of carbon being necessary for explaining how an abundance of helium atoms can come together and form carbon, which is necessary for life as we know it.
- **If Jupiter and to a lesser extent, the other outer planets hadn't existed, it's quite possible the Earth would be struck more often by potentially world ending impacts.** *Deborah Byrd, 2015*
- **The Earth sits in a narrow, habitable region around the sun.** A little closer to the sun and no water freezes, a little farther away and too much water freezes. *Harris and Silverman, Are we not the only Earth out there?*
- **The existence of a sizeable, solitary moon stabilized weather patterns and helped disperse heat around the globe.** Without it, there would likely be a much smaller band of habitable area on the globe. *Bruce Dorminey, Without the Moon, would there be Life on Earth? 2009*

"It seems as though someone has fine tuned nature's numbers to make the universe...The impression of design is overwhelming." Paul Davies

7. The Universe is Finely Tuned for Human Life (Anthropic Principle)

The "Anthropic Principle" means that the universe has to be very precisely structured to support life. At very least, this principle points to the reality that scientific theories of the cosmos must take its observers into consideration.

"The best data we have (concerning the Big Bang) are exactly what I would have predicted, had I nothing to go on but the five books of Moses, the Psalms and the Bible as a whole."

Arno Penzias

John Lennox points out:

- The distance from the earth to the sun must just be right – too near and water would evaporate, too far and the earth would be too cold for life (unless you were from Winnipeg and therefore used to bitterly cold weather). A change of only 2 per cent or so and all life would cease
- Surface gravity and temperature are critical to within a few per cent for the earth to have a life-sustaining atmosphere – retaining the right mix of gases necessary for life
- Planets must rotate at the right speed
- According to Hugh Ross, the chances of one such planet existing in the universe is about 1 in 10 to the power of 30
- Examples abound...

Discuss:

What does the idea of a Finely Tuned Universe do to your idea of the nature of God? Does it reinforce, shake or do nothing to it?

Does just focusing on a Finely Tuned Universe offer proof of God? If so, what would this God be like?

But wait!!!! Counter arguments to the Finely Tuned Universe

1. If the universe didn't exist, we wouldn't be around to observe it, so obviously this is the way it is, regardless of odds

The argument is essentially, "Well, duh!" If nothing exists, we wouldn't exist and therefore would have nothing to say about things. As it turns out, the universe (and the potential for life) exists, so naturally we are here to talk about it. Let's just get on with things - this is just the way things are.

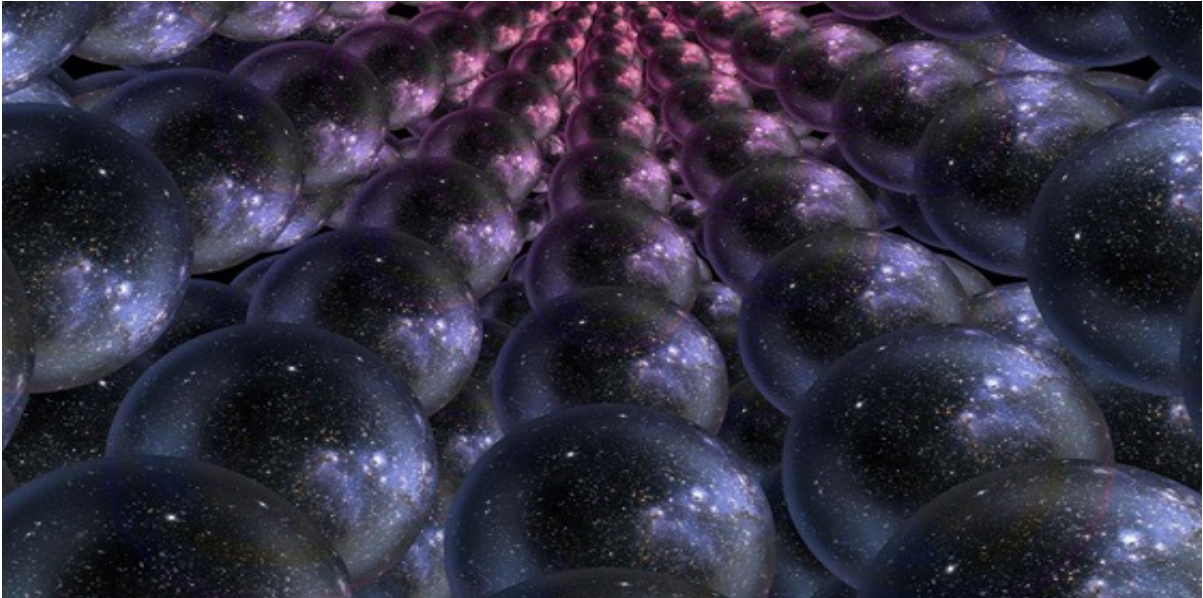
William Lane Craig states that this is a fundamentally unsatisfying answer:

"Suppose you are dragged before a firing squad consisting of 100 marksmen. You hear the command to fire and the crashing roar of the rifles. You then realize you are still alive, and that not a single bullet found its mark. How are you to react to this rather unlikely event?"

If we applied a sort of [anthropic principle] to the firing squad scenario, we could state the following: 'Of course you do not observe that you are dead, because if you were dead, you would not be able to observe that fact!' However, this does not stop you from being amazed and surprised by the fact that you did survive against overwhelming odds. Moreover, you would try to deduce the reason for this unlikely event, which was too improbable to happen by chance. Surely, the best explanation is that there was some plan among the marksmen to miss you on purpose.

In other words, you are probably alive for a very definite reason, not because of some random, unlikely, freak accident. So we should conclude the same with the cosmos. It is natural for us to ask why we escaped the firing squad. Because it is so unlikely that this amazing universe with its precariously balanced constants could have come about by sheer accident, it is likely that there was some purpose in mind, before or during its creation. And the mind in question belongs to God." Cited in Barrow and Tipler on the Anthropic Principle vs. Divine Design

2. The multiverse theory



This is a satisfying materialist theory to solve the Finely Tuned Universe problem because now that you have an infinite number of universes to pick from, we can simply say that we won the lottery pick and happen to reside in one of the lucky few universes to be friendly to existence of life.

The counter to this argument from a theistic perspective though, is that it doesn't preclude a creator God. The belief in a God who created an infinite number of universes in a multiverse is no more difficult than a belief in a God who created an almost infinite number of galaxies and stars in our universe.

Concluding Thoughts

Whether one postulates a Creator (theism) or no Creator (materialism), the differences in arguments have nothing to do with Science. Rather, they are arguments from competing worldviews: worldviews that are fundamentally incompatible. Both worldviews take their first steps into the world based on faith and view the facts accumulated about the world based on those early foundational steps.

Next Week: Evolution!!

Remember: May 21

MAiD in Canada: Euthanasia - with Dr. Kevin Sclater