

Why our worldview is different!.....Part 2

The worldview of indigenous cultures always reflects their deep appreciation of the interconnectedness of life. Such primal cultures are sometimes derogatorily called 'primitive', but they hold a sense of how things were, that we have lost.

Western (Christian) culture, gradually separated the 'holy' from the 'profane'. This became extreme under the influence of philosopher, Renee Descartes. This is an unhealthy emphasis we have consistently tried to correct in our PFGM spirituality. Whereas Church 'going' was highlighted as the essential responsibility of a faithful Catholic, we know that church living is what we are called to focus on. We seek to meld them, but we must remember that we don't 'go to' church; we are church! Our worship comes out of our belonging. Some people have come to see that cooking a casserole for someone in need is truly putting faith into practice, and that all the prayers and external 'actions', have to be backed up by such practical action, as the letter to St James highlights.

A new worldview is inviting us to ask such new questions as, is hydrogen spiritual? Is water spiritual? We might at first balk at such a question, but the truth is, that we came out of hydrogen, and water becomes us! Water allows us to think, move, speak, act and pray. Without water we are nothing. Such new thinking invites us to see God's presence all around us, sustaining us. Holiness can so much more, be found in the ordinary.

When an old worldview, or way of seeing things, is threatened, advance is sometimes stopped. Galileo discovered that the sun, not the earth is the centre of the universe. No one wanted to believe him! Not only the church authorities disbelieved, so did the scientists. Last century we discovered more than Galileo discovered. We discovered that the sun is not the centre of the universe. Our sun is one of hundreds of billions of suns in one (Milky Way) galaxy. There are perhaps 200 billion galaxies! Some scientists say that the discovery of other galaxies was the most significant discovery of the 20th century.

It makes an incredible difference to know what we now know about the universe. Galileo's discovery did not fit with the Bible story. Recent scientific discoveries do not fit with the Bible either, and this affects our worldview. So we need to understand the Bible much better than most people do. The first thing to say is that it is not a science book. It contains many forms of literature, including myth. Of course the popular understanding of myth today suggests 'make believe', but a myth is meaning making story that explains belief. Every culture carries such myths and to understand the culture, we need to know the myths.

The Australian aboriginals have 'the Dreaming and the Rainbow Serpent',. One of the Maori stories of creation has great similarities with Genesis. *"In the beginning there was no sky, no sea, no earth and no Gods. There was only darkness, only Te Kore, the Nothingness. The very beginning was made from nothing. From this nothingness, the primal parents of the Maori came, Papatuanuku, the Earth mother, and Ranginui, the Sky father"*.

Such stories helped people understand who they were, where they came from and why they were here. Santa Claus is popular myth in our culture. You can claim that such a person does not exist, but he does exist for young children, and parents have no difficulty in promoting that belief for their children.

We can consider the Bible a little more, but first it is good first to reflect a little on the common reaction to discoveries. A common response to those who announce discoveries is scorn or rejection. Even the term 'Big Bang' was coined by Fred Hoyle as term of derision. Charles Darwin knew that his theory would cause incredible reactions and he took many years to publish it. His book was popular and new editions sold out immediately, but most people, did not want to believe that we had a common ancestor!

The Wright brothers' father was a Bishop. When asked what he thought about the idea that one day humans might be able to fly, Bishop Wright said "Only angels fly"! Abraham Ortelius (1527-1598) suggested that when you look at a map, Europe, Africa and the Americas must have been joined at one time and that perhaps they had separated as a result of earthquakes or other eruptions. It could not be proven and seemed to most people to be impossible.

In 1912 Alfred Wegener proposed that all the countries had at one time belonged to a super continent called Pangaea (meaning the entire earth). Wegener suggested that they must have drifted apart (Continental drift). Notable scientists rejected his theory. In 1968 Jack Oliver (building on the work of Warren Carey in 1953) was able to give evidence that the continents sit on 7 large plates and 20 or so smaller (tectonic) plates). How could someone have imagined this possibility before maps were drawn? Some primitive peoples did and expressed it in their myth!

Science, theology & scripture are telling us that the western story is evolving. We know our sun is half way through its nine billion year life. Feelings we identified in our first session can stop us from accepting or embracing change, because "It's too hard". We could choose to not believe in the things new discoveries tell us, but who would we be fooling apart from ourselves? Why would we do that?

Our main trouble is not so different to those who lived at the time of Galileo. Much of what we are learning does not 'fit' with the Bible. It is good to reflect on images of God that were carried in the Scripture story you learned? How was it passed on to you and interpreted by you? In the Scripture story how was the earth formed? How were humans made? What implications are in the story regarding our attitude to the earth, other peoples, and men as distinct from women?

Israel and Judah were separate kingdoms from 930BC. Israel (north) conquered by Assyria in 720. Judah (south) was conquered by Babylon in 586. During this time of separation different names for God were used and we can detect this in the book of Genesis. An editor has brought the stories together around 450BCE. We can read one story of creation in Chapter 2 of Genesis which scholars suggest was written around 900 BCE by the Jahwist tradition.

This tradition refers to God as Yahweh. The creation story in Chapter 1 of Genesis was written around three hundred years later (around 600BCE) by the Priestly tradition. This tradition refers to God as Elohim. The accounts give us a different order of creation, such as plants being created before humans in one tradition and after humans in the other. The stories do not attempt to tell facts. They carry a belief and a tradition.

Genesis 1 says that on the sixth day, God made humans “in our likeness”. What does this use of the plural suggest? Who was God speaking to? In Genesis 2, God forms man (before plants) from dust, and breathes life into him. In Hebrew Adamah means ‘from the ground’. This man lives with creation and names all the creatures, and then God creates woman from the man’s rib.

The worldview which lies behind the Genesis creation story is that of the common cosmology of the ancient Near East in which Earth was a flat disc with infinite water both above and below. The dome of the sky was thought to be a solid metal bowl holding back the water. The stars were embedded in the lower surface of the dome. Gates allowed the Sun and Moon to go back and forth. Beneath the Earth was a fresh-water sea, the source of all fresh-water rivers and wells.

Today we have a different worldview. Our sun is an ordinary star located in a seemingly insignificant place on the Orion arm of the ‘Milky Way’ galaxy, two-thirds of the way out. We are ‘hanging off’ rather than ‘standing on, the planet. Earth is orbiting it’s own axis at about 1,700 kilometres per hour. It circles around the sun at about 10,000 kilometres per hour and the whole solar system circles around the centre of the Milky Way at 800,000 kilometres per hour.

Neptune is 4,498,252,900 kilometres from the sun and this highlights how old classroom models of our solar system do not do justice to the incredible distances between the planets and the sun, nor to their size. A million ‘earths’ could fit inside the sun! While this size and the distances are huge, we need to appreciate that we live within one system in one galaxy and that there are two billion galaxies! Not only that, but these galaxies are moving away from each other at an increasing speed!



William Anders was one of the astronauts on Apollo 8 and in December 1968 he took a photograph that ‘changed the world’. It became known as ‘Earthrise’. It was the first time, we on earth saw ourselves as ‘one’ and the first time it became obvious that our daily descriptions of ‘sunrise’ and ‘sunset’ are incorrect. Other photographs taken by Apollo astronauts revealed the beauty of the planet and confirmed that not only is earth was not flat, it is 70% water. Saudi Arabian astronaut, Sultan bin Salman al-Saud gave a clear example of a changed worldview. He said, “The first day we all pointed to our own countries. The third day we were pointing to our continents. By the fifth day we were all aware of only one Earth.”

People from earlier times did not know what we know, and what we are learning and our children will learn even more than us.

Cosmology is the study of the universe and modern cosmology is inviting us into a new worldview and a new spirituality. Our images of God, our language and our answers to the four basic questions are changing. Who am I? Why am I here? How did I get here? Where am I going? There have been a number of major contributions to this new thinking and countless scientists, celebrated or unknown have contributed. It is worth noting a few of them.

Charles Darwin's theory of **Evolution** was first posited in his book 'Origin of Species' in 1859. Darwin contended that all species are related, that we all have a common ancestor, that mutations occur, that species adapt and that those that adapt best, survive. He did not have the language of genes. He called them 'factors', but how he described characteristics being passed (factors) on has been confirmed by genetic theory.

Einstein published his theory of **Relativity** in 1905 (Special) and enlarged on it in 1916 (General). His famous equation is $E=MC^2$. This brought a new understanding that energy and matter are two sides of the same coin and that no matter that was created in the Big Bang has been lost, and no more has been added. Einstein declared that time and space are connected, and this changed Newton's mechanistic physics. Einstein initially fudged his figures because he refused to believe what his mathematics showed; that if the galaxies were receding, they must have had a common starting point. He could not reconcile this with the Genesis story.

Edwin Hubble urged him to come and look through his powerful telescope, because the 'red shift' (light) he would see, was proof. It took some time, but eventually Einstein looked and later said that his fudging and refusal to believe what he knew, was the biggest blunder of his life. It is easy for any of us to act like Einstein did.

Quantum physics deals with the very small (atomic and sub-atomic world). Electrons are not really matter as we know it, they are clouds of energy. Electrons, protons and neutrons are popping in and out of existence constantly. Scientists don't know why this happens and they don't know where they come from or where they go! A particle is what we perceive as matter of some sort - something with mass. A wave is a disturbance in some type of substance such as water or air.

Quantum physics has established that a subatomic particle is not a particle until it is observed. Until then it is a wave. Everything we perceive as having mass is in fact a wave of information (or possibilities) until we observe it in some way. Until we observe the (not yet) particle, it is a wave that is actually 'doing' every possibility it could do at the same time. The Double Slit experiment demonstrates that we create reality by observing it. (<http://www.colorado.edu/physics/2000/schroedinger/two-slit2.html>)

In 1900 Max Planck developed **Quantum theory**. This proposed that Energy arrives in bundles of potential (quanta) and that particles impact on each other even when not physically connected! Entities once connected, never cease influencing on each other. Even humans have such an experience!

Elementary particles have no inner structure and they cannot be divided. They have 'spin'. Translocation happens because opposite 'spin' has been recognised and communicated across distances faster than the speed of light. This was something Einstein could not establish in his day, but it has now been demonstrated. The way we observe or measure the nature of something determines what we see. Comprehending this has been beyond the mind of some of the greatest scientists so we should not be daunted. We can glimpse something of this postulation, that everything (even humans) are bundles of potential. Often that potential is not achieved. Susan Boyle stands out as an reminder of how many people's potential is never discovered or revealed.

We think at times, and argue, that we see reality, but there is often far more going on than we can see. A hawk, for example, has eight times our visual capacity, so looking down on the same scene that we are looking at, the hawk will see so much more than we will. Dragonflies have thirty-five optical units, so how much more will one of them see in the common field, that we think we are fully observing!

Cosmic Microwave Radiation was measured in 1992 by satellite and identified in 1964. It had been proposed that since radiation does not cease to exist, if there had been a 'Big Bang', the radiation from that explosion should still exist. Capturing a picture or map of it has served scientists in much the same way as discovering an early fossil. The radiation created in the first trillionth of a trillionth of a trillionth of a second is still radiating and we are receiving it on earth (Like when we get the fizz on out TV sets).

The theory of **tectonic plates** was only confirmed in 1968. We now know that the continents were once joined, and that Pangea began to break up 220 million years ago. The break up took around 150 million years. New Zealand split from Australia around 100 million years ago. Our part of the world was the most recent to break away, around 60 million years ago, five million years after the dinosaurs disappeared. The continents now float on plates. They move about 5 centimetres per year. This theory helped to explain how identical species have been found on different continents.

The **human genome** (the base pairs that make up DNA) was mapped in 1993. We have 100,000,000,000,000 cells. Each cell has 46 chromosomes and each chromosome has a DNA strand. If all this DNA in any one chromosome was unraveled, it would stretch to two 2 metres and the DNA within any one person would stretch for 182 billion kilometres!

There are some interesting realities about our DNA. The wheat genome is 5 times more than humans! Human DNA is 99.9% the same as any other human; 95% the same as a chimp; 9% the same as a mouse, 44% the same as a fruit fly, and 25% the same as yeast! If the gene cell for the beak of a duck is placed in a mouse it develops into teeth!

It is no wonder that Brian Swimme urges us to reflect on the fact that “No matter what being we are talking about on the planet, we are related in terms of energy, we are related in terms of genetics, we are all in one way or another a form of kin– it is overwhelming!” ‘The’ big discovery of modern science is not just that humans are inter-related, but that every species is related!

If we observe the mammals we can easily see that we share the same basic structure , though wings, arms and feet may be used for different purposes. Life is evolving. Creation is not finished. God is not the creator, God is creating. The universe is self-organising. Galaxies formed the stars, and everything we know was formed from star dust. Our star (sun) formed earth, and earth formed all life here. What was once molten rock has developed into trees, parrots, horses and humans who can sing, dance and create music!

Extinctions have led to new life forms. From a faith perspective, God is still ‘everywhere’ as the old catechism suggested. God is prompting, inviting, and calling. Therefore ‘Life’ knows where it going. Death and destruction are woven into this process, and life triumphs. ‘Life is changed, not ended”

We are called to alter our view of the world. Stars are not ‘star’ shaped as we draw them, and rather than twinkle, they are giant cosmic factories.. The sun does not rise. Heaven is not up there!

In 1999, Pope John Paul declared, “Heaven, or the happiness in which we will find ourselves, is neither an abstraction nor a physical place in the clouds, but a personal relation [with God].....This final condition can be anticipated in a certain sense now on earth”. “Moreover”, the Pope continued, “the pictures of Hell given to us in Sacred Scripture must be correctly interpreted. They express the total frustration and emptiness of a life without God. More than a place, Hell is the state of the one who freely and finally removes him/herself from God, the source of life and joy”.

Things are not as they seem. The sun is not the centre! Everything is! Earth moves around the sun, so earth rises. Earth is not sitting on a flat surface If it is raining in Norway and New Zealand at the same time (top and bottom continents) it must be raining ‘up’ in one of those locations!

We cannot have the same worldview as our parents, or of the Scriptures. We are being called to embrace this truth and to become seekers of mystery. We never have been able to comprehend God but we are starting to see more clearly that the everyday mysteries of life, death and rebirth are deeply imbedded in the circle of life. We must seek within ourselves a sense of awe and reverence for the divine creating presence within and around us – everywhere.

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May, 2011