

The Way God Works in the Universe

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Abstract

Around 14.5 billion years ago, at the Big Bang, our universe originated. Amidst the myriads of planets in the cosmos, given our current knowledge, only planet earth is capable of harboring intelligent life forms. Life originated out of a primordial soup of essential elements. This event was named as an ontological leap, meaning that life's essential basic super-complex molecule, the DNA could not have evolved by natural selection and that a Super Intellect should have designed it. The evolution of life into humans (*Homosapiens*) makes many evolutionary biologists accept the notion that an anthropic principle was built into the fabric of biological evolution. The God of religion is both faithful and loving and the natural gift of the faithful God will be reliability in the operation of creation. The natural gift of a loving God will be independence granted to creation. This is reflected in the fruitful interplay of chance and necessity, flexibility and rigidity in evolving cosmic history.

Keywords: Ontological Leap, Anthropic Principle, Chance, and Necessity

Introduction

Science tells what makes the stars shine, why the water is wet, how genetic information is conveyed from one generation to the next. The most impressive thing is that we can agree on the answers, and it does so to universal satisfaction. On the other hand, on religious issues, there are disputes about the most fundamental questions, such as, ‘Is there a God?’ Religion may be true for me or true for you. It is not plain true, pure and simple, for all people. Yet we cannot place our lives and hope on the mere opinion (Polkinghorne, 2005).

God is the God of the Whole Universe

Experience shows that some force pulls us down to Earth. With Newton, we understand that it is the same force that keeps the moon circling the Earth and the Earth circling the Sun and the Sun circling the center of the galaxy. Then with Einstein, we realize that this is due to the curvature of space-time, i.e. mass and energy actually bend space and time. Strangely enough, it is mathematics that gives us clues to understand such things. One of the founding fathers of quantum theory, Dirac (1958) was always looking for beautiful equations to describe the physical world. Mathematics is pure thought. Mathematicians dream up a beautiful pattern of pure thought in their heads. Strangely enough, some of these beautiful patterns actually occur in nature, out there. This puzzled Einstein (2008). He once said that ‘the only incomprehensible thing about the universe is that it is comprehensible’. A scientific mind sees in the universe signs of a Mind at work, maybe the mind of the Designer. The reason within our brains and the reason perceived in the universe fit together because they have a common origin in the mind of the Creator, who is the ground of all that exists. The existence of a Creator would explain why the world is so profoundly intelligible (Peacocke, 2001).

The Anthropic Principle

Apart from the presence of a Mind in the universe, our religious belief is supported by the realization that we and our planet Earth are incredibly special. Apart from the earth, all other planets and the universes we know of are sterile and incapable of supporting higher forms of life. Hence

evolution by itself is unable to explain the origin and development of intelligent life on our planet. This is such an important conclusion that it is given its own learned name, the Anthropic Principle, from the Greek word anthropos, meaning man, humankind (Polkinghorn, 1998).

Stars and Stardust

All living organisms on our planet are carbon-based. Every atom of carbon in our body was once inside a star. We are all made from the ashes of dead stars. To make carbon in a star, three helium nuclei have to stick together. The obvious way is to make two helium molecules to stick together to make beryllium and then add the third helium. However, beryllium is very unstable. Physicist Hoyle (2005) of Cambridge had a bright idea. If there was a strong enhancement effect or resonance, it would make the sticking on of the third helium go fast before all beryllium vanished. If this was to work, the resonance had to be very precise energy. Some of Hoyle's friends experimentally found the exact resonance. In scientific jargon, it is called the 'triple-alpha process.'

Hoyle realized that if the laws of Physics had been a little bit different, there would have been no carbon, no life, and no humans to understand it all. Hoyle, an atheist is said to exclaim, "The universe is a put-up job!" Such remarkable fine-tuning of the laws of nature, yielding such remarkable fruitfulness, such as Homo sapiens, could not be such a happy accident. Hoyle, who did not care for the word God, said that there must be some Cosmic Intelligence behind it all (Polkinghorn, 1996).

God is the God of the whole show

Hawking (1988), the foremost astrophysicist of our times, in his book *A Brief History of Time* writes, "If the universe is really completely self-contained, having no boundary or edge, it would have neither beginning nor end; it would simply be. What place then for a Creator?" His answer is, "Every place, as the Ordainer and Sustainer of all that is going on". "God is the God of the whole show." This universe which started as a very hot soup of elementary particles, after 14.5 billion years has become the home of saints and scientists, artists and musicians and

mystics. This has been possible because the universe has an anthropic fine-tuning built into it (Hawking, 1988).

Chance and Necessity

In biological evolution, genetic mutations occur from time to time. New forms of life arise that are sifted and preserved by natural selection in an orderly environment. If genetic information were unchangeably transmitted from generation to generation, nothing new would ever happen and if it were not reasonably reliable in its transmission, nothing would ever be perpetuated. A fertile world must neither be too rigid nor too loose. It needs both flexibility and regularity, chance and necessity (Polkinghorne, 1996).

God is Faithful and Loving

God of religion is faithful, and the natural gift of the faithful God will be reliability in the operation of creation. Reliability by itself could harden into mere rigidity, leading to a clockwork world, in which nothing new ever happened (Dawkins, 1986). God is loving and the natural gift of a loving God will be independence granted to creation. This is reflected in the fruitful interplay of chance and necessity, flexibility and rigidity in evolving cosmic history. In the words of Peacock (2001), the chance is ‘the search radar of God, sweeping through all possible targets of its probing.’

Creation is a Continuous Process

There are two extreme pictures of God’s relationship to creation that are unacceptable to Christian theology. One is the picture of the universe as God’s puppet theatre, in which all creatures dance according to the divine tune alone. The God of love cannot be such a cosmic tyrant. But neither can God be an independent spectator, who doesn’t care for his creation. The evolutionary world is to be understood theologically as a world allowed by the creator to make itself to a large degree. In other words, creation is a continuous process. God is as much the creator today, as He was 14.5 billion years ago, at the Big Bang. God creates, not just once created and then rested.

Who Are We?

A few decades back physicists believed that matter consisted of atoms, made up of electrons going around the nucleus, and the nucleus itself was made up of protons and neutrons. Now physicists know that protons and neutrons themselves are made of over 200 smaller particles, the quarks, held together by gluons. Is this the only way to learn how things really are? Is reality just a collection of quarks, gluons, and electrons? All the elements in a human being put together does not make a human person. One has to accept the fact that the whole is more than the sum of its physical parts.

DNA the Most Amazing Molecule

Carbon is a key component of all living organisms on planet Earth. Carbon, bonded with other elements such as hydrogen, nitrogen, oxygen, phosphorus and sulfur, the CHNOPS elements, form DNA (deoxyribonucleic acid). DNA is made up of six smaller molecules: a five-carbon sugar named deoxyribose, a phosphate molecule, and four nitrogenous bases, arranged in very specific relations on a twisted ladder-like structure known as the double helix. The amazing thing about this super complex molecule is that it encodes all traits of an organism and is capable of replicating itself.

Some physicists believe that biology is nothing but complex physics. It is not so. The emergence of life from matter does not require any additional magical ingredient. But it can arise from greater complexity from within. We certainly don't understand all the stages of the evolution of life. But there seems to be one continuous pathway of progressive evolution from the shallow, chemically rich pools to self-replicating and living systems, the DNA, leading to humans. Matter itself had been empowered to achieve this goal. Matter, as in electrons, has a spiritual aspect. Let me illustrate this point by an example, the wetness of water. A few H₂O molecules by themselves are not wet. But if you have billions of molecules they interact with each other in such a way that they produce an energy on the surface called surface tension, which we experience as wetness. Energy is distributed between molecules in a new way. Much more profound is the emergence of a property like

consciousness. This is the most significant thing that has ever happened in the whole history of the universe. A world which was an expanding ball of energy, knows, through us, that it was once an expanding ball of energy (Polkinghorn, 2005).

Now, one has to put on one's thinking cap. Is it possible that biological evolution, on its own, can reach such a complex organization and produce an entity like life? Is a Super-intelligence required to fine-tune the exact configuration of a DNA molecule to produce life on earth? Many theistic evolutionary biologists argue for an ontological leap in the evolution of life from elementary particles. The ontological leap implies intervention of a Superpower in the natural process of evolution. The evolution of life from non-life is such a big jump in the chain of evolution that it cannot be taken as a simple natural process. The guiding mind of a Super-Intelligence makes perfect rational sense. Any other option does not satisfy rational thinking.

The Mystery of Consciousness

Consciousness is surely more than the effect of patterns of energy. Here is something more mysterious than the mere wetness of water. This mystery is not explained away by neurophysiology or artificial intelligence. The essence of consciousness is awareness; awareness of the external world; of one's feelings and thoughts. In the words of the foremost thinker of the 20th century, Teilhard de Chardin (1955; 2004), "The animal knows; but the man knows that he knows." Consciousness is linked with what is going on in our skulls, but it is not simply identical to neural activity.

How Will It All End?

The history of the universe is the story of a gigantic tug of war. On the one hand, is the effect of the Big Bang driving galaxies apart from each other at astronomical speeds. On the other side is the relentless pull of gravity, holding things together. If either of them wins, the universe will end in a Big Crunch, tens of billions of years into the future. Planet Earth will be swallowed up by an expanding Sun, in less than 10 million years. If all will end in a Big Crunch, is everything futile? (Polkinghorn, 2002). Has humanity got any reason for hope? Chardin

thinks that evolution has a purpose, the ultimate evolution of humans into Christ-like beings, reaching the Omega Point. Teilhard's Omega Point, in the understanding of this writer, can be equated to the fulfillment of the kingdom of God which Jesus established in the minds and hearts of his followers. The essence of this other-worldly kingdom is a change of heart, a metanoia, by which humans look at life and earthly values from a new perspective. It is similar to the perspective of a person who had a near-death experience (NDE). All earthly values like a big bank balance, power, and social status lose their importance. Such a person is saturated with a sense of care and concern for the less fortunate ones. Selfishness and self-interests vanish and a sense of true altruism envelops such a person. Once a person achieves such insight, a mystical state takes hold of him/her. Such a person has reached the Omega Point and the kingdom of God has taken roots in his/her heart.

Conclusion

After Darwin's 1859 publication of *The Origin of Species*, a number of scientists and pseudo-scientists thought it fashionable to replace the Creator with 'blind chance' and shout in the streets that 'God is dead.' However, towards the close of the second millennium, a number of world-class scientists like Stephen Hawking, Albert Einstein, Teilhard de Chardin, Fred Hoyle, John Polkinghorne, Ian Barbour, Arthur Peacock, Paul Davis, Paul Dirac, Francis Ayala, Stephen Mayer, Christopher Hitchins, George Lemaître, George Greenstein, Francis Crick, Antony Flew, Robert Jastrow and Theodore Dobzansky, to mention just a few, began to realize that 'blind chance' by itself cannot rationally explain the origin and evolution of the universe. Behind the amazing design of the universe, there must be a more amazing Designer. In the words of Dobzansky, the evolutionary world is the 'unfolding of a magnificent idea.' Nothing else makes rationally complete sense.

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