

in total ignorance of these events. God reminds people of His blessings: *God makes night merge into day & day merge into night. He has made the sun & moon subservient, each one running until a specified time. That is GOD, your Lord. The Kingdom is His. Those you call on besides Him have no power over even the smallest speck.* (Quran, 35:13)

It is sufficient to look at millions of dead planets in space in order to understand that the delicate balances required for life on earth is not a result of random coincidences. The conditions essential for life are too complicated to have been formed 'on their own' and at random, and these conditions are specially created for life alone. These balances we have briefly described so far are only a few of the millions of intricate, interrelated balances and orders established so that people can live in peace and safety on the earth.

Examining only a part of the balances and harmony on the earth is enough to comprehend the superior being of Allah and grasp the existence of a planned creation in every detail of the universe. It is no doubt impossible for a person or any other living being to build such an enormous balance and order. Nor are the components of this order such as atoms, elements, molecules, and gasses capable of establishing an order based on such intricate and extremely delicate calculations and measurements, and such fine tunings. This is because activities like planning, ordering, arranging, calculating, and proportioning can only be realized by beings that possess wisdom, knowledge and power. The Exalted Being Who orders, plans and balances the entire universe to be fit for life of human beings on a planet like earth and Who sustains it with dramatically delicate measures and balances is GOD, Who has Infinite Wisdom, Knowledge and Power.

God states that those people who are able to realize these facts are only 'people with intelligence': *In the creation of the heavens & the earth, & the alternation of night & day, there are Signs for people with intelligence. Those who remember GOD, standing, sitting & lying on their sides & they reflect on the creation of the heavens & the earth: "O Lord, You have not created this for nothing. Glory be to You! Safeguard us from the punishment of the Fire."* (Quran, 3:190-191)

Dr. Scania, the distinguished head of Cambridge University Observatories: If you change a little bit the laws of nature, or you change a little bit the constants of nature – like the charge on the electron – then the way

the universe develops is so changed, it is likely that intelligent life would not have been able to develop.

Dr. Paul Davies, noted author & professor of theoretical physics at Adelaide University: "The really amazing thing is not that life on Earth is balanced on a knife-edge, but that the entire universe is balanced on a knife-edge, and there would be total chaos if any of the natural 'constants' were off even slightly. "You see," Davies adds, "even if you dismiss man as a chance happening, the fact remains that the universe seems unreasonably suited to the existence of life – almost contrived – you might say a 'put-up job'."

According to the latest scientific thinking, the matter of the universe originated in a huge explosion of energy called "The Big Bang." At first, the universe was only hydrogen and helium, which congealed into stars. Subsequently, all the other elements were manufactured inside the stars. The four most abundant elements in the universe are: hydrogen, helium, oxygen and carbon.

When Sir Fred Hoyle was researching how carbon came to be, in the "blast-furnaces" of the stars, his calculations indicated that it is very difficult to explain how the stars generated the necessary quantity of carbon upon which life on earth depends. Hoyle found that there were numerous "fortunate" one-time occurrences which seemed to indicate that purposeful "adjustments" had been made in the laws of physics and chemistry in order to produce the necessary carbon. He sums up his findings: A common sense interpretation of the facts suggests that a superintendent has monkeyed with the physics, as well as chemistry & biology, and that there are no blind forces worth speaking about in nature. I do not believe that any physicist who examined the evidence could fail to draw the inference that the laws of nuclear physics have been deliberately designed with regard to the consequences they produce within stars. Adds Dr. David Deutch: If anyone claims not to be surprised by the special features that the universe has, he is hiding his head in the sand. These special features ARE surprising and unlikely.

Simon Morris, professor of evolutionary paleobiology, finds that "the existence of life on earth appears to be surrounded with improbabilities." A "fluke" is not a very scientific way of explaining the phenomena, especially since such a rationalization repudiates all scientific experience. The answer, obviously, is GOD, the Magnificent Creator. Can't bring yourself to believe? Scientific developments, historical facts cannot convince you. "**Well, wait, we too shall wait.**" (6:158)

## The Fine-tuning of the Universe

# The Anthropic Principle

The "science **versus** religion" debate  
is a false dichotomy

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According to growing numbers of scientists, the laws and constants of nature are so "finely-tuned," and so many "**coincidences**" have occurred to allow for the possibility of life, the universe must have come into existence through **intentional planning and intelligence**. In fact, this "fine-tuning" is so pronounced, and the "coincidences" are so numerous, many scientists have come to espouse **The Anthropic Principle**, which contends that the universe was brought into existence intentionally for the sake of producing mankind. Even those who do not accept The Anthropic Principle admit to the "fine-tuning" & conclude that the universe is "too contrived" to be a **chance** event. Dr. David Deutsch, Institute of Mathematics, Oxford University: **If we nudge one of these constants just a few percent in one direction, stars burn out within a million years of their formation. If we nudge it a few percent in the other direction, then no elements heavier than helium form. No carbon, no life. Not even any chemistry. No complexity at all.**

**The experience of sequencing the human genome, & uncovering this most remarkable of all texts, as well as ALL other scientific discoveries are stunning achievements, as well as occasions of worship. With every intellectual input that leads to discovery we learn the language of God.**

**S**cience is not threatened by God; it is enhanced; and God is most certainly not threatened by science; He made it all possible. It has long been believed that science & faith cannot mingle. Faith rejects the rational, while science restricts us to a life with no meaning beyond the physical. **Is it an irreconcilable war between two polar-opposite ways of thinking and living?**

The earth is a living planet where many complex systems run perfectly without stopping at all. When compared to other planets, it is evident that in all its aspects the earth is specially designed for human life. Built on delicate balances, life prevails in every spot of this planet, from the atmosphere to the depths of the earth. Exploring only a few of the millions of these delicate balances would be sufficient to show that the world we live in is specially designed for us.

One of the most important balances in our planet is revealed in the atmosphere that surrounds us. The atmosphere of the earth holds the most appropriate gasses in the most appropriate ratio needed for the survival not only of human beings, but also of all the living beings on the earth.

The 77% nitrogen, 21% oxygen and 1% carbon dioxide as well as other gasses readily available in the atmosphere represent the ideal figures necessary for the survival of living beings. Oxygen, a gas that is vital for living beings, helps food to be burned and converted into energy in our bodies.

If the oxygen quantity in the atmosphere were greater than 21%, the cells in our body would soon start

to suffer great damage. The vegetation and hydrocarbon molecules needed for life would also be destroyed. If this quantity were less, then this would cause difficulties in our respiration, and the food we eat would not be converted into energy. Therefore, the 21% oxygen in the atmosphere is the most ideal quantity determined for life.

No less than oxygen, other gasses like nitrogen and carbon dioxide are also arranged in the ideal quantity for the needs of living beings and the continuity of life. The amount of nitrogen in the atmosphere has the ideal ratio to balance the harmful and burning effects of oxygen. This ratio represents the most appropriate value required for photosynthesis, which is essential for life's energy supply on the earth. Moreover, the amount of carbon dioxide has the most appropriate value that is needed to maintain the stability of the surface temperature of the earth and to prevent heat loss especially at night time. This gas, comprising 1% of the atmosphere, covers the earth like a quilt and prevents the loss of heat to space. If this amount were greater, the temperature of the earth would increase excessively, causing climatic instability and posing a serious threat against living beings.

These proportions remain constant thanks to a perfect system. The vegetation covering the earth converts carbon dioxide to oxygen, producing 190 billion tons of oxygen every day. The proportion of other gasses is always kept constant on the earth by the help of interconnected complex systems. Life is thus sustained.

In addition to the establishment of the ideal gas mixture required for life on the earth, the mechanisms needed to preserve & maintain this order are created alongside with it. Any break in the balance, though instantaneous, or any change in the ratios even for a very short time period, would mean the total destruction of life. Yet, this does not happen. The formation of these gasses in the atmosphere just in the amount people need, and the constant preservation of these ratios **indicate a planned creation.**

At the same time, the earth has the ideal size in terms of magnitude to possess an atmosphere. If the mass of the earth were a little less, then its gravitational force would be insufficient and the atmosphere would be dispersed in space. If its mass were a little greater, then the gravitational force would be too much and the earth

would absorb all gasses in the atmosphere. There is an incredibly high number of conditions required for the formation of an atmosphere such as the one our world currently has and all of these conditions should exist altogether to be able to talk of life.

The creation of these delicate proportions & balances in the sky is mentioned in Quran, 55:7: "*And the heaven He has raised high & set up a measure.*"

Most people spend their lives without being aware of the delicate balances & subtle adjustments in the gas composition of the atmosphere, the distance of the world to the sun or the movements of planets. They are ignorant of the great significance of these balances and adjustments to their own lives. However, even a minor deviation in any one of these arrangements would create very severe problems regarding the existence and survival of humankind.

There are many other balances established on earth for the continuity of life.

For instance, if the surface gravity were stronger than its current value, the atmosphere would retain too much ammonia and methane gasses, which would mean the end of life. If it were weaker, the planet's atmosphere would lose too much water, and life on earth would be impossible.

The thickness of the earth's crust constitutes another one of the delicate balances in the earth. If the earth's crust were thicker, too much oxygen would be transferred from the atmosphere to the crust and this would have severe effects on human life.

If the opposite were true, that is, if the earth's crust were thinner, volcanic and tectonic activity would be too great to permit life on earth.

Another crucial balance for human life is the ozone level in the atmosphere. If it were greater than its current value, the surface temperatures would be too low. If it were less, surface temperatures would be too high, and there would be too much ultraviolet radiation at the surface.

In fact, the absence of even a single of these balances would set the end to life on earth. However, Allah has created the universe with infinite wisdom and power and designed the earth specially for human life. Despite this fact, the majority of people lead their lives

**And the heaven He has raised high & set up a measure**

(Quran, 55:7)

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