

## **Scientific Implications Of Origins**

**A group of biology professors from a major university were asked if biology and biological processes are governed by the laws of chemistry and physics. Amazingly, only one of the group agreed that biological life processes are governed by the laws of chemistry and physics. When the biology professors were pressed as to what laws governed biological life, they became almost mystical. With exception of the one professor, they explained that life processes are determined by complex laws which we have not yet discovered.**

**Certainly, mankind has not plummed the depths of the complex chemical reactions that govern life metabolisms. However, biological life processes are a subdivision of chemistry and subject to the laws of chemistry. There are inorganic chemistry and portions of organic chemistry which are not related to life metabolism. Chemistry and its subdivision of biology only involve the exchange of electrons in the outer orbits of the atoms with no change in the nucleus of atoms. In fact, chemical reactions are not affected by different isotopes (different numbers of neutrons in the nucleus) of particular elements involved in reactions.**

**Chemistry, in turn, is a subdivision of physics which more broadly includes nuclear reactions and changes. It seems strange that biology professors would not understand that DNA-RNA interactions, the Krebs cycle, meiosis, mitosis, protein production, and other cellular and life systems are chemistry, governed by the laws of physics. Although not all these biological reactions are fully understood, it would be scientifically absurd to attribute these processes to some metaphysical explanation by scientists, contrary to the known laws of physics.**

**The question of origins of life and the Universe have caused many teachers of biology and cosmology to resort to explanations contrary to well-known laws of physics. Much of the problem in origins of life and the cosmos rests on the impossibility of going from disordered states of matter and energy to highly ordered and very complex systems according to the most established laws of physics. This paper hopes to elucidate the origins question in the light of our most verified laws of science.**

**The Universe is composed of two elements: matter and energy. All physical phenomena are either matter or energy and their interactions. The purpose of science is to discover the laws that define the principles that govern the interactions between matter and energy. Dr. Albert Einstein expressed it well, "In the whole history of science from Greek philosophy to modern physics there have been constant attempts to reduce the apparent complexity of natural phenomena to some simple fundamental ideas and relations." Like master detectives, scientists through**

the ages have looked for clues of these fundamental laws that define the interactions of matter and energy.

Modern physics assumes that the entire physical Universe has only these two components: matter and energy. In the last two hundred years, physics has developed two general laws which encompass all matter and energy interactions. These two laws of physics are: (1) the conservation of mass and energy and (2) increasing entropy. All of our laws of science (physics, chemistry, and biology) are derived from these two laws. The first law is the quantity law for matter and energy. It states that in all interactions total quantity of matter and energy is conserved. In every matter-energy interaction there is the same quantity of matter and energy before and after the interaction. Matter-energy interactions are a zero sum game; there is no net gain or loss of matter and energy in any interaction. The ideal laws of classical physics, such as conservation of energy (kinetic and potential), conservation of mass, conservation of momentum, conservation of angular momentum, ideal gas laws, field theories (electric, magnetic, and gravity), etc., are all conservation laws, derived from this first law. This law has been verified without exception for nearly 150 years and is the most universally accepted law in both classical and modern physics. The Universe never creates or destroys matter and energy.

The second law is the quality law for matter and energy. It states that in all matter-energy interactions, entropy or disorder always increases. Although the quantity of matter and energy is always constant in any interaction according to the first law, the disorder of matter and energy always increases in the same interaction according to the second law. Again, the veracity of the second law is bedrock for both classical and modern science. The non-ideal laws all involve increasing entropy or disorder like friction, free expansion of gases, and free heat exchanges are derived from this second law.

Although this second law has been verified also for nearly 150 years, it is a statistical, mathematical law which for all practical purposes needs no experimental verification. Since the disorder states of any system of matter and energy are so much more numerous than ordered states above absolute zero degrees temperature, then any matter-energy interaction will result in a more disordered state at a given temperature. Entropy makes events irreversible and was given the name, time's arrow, by the physicist Eddington.

Both of these laws were originally developed and known, respectively, as the first and second laws of thermodynamics. The first law has been expanded to develop all of our ideal laws, simply by applying energy, instead of forces. The second law expanded with the development of statistical mechanics, kinetic theory, and information theory. Historically, these two laws are so thoroughly accepted that any patent application submitted to the patent office will not even be examined if the patent claims violate either the first or second law. These laws have become recognized as the king and queen of science. By another analogy, the first law is the

accountant, keeping the debits and credits of matter and energy accurate, and the second law is the manager, telling how the balanced credits and debits will be dispersed.

The implications of these two fundamental laws of science in the question of origins are rather astounding. Since according to the first law the Universe can not create or destroy one particle of matter or one joule of energy, then there only two possibilities for the origin of the matter and energy in the Universe. Either the Universe is eternal or it was supernaturally created. The Universe is incapable of creating or destroying any of its matter and energy naturally, in accordance with the laws of science. The first law, the law of conservation of matter and energy, prohibits the Universe from creating or destroy any part of itself. The Universe can not procreate itself. This first law limits science to two conclusions about the origin of Universe: (1) the Universe is eternal or (2) the Universe was created supernaturally.

The second law further constrains the options on the origin of the Universe. The Universe is dying irreversibly in the death grip of entropy, the heartless mathematical destroyer of the order in matter and energy. The Universe has no means to prevent its own demise. Each day, the stars, galaxies, and super clusters irreversibly lose matter and energy which they will never get back. A Nobel Prize was awarded for the discovery of the background microwave radiation at 2.7 degrees absolute temperature (Kelvin) as a proof of the lingering energy left from the Big Bang. In reality, rather this radiation is the effect of entropy as the stars irreversibly radiate their energy into the cold parts of the Universe. Energy cascades downward until all of the energy and matter in the Universe will be uniformly 4 degrees above absolute zero.

Long before this happens, light will disappear from the Universe. Even before the disappearance of light, genetic entropy will mutate the vital genomes of all species below vital functioning levels, driving all life into extinction. No intelligence will be alive to observe, much less prevent, this ultimate demise of the Universe. This scientific eschatology will be a whimper and not a bang, as T. S. Eliot penned. Science's prognosis of the Universe is similar to the Shakespearean fool's view of life, "Life is a tale told by an idiot, full of sound and fury and signifying nothing." Or in the Mother Goose rhythms, "Humpty Dumpty sat on a wall, Humpty Dumpty had a great fall, and all the King's horses and all the King's men couldn't put Humpty together again."

Each day, the Universe loses some of its former beauty and order. Yesterday, the Universe had more life and beauty than today. The records written in geological stone remind us that we had one hundred times more species on the Earth than we have today. No new species are arriving to replace them. Contrary to the public perceptions from movies like Jurassic Park, the genomes of the past creatures are probably gone forever. Species can not be resurrected from mitochondrial DNA. Even if some wizardry of genetic engineering could resurrect

species or stabilize DNA entropy, the fires of the Universe will ultimately extinguish and exterminate all life.

The second law eliminates the first option (an eternal Universe) at a finite time in the past where all of the energy in the Universe was possessed by one particle. The Universe could not have reversed entropy from disorder to high order on a cosmic level and then began its present decay to total disorder without violating the second law. Neither could the Universe have existed before this finite time in the past. The Universe can not have more ordered energy and matter than total energy and matter. Neither can all the energy of Universe reside in one particle before this point of time in the past without entropy disordering the particle's energy. Either the first law was broken on a cosmic level (the matter and energy of the Universe can into being *ex nihilo*, out of nothing, a supernatural creation) or the second law was broken on a cosmic level (the entropy of the matter and the energy in the Universe was reversed into great order on super galactic levels). In either case, at finite time in the past, the Universe, according to these fundamental laws of science, had a supernatural intervention or creation of matter and energy at super galactic levels.

Therefore, looking back in time the two laws of science can interpolate certain perimeters about the Universe's origin. With no means either to create matter or energy according to the first law, the Universe was incapable of creating itself. Being unable to reverse entropy on any level above simple molecules, the Universe is equally impotent of giving itself its former order and beauty. As a matter of fact, with each day that passes, the Universe continuously loses its base of operations to get try to get back to a more ordered state. Philosophically speaking, this is a morbid state of affairs. Time and chance with these two governing laws of science, and for that matter all the laws of science, will never create even a protein molecule, much less a star. But what do these two laws further tell us about the Universe's origin?

The Universe must have been given its ordered matter and energy from a highly ordered agent with an energy supply greater the Universe's total matter and energy. Given that all the large celestial systems, such as galaxies and super clusters of galaxies, seem to be burning out at roughly the same rate and from a common starting time in the past, it appears that all parts of the Universe came into being or acquired their ordered structure at the same time. This ordered agent that gave the Universe its matter, energy, and order had several unique characteristics, forensically speaking.

First, the author of the Universe's order had to have access to all parts of the Universe at approximately the same time. This is not naturally possible since no material agent can travel faster than the speed of light to access all parts of the Universe. In other words, the agent could not be made of matter. If this agent did its ordering of the Universe at a point when the Universe was together, as proposed by the Big Bang advocates, then the agent would not have to have exceeded the

speed of light. However, in this case at the beginning of the Big Bang, the ordering agent must operate at temperatures where no matter can exist, so in either case, the agent could not be made of matter. Second, the agent had to have an energy source equal to or larger than the total energy in the Universe in order either (1) to impart that amount of energy to the Universe initially, or (2) to order the Universe's energy to the extremely ordered states from which it is decaying. The agent must not be made of matter, i.e. supernatural, and must possess more matter, energy, and order than the Universe had at its beginning.

Second, the agent would have to manipulate the stars, galaxies, and super clusters at energy levels unavailable in the natural realm or laws. Again, this manipulation of order in matter and energy must have been done in every part of the Universe at the same time. This is beyond any mechanism or law found in our material Universe. In fact, these two fundamental laws militate against the natural Universe, made of matter and energy, ever producing itself with its ordered matter and energy at a cosmic level of stars, galaxies, and super clusters of galaxies.

Lastly, the second law would require that the ordering agent that gave the Universe its order had to have more order than the most complex part of the Universe. The second law and its derivative, information theory, requires that the agent which ordered the Universe must be more complex than the most complex part of the Universe, i.e. man including the personality of man (intellect, emotion, and will). Hypothetically, the agent which ordered the Universe would have to be more complex than aliens if they existed.

The agent that ordered the Universe, from which it is exponentially decaying, must have four characteristics according to the two laws of science. First, the agent must possess more energy and order than the whole Universe. Second, the agent must be able to access and manipulate the energy and matter in the Universe at approximately the same time. Third, the agent can not be made of matter since it would have to exceed the speed of light which no matter can do in order to give order to a disperse Universe or the agent would have to operate in conditions in which no matter can exist at the beginning of the Big Bang. Lastly, this agent must be more complex than man, the most complex part of the Universe. If we are not talking about a personal God, rather than an impersonal force of nature, as the creator of the ordered Universe, what are we talking about? The two laws of science, which govern all of the other laws of science, exclude any natural causes for the origin of the Universe and limit the conclusions to a supernatural, intelligent being with all the personality and power exclusively belonging to God.

We have been educated to think that the natural realm as studied by science and the supernatural realm related to God have not connection with each other. We are told that there is no proof of God in nature and therefore any mention of God is ban from our science and educational system. It is quite the contrary. The education establishment, the courts, and the majority of the scientific establishment may be willfully blind, but the laws of science and nature are not. The very nature

**of the Universe and the laws of science that govern it reveal even the invisible characteristics of the Maker of the universe. Every work of art, piece of music, mechanical machine, architectural building or civil work reveals the character of their makers. So nature with its exquisite beauty and symphonic orchestration reveals the divine power and Godhead in its biological and physical structures and operations from subatomic particles to super celestial bodies.**

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