THE GREAT MYTHS OF MODERN SCIENCE

Forward

It is astonishing to me to see so much pseudo-science is taught and believed as science in our modern scientific academia. In reflection, I can not be too severe in my criticism since I also once whole-heartedly embraced and advocated with vigor many of these same pseudo-science doctrines myself. Our whole public education establishment with its virtual monopoly indoctrinates our students at the primary, secondary, and university levels with an incessant drone of pseudo-scientific dogma. This indoctrination with massive amounts of tax dollars has proven largely successful.

However, increasingly, dissidents are objecting to this institutional masquerade. Sometimes, these dissenters come from the most unlikely quarters, often from the inner workings of the educational industry. It has taken much courage for some academics and educators to say that the scientific king has no clothes. Even a whisper of doubt has cost more than one scholar his career. This has been particularly noticeable in the evolution-intelligent design controversies which are embroiled in legal and political actions. The threat of an increasing number of rebels to the party line has led the scientific establishment to ignore, marginalize, ridicule, and attack any dissidence.

Henry Kissinger was once asked why the battles in academia are so severe. He replied that it is because the stakes are so small. This might be true of philosophy but it can not be said of science where the stakes are great. Scientific differences about the past events, such as the origins of the Universe and life, might seem innocuous, even if false. However, even scientific premises about the past affect important modern world views and ideologies on education, politics, economics, and social structure, sometimes with either magnificent or horrifying consequences. The course of world history has been significantly impacted by the true and false scientific views of powerful political ideologies. We will explore this subject at the end of this book.

Whatever your biases in science, I hope that you will seriously consider the premises and assertions presented here. Even if you do not agree with my conclusions, I am sure that your understanding and appreciation for science will be enhanced by the synopses of science in the first part of this work. If you are a beginning student of science, a clear understanding of the fundamental laws of physics will accelerate your comprehension of physics, chemistry, and biology along with their virtual mathematics. My hope is that it will alter forever your thinking for good and for God.

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Introduction

The Universe is composed of two elements: matter and energy. 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." Evolution of Physics, p. 52. Like master detectives, scientists through the ages have looked for clues of these fundamental laws that define the interactions of matter and energy.

Even the proper distinction and definition of matter and energy has been a formidable task in the last four hundred years. The principles that govern the matter-energy interactions have never changed, being seen and used by all of humanity for millennia, but the simplified understanding of these principles has taken centuries. For instance, a bird in flight uses very sophisticated aerodynamics without any understanding of the laws of aerodynamics. Men in past millennia have constructed sophisticated naval vessels without designing them according to the laws of naval architecture, such as buoyancy, yaw and trim. Further, the term, science, itself is hard to define, although science has a process for developing the laws of science. This process of discovering our laws of science has several underlying assumptions.

First, science assumes the law of cause and effect. The Universe is not static and is constantly changing, albeit slowly at times or rapidly at other times. Any state of matter and energy (the effect) is the successive result of a previous interaction of matter and energy (the cause). The Universe has a continuum of matter and energy interactions where previous interactions of the matter and energy (causes) are followed by a subsequent state of the same matter and energy (effects). The previous interactions of specific matter and energy affect or cause the outcome of the subsequent resultant states of the same specific matter and energy.

Second, science assumes the principles that govern these interactions of matter and energy never change with time. Given exactly the same conditions, the Universe will always produce the same results at all times. This is true even if science has not discovered the law that governs the particular interaction. The sun produced sunlight using invariant principles of nuclear fusion long before science formulated any law of nuclear fusion. This invariant operation of the principles of the Universe is the experimental basis of the scientific method. One scientist can duplicate the results of another scientist by duplicating his pre-existent conditions. Some advocates of quantum physics would disagree with this invariance of the interactions of matter and energy. In protest to such assertions of quantum physics, Dr. Albert Einstein reacted that God does not throw dice with the Universe.

Third, science assumes that the principles that govern the interactions of matter and energy here on the Earth are true throughout the Universe. For instance, the law of gravity that we can test here on the Earth is the same law that governs the motions of bodies of matter everywhere in the Universe.

Using these three assumptions, science has used numerous approaches to formulate theories that describe the operation of the principles that govern the interactions of matter and energy. First, a hypothesis is given a theoretical basis, usually by induction or deduction. Second, this theoretical basis is tested experimentally to see if it is true for all matter/energy interactions covered by this hypothesis.

First, the hypothesis must have a theoretical basis. Using induction, scientists will observe many particular interactions and then make a general conclusion that summarizes these numerous interactions as a general theory for all similar interactions. Inversely, using deduction, a scientist will hypothesize a general theory and then look at all the particular interactions to see if these similar interactions conform to the general theory. The deductive scientist usually arrives at his general theory by interpolating proven laws, often using mathematics or rules of logic. This gives the deductive scientist a theoretical basis to his general theory without induction from observing many specific particular interactions. Often, some hybrid combination of induction and deduction is used to develop a theoretical basis for a hypothesis.

Second, once a general theory is developed, experiments are formulated to test the validity of the theory in all possible interactions covered by the general theory. This experimentation is based on the assumption that the principles of the Universe will always give the same results. Cold fusion, the nuclear fusion of hydrogen atoms into helium at temperatures close to chemical reactions, is theoretically possible with a huge release of energy. Some scientists have claimed to have produced cold fusion under specific conditions. However, numerous scientists have failed to obtain the same results under the identical conditions. Consequently, this hypothesis of cold fusion has been rejected as a theory until the present, although it has a theoretical basis, because it has failed the experimental validation.

As in this case of cold fusion, it is implicit that a theory must be falsifiable, as well as verifiable, by experimentation. In fact, the experimental ability to prove a theory false is more formidable than to prove that it is true. Ten thousand positive experiments for validation are negated by only one positive experiment for falsehood. It only takes one fly to ruin the ointment. A valid general theory must cover all relevant interactions without exception.

The theoretical basis and experimental validation form the necessary two-fold confirmation of a theory defining specific matter and energy interactions. Given an apparently irrefutable theoretical basis and repetitive experimental confirmations over a period of time without any exceptions, a theory will eventually

gain the status of a law of science. Occasionally, new theoretical bases or experimental evidence can call into question an accepted theory or even a law. In some cases, the theory or law must be changed to deal with special cases of interactions within the theory or law. In serious cases, the theory or law may be proven to be seriously flawed and must be rejected altogether in favor of a theory which has much stronger theoretical and experimental bases.

Looking at the Universe composed of two elements-matter and energy, science seeks to discover the laws that describe the invariant principles that govern the matter-energy interactions of the Universe. Assuming cause and effect interactions of matter and energy governed by principles (invariant with time and space in the Universe), science, using theoretical and experimental bases, seeks to develop theories and laws of these principles.

Matter and Energy

Over the centuries, science has worked to discover the most general laws of matter-energy interactions. For example, biology, the science of living systems, is essentially a sub division of chemistry, organic chemistry. There is also inorganic chemistry under the more general class of matter-energy interactions of chemistry. Chemistry involves the exchange of electrons between atoms without any nuclear changes in atoms. Chemistry, in turn, is a sub division of physics. Physics includes nuclear changes of atoms as well as non-nuclear chemical (electron exchange) interactions. Physics might be called the mother of all science since it broadly covers all matter and energy interactions.

I came to Massachusetts Institute of Technology in the early 1960s on the crest of a scientific wave generated by the United States government. The launch of Sputnik, the first man-made satellite around Earth, spurred a frantic push by the American government to catch up with the Russians. Being enthralled with science and math, I pursued all the nooks and crannies of science that my high school and government science camps offered. Before arriving at the Institute, I had learned a matrix of scientific facts and formulas about mechanics, optics, electromagnetism, and fluids. My physics class at MIT was full of all these little Einsteins from all of the United States, each with a slide rule as his or hers prize possession. Many students at MIT achieved the highest possible scores in the math and science sections of the aptitude entrance examinations.

I joined a scholarly fraternity who had extensive files of previous exams. I would go over these previous exams to prepare for my physics exams. I memorized formulas and worked all the types of problems that had been given in the previous exams. In spite of that, I still struggled to maintain an average grade. My pledge father, realizing my difficulties, took me aside. He was a first rate scholar and eventually he became one of only thirty Rhodes Scholars chosen each year. He

began placing these previous exams before me to watch my methodology in solving the exam questions.

Firmly, he told me to stop trying to remember formulas. There are only two laws of physics: (1) the conservation of mass and energy and (2) increasing entropy. I recognized those as the two laws of thermodynamics but not as general laws of physics. However, he emphatically explained that all of our laws of physics are derived from these two laws. 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. The non-ideal laws all involve increasing entropy or disorder like friction, free expansion of gases, and free heat exchanges. Almost every problem on the exams, he explained, is a conservation law with a few entropy ones sprinkled in. He said that these MIT professors are smart and are paid the big bucks to come up with new problems on the exams, using the same principles. Learn the ideal conservation law and the application of non-ideal entropy, he said, and I would be able to work any problem I faced.

Putting down exam problem after exam problem, my mentor forced me to write down the conservation or entropy principles which each problem entailed. With each problem, I got better and better at grasping the conservation or entropy principles to solve the problem. Needless to say, I moved into the upper portion of my physics class with this new found secret. My previous science education had taught me a labyrinth of physics formulas but no comprehension of the two underlying laws that are the bases of all physics.

In the last two hundred years, physics has developed these two general laws which encompass all matter and energy interactions. All the physical Universe has only these two components: matter and energy. All physical phenomena are either matter or energy and their interactions. In classical physics, matter can be distinguished from energy. Matter has a property of mass and, in contrast, energy is massless. Modern physics uses $E=mc^2$ to imply that energy can have mass and inversely that mass is energy. More broadly, it is taught that energy can convert into mass and mass can convert into energy. We will deal with that later. Nevertheless, both classical and modern physics affirm without equivocation the validity of these two laws.

The first law is the quantity law for matter and energy. It states that in all interactions all matter and energy is conserved. In every matter-energy interaction there is the same quantity of matter and energy before and after the interaction. Classical physics says that matter and energy are conserved separately. Modern physics holds that energy and matter are conserved collectively, since matter and energy are interconvertible. Matter-energy interactions are a zero sum game; there is no net gain or loss of matter and energy in any interaction. The Universe never creates or destroys matter and energy. 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 second law is the quality law for matter and energy. It states that in all matter-energy interactions, entropy or disorder always increases. Again, its veracity is bedrock for both classical and modern science. Although this 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 a business 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.

Often, people, including scientists, confuse the two laws. Aristotle in his work, *Mechanic,* says, "The moving body comes to a standstill when the force which pushes it along can no longer so act as to push it." Aristotle confused the two laws and concluded that a body would stop moving once a force stopped pushing on it. Aristotle mixed the first and second laws in which the ordered energy of the body is turned into disorder by friction according to the second law. Isaac Newton corrected Aristotle's law of motion with his first law of motion by stating that once in motion a body will remain in motion if no force acts upon it. Using forces and momentum, Newton indirectly states the first law, conservation of energy, for ideal conditions of frictionless motion in which kinetic energy is conserved. As an historical footnote, Gottfried Leibniz, a contemporary of Newton, more correctly sought to use energy (mass times velocity^2) as the conservation quantity, rather than momentum (mass times velocity) as Newton did. In retrospect, since the conservation of momentum is derived from the first law, the conservation of momentum will be equally true.

The difference between the first and second laws can be distinguished by a simple example. Suppose that a boy throws a rock in a mirror glass Walden Pond. Just before it strikes the water, the rock has useful or ordered energy which can be used to run a refrigerator or move a toy car quite a distance. However, the rock hits the water, sends out waves, and settles to the bottom. Gradually, the waves die

down and the pond returns to its mirror glass surface with no waves or visible motion. What happened to the energy that the rock possessed before it struck the water? The first law says that it must be conserved, no energy can be lost. The rock imparted its energy to the water and created the waves. The ordered wave energy became more disordered in the water molecules in the lake. All of the energy of the rock is now random energy in the water molecules and the lake is slightly warmer than before. Eventually, that lake energy will be given off to the atmosphere, and the atmospheric energy will then go into space to be spread throughout the Universe.

The first law accounts for all the energy. Before the lake lost its energy to atmosphere, it would have all the energy that the rock originally possessed. If the disordering or entropy of the second law were not true, the first law would allow the energy in the lake to lift up the stone, to form waves and to throw the rock back at the boy in the revenge of the lake without violating the first law. However, the second law prohibits the revenge of the lake from taking place. It states that, yes, the first law must balance the books but I have the sole right to tell how the energy is disbursed. It must be an irreversible event. Energy must go from ordered states to disordered states. It can not go from disordered to ordered energy. The lake can not avenge itself with its disordered molecular energy.

Both of these laws deal with closed systems. It means they are idealized for a system in a closed surface like air inside an inflated balloon. However, in the real Universe with its constant flux or flow of matter and energy, there is no such thing as a closed system. So for solving real problems with both laws, we subtract the matter and energy leaving the closed system from the matter and energy entering the closed system and this difference between the entering energy and leaving energy is equal to the change of matter and energy inside the closed system. Extending out this zero sum gain with a series of closed systems next to each other, one system will gain what its neighbor loses and vice versa. In this manner, both the law of the conservation of matter and energy and the law of increasing entropy or disorder are equally valid with a closed system or a series of adjacent closed systems. As an alternative, some scientists will expand the closed system to include significant sources or losses of matter and energy to the original system. For example, the earth and sun can be combined into a single closed system to handle the large exchange of energy and entropy from the sun to the earth.

In accordance with the second law, order, a localized decrease in entropy, can be produced under three special conditions: (1) strong internal energy bonding and a small change of entropy, (2) statistical probabilities in accordance with Boltzmann's equation, and (3) an ordered agent and a degradable energy supply.

Firstly, sometimes in a closed system, the internal energy of the system increases significantly, through strong chemical or nuclear bonds. This internal energy, known as enthalpy, can be so significant, especially at lower temperatures, that they can overcome the effect of entropy (disorder), if the change in entropy is

rather small. This relationship of internal energy, enthalpy, and entropy is expressed as Gibbs free energy in the equation, = h - T s 0, where g is Gibbs free energy, h is the internal energy (enthalpy), T is the temperature, and s is entropy. This equation states that, if the positive change in internal energy is greater than the temperature times the change in entropy in a reaction, then more order (the reverse of entropy) will result because there is a positive Gibbs free energy in the reaction. For instance, water will change to crystalline ice (a decrease of entropy) as the temperature is lowered because the T s term becomes less than the large h, the strong bonding energy change of ice from water. The change in entropy (s) from water molecules (liquid H^2O) to ice crystal molecules (solid H^2O) is very small. The weak entropy term (s) at lower temperatures (T) can be overcome by the strong internal energy change (h). That is why the strong bonding energy of inorganic compounds can form crystals at normal room temperatures around 300 degrees Kelvin above absolute zero.

But in the formation of crystals in accordance with Gibbs free energy, even very strong bonding energies can not overcome entropy in order to produce perfect crystals of normal size. Even in small crystals, there will be numerous imperfections (disorder) which will greatly weaken the ideal perfect crystal structure which would ideally be tremendously strong. As an example, a perfect steel crystal structure should have a tensile strength of millions of pounds per square inch. Because of the imperfections in the steel crystals caused by entropy, good steel only has tensile strengths of sixty thousand pounds per square inch! I remember a large block of steel weighing several tons in the rotunda of the main entrance to MIT, suspended by a nearly invisible thread. The thread was made of many long whiskers (only a few atoms in thickness) of perfect steel crystals. The number of atoms in the whiskers was very small so that they formed perfect crystals according to Gibbs free energy with a low value for entropy. As a consequence, these whiskers as perfect crystals had a tensile strength of over one million pounds per square inch! These perfect crystals are only possible in very strong bondage energies (high enthalpy change) and very simple and small systems (low entropy change) at temperatures of the Earth's biosphere (300 Kelvin).

Near absolute zero degrees Kelvin (K), almost all matter will become solids at ordinary atmospheric pressure except for hydrogen and helium. Some electrical systems can almost operate in perpetual motion near absolute zero. Electric currents will continuously run on a circuit with almost no resistance for long periods of time near absolute zero degrees temperature. Certain superconductors can act with very low entropy increase conditions even at temperatures well above absolute zero. This is known as superconductivity. In other cases, even at a room temperature of 300 K, some special laboratory conditions have been used to form simple protein crystals, such as precipitating egg albumin protein out of a saturated water solution by displacing them with inorganic salts.

Although there are some organic compounds with strong bonding energies that allows the formation of crystals, it is impossible in the more complex biological

chemical reactions necessary for life to have a positive Gibbs free energy. Such a biological reaction requires the internal energy change to be greater than the entropy change at temperatures where life takes place at about 300 degrees Kelvin which is virtually impossible. On the contrary, at 300 degrees K, all organic matter in life forms rapidly biodegraded unless it is maintained with a continuous food energy supply in a living organism. Gibb's free energy does not allow natural chemical processes to produce complex living systems from elements because of entropy at temperatures necessary for biological chemical reactions. This is true even in very small systems such as individual molecular systems or reactions.

Secondly, although complex biological systems can not be synthesized in nature by random chemical reactions, entropy will allow simple, ordered systems to form by time and chance in a very small part of large systems over long time periods. Ludwig Boltzmann, in the greatest triumph of kinetic theory, formulated entropy as a probability, S = k ln(w), where S is entropy, k is Boltzmann's constant, and ln(w) is the natural logarithm of the number of possible states of a given system of particles as measured from absolute zero degrees Kelvin. It was a stunning development linking entropy, a physical property, to pure mathematical probability. In fact, it is so significant that Boltzmann had this formula engraved on his grave in Vienna as his *opus magnus* (greatest work). The probability of events can be predicted based on the number of possible energy states that any closed system can have.

A brick on a table at room temperature, about 300 degrees K, has a tremendous amount of energy in its molecules. For instance, if all of the molecules in the brick should vibrate upward at exactly the same time (in unison), then the brick would go right through the ceiling. Using Boltzmann's equation, it can be calculated that it would take 10^{37} years for this event to happen. Even if the Universe is 10^{10} years old, the event of the brick going through the roof would be impossible. However, I understand that a group in Europe during the 1960s had a brick on a white table under constant surveillance to record such an event. With the odds determined by Boltzmann's equation, the success of this surveillance would be comparable to one ticket winning a lottery in which every one in the world (6 billion people) each bought 10 billion tickets each year and the winner waited 10 billion years to draw the lucky ticket. Entropy will never allow the brick on the table to beat the odds. Entropy is a bookmaker who always carries the winning odds.

Unfortunately, some scientific theories are violations of entropy as defined by Boltzmann's equation. For instance, biological evolution advocates use the Miller-Urey experiments in the 1950s of producing amino acids after a week in a spark chamber with a reduced atmosphere as proof that evolution can produce complex life from simple atoms by time and chance over a long period of time. It is implied that if amino acids can be formed by time and chance in one week, then humans with their stunning chemical complexity will evolve in millions of years by time and chance from random atoms. Theoretically, under ideal conditions the spark chamber in the Miller experiment will produce one million amino acids per

second by time and chance. So it is not unusual to find some amino acids in the Miller experiment after a week. But, if we hypothetically place all the matter in the universe (10 particles) in a spark chamber with the same ideal conditions that can produce one million amino acids per second, then not even <u>one</u> protein molecule would be formed by time and chance in 20 billion years! The probability odds increase exponentially with the complexity of the molecule to be formed by time and chance according to the second law of increasing disorder or entropy as defined by Boltzmann's equation.

Thirdly, order, the reverse of entropy (order from disorder), can also be produced by an ordered agent and a degradable energy supply. For instance, a watch can be disassembled and placed in a bag. An attempt to get an assembled watch could be tried by shaking the bag with energy and hoping that time and change will allow the watch pieces to come together. Even if the watch pieces are made of indestructible materials, such an event would not happen in 20 billion years. On the other hand, if a watchmaker and a degradable supply of energy in the form of sandwiches were placed into the bag, then an assembled watch could be produced in a relatively short time. In conformity with the second law of increasing entropy, the amount of energy taken from the sandwiches must exceed the energy needed by the watchmaker to assemble the watch. In addition to the degradable energy supply from the sandwiches, the watchmaker (the agent), of course, must be more complex or ordered than the watch, according to the second law of increasing entropy.

Philosophy and Physics

Philosophers in Western Civilization for more than two millennia assumed that the Universe is controlled by fundamental principles and sought to state them philosophically. These attempts cover the whole range of ideas: mathematics, alchemy, metaphysics, science, logic, religion, and abstract concepts to name a few. After centuries of failure in these attempts, Georg Wilhelm Hegel in the early 1800s proposed his dialectical process, known as the Hegelian triad, of a thesis, followed by an antithesis, which combine to form a synthesis. This synthesis then becomes the new thesis for a repetition of the dialectic process. Some of Hegel's colleagues and students at the University of Berlin adopted this Hegelian triad without any absolutes, rejecting the premise of absolutes underlying the operation of the Universe, held by the philosophers and scientists of former centuries. This Hegelian dialectic with its rejection of absolutes became the basis of most of modern thought. This dialectic gave birth to many isms in the 19th and 20th centuries which spread into nearly every area of human endeavor. This expansion of dialectic materialism has been profound, as well as extensive.

The social sciences and even some physical sciences, such as biology, were radically changed in this Hegelian revolution which overthrew of the idea that absolute principles rule the Universe. In sharp contrast at the same time during the

middle 1800s, physics was becoming more firmly based on the concept of absolute principles controlling the Universe. In fact, the very heart of the scientific method assumes that, given the same conditions, the Universe will always give the same result. This invariant operation of the Universe is the basis of the experimental proof to verify a theory. Science assumes that the Universe is ruled by absolute principles and always gives the same results to the same conditions. No theory or law can be certified without absolutely consistent results. No bird could land on the branch of a tree if the principles of aerodynamics even changed a minuscule amount. The society of bees would perish if any number of principles of nature varied slightly.

Quite apart from the birds and the bees, the whole realm of nature would self-destruct if gravity, electromagnetism, or other physical phenomena should lose their invariant performance. The Universe and the scientific study of it militate against this Hegelian dialectic materialism. In the middle 1800s, the formulation of the first and second laws of thermodynamics led science's antithetical march against this Hegelian tide. It was apparent that the Universe could not create or destroy one gram of matter or one joule of energy. Further, entropy clearly led to the singular conclusion of the irreversible heat death of the Universe. The absolute nature of Nature's laws, the inability of the Universe to create or destroy either of its two components-matter and energy, and the impotency of the Universe to save itself from certain death have serious anti-Hegelian implications. Hegelian dialectic materialism, the darling of modern human endeavors, needed something in the hard sciences, especially physics, to nullify or to disperse doubt about science's absolutism.

James Clerk Maxwell in the middle 1800s put forth his famous Maxwell's equations of electromagnetism. These differential calculus equations, consolidating the works of Michael Faraday, Hans Oersted, and Andre Ampere in electromagnetism, are one of the enduring accomplishments of modern physics. Earlier, Faraday had proposed light as an electromagnetic phenomenon because his experimentation showed that light reacted to a magnetic field but he lacked an experimental or mathematical means to confirm light's electromagnetic nature. Using his four equations of electromagnetism, Maxwell predicted the existence of light as transverse electromagnetic waves and the speed of these waves, the speed of light, as $c = \frac{1}{\sqrt{\varepsilon_0 \mu_0}}$, where c is the speed of light, ε_0 is an electric constant, and μ_0 is a magnetic constant. Using the electric constant and the magnetic constant of air or a vacuum, Maxwell theoretically predicted the speed of light accurately.

Two results of Maxwell's work are: (1) light and other electromagnetic waves are composed of an electric field and a magnetic field, oscillating perpendicular to each other as well as perpendicular to the direction of the wave travel, and (2) the speed of light is inversely proportional to the product of electric and magnetic constants of light's medium of transport. These electric and magnetic constants which determine the speed of light are properties of electric and magnetic fields of

charges in matter, external to the wave itself. The electric and magnetic fields in matter serve as the transport medium for the light wave to vibrate in and to travel through. Experimentally, Maxwell's theory, based on his equations, proved successful. In a multitude of transparent materials, the electric and magnetic constants of each material were measured and the theoretical speed of light always corresponded to the experimental. Further, because light changes speed as it travels from one medium to another medium according to $c = \frac{1}{\sqrt{\varepsilon\mu}}$, it changes direction in accordance with Snell's law as Maxwell's theory predicts and the first law of conservation of matter and energy requires.

However, light travels through a vacuum where there is no matter, such as star light through the vacuum of outer space. The conclusion in the middle and late 1800s was that there must be ethereal matter (ether) in vacuums like outer space which serves as the medium to transport light. The ether is ethereal because celestial bodies can travel through the ether without friction, and yet the ether must be material to have electric charges with electric and magnetic fields and their respective electric and magnetic constants. It was assumed to permeate all space and to be motionless, i.e. a fixed ether in space.

Michelson and Morley in the late 1800s performed experiments with an interferometer to determine wave sifts and therefore differences in the speed of light. If the ether is the transport medium of light and is fixed in space, then the speed of light on the earth as it travels through the fixed ether in space should be slower in the direction of earth's travel and faster in the opposite direction. Shockingly, the speed of light was the same in all directions during all times of day and all seasons (i.e., all orbital positions with respect to sun's position). Further, there was no experimental evidence of an ether with its unusual properties of no entropy effects in violation of the second law. The fixed ether theory was doomed.

Mathematical consideration was given to an entrained ether, an ether pulled along by bodies of matter. Smaller bodies of matter, less than the size of celestial bodies experimentally would have little entrained ether effect. However, ethers entrained by celestial bodies satisfy the theoretical mathematical basis for the transport medium of light but the existence of an ether was still difficult to prove experimentally. In fact, Hendrik Lorentz, using ether theory, developed the Lorentz transforms which predicted the contraction of bodies in the direction of travel as the bodies approach the speed of light. However, history took a dramatic turn before these theories could be tested and verified experimentally.

Albert Einstein in 1905 proposed his theory of special relativity to solve the fixed ether problem. Special relativity is special because it only applies to inertial frames of reference; that is, non-accelerating and non-gravitational frames of reference. In these constant velocity or non-accelerating inertial frames of reference, Einstein's special relativity has two postulates: (1) the laws of physics are the same in every inertial frame of reference, and (2) the speed of light is constant

regardless of the inertial frame of its origin or the inertial frame of any observer. The first postulate is simply classical physics. However, the second postulate is revolutionary. It rejects the theory that light has a medium of transport, contrary to an explicit implication of Maxwell's equations. It also rejects the concept of any preferred frame of reference, fixed or not. Einstein reinterpreted Lorentz's transforms to reject a Euclidean space and Galilean relativity which have independent, linear time and space dimensions. In Einstein's relativity, space is transformed to the frame of the observer and the interdependent space-time continuum will change each time the observer moves.

About ten years later, Einstein proposed his theory of general relativity. This theory applies to all frames of reference: accelerating and gravitational, as well as inertial or non-accelerating. General relativity only has one postulate: the equivalence of accelerating and gravitational frames of reference. If an observer feels a force pulling on him, he is unable to determine if the force is due to the acceleration of the frame of reference or if the force is due to a gravitational force from a nearby body of matter. According to Einstein, there is no instrument that can distinguish between accelerating and gravitational forces. This theory led to warped space, co-spatial (occupying the same space) with gravity fields around bodies of matter, particularly celestial bodies.

Einstein's two theories with their corollaries, such as E=mc , space-time continuum, and warped space, erased the line between mass and energy and between time and space. Einstein's theories mark the beginning of modern physics. Absolute mass, energy, time, space, and fixed reference points are eradicated in Einstein's theories of relativity. All of this is based on Einstein affirming the absolute speed of light and the equivalence of acceleration and gravity. Only absolute zero temperature remained of classical Euclidean space, Galilean relativity, and classical physics except in special conditions. Oddly, those special conditions of classical physics are the normal conditions of our existence and experience in the Universe. In fact, the space programs which require accurate and precise calculations for predictions never used Einstein's theories of relativity, preferring Galilean relativity and Newtonian gravitation. Further, the relativistic changes of mass and length at velocities approaching the speed of light, used in particle accelerators, can be developed mathematically from classical electromagnetism and Lorentz transforms without Einstein's relativity, using linear, interdependent time and space dimensions of classical physics. Even Newton's law of gravity and his corpus view of light would predict the bending of light in the gravitational field of a celestial body. Einstein's theories, contrary to public perception and academia's assertions, lack solid experimental proofs and are unnecessary in the applied science of our Universe, even at velocities approaching the speed of light.

Einstein's theories of relativity deal with the macrocosm. Quantum physics, originating with Einstein's theory on quantum states of electrons and developed by the Copenhagen school of Neil Bohr, deals with the microcosm. Einstein used his thought experiments (*gedanken*) to explain the logic of his macrocosm. Quantum

physics uses colorful terms like color, flavor, strangeness, charm, quarks, bosons, worm holes to spice up their flights of fantasy into the microcosm. More recently string and super-string theories are hypothesized to combine the theories of relativity macrocosm and the quantum physics microcosm. However, Bell's Theorem postulates that it is impossible to reconcile the theories of relativity and quantum physics.

Many of the public and even academicians have difficulty following the counter-intuitive explanations of both relativity and quantum physics. These modern physics outsiders struggle to fathom these concepts and assume that these concepts are the thoughts of great minds since they do not quite grasp the inner mysteries. The high priests of modern physics mesmerize the true believers and excommunicate or ridicule any skeptics. These later day alchemists and sorcerers of quantum physics conjure up the blind Fickle Finger of Fate as the Master Designer of the Universe with all of its incomprehensible complexity. More recently, some Grand Masters of modern physics with extreme counter intuitiveness and irrationalism weave together the widely acclaimed Einstein macrocosm and the quantum physics microcosm into super string theories; utterly spell binding both the initiated and the uninitiated.

However, Einstein's theories of relativity and its illegitimate, quantum offspring did not go unnoticed to the champions of Hegelian dialectic materialism. The destruction of absolutes of mass, energy, time, space, and absolute frames of reference was music to the ears of the Hegelians. Einstein's universe is not confined to absolutes, such immutabilities imply a past creation *ex nihilio* of the Universe with its complex order. Ironically, it is the same complex order which the Universe is losing every day. George Bernard Shaw, the prominent promoter of Darwin, adored and promoted Einstein for the conclusions of relativism fostered by his theories of relativity. Even the word relativity in the ear of the public seems to give relativism a scientific basis, although the two words, relativity and relativism, are about two different concepts. But perception is everything and as T.B. Barnum, the highly successful circus showman, said of the public, "There is a fool born every minute." Einstein with his catchy $E=mc^2$, implying that matter converts to energy and vice versa, was a fascinating product easy to market. Did not the later explosion of the atomic bomb about 50 years later just confirm the erasure of the line between matter and energy by converting matter into a huge amount of energy? The Hegelian dialectic materialism found its much sought after absolution of absolutes controlling the Universe in the hard sciences with Einstein's two theories of relativity. What Darwin had done for the Hegelian dialectic in origin of biological life without divine origins, Einstein did for the origin of the universe without God.

The Origin of Life and Darwinism-Implications of the Two Laws of Science

Darwinian evolution is founded on the bedrock of the Primary Axiom that all life, of which man is the apex, arose from (1) *beneficial random mutations* chosen by (2) *natural selection*. The time and chance random mutations produce beneficial mutations which have superior qualities for an organism to enhance its survivability over its progenitors who lacked these beneficial mutations. These beneficial mutations increase over time in complexity and order from random atoms to man. The natural selection mechanism has a two-fold function, one positive and one negative. Positively, natural selection gives the organism with the beneficial mutations an ability to compete and survive in conditions that its progenitor could not. Negatively, it eliminates degenerative or non-beneficial mutations by making the organism that possesses the regressive mutation less able to compete and to survive than the comparable organisms with no mutation or a beneficial mutation. For Darwinian evolution, the tree of life is made up of species of increasing order brought about by random, beneficial mutations chosen by natural selection.

From scientific prospective, all biological systems, both plant and animal, must be considered chemicals reacting in accordance with the laws of chemistry and more specifically the laws of physics. First, all living systems are matter, elements from the periodic table, interacting almost exclusively in chemical reactions (the exchange of electrons). Few, if any, of the reactions involve nuclear reactions (the change of the protons and neutrons in the nucleus). In all these biological reactions, matter and energy are always quantitatively conserved. There is always the same amount of matter and energy before and after the reactions. Secondly, all these biological reactions take place where the net change in disorder (entropy) always increases. Further, the information and agent to produce the order in biological systems must be more ordered than the system that is constructed, especially for the propagation of any living species. In living systems, the information resides in the genetic code, the genome, of every cell. The agent is the complex cellular structures and systems, such as mitochondria and ribosomes, in each cell which manufacture the biological systems for life from the information in the genetic code.

An example of the fertilized egg of a human being shows this biological development of complex structures from a less complex one. The fertilized egg, if it contains a good set of genes and a continuous supply of food, will develop into a highly complex human being. Once fertilization has taken place, the genome of each individual human is determined with all of his or hers unique characteristics. On one hand, if the genetic material is sufficiently damaged or removed, then the human will not develop properly and will die. On the other hand, if the continuous food supply is stopped, then the human also will not develop and will die. An ordered system can only be produced from a less ordered system if (1) there is an active agent with the ordered information necessary to construct the ordered system, and if (2) there is more ordered energy available to the agent than is used to construct the ordered system (a net gain of disorder). The watch and the sandwich-eating watchmaker example illustrate the necessity of an active ordered agent using a degradable energy supply. Energy alone will not produce order. An ordered

agent alone, not matter how complex, will not produce order as non-living virus, replete with information, outside of living cells show.

In fact, some evolutionists advocate that the energy from the sun can drive an evolutionary system upward to higher ordered life forms. In reality, order and complexity are under the rule of the second law of increasing disorder, and not the first law of conservation of matter and energy. Adding the sun's energy to the earth without a pre-existing, ordered agent has exactly the opposite effect. The more energy that the sun gives to the earth, without the proper agents of order which can utilize the sun's energy, the faster any ordered systems will biodegrade. Anything organic left in the sun will decompose faster the more energy it receives in radiation from the sun. Higher energy radiation will degrade organic matter faster than lower energy radiation.

In an analog, all the building materials needed to construct a nice office building can be gathered together in one place. All the energy needed to construct the building could be sprayed on these materials in the form of gasoline and ignited. All the energy needed for the construction is available in the gasoline. However, the burning gasoline will never produce a fine office building although materials and energy are more than adequate. On the contrary, the energy in the burning gasoline will reduce the materials to uselessness, losing even the order that they previously possessed. Energy is no substitute for order, decreased entropy. Likewise, an explosion in a print shop will not produce a Webster's dictionary. A powerful tornado churning through a junkyard in Wichita never produces a Boeing 747 airliner, although the tornado has the energy necessary and the junkyard belongs to the Boeing Aircraft company. Excessive energy from a high energy source like the sun without a highly ordered agent will never produce complex biological life forms.

George Bernard Shaw, even in the 1800s was aware of this problem, and affirmed that given a million monkeys typing randomly on typewriters, the monkeys would type a play of Shakespeare. A friend from MIT and I worked out the probabilities of such an occasion. We took the Shakespearean play of Othello which begins with three four-lettered words. For the sake of argument, we assumed that there are four four-lettered words. We assumed one million monkeys (10), typing randomly at 100 words per minute. How long would it take for the probability to be one that somewhere in their random typing that there is the first word, four letters in sequence? Well, it is only 2 seconds. Let us double that to two words or eight letters in sequence. That would only take about 5 minutes. Let us double it again to four words or sixteen letters in sequence. That would take the monkeys one hundred million years!! Shaw was a great playwright but a poor mathematician and scientist. I am sure that he never produced any of his plays by randomly typing monkeys.

Nearly two hundred years ago, William Paley, trained as a churchman at Christ College, Cambridge University as was Charles Darwin, noted that a watch lying on the ground implies the existence of a watchmaker. The watch can not be

the product of the blind forces of nature. In essence, Paley reaches the same conclusion with logic that the two basic laws of science today affirm-life with its astonishing molecular complexity can not be a product of time and chance interactions of matter and energy.

From the geological record, it is estimated by many scientists that the Earth has lost 99% of all the species that have lived on the earth. In fact, each year there probably are species of microorganisms disappearing forever. Even of the remaining 1% of species, there is a continuous degradation of their genetic material. Degenerative mutations are accumulated in each successive generation since natural selection is incapable of distinguishing these incremental mutations. Consequently, each generation passes on a degenerative mutated gene pool to the next generation. This genetic making of copies from degenerate copies is slow but irreversible in large populations and is rapid in small populations of a species. That is why close inbreeding can lead to the rapid demise of small group species. Some geneticists have surmised that the lost of 99% of Earth's species may be due to this irreversible genetic meltdown rather than catastrophic geophysical events. The geological record of species in rock indicates that genetic entropy (increasing disorder) rather than genetic evolution (increasing order) is the rule of nature.

All life forms are classified by genus and species. In fact, each species can not, by definition, interbreed with another species and have a fertile offspring. Because no species of plants and animals can interbreed with any other species, there is no continuous reproduction of species from inorganic atoms to man. The inverse is true. The chain of life only has missing links between all species, contrary to an essential doctrine of evolution whereby man must be a product of continuous reproduction from random atoms. In contradiction to the necessity of continuous reproduction of all species from inorganic atoms according to the theory of evolution, the whole spectrum of species, both animal and plant, is completely discontinuous.

This discontinuity of life forms of species is formidable in asexual reproduction where only one organism is needed to make this quantum leap to form and to perpetuate a new species. However, in higher animal species and some plant species, sexual reproduction is necessary to perpetuate a new species. In sexual reproduction of these higher species, there must be a male and female with the same genetic mutation to form the new quantum species. Two males or two females, even with the genome of the new species, will not procreate offspring in sexual reproduction. Further, this male and female of the new species must exist at the same time, must be at the same geographical location on the Earth, must be at the same breeding age of life, and must breed together in order to perpetuate the new species. The odds of sexual reproduction to develop a new species are astronomically greater than asexual reproduction. The fight against entropy to get just one new species by time and chance, across this discontinuity of species using sexual reproduction is impossible, a mathematical absurdity.

Undaunted by the mathematical realities of entropy, evolutionists somehow hope that long periods of time will supply evolution the time necessary for chance mutations to occur. Radioactive dating of fossils and other geological materials is used to get billions of years for this evolutionary process to happen. Because of entropy, larger elements over time decay into simpler elements through the loss of nuclear matter, usually neutrons. It is assumed that the exponential rates of decay are constant over time. This decay sometimes takes millions of years for the radioactive material to lose one-half of its original matter. The slow rate of decay is true in uranium to produce lead, strontium to produce rubidium, and potassium to produce argon. By measuring the amount of parent material for instance uranium, and the amount of the radioactive offspring, lead in the case of uranium, the age of an object which originally contained no offspring material can be determined based on the radioactive half-life. If the half-life decay is 5 million years and only one-fourth of the original radioactive material is left, then there have been two half-lives of decay or 10 million years.

There are generally considered three types of rock material on Earth: (1) sedimentary, (2) igneous or volcanic, and (3) metamorphic. Since fossils, mineralized remains of plants and animals, are found in sedimentary rock and some metamorphic rock formed from sediments, radiometric dating is used to date the age of the fossils. However, it is impossible to date fossils with this method because the fossils have been mineralized by inorganic materials from the sedimentary layer around them. For instance, the inorganic calcium in a bone fossil is not the organic calcium that was in the living animal. The material in any mineralized fossil is not the organic material in the living animal or plant so radioactive dating of the imported elements can not date the fossilized remains and its sedimentary layers!

Even in living animals, the non-mineralized portions of fossils, or sedimentary layers, the dating of radioactive elements is not valid because the living organism, sedimentary layer, or fossil do not contain only the radioactive parent element. Generally, the radioactive offspring elements are found together with its parent element both in living and geophysical sites because the parent-offspring radioactive pair often has similar physical characteristics (an exception is a solid/gas pair such as potassium/argon). As an example, uranium and lead are generally found together because they have similar physical properties. The same is true of most of the parent-daughter radioactive pairs. Radioactive dating, to be accurate, must assume that all the radioactive offspring (such as lead isotopes) is the product of radioactive decay of its parent (such as uranium). This false assumption explains why the use of two different radioactive pairs rarely gives the same date within the acceptable standard deviation of less than 5%, such as uranium-lead dating compared to strontium-rubidium dating. In any case, dating of fossils in sedimentary rocks is inadmissible because (1) the radioactive elements used for dating did not begin (come into existence) in the living organism, (2) the dating material in most cases never existed in the original living organism, and (3) the material surrounding the fossils invariably has contamination with elements, identical to daughters but of non-radioactive origins.

Carbon dating using ^{14}C to ^{12}C decay with a half life of slightly over 5,000 years has a number of problems, besides sample contamination. But, even reaching technical accuracies of 10 half-lives, this method can not exceed a theoretical time scale of 100,000 years. There should not be even any atoms of ^{14}C in any sample over 100,000 years. Recent research indicates that the quantity of ^{14}C levels off instead of approaching zero as radioactive decay would demand. Independently tested samples never seem to go below the levels of ^{14}C expected for 10,000 years ago, even where no contamination of atmospheric ^{14}C is possible into sedimentary samples. This would imply that none of the samples are more than 10,000 year old! This applies to coal beds that have been assigned ages in the 100,000,0000s of years!

Knowing the problem of mineralization of fossils in sedimentary rocks, some evolutionists have used igneous or volcanic layers between the sedimentary layers to date geophysical and biological processes. This method of dating has some of the same problems of getting a starting point for the radioactive decay as in sedimentary rock. For instance, Mount St. Helens exploded in 1980 and left significant ash deposits of igneous material. Using radioactive isotopes of argon to argon decay, as well as potassium to argon, the youngest dates of the igneous ash material are in the millions of years, although the eruption only took place 30 years ago! Even some of the trees, such as those in Spirit Lake, are already mineralizing into fossils upside down in a time period of years, not millions of years!

The dating of metamorphic rock is even more perplexing. The radioactive decay of some elements leaves a distinctive halo mark in the surrounding material. The metamorphic rock must be solidified in order for the halo to be imprinted in the rock because of the extremely short half-lives. Granite, usually a very durable metamorphic rock, sometimes has halos of radioactive elements which have a very short half-life of hours or a few days, such as polonium. It is hard to conceive of geophysical conditions that would allow the granite to entrap polonium in its matrix and cool fast enough so that the polonium decay would leave a halo imprint in the solid rock. Based on recent research, there appears to be no rapid transmigration of the polonium from the outside into the granite. Also, there is no other radioactive parent in the granite that could produce polonium as an offspring which would then rapidly decay, producing the halo imprint. It is almost as if the polonium was created inside the solid granite. These halos appear in hard gems such as diamonds.

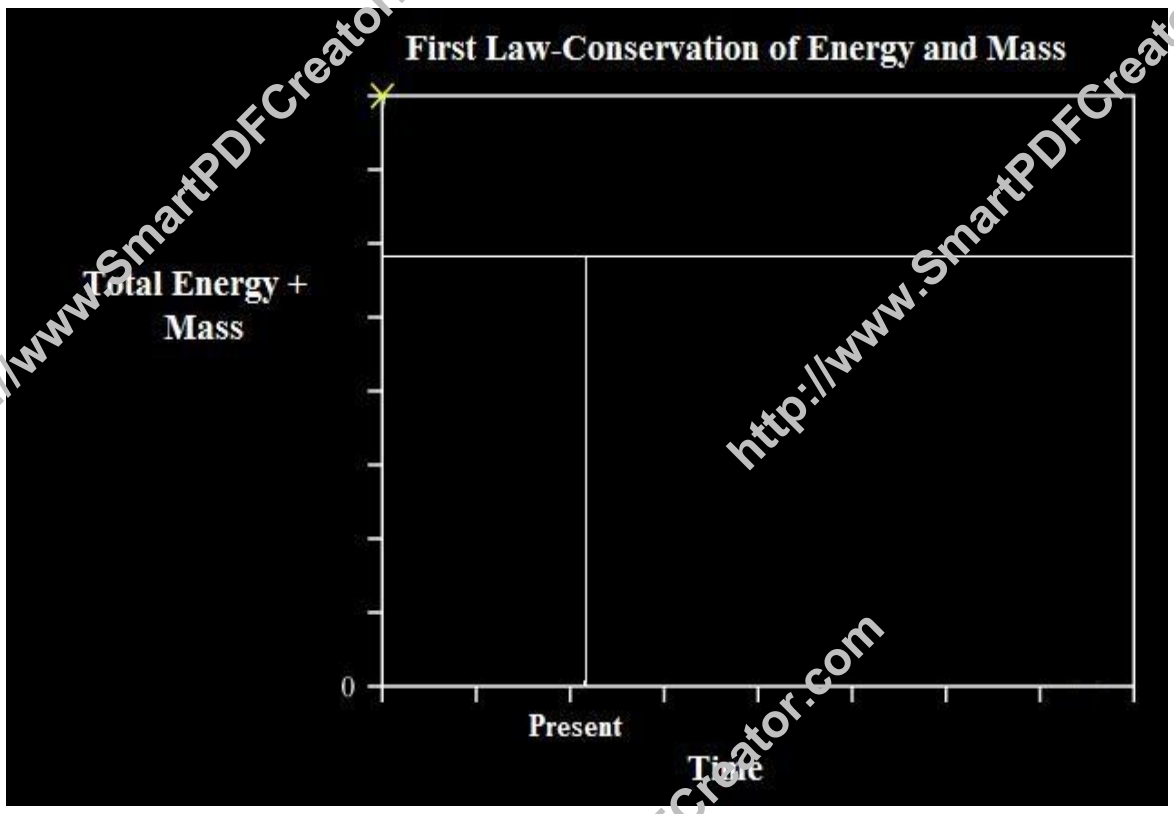
Metamorphic rocks are also an enigma as far as their origin, quite apart from the radioactive decay halos. Most metamorphic rock appears to be preexisting units of minerals that are fused together under great pressure and probably intense heat, conditions necessary to liquefy the preexisting minerals. All efforts to reproduce this matrix of fused crystalline structures have all failed experimentally. Also, the metamorphic rock has been melted together into a homogenous mass and then has been resolidified in every conceivable manner. Never has it been possible experimentally to reproduce these metamorphic matrixes of quartz, feldspar, and mica or even marbles out of sedimentary rock. These non-homogenous crystalline

units do not fuse nor do they resolidify from homogenous melts under any conditions. Entropy does not appear to allow these ordered crystals to reform from disordered molecules of the liquid mixture, although it would seem possible from Gibbs free energy (strong bonding energies and a small change of entropy from liquids to crystals). These units of minerals, such as quartz, feldspar, and mica, seem to have been loose granules on the surface of the Earth which were later fused together. This would take some incredible and unknown geomorphic processes taking loose granules, fusing them (with heat, pressure, or cementing agent), and then leaving the metamorphic matrix exposed on or near the Earth's surface.

Radioactive dating of sedimentary, igneous, and metamorphic rocks has major problems, each for different reasons, which can not and does not give any accuracy according to scientific testing standards. Even if the age of the Earth is in the billions of years, entropy would not allow the whole Universe to produce life forms anywhere in 20 or 30 billions years by time and chance. In spite of this impossibility on a cosmic level, some evolutionists, acknowledging the impossibility of time and chance evolution on the earth, embrace panspermia, the planting of life forms on the Earth. For instance, Sir Fredrick Hoyle, the preeminent Cambridge University cosmologist, believed, as an agnostic, that the genetic material for the different phyla came from other parts of the Universe embedded in meteorites. Others such as Dr. Crick, the Nobel laureate for the discovery of the helix molecular structure of DNA, believed that life was planted on the Earth by intelligent, ordered aliens, although the existence of such beings has never been established by SETI (Search for Extraterrestrial Intelligence) after decades of listening for an ordered signal from outer space. Ironically, the major premise of the SETI, most of whose collaborators are evolutionists like Carl Sagan, the founder, is that an ordered signal can only come from ordered, intelligent agents, as entropy would demand!

The Origin of the Universe-Implications of the Two Laws of Science

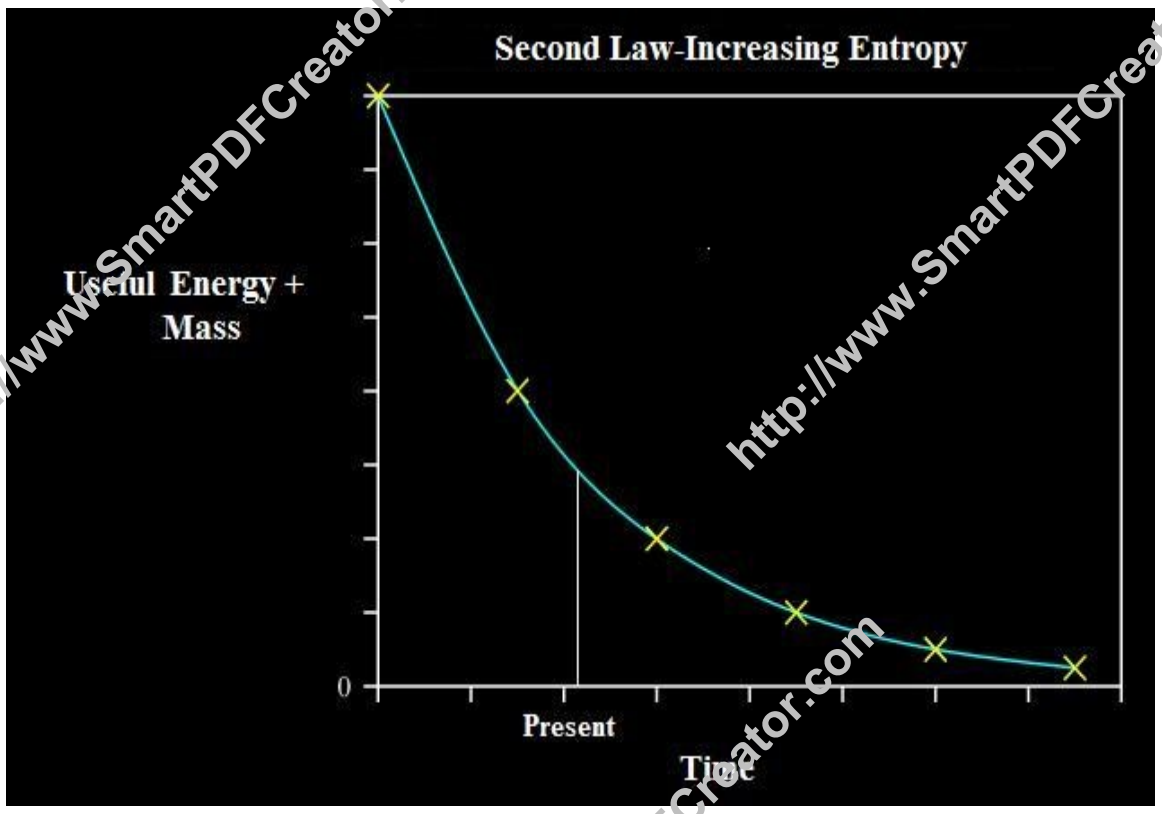
The first two laws have implications concerning the origin of the Universe, just as they do for the origin of life. The first law, the conservation of energy and matter can be plotted as the total quantity of matter and energy in the Universe as a function of time as shown below.



First Law-Total Energy and Mass versus Time 2

The total quantity of matter and energy is constant for all time. Matter, as mass, will be considered another form of energy according the equation, $E = mc^2$. At the present time, the Universe has the same quantity of matter and energy as the Universe had a thousand years ago and will have a thousand years from now.

The second law, increasing entropy (disorder), can be expressed as the <u>useful</u> quantity of matter and energy. As the matter and energy in the Universe becomes disordered, the useful quantity of energy in the Universe decreases. This decay, like most types of radioactive decay, is an exponential decay. The Universe's useful energy will approach, but never reach, a zero value in the future. In the past, the Universe had an exponentially larger and larger quantity of useful energy as we go back in time. The Universe's useful quantity of energy and matter is shown in the following graph as a function of time. Again matter, as mass, is considered a form of energy by Einstein's $E = mc^2$.



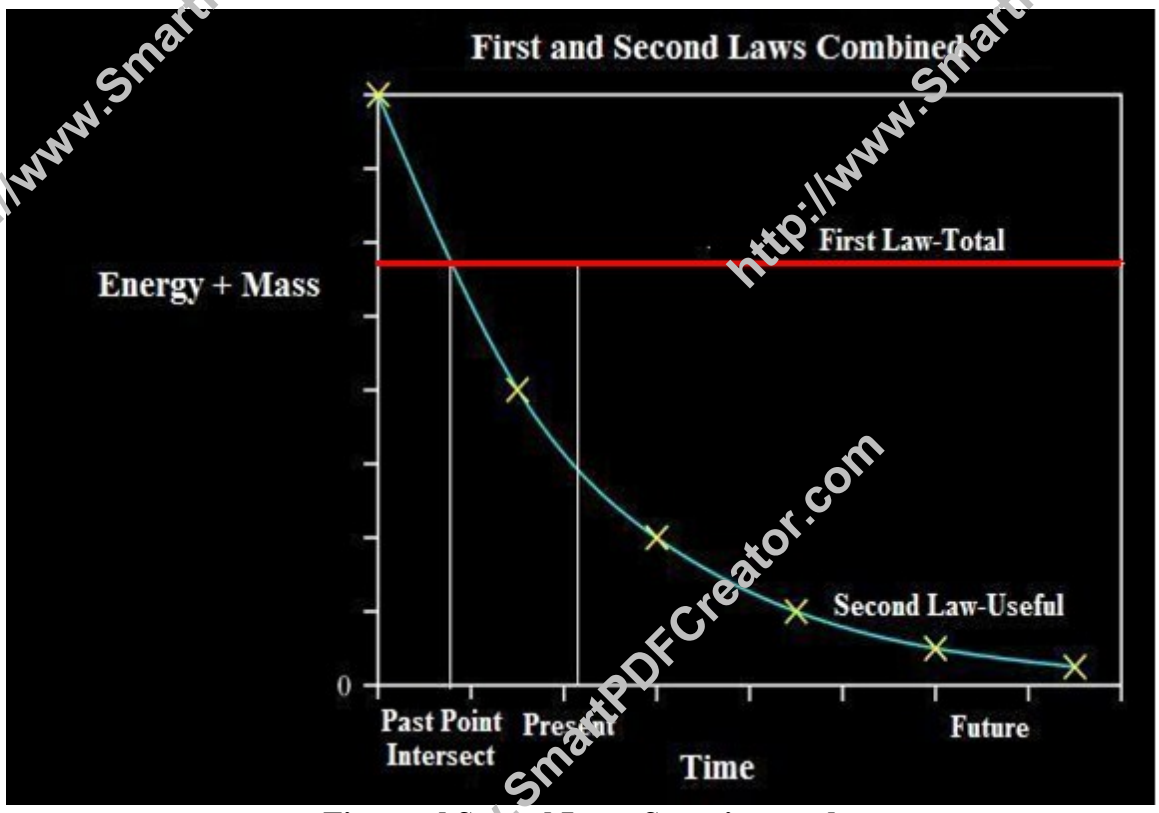
Second Law-Useful Energy and Mass versus Time

Yesterday, the Universe had more useful energy and matter than it has today. And today the Universe has more useful energy than it will have tomorrow, although the loss of useful energy will decrease slightly each day, typical of exponential decay. It will never reach zero but will approach zero asymptotically.

These two graphs of the two laws can be viewed in two ways. For the first law, if the Universe is closed as Einstein and others affirm, then the quantities of total matter and energy are considered finite. On the other hand, if the Universe is infinite in space, the total energy and matter coordinate of the chart would be considered densities of matter and energy. A Universe with infinite space would have a finite total energy and matter density, since what one volume or closed surface would lose a neighboring closed surface would gain with a zero sum gain in energy and matter.

The same rationale would apply to the useful energy and matter coordinate of the second law chart for either the finite or infinite Universe, although the useful energy and matter decreases with time. For each graph of both laws, the coordinate for energy and matter (total-first law or useful-second law) would be a large, but finite, quantity for a finite Universe or a finite density for an infinite Universe. The total energy and matter for the first law will be fixed for all time for the first law. On the other hand, the useful energy and matter for the second law will be decreasing, probably exponentially, with time.

The following chart superimposes the two previous graphs, one for each of the two laws, together.



First and Second Laws Superimposed

The present time is indicated by a vertical line Present. Points of time in the future have to do with the destiny of the Universe which has already been discussed and will be mentioned again later. Concerning the origin of the Universe, there is a point in the past where the lines for the first law and for the second law intersect, Past Point Intersect. At that point in the past, the useful quantity of matter and energy in the Universe is equal to the total quantity of matter and energy. All of the energy in the Universe would theoretically be in one particle.

However, the two laws of physics make it impossible to go back further in time from this Past Point intersection of the graphs of the two laws. First, before this intersection time, the useful energy line can not continue its exponential increase into the past because there can not be more useful energy than total energy. Continuing the exponential curve of the graph of the useful energy before this intersection point in time, there would be more useful energy than total energy. Since the total energy is equal to the sum of the useful and non-useful energy components of the total potential energy, the useful energy can not be greater than the total energy.

Second, the particle containing all of the energy of the Universe could not have retained all of the Universe's energy for even a moment of time earlier than the time when the two lines intersect, Past Point Intersect. A particle possessing all of the Universe's energy would rapidly begin transferring this energy to other particles or emitting its energy in the form of electromagnetic radiation. The second law would not permit the particle to exist before this point in time without losing its energy to the rest of the Universe.

Third, all the energy in the Universe could not have been at nearly zero useful energy (about 4 degrees Kelvin) and then jumped up to a high useful energy value. In this case, all the energy in the Universe, against the second law of increasing entropy (order), could not be transferred into one particle from all the other matter at that point in time. That energized particle then would begin the entropy decay of the Universe. This is the brick on the table illustration taken to a cosmic level. From Boltzmann's equation of entropy, the probability of the whole Universe to have this reversal of entropy is more than a googleplex (10 to the 10 power) of years. Such an event would be an extreme violation of the second law of increasing entropy to have all of the energy in the entire Universe go from totally disordered states to the singular ordered state before it began its present exponential decay.

The first law clearly states that the Universe can not create or destroy one gram of matter or one joule of energy forever. The Universe can not procreate itself! Even using Einstein's $E = mc^2$, the total energy and mass equivalence of energy in the Universe will always be the same. According to the first law there are only two options as far as the origin of the Universe: (1) the Universe is eternal with an unchanging quantity of matter and energy, or (2) the Universe came into being by some supernatural (non-natural) creation of all the matter and energy by some agency external to the Universe. The second law eliminates the first option (an eternal Universe) at the point a finite time ago in the past (the Past Point Intersect- the intersection of useful and total energy and mass) where all of the energy in the Universe was possessed by one particle. The Universe could not have reversed entropy from total disorder to an extremely high order on a cosmic level and then began its present decay again 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 useful energy and matter than total energy and matter. Neither can all the energy of Universe reside in one particle before this point of time 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 nihilio,* out of nothing) 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.

The Myths of Modern Science and the Laws of Science

Forensics is not just an art plied by criminologists and pathologists to solve crimes. Every piece of art, music, machine, or crime bears very distinct marks of its maker. If a painting is brought to an art expert specializing in the Dutch Masters, that expert can tell if the painting is a genuine Rembrandt or not; although he has never met Rembrandt nor does he know anyone who has met Rembrandt. A specialist in Bach can with careful examination determine if a score of music is a lost work of Bach's or not. Again, this music expert can affirm personally the existence of Johann Sebastian Bach and identify his works of music. A forensic pathologist can give the profile of an individual including its age, type of occupation, cause and circumstance of death, even from a skeleton taken, for instance, from the ruins of Pompeii which was destroyed nearly two millennia ago. A good forensic psychologist can write an accurate personality profile of a criminal whom he has never met simply from details of the criminal's modus operandi (method of operation). An inventor betrays his personality in his mechanical inventions to an observant analytical engineer. A mass-production gun will leave distinctive rifling marks on a bullet. A good ballistics expert can identify an individual gun from other guns produced by the same machines at the same arms factory by these distinctive marks on a bullet fired from the gun. The watch makers of old left their hallmarks in every watch they made. A violin is known as a Stradivarius by the marks of its maker's hand. So the Universe bears the marks of its Maker from its intricate structures and its imbedded laws of operation.

The Universe is incapable of creating or destroying any of its own essence, matter and energy. Further, 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 galactic 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 colder parts of the Universe. Energy cascades downward until all of the energy and matter in the Universe in the future will be uniformly 4 degrees above absolute zero as a vast ocean of electromagnetic microwaves, filling all of space.

Long before this happens, light will disappear from the Universe. Even before the disappearance of light, genetic entropy will degenerately 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 Hamlet'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.

Looking back in time, however, the two laws of science can interpolate certain parameters 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 tell us about the Universe's origin?

First, like the watchmaker and the sandwiches, the Universe must have been given its ordered matter and energy from a highly ordered agent with an energy supply greater than the Universe's total matter and energy. In the deep field Hubble telescope photos, galaxies are seen disappearing into infinity in every direction. Novas and supernovas, explosions of stars and possibly galaxies are seen in every direction. 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. The ordered agent necessary to give the Universe its matter and energy and to give the Universe its 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 an agent made of matter can not travel faster than the speed of light to access all parts of the Universe. No matter can travel faster than the speed of light. If this agent did its ordering of the Universe at a point when the Universe was all 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 because of the incredibly high temperatures. So in either case of the Big Bang or of an immensely expansive Universe, 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 both (1) to bring into existence the total quantity of matter and energy of the Universe initially, and then (2) to order the Universe's matter and energy into the highly ordered states from which it is presently decaying. The agent would have to manipulate the stars, galaxies, and super clusters at energy levels unavailable in the natural realm or laws of the Universe. 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 the Universe 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 must have more order than the most complex part of the Universe. Information theory, derived from the second law, requires an ordered system to be ordered by an agent with more information or order than the ordered system which the agent produces. Applied to the complex order of the Universe, the agent that ordered the Universe must be more complex than man, the most complex part of the Universe, including the personality of man (intellect, emotion, and will). The agent can not be an impersonal force. Hypothetically, the agent which ordered the Universe would have to be more complex than aliens if they exist.

In summation, the ordering 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 temperature 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.

It might be appropriate to use the "G" word. If we are not talking about a personal supernatural 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 and order of matter and energy in the Universe. These same two laws limit the conclusions to a supernatural, intelligent agent with all the personality and power exclusively belonging to God in order to bring the matter and energy of the Universe into being and give the Universe its complex order. This is not a philosophical or religious conclusion, rather it is the conclusion of the most basic laws of science, the first and second laws of physics.

The Great Myths of Modern Science Contrary to the Laws of Science

The primary ideal laws of science are derived from the first law, conservation of matter and energy. Among these are the conservation of momentum, conservation of angular momentum, conservative fields (electric, magnetic, and gravity), gas laws, laws of mechanics, and chemical reactions, to name a few. However, there are other sacrosanct teachings of modern science which are violations of these two primary laws, the bedrock of science. These other teachings of modern science, although violations of the two primary laws of science, are considered infallible and indisputable in modern science, like some holy decrees from on high.

First Myth: The Big Bang

Considering the origin of the Universe itself, the Big Bang theory is presently held as the mantra of cosmology. In close analysis, the Big Bang theory appears to violate not only the two basic laws but also almost all of the other primary laws of physics, derived from these two laws.

First, all the matter in the Universe is in rotary motion, every smaller body rotating around a larger celestial body (moons around planets, planets and comets around stars, stars around galaxy centers, galaxies around the center of superclusters). A satellite must have rotary motion around its host body in order to have a centripetal force from its angular acceleration to counter act the gravitational pull of its host. Otherwise every satellite, such as our Moon, will be pulled by gravity into its host, the Earth in the case of our Moon.

In reflection, it is hard to conceive that a Big Bang could give matter rotary motion since the forces in an explosion are only radially outward with no rotary components. In contrast to an explosion in an atmosphere which can produce rotary eddy currents because of friction from the atmospheric gases, empty space has no friction forces to induce counter rotating angular momenta. Since gravity only acts from centers of matter, neither can gravity give matter any angular momentum in an explosion in space. Further, this rotary motion places almost all the matter in the Universe in nearly perfect stable orbits which is extraordinary in itself. It is nearly impossible to place a satellite in a long term stable orbit, yet nearly all the matter in the Universe is in stable orbits. For example, of the thousands of objects placed in orbit by man around the Earth, all these objects either shoot off into space or fall back into the Earth in a relatively short time frame. Putting satellites in orbit around the earth is largely a simple two body gravitational problem. The mathematics of establishing a solar system such as our own with a hundred bodies (planets and moons) into stable orbits is beyond man's capabilities, much less man's ability to physically accomplish such a feat with any means or energy sources.

In any case, this rotary motion of all the matter in the Universe, particularly concentrated in superclusters of galaxies, represents huge, net amounts of angular momenta. The large angular momenta of these superclusters are net amounts since the angular momenta do not appear to be counter-rotating, whether in solar systems, galaxies, or super clusters of galaxies. Equal counter-rotating angular momenta would give a zero net sum of angular momentum in the Universe. Going back to the time of the Big Bang when the initial body of matter contained all of the angular momentum of the Universe, the conservation of angular momentum would have this initial matter rotating at a speed much in excess of the speed of light, probably at googolplexes ($10^{10^{100}}$) times the speed of light. In fact, the initial matter of a single galaxy would possibly spin at speeds, predicted by the conservation of angular momentum, of over a googol (10^{100}) times the speed of light. Since the mass of any matter approaches infinity as the body of matter approaches the speed of light, no matter can travel or spin at speeds greater than the speed of light. This impossibility means that the Big Bang theory would violate the conservation of angular momentum, given the huge angular momenta in the Universe.

Second, from Newton's third law (For every action, there is an equal and opposite reaction) in an explosion like the Big Bang there must be equal and opposite momenta of matter moving away from the center of the explosion. However, the Universe is lumpy. The matter in the Universe is not evenly distributed. The matter in the Universe forms clumps of matter configured in superclusters and concentrated in irregular parts of the Universe. There is no position in the Universe where there are equal amounts of momentum moving away from each other in opposite directions which Newton's third law would require. In the case of Newton's third law, the Big Bang theory violates the conservation of momentum.

Third, since the explosion of the Big Bang would atomize all matter into gases or particles, it is difficult to conceive of gravity recollecting these gases and particles into celestial bodies and systems. The energy levels of the gases and particles would make it impossible to overcome the second law of increasing entropy or disorder in order to recombine these scattered atoms and particles into larger bodies. Gravity is certainly too weak. Gravity, like all the king's men and all the king's horses, can not put the Universe, like Humpty Dumpty, together again once matter is blown with super high energies into gases and particles by the Big Bang.

With an equal amount of positive and negative charges, it is likewise impossible to attribute the formation of celestial bodies to electromagnetic forces. Even invoking the hypothetical weaker and greater nuclear forces, it is difficult to explain the formation of elements higher than helium and their successful exit from the "cooker" of a star. If higher elements can form in the high temperature conditions of a star, then they can equally disassociate in such conditions. Even in the explosion of a star, a nova, the higher elements will easily disintegrate into lower elements, releasing helium or alpha particles, as it is blown out of the star's

incubator conditions. The formation of heavier elements and celestial bodies in a Big Bang scenario likewise would be a violation of the second law of increasing entropy or the first law of conservation of matter and energy.

Fourth, recent observations of light from the fringes of the Universe can indicate that these fringe bodies are accelerating outward. Light has a Doppler effect of red or blue shift depending on whether the light is moving toward or away from the observer. The Doppler effect with sound waves is heard with a high pitched sound from the horn as an automobile approaches and the low pitched horn sound after the car passed and leaves. The current cosmological interpretation of the shift from light-emitting bodies on the fringe of the Universe is that the bodies are accelerating away from us.

In an explosion like the Big Bang, bodies of matter will initially have great velocity from the center of mass of the explosion. However, gravity will act on the body from the center of the explosion of the Big Bang and the body, although it may have great velocity, will continuously decelerate because of the gravitational pull back toward the center of the Big Bang. Since the light shift indicates acceleration, instead of deceleration, then the bodies are assumed to be under the influence of anti-gravity forces instead of gravity. So cosmologists believe that there is dark matter and dark energy, comprising 95 % of the matter and energy of the Universe, which is anti-gravity. The other 5 %, the visible matter and energy of Universe, operates on gravity. The mainstream proponents of the Big Bang now advocate that 95 % of the Universe operates on antigravity. The Big Bang, contrary to Newton's Law of Gravity, embraces antigravity as a principal force in the Universe.

Since science assumes that the laws of physics are universal throughout the whole Universe; all of the laws formulated and tested here on Earth would be equally true in the rest of the Universe. However, the Big Bang appears to violate most of the established laws of science, tested to be true on the Earth. The Big Bang theory violates the conservation of angular momentum, the conservation of momentum, increasing entropy, and gravity. Although it is one of the holy grails of modern science, the Big Bang theory of the origin of the Universe is the <u>first</u> of the great myths of modern science since it violates most of our major laws of science.

<u>Second Myth:</u> <u>Evolution</u>

Evolution, the increasing order of systems, is taught as the law of change not only for the origin of the Universe but also for the origin of life in the Universe. As has been alluded to earlier on several occasions, the evolution of random atoms into complex life forms such as man is impossible by a time and chance mechanism. This theory of evolution is a violation of the second law of increasing entropy or disorder.

Evolution, although not even theoretically possible, is taught as a basic concept underlying most of science. It is the scientific basis of the Hegelian

dialectric triad, sometimes called scientific materialism. Scientific materialism, a God-less philosophy, seeks to explain the high degree of order and complexity in the Universe from no order using naturalism without supernatural intervention. Unfortunately, the two basic laws of science, the basis of naturalism, militate against the ability of the Universe, acting in accordance with the laws of science, to produce ordered systems of the magnitude of life forms or even non-living systems such as celestial bodies. Life forms are experiencing genetic entropy, death, and biodegradation, just as the suns, galaxies, and the superclusters are suffering physical entropy and cosmic death. The Universe with its biological life is trapped in a death spiral of disorder. Entropy, not evolution, is the irreversible law of change in the Universe. Evolution is the second great myth of modern science.

Third Myth: General Relativity

Einstein's two theories of relativity are the basis of modern science's view of the Universe. Relativity in physics is the relationship of the laws of physics measured in different frames of reference. For example, a man sitting on a park bench along the Michigan lake front is in a different frame of reference (stationary to the earth) from a man sitting in a city bus traveling north at 35 miles per hour along the same lake front (a frame of reference moving north at 35 miles per hour with respect to the earth). Both of these frames of reference are different from the frame of reference of a man sitting on a boat going south on Lake Michigan at 25 miles per hour, the frame of a man sitting on a train traveling north along the same lakefront at 60 miles per hour, or the frame of reference of a man sitting in airplane flying south over Chicago at 550 miles per hour. All men are sitting and stationary with respect to their respective frames of reference. However, each man would perceive that all of the other men are all moving with respect to his frame of reference.

Relativity is the science of relating the laws of physics from one frame of reference to another frame of reference. Special relativity relates two frames of reference which have no forces, acceleration or gravitation, acting on bodies of matter in these constant velocity or inertial frames of reference. Special relativity relates inertial (non-accelerating and non-gravitational) frames of reference. That is why it is called special, since it only applies to relating inertial frames of reference. An example of that is a man in a space station orbiting around the earth who feels no force, either gravitation or acceleration, acting on him.

General relativity relates frames of reference which have gravitational and acceleration forces acting on bodies of matter in their frames of references. General relativity is called general because it is broad and comprehensive. Therefore, general relativity would also include special relativity frames of reference (inertial).

Special relativity was proposed by Einstein in 1905, as mentioned in a previous section. Special relativity has two postulates: (1) all of the laws of physics are the same in all inertial frames of reference, and (2) the speed of light is constant

regardless of the frame of reference from which was emitted or the frame of reference of the observer of the light. The first postulate is really a summation or conclusion of classical, Galilean relativity which relates matter-energy interactions in two inertial frames of reference. The second postulate, the constant speed of light, is the radical departure from classical physics.

General relativity was proposed by Einstein in 1916, as also mentioned in a previous section. General relativity has only one postulate: accelerating and gravitational frames of reference are equivalent. This is called the equivalence principle. Einstein said that no instrument inside of a closed frame of reference could tell if a force acting on a body of matter in that frame of reference is due to gravity from an external gravitational body or due to the acceleration of the frame of reference itself.

Modern cosmology, theories of the Universe and its origin, is founded on both special relativity and general relativity. The second postulate of special relativity states that the speed of light is constant regardless of the inertial frame of reference of its origin or of the frame of reference of the observer of light. The cosmological calculations of the size and dimensions of galaxies, superclusters, and the Universe itself are all based on this second postulate of special relativity, the constant speed of light. More importantly, the only postulate of general relativity, the equivalence of accelerating and gravitational frames of reference, is the heart and core of almost all the accepted cosmologies. The Big Bang, black holes, worm holes, and other singularity points of the Universe are based on warped space from Einstein's general relativity. The Big Bang, the heart beat of modern cosmology, is a sort of reverse black hole event with the whole Universe coming out of a black hole. General relativity linked with Heisenberg's Uncertainty Principle forms the theoretical basis of cosmology, modern science's view of the whole Universe and points beyond. In fact, it is sacrilegious even to whisper a doubt about Einstein's theories of relativity. It is a fast way to gather a heap of scorn. It is a taboo which only madmen and intellectual primates violate.

However, desecrate briefly this hallowed ground of Einsteinian relativity. Maybe, the Relativity Emperor really does not have any clothes. General relativity says that accelerating and gravitational frames of reference are equivalent. In other words, a person in a closed room has no instrument to tell whether a force pulling on him is from a gravitational body or from the room accelerating. A high school student, after hearing an explanation of the inability to distinguish between gravitational and accelerating forces, stated that, on the contrary, the forces of gravity and acceleration can be distinguished with an instrument. His logic is immaculate.

The lines of force for gravity are <u>non-parallel</u>; they converge toward the center of mass of the gravitational body. However, the lines of force for acceleration are <u>parallel</u>, non-converging. When the student was asked about centripetal acceleration, like a car going around a curve, he thought a moment and then stated

that the lines of force in centripetal acceleration are non-parallel but diverging. He proposed a simple, but accurate instrument to measure the difference between a gravitational force, a straight acceleration force, and a centripetal force. Hang two long, accurately made pendulums with weighted ends in the force. If pendulums are closer together at the bottom than the top, then the force is gravity. If the pendulums are equal distance apart at the top and bottom, then the force is straight acceleration. Lastly, if the pendulums are farther apart at the bottom than at the top, then the force is centripetal.

Not to be out done, another high school student proposed another way to differentiate between a force of gravity and a force of acceleration. The mass of body of matter has a rest mass at zero velocity and increases non-linearly toward infinity as it approaches the speed of light. This student simply proposed to weigh against the force a body of matter on a sensitive scale which with a large mass will give mass changes at speeds much less than the speed of light. If the mass's weight is constantly changing, then the force is acceleration. If the weight is increasing, then the force is accelerating. Inversely, if the weight is decreasing, then the force is decelerating. However, if the weight is constant then the force is gravity. Not only would this sensitive scale distinguish between an accelerating force and a gravitational force but it will determine if the accelerating force is decelerating or accelerating!

Using two well-known facts, the converging lines of force of gravity and relativistic change of mass with velocity, two instruments can prove that accelerating and gravitational frames of reference are not equivalent. In other words, the sole postulate of general relativity is false. The falsehood of general relativity would not only bring down the modern cosmology house of cards which has no basis in the two laws of matter and energy, but it also nullifies general relativity, one of the pillars of modern science. In fact, Einstein's general relativity in the macrocosm and quantum physics in the microcosm are the principal features that distinguish modern physics from classical physics. On the basis of the two instruments and the known facts that underline them, general relativity is the third great myth of modern science.

Fourth Myth: Special Relativity

Einstein's theory of special relativity, the constant speed of light along with one of its corollaries, the equation $E = mc^2$, forms another pillar of modern science. Every school child in the world knows by heart Einstein's famous equation even if they know nothing else about modern science. $E = mc^2$ implies that matter can convert into energy and energy can convert into matter with the speed of light squared as the conversion factor. Every one is sure that the atomic bomb is proof of this conversion of matter into energy. This equation is dependent on the speed of light being a constant, the second postulate of special relativity. If the speed of light is not constant, then this equation becomes a function of two variables and is of little value. In that case, the conversion of matter to energy would be dependent on the

varying speed of light which could be different in different circumstances if the speed of light is not a constant.

James Clerk Maxwell derived from his equations of electromagnetism that $c^2 = \frac{1}{\varepsilon_0 \mu_0}$ where the speed of light (c) squared, used in Einstein's equation, is dependent on electric and magnetic constants which come from electric charges in matter. This derivation was the genesis of the ether theory that there must be matter (ether) composed of electric charges in outer space which gave deep space its electric and magnetic constants. In fact, everyone knows that the speed of light changes as it passes through different transparent mediums like air, water, and glass. That is why light refracts or bends as it goes from air to glass to water. The speed of the light changes in different mediums of transport or transmission. To avoid the problems posed by this property of light of changing speed according to the electric and magnetic constants of the medium it travels through, Einstein arbitrarily stated that light has no medium of transport and the speed of light for his famous equation is constant in a vacuum or free space (outer space) where there is negligible matter. To satisfy Maxwell's equation, arbitrary values are assigned to the electric and magnetic constants of a vacuum on Earth or of outer/free space where these constants mysteriously appear without any sources (electric charges) for the electric fields necessary to produce the electric and magnetic constants of free space.

Two problems are evident from Einstein's special relativity of the constant speed of light and $E = mc^2$. Maxwell's derivation for the speed of light was one of the greatest mathematical developments of science for all time. No one disputes his results which predicted not only the speed of light accurately but also developed the nature of light as a wave of electric and magnetic fields vibrating perpendicular to each other in phase and perpendicular to the direction of travel of the light wave. However, Maxwell's equations also depend on the electric and magnetic constants for light propagation to be from an external electromagnetic medium.

The vibrating, perpendicular electric and magnetic fields in a light wave are in phase which means that they reach maximum and zero energies together at the same time. From the first law, the conservation of energy, that means that the electric and magnetic fields of a light wave are exchanging energy with an external electromagnetic medium. Light does not store its electromagnetic energy internally like an electromagnetic oscillating circuit which stores its electromagnetic energy alternately between its electric capacitor and its magnetic inductor. Einstein's affirmation that light has no medium of transport is blatantly contrary to the first law of conservation of matter and energy.

Light must have an electromagnetic medium of transport with electric and magnetic constants and the square of the speed of light in Einstein's famous equation ($E = mc^2$) will vary inversely with product (multiplication) of the electric and magnetic constants of the medium in accordance with Maxwell's equation ($c^2 =$

——). Since both gravity and electric fields are infinite, there is no space in the Universe, not matter how far from celestial bodies, where either gravity or electromagnetic fields are zero. Therefore, the electric and magnetic fields from the electric charges (electrons and protons) in the atoms of celestial systems will extend infinitely into deep space. Although very weak in deep space these electric and magnetic fields supply the electric and magnetic constants for determining the speed of light in deep space, according to Maxwell's equation.

Therefore, the speed of light is not a constant even in a vacuum or free space, especially far from the gravitational frames of reference of celestial bodies like our solar system, because the electromagnetic fields of the electric charges (the source of electric and magnetic constants) in matter are finite but nearly nonexistent in deep space. The electric and magnetic constants for a vacuum or free space are not fixed but will decrease dramatically as light moves into deep space away from celestial bodies of matter composed of electric charges. Since the speed of light is inversely proportional to the product of the electric and magnetic constants, the speed of light in deep space may approach infinity in deep space and slow down again as it approaches celestial systems which are atomically composed of electric charges.

Also since the electric and magnetic constants will become stronger near celestial systems, light will refract (bend) in these variable density electromagnetic fields as it passes near the celestial system composed of electric charges. This is similar to mirages where light is bent in air of varying density with varying electric and magnetic constants. The light continuously bends toward the higher electromagnetic density when passing through a medium of varying electric and magnetic constants. The light wave bends toward the celestial body as it slows and approaches the celestial system because of the increasing electric and magnetic constants of the celestial system. If the light has sufficient kinetic energy, then the light wave will increase speed, continuing its curved trajectory, as it escapes the celestial system. A light wave does not have to be a particle or travel in warped space according to Einsteinian relativity in order to bend as it travels pass a celestial body of matter, composed of electric charges, with a variable density electromagnetic medium!! 2

A second problem lies with the implication that matter converts into energy according to Einstein's famous equation, $E = mc$. Matter has as its intrinsic property electric charges. This is quite clear from the periodic chart of elements from which all the matter in the Universe is composed. There appears to be an equal quantity of electrons (negative charges) and protons (positive charges) in the Universe. The periodic chart of elements indicates that there is an equal number of electrons and protons in every element. Even the neutrons, when they leave the nucleus of an atom, degenerate into an electron and a proton. Instead of electric charge, classical and modern physics have used mass as the intrinsic property of matter, as in Einstein's equation.

The mass of a body of matter changes as it changes velocity in conformity with Lorenz's transforms which Einstein reinterpreted. The mass will increase as the velocity of a body of matter increases up to nearly the speed of light where the mass value will approach infinity. This is called a relativistic change of mass with velocity. Einstein states that the m (mass) of his famous equation is the rest mass of a body of matter. But when he says a rest mass, with respect to which frame of reference does Einstein mean that the body of matter is at rest, since Einstein affirms that there is no absolute frame of reference? Is the matter at rest with respect to the Earth, or to the Sun, or to the Milky Way galaxy, or to some supercluster of galaxies? There is no frame of reference in Einstein's relativity with which to measure a rest mass for his famous equation. Between Maxwell's equation for the variability of the speed of light and no fixed rest frame of reference, Einstein's equation $E = mc$ leaves even E (energy) in question since the speed of light and mass are variable and relative.

However, the electric charges in matter do not change in quantity at any relative velocity in any frame of reference. Electric charges do not change quantitatively even at relative velocities near the speed of light. Electric charge is the intrinsic property of matter which does not change with relative velocity or frame of reference. Electric charge, not mass nor the speed of light, is constant. There is not space here to develop the concept but the E (energy) and m (mass) of Einstein's famous equation are in reality electromagnetic energies that a body of matter possesses from the electric charges of which it is composed.

In any case, the speed of light is not constant (light is transported by different electromagnetic mediums at different speeds). Otherwise, the energy in light's electric and magnetic fields would violate the first law of conservation of energy if there is no electromagnetic medium of transport with which to exchange energy. Matter is not converted to energy and vice versa as Einstein's special relativity implies without violating the first law of conservation of matter (composed of non-relativistic electric charges). Electric charge, the intrinsic property of matter, is constant with all relativistic velocities in all frames of reference. There is no increase or decrease in the quantity of matter in any physical interaction at any relativistic velocity in any frame of reference. The kingpins of special relativity, a constant speed of light and the conversion of matter to energy and vice versa, are violations of the first law of conservation of matter and energy. Special relativity is the <u>fourth</u> great myth of modern science.

<u>Fifth Myth:</u> <u>Quantum Physics</u>

Jules Poincare, the French mathematician, postulated that no law of physics can be considered a fundamental law unless there is only one constant related to that law. That constant must solely and uniquely be related to that law. Modern science, particularly quantum physics, affirms that there are four fundamental forces: (1) gravity, (2) electromagnetism, (3) weaker nuclear and (4) stronger nuclear. Although all these forces have constants, they also have one unique

constant in common, the speed of light (c). All of these forces are limited in their ability to operate by the speed of light, an electromagnetic phenomenon, according to Einsteinian relativity and quantum physics. Since according to Maxwell's derivation the speed of light is solely related to electromagnetism ($c = 1/\sqrt{\mu_0 \varepsilon_0}$), the other three forces (gravity, the weaker nuclear force, and the greater nuclear force) must be electromagnetic in nature and not fundamental forces according to Poincare's postulate. Poincare's postulate which only a postulate with no universal confirmation attacks one of the bedrocks of quantum physics and modern science that the four forces are fundamental forces and not merely different kinds of electromagnetic forces in nature.

Also, Ernst Mach earlier postulated a criterion that if a law has one premise which is false, then the law will be false as well. Mach's Criteria is a much more serious threat to quantum physics than Poincaire's postulate. Quantum physics deals with the microcosm of science, the atomic and subatomic portion of the Universe. Electromagnetism and gravity are long range fundamental forces while the weaker and stronger nuclear forces are very short range. Quantum physics has a number of premises that are false, either being violations of well established laws of science or being contrary to verification by scientific experimentation, and therefore is considered false in its entirety according to Mach's Criteria.

First, according to quantum physics, the four fundamental forces are not transmitted at a distance between bodies of matter by fields acting at a distance but rather by field energy being transmitted by particles. As a consequence, for every primary force there is a corresponding primary particle that transmits energy between bodies of matter. Electromagnetism has photons, gravity has gravitons, the weaker nuclear force has W and Z gauge bosons, and the stronger nuclear force has gluons.

This concept of energy transmission between bodies of matter by primary particles instead of force fields acting at distance is a basic premise of quantum physics. Except for photons (wave phenomenon converted to particles) which travel at the speed of light (uncharacteristic of mass or matter), the other fundamental particles which transmit the other three fundamental forces of nature have been elusive to scientific verification. Gravitons, being the transmitter of gravity, a long range force, should be detectable since it transmits gravity over vast ranges of the Universe. Oddly, even electromagnetic field interactions at a distance have never been experimentally shown to be transmitted by photons, the particle for electromagnetic forces. No photons have been detected transmitting magnetic or electric fields at a distance as electric and magnetic fields acting between two bodies such iron filings moved by a magnetic field.

Second, according to quantum physics, the fundamental particles associated with the four fundamental forces are considered to be fundamental waves. Using Einstein's $E = mc^2$, quantum physics erases the line between particles and waves.

For example, electromagnetic waves are called photons and treated as particles, as well as waves. They have a dualistic nature of having both wave (energy without mass) and particle (matter with mass) characteristics. However, this leads to a paradox, light can have finite mass and momentum, yet light travels at the speed of light where its mass would be infinite as a particle of matter with mass. Gravity is the other long range force along with electromagnetism. Gravity waves which have never been detected are considered by quantum physics as equivalent to gravitons (gravity particles) which also have never been detected. The short range weaker and stronger nuclear waves are associated with W and Z boson and gluon particles respectfully which also have never been detected either as waves or particles.

Transverse electromagnetic waves, such as light, composed of an oscillating electric field and an oscillating magnetic field, are distinctly different from static electric fields and static magnetic fields between static bodies of matter. Whether in logic, in theory or in experiments, there is no scientific proof linking the matched oscillating electric and magnetic fields of a transverse electromagnetic wave to photon particle presence or motion within the transverse electromagnetic wave's fields. Not only is the premise of quantum physics that classical electromagnetic force fields and transverse waves have particle presence or particle activity without scientific proof but also this premise is counter-intuitive.

Third, according to quantum physics, the two greater nuclear forces and their associated waves/particles can not reach beyond the limits of atomic structure. This would mean that the nuclear forces are essentially virtual, undetected phenomena by not extending beyond the radius of atom structures. The strong nuclear force must be stronger than the electromagnetic replusive forces of the positive electric charged protons in a nucleus which want to blow the nucleus apart. This strong nucleus force is postulated by quantum physics to prevent this nuclear destruction of all of the atoms in the Universe from the huge repulsive electromagnetic nuclear forces of protons in every atom.

All energy fields in the Universe must be conservative energy fields according to the first law of conservation of matter and energy. A conservative energy field (1) must decrease inversely proportionally to square of the distance from the source of the field and (2) must extend infinitely into space. For instance, a gravity field has one-fourth of its strength at twice the distance from its gravitational body. The strength of Sun's gravity field on the Earth is one-fourth of its strength half way between the Sun and the Earth. The same is true of electric and magnetic fields as conservative fields. Also both gravity and electromagnetic fields extend out into infinity in space, howbeit getting weaker and weaker according the square of the distance for their sources. Strange as it may seem, there is no place in the Universe where the gravitational effect of a person's does not reach. Since all forces from energy fields in the Universe must be conservative according to the first law, then the greater nuclear force must extend into infinity. Likewise, the greater nuclear force field of a particular nucleus as a conservative force/field/wave/particle must be

stronger than the electromagnetic repulsive force field from that given nucleus at every point in space extending out from that nucleus into infinity.

On the contrary, quantum physics' concept of the greater nuclear force is not a conservative field, being different from the conservative force/field requirement of an inverse distance square rule and extention into infinity. Quantum physics asserts that the greater nuclear force, although stronger than the electrostatic forces in the nucleus, does not extend beyond the atom's structure, certainly not into infinity. This is a clear violation of the first law of conservation of matter and energy whether these greater nuclear forces are consider fields, waves, or particles. The line between fields, energy waves, and particles of matter in classical physics disappears in quantum physics, even if fields (gravity, electromagnetic, weaker nuclear, and greater nuclear) can be consider either as particles or waves. Quantum physics hypothesizes (1) the existence of non-conservative nuclear forces, (2) the transmission of force fields by virtual particles, and (3) asserts that waves and particles are equivalent, even if the forces and particles may be virtual (non-real and non-scientifically demonstrable) entities and violate the two basic laws of science.

Third, even more incredible is the premise and hypothesis of quantum physics that the law of cause and effect can be broken or entirely eliminated. In quantum physics there is a sharp disconnect in the laws of physics between one state of matter and energy (effect) in time and space and its immediately preceding state (cause). Particles, even larger than our atoms, can appear out of nothing and then disappear. The sudden appearances of these particles are only to transmit field energy between two bodies of matter. Interestingly, they appear at just the right moment, in the twinkling of an eye, with just the right energy and direction of momentum to affect the exact reaction, and then abruptly disappear. Without any previous cause, these particles mysteriously appear out of nowhere with just the right potions of mass, time, and energy at the exact moment to transmit the proper energy between bodies of matter before their abrupt disappearance. Because such particles have not experimental proof, these mysterious particles are called virtual particles, lacking any experimental verification. Some quantum physicists even postulate that whole universes, called multiverses, are constantly appearing and disappearing in the time and space of our Universe from other dimensions in very short moments of time.

Using Heisenberg's Uncertainty Principle, the quantum physicists feel that nature will do this voodoo magic, even if it violates the most basic laws of science, the first law conservation of matter and energy with its corollaries of conservation of momentum, conservation of energy, etc. and the second law of increasing entropy. It is unclear whether there has ever been one scientific proof for Heisenberg's Uncertainty Principle, yet quantum physics, using this principle, propounds the absurdity of violating the law of conservation of matter and energy even for a faction of a moment of time without any physical mechanism or scientific evidence. In the quantum physics scenario, Nature suspends the law of cause and effect and Nature, like some omnipresent, omnipotent, all wise supernatural Being, controls

the whole microcosm and macrocosm of the Universe. The premise that Heisenberg's Uncertainty Principle allows Nature to violate the first law of conservation of matter and energy and the second law of increasing entropy for moments of time is a blatant violation of the primary established laws of science.

Fourth, energy interactions of particles or bodies of matter are always repulsive. In other words, when two particles collide they always react away from each other (repel each other) in accordance with Newton's third law (for every action, there is an equal and opposite reaction). No reaction of two or more particles is ever attractive without chemical or nuclear physical bonding. It is impossible for quantum physics to get attractive forces out of the interaction or collision of particles which disappear after the interaction. Some quantum physicists have proposed absurd, counter-intuitive thought-experiments to get attractive interactions of particles which have never been observed or even logically deduced. The premise of particle interactions producing attractive forces without physical bonding is a violation of known basic laws of mechanics in science.

Fifth, Maxwell's derivation shows that an accelerating electric charge (both straight and centripetal acceleration) will produce a transverse electromagnetic wave such as light or radio waves. This is the very way in which television and radio stations generate their signals by accelerating electrons in their antennas. The standard model of the atom used in quantum physics has the electrons of an atom in centripetal acceleration by both circular and rotational motion. This centripetal acceleration of the atomic electrons would radiate off all of the electron energy in millionths of a second according to Maxwell's electromagnetic equations. The spin of the protons to create magnetic moments would also radiate their energy in fractions of a second. This radiation of energy would destroy the atomic structure. Neil Bohr, confronted with this glaring problem with his quantum physics model of atomic structure, arbitrarily said that the electrons and protons simply do not radiate energy in atoms! Even quantum physics' basic atomic models of matter violate the basic laws of electromagnetism, such as Maxwell's equations for electromagnetism.

Sixth, quantum physics, using Heisenberg's Uncertainty Principle and Schrödinger's Wave Equation, holds the premise that small bodies of matter like electrons do not have sharply defined body boundaries. In quantum physics, all bodies of matter are wave phenomena without sharp boundaries, particularly true in small bodies at high velocities. Rather these small bodies are treated as probabilities rather than distinct, defined bodies of matter. This is contrary to the scatter patterns which these particles in crystals give when bombarded with other small particles or radiation waves. In the early part of the 1900s, many of the early properties of these small bodies of matter (particle diameter, magnetic and electric moments, bonding structures, etc.) were determined in contrast to this premise of the quantum physicists. It was even determined from experiments that electrons are larger than protons, although protons have nearly 2000 times the mass of the electrons!

All of this is counter to the premise of quantum physics that small particles are mere probabilities and the larger masses have the larger probability volumes and the more distinct body boundaries. This premise, based on Heisenberg's principle, that small bodies of matter are mere probability "clouds" and not distinct boundary bodies is contrary to scientific experimental evidence and proven classical mechanics. Even the photographic traces of particle collisions from particle accelerators (supercolliders and atom smashers) confirm the hard, distinct boundaries (as opposed to fuzzy probabilities) of very small particles. The actual diameters of atoms in the periodic table reveal a classical energy solution to atomic and subatomic structures rather than solutions from Schrodinger's Wave Equation, which has nonexistent solutions except for some states of hydrogen and possibly of helium. Just because a mathematical wave equation can be made of a body of matter does not make the body of matter a wave. A Hamiltonian wave equation (Schrodinger's Wave equation is a simple Hamiltonian) of an automobile does not make the automobile a wave! The use of conceptual mathematics such as the Schrodinger Wave Equation and the Heisenberg Uncertainty Principle does not make the virtual (mathematics) into reality (matter and energy).

Seventh, quantum physics uses electric charges, such as electrons and protons, as point sources or probability clouds. In theory, it is correct that electric charges and electric fields only act from their center of electric charge outside of the surface of their charged bodies. However, this will not work with the probabilistic nature of small charges used in quantum physics. The electric field of small subatomic electric charges will change as one moves in this probabilistic "cloud" or even inside the surface of a well-defined electric charged body. It is impossible to work out the electrodynamics of an atomic model using probabilistic electron "cloud" densities or point charge particles, especially for magnetic and electric moments.

It is impossible to develop most electromagnetic properties of subatomic particles using point source or probability cloud electric charges and probabilistic electric fields. With the assumed point or center source of electric charges it is impossible to develop magnetic fields, magnetic spin, or magnetic moments (known quantities of electric particles). The probabilistic electric charges in matter and the resultant inability of point and cloud electric charges to produce intrinsic magnetism destroys the quantum physics model of electromagnetism in atomic and subatomic structures. Quantum physics has another premise in point charges and probabilistic natures of charges that violates Maxwell's equations of electromagnetism.

Eighth and lastly, combining the macrocosm of general relativity with the microcosm of quantum physics, cosmologists have created grand unified theory (GUTs) for the origin of the Universe and possibly Multiverses. Bell's Theorem postulates that it is impossible to combine general relativity and quantum mechanics. In spite that, string and superstring theories have been mathematically

developed to combine quantum physics and general relativity with many invisible dimensions. If these strings and superstrings exist, the theoretical superstrings would be too small ever to detect. An elephant is to an electron what an electron is to a superstring. Even according to quantum physics using Heisenberg's Uncertainty Principle, it would be impossible to detect a virtual superstring!

The widely acclaimed aspects of modern cosmologies (warped space, black holes, time worm holes, and the Big Bang) developed from general relativity are built on singularity theory. The anathema and curse of mathematics are singularity points where values go to infinity. Dividing by zero creates a singularity point and is an absolute taboo in mathematics. Every equation or algorithm must be carefully evaluated to guarantee that there are no singularity points in them. Strange and seriously false things happen around singularity points. Using singularity points, like dividing by zero, it can be proven that 1 + 1 = 3 or anything else a mathematician who is skilled in singularities wants to prove. However, both general relativity and quantum mechanics as mathematical models of reality not only fail to avoid the pitfalls of singularity points, but they build their major conclusions on singularity points, calling it Singularity Theory! This foolish plunge by Einsteinian relativists and quantum physicists into singularities, instead of freeing them to great discoveries, leads to a dearth of foibles and falsehoods.

General relativity with its equivalence of gravity and acceleration concludes that there is no force of gravity but rather gravity is a vortex of warped space into a singularity point. At this singularity point theoretically space goes to zero and gravity goes to infinity. After adding a few fudge factors, the cosmologists tried to work themselves out of that hole. However, according to general relativity given enough matter then we have a deep hole in space that becomes known as a black hole with a horizon event, a point of no return if light or matter gets too close to this mathematical nightmare. Or maybe, the whole Universe came into being by coming out of, the reverse of going into, a black hole as Stephen Hawkins proposed. One can see where this singularity math is leading. The absurdities have just begun.

At this singularity point of origin of the Universe, matter could not have existed because of the infinite energy density. Well, with all of the energy in the Universe concentrated in this infinitely small area, there must have been an explosion. Of course, the Big Bang would take place but in the first fractions of time after the Big Bang, quantum physics can tell us how the energy changed until the laws of nature began to happen arbitrarily, of course. Time would come into being. The strong force began, followed by the weak force, electromagnetism, and finally gravity.

Matter would begin to appear as the temperature decreased so that matter could become stable as the Universe rapidly expanded (Inflation or Hyperinflation Theory, of course), then rapidly slowed down and cooled. Little eddies of time and space with a little gravity thrown in would help recollect the dust and gases produced by the expansion from the Big Bang to form celestial bodies. Eventually,

these celestial bodies would gather enough mass to re-ignite in hydrogen fusion as stars, galaxies, and clusters of galaxies. This singularity story makes a great Standard Model for cosmology, using general relativity which opens the door for singularity points and quantum physics which gives explanations for matter and energy development. The whole Universe came out of a reverse singularity point, a marvel of modern math which overcomes and ignores the ancient fear of singularity points!

But of course, the story can not end here. What happened before the Big Bang, the escape from the Universe's singularity point in time and space? Surely, the Big Bang is not a unique event of one singularity point. If singularity theory is good for one universe, then it is good for many universes, multiverses. In fact, with singularity points in space and time, through worm holes in time smaller in diameter than the smallest particle in the Universe, whole universes could pop in and out of existence continuously in time and into the time and space of our Universe. Of course, to fit through such a small hole these rapidly appearing and disappearing universes would have be made of strings, longer but smaller in diameter than the smallest particles in nature in order to fit through the worm holes. Well, to get a whole universe in through and then back through that small time worm hole in such a short time in conformity with Heisenberg's Uncertainty Principle, then the universe must be superstrings in length. These ideas, all developed from the spontaneity of singularity theory, could be called Worm holes, String Theory and Superstring Theory. Multiverses can come into being spontaneously, maybe billions a second, all thanks to singularity points in time and space created by general relativity and quantum physics. But remember that mathematical Singularity Theory does not make real black holes, worm holes, or alternative multiverses any more than the mathematical Schrodinger's Wave Equations makes matter into a wave. As a personal colleague once remarked, "I would not have seen it, if I had not believed it!"

This whole concept of these multiverses or parallel universes popping in and out of existence is absurd for more than its violation of the first law of science. Two bodies of matter can not occupy the same space. That is why we have car accidents. Also, this is what makes the high speed collision of two particles so effective in an atom smasher like a linear accelerator or cyclotron supercolliders. If the matter from multiverses is continuously entering the time and space of our Universe, their matter would inevitably collide with our matter with the catastrophic result of nuclear explosions. There would be continuous cataclysmic destruction of our Universe in a relatively short time. Obviously, that is not happening and this ill-conceived cosmological idea of parallel universes or multiverse is absurd, even to a kindergartner who has seen in bicycles or automobiles collide.

Quantum physics, the charming darling of modern science's microcosm, has multiple false premises. Mach's Criteria needs only one false premise to make a whole theory based on that premise to be false. It is difficult to find just one premise of quantum physics that is true and in agreement with the time-tested laws

of science. Quantum physics with its multiple false premises is the fifth great myth of modern science.

The Spread of the Hegelian World View

During the communist days in Russia, all social groups whether factories, military, local governments, schools, or clubs had indoctrination sessions lead by professional propagandists of the Communist Party. The purpose of the meetings was to insure that everyone was brainwashed in the great Proletariat ideas. The writings of Marx and Lenin were constantly repeated in the social and economic issues. However, more time was devoted to Darwinian evolution than Marx in the 1980s. Communism depends more on scientific materialism (euphemism for Hegelianism), such as Darwin's theory of evolution, than on the philosophical and historical dialectic materialism of Marx in economics, politics, and social order (another form of Hegelianism). Logically, the objectivity and invariance of science can stand the test of time much better than the subjectivity of philosophy, economics theories, and social ideologies which change with the winds of time.

Hegel's dialectic materialism is the strongest comprehensive philosophy of an atheistic world view. In early history, Lucretius and other early Greek philosophers used their atomist model of eternal matter to develop their flawed atheism which had little and temporal following. Later atheists, such as Hume, attempted to use rationalism and objectivism, based on the Universe governed by absolutes, to define their atheistic world view. However, the very acceptance of the premise that the Universe is governed by absolutes implies that a supernatural agent or being imposed these very specific, imbedded laws of nature on the Universe. Philosophies prior to Hegel, with the exception of Romantics and their flights of fancy, sought to find the fundamental principles that govern the Universe. Religions sought to find the cause of events in the Universe through the actions of their gods where nature and events are controlled by the will of the gods, often capricious and arbitrary. The Reformation and the Renaissance demythologized the actions of nature from the arbitrary actions of the gods. This gave rise to scientific development based on nature being controlled by absolute principles, independent of divine intervention except in the case of miracles.

Georg Wilhelm Hegel in the early 1800s developed his Hegelian Triad where everything in the Universe, real and theoretical, is in a continuous flux or dialectic. The Hegelian Triad is an endless loop of thesis-antithesis-synthesis. Although Hegel ambiguously held to some overriding Absolute (God?), probably because of his religious upbringing, a number of his atheistic students and colleagues at the University of Berlin dropped any absolutes, developing an atheistic world view built on Hegel's dialect. The search for absolute truth in philosophy ends in their adaptation of Hegel's dialect.

Truth by its definition means that some things are true and other things are false for all time. That absolute concept of right and wrong, truth and non-truth is

based on time invariant absolutes, even if those truths are unknown to men. Atheistic Hegelianism is the ultimate anarchy of philosophy, rejection of any absolute truth. "Truth" to Hegelianism is a constantly moving target in the dialectic which is ever changing with time. Hegel's dialectic Triad laid the basis of a world view without God-the Universe without God either at its origin or in the establishment of its laws of operation. Hegelian dialectic materialism forms the basis of an absolute relativism and empirical naturalism, no absolutes and no God. Hegel's atheistic disciples of course offered no proofs for this arbitrary world view, but then again this dismissal of invariant truth required no proofs. This God-less arbitrary quicksand of Hegelian dialectic materialism historically proves to be a deadly subterfuge for millions.

Hegelian dialectic materialism found root in the rich soil of atheists, many at the edge of poverty, in the mid 1800s and early 1900s. From marginal beginnings, Hegelian thought grew and swept like an invasive plague over the whole earth. Marx, with the finances of Engels, formulated from Hegel's dialectic the basis of communism which Lenin, Stalin, and Mao Tse-tung implemented, enslaving hundreds of millions and killing tens of millions. Nietzsche formulated another form of Hegelianism which Adolph Hitler and Mussolini implemented, enslaving hundreds of millions and killing tens of millions. Some like Pol Pot imbibed the same potion, enslaving millions and killing millions. Lesser politicos and revolutionaries, even to this day, embrace the god-children of Hegelianism, enslaving whole populations and killing those opposed to their Godless world view.

One might be repulsed by connecting the dots of Pol Pot, Hitler, Mao, Stalin, and Lenin back to Nietzsche and Marx and then back to Hegel. It is no secret of history that Marx-Leninism and Marx-Maoism are the bases of communism and that they killed millions in their regimes while enforcing their world view. Nor is it unknown that Hilter was a devotee of Nietzsche and that Hilter killed millions, spreading his gospel both on and off the battlefield. Maybe less known in our times is the influence that Hegel's dialectic materialism had on these and other atheists in the early and middle 1800s, not just in political thought.

Hegelian dialectic materialism allows no absolutes and no absolute truth. Hegelianism is a thoroughly God-less world view. It is the soul of atheism because its rejection of absolute truth implies the following: There is no absolute truth. There are no absolute laws that govern the Universe. There is no divine Lawgiver who established absolute laws which govern the operation of the Universe. There is no cause and effect if this leads to an ultimate supernatural Cause, God. There is no creation, a supernatural origin to the Universe by a divine being. There is no divine origin to life on Earth.

Hegel, although no necessarily an atheist himself, gave the believers of atheism a comprehensive world view. However as mentioned earlier, contemporaneously with Hegel, science was developing a scientific method built on the absolute, invariant operation of the Universe and the two basic laws of science,

the first and second laws of thermodynamics. The absolutism of the Universe's operations and the heat death of the Universe are diametrically opposed to the major premise of Hegelianism and its atheist adherents, no absolutes and no God. It was clear in the middle and late 1800s that the Universe is a highly ordered system which is dying by losing its order in energy and matter every moment of time. It was known then as the heat death of the Universe, the absolute final demise of the material world, a despairing eschatological end of everything.

But turning from the scientific destiny of the Universe and life in the future, science posed an even greater problem for the Hegelian dialect worldview concerning the origin of the complex material Universe and the complex life on the Earth. How could an Hegelian dialectic explain the origin of the highly ordered Universe and highly ordered biological systems? Without God, a divine creator of the highly ordered Universe and biological life, the Hegelian triad of thesis/antithesis/synthesis must be an upward history from no order and no supernatural beginnings. For the Hegelian atheists, the Universe must get to its highly ordered state from a non ordered state without divine intervention.

Charles Darwin, the father of modern biology and ultimately an agnostic or an atheist, originally trained as a Anglican clergyman, clearly developed his theory of evolution based on the Hegelian dialectic. He wanted to show that higher forms of life can evolve without divine intervention from inorganic material. His book, Origin of the Species, has become the bedrock of evolutionary biology to show that the Hegelian model can explain the development of all life within natural laws without God. All life arose by random beneficial (upward) mutations chosen by natural selection. For Darwinists beneficial mutations from time and chance, chosen by the survival of the fittest (natural selection), explain all of life by natural causes without God.

Sigmund Freud, the father of modern psychology and an avowed atheist, although raised as a religious Jew, based his life and his psychoanalysis on a Hegelian dialectic view of man. Man is not a creation of God; rather he is a product of the Hegelian triad forming him since his birth. Psychoanalysis is the process to retrace the history (dialectic) of an individual's psyche in order to repair damages caused by his past. Although the different schools of psychology may disavow their roots in Freud, almost all have his Hegelian view of man as the foundation of their systems. Freud gave Hegelianism its view of man, without God.

As seen earlier, Albert Einstein with his theories of relativity, quantum physics, and modern cosmology using Einstienian relativity and quantum physics are modern physical science's effort to explain the origin and the operations of the Universe without God. Sir Fredrick Hoyle, an agnostic, and Stephen Hawking, an avowed atheist, have built models of the Universe, openly violating fundamental laws of science instead of accepting the obvious divine origin of the Universe. Other cosmologists, relativists, and quantum physicists have taken Hegelian dialectic materialism to the extreme, even postulating absurdities that are contrary to the

most basic laws of science. The obvious caveat of the Hegelian rejection of absolute truths is: If man will not stand for truth, then he will fall for anything.

This discussion of the Hegelian intrusion into the sciences might seem like a tempest in a teapot. Why make so much of irrelevant philosophical matters? What difference does it make anyway? Who knows and who cares if the Universe was created by God or it just happened? What difference does it make if life evolved naturally or God did it? Will it make any difference in a person's salary or the Super Bowl outcome? Who cares about men who have been dead over a century? It is a waste of time to be concerned about what Hegel thought since most people have never even heard about him before. Isn't this just a discussion for academia where the stakes are so small and meaningless?

The Impacts of Hegelian Scientific Materialism

The political ideas of the Reds during the Bolshevik Revolution sounded like dreams to the peasants in Russia. These peasants had been serfs on the land ruled by powerful lords consolidated under the Czars. Over generations, the peasants had developed animal husbandry and crops (like the Russian red wheat used in the United States) and were the real masters of making the Russian soil produce wealth. However, their lords were the real beneficiaries of the peasants' work and ingenuity. The communist Reds offered the peasants freedom and land in a workers' utopia, the reign of the proletariat. Deep down the communists were driven by Marxism, a refined Hegelian dialectic materialism. Little did the peasants know that in the Marxist scheme that there is a dictatorship of the proletariat between the overthrow of the bourgeois and establishment of the rule of the proletariat.

In ignorance of this hybridized Hegelian triad, the peasants supported the communists as their saviors. The communist Reds under Lenin and Stalin suspended the thesis/antithesis/synthesis triad at the dictatorship of the proletariat stage. The God-less communists never felt that the proletariats (peasants and workers) were ever ready to rule. With the collectivization of farm land into cooperatives under communist party operatives, the peasants became disenchanted with Papa Joe Stalin, the dictator. Using purges in the 1930s, Stalin ended the dissentience and the peasants' dreams turned to nightmares. It is estimated that 30 million peasants died in the purges. With them died their dreams, their inherited knowledge, and Russia's agriculture, possibly forever. Hegel's philosophy, practiced by Marx, Lenin, and Stalin, was not an intense academic dispute. This scientific materialism sowed and then reaped the bitter seeds of destruction.

Friedrich Nietzsche developed his existential view of man and God ("God is dead") with its offspring, the breeding of a new aristocracy of supermen, basing his philosophy on Hegelianism and Darwinism. Blending in the Godless dialectic materialism with an evolutionary survival of the fittest, he developed a potent predatory mixture for business barons like John Rockefeller and political ideologues like Adolph Hitler. Even today, authors like Ayn Rand of the so called Iron Man

philosophy, the eugenics of Margaret Sanger of Planned Parenthood, and modern libertarianism politics remain vivid reminders of Nietzsche's ghost. Even a cursive reading of Mein Kampf (1923) by Adolph Hitler should have given the world of 1930 a vision of things to come. All racial groups outside of the mythical blond hair, blue-eyed Aryans, especially Jews, should have been fleeing Germany and surrounding countries during Hilter's rise to power. The Hegelian triad with its rejection of absolutes and of God which inspired Darwin and Nietzsche was to produce a Holocaust. Mentally and physically handicapped, Gypsies, Jews, and other so-called genetic inferiors of human evolution would be victims of Hitler's accelerated survival of the fittest plan to produce the master human race. Hitler implemented Darwin's and Nietzsche's philosophies with harsh realities. To the millions that died in Hilter's concentration camps, Hegel's god-children (Darwin, Nietzsche, and Hitler) and their world views were more than an academic tempest in a teapot. The Nazi vision for the world meant the death of over 50 million other humans in the Second World War, 30 million Russians alone.

Without God and absolute truth, Hegelianism as scientific materialism has spawned world views that mercilessly destroy tens of millions of people at a time like giant meat grinders. The great myths of science are more than academic errors; they supply the fare for frightening world views with deadly wakes. Departure from reality with its Divine order makes entropy an untimely scepter of terror on Earth. The full title of Darwin's first five editions was On the Origin of Species by Means of Natural Selection or the Preservation of Favored Races in the Struggle for Life. Who did the Darwinian Hitler think were the favored races? Scientifically, if the Universe and Man are cosmic accidents, the destruction of mankind and man's works creates little remorse for a Hegelian. Stalin, a former religious seminarian and another Darwinian, once observed that the death of a person is a tragedy, but the death of millions is only a statistic.

Appendix: The Natural and The Supernatural

We have been educated to think that the natural realm as studied by science and the supernatural realm created by God have no connection with each other. We are told that there is no proof of God in nature and therefore any mention of God is to be ban from our science and educational system. It is quite the contrary. 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.

In the Scriptures, Psalm 19 states, "The heavens declare the glory of God. And the firmament shows His handiwork. Day unto day utters speech. And night unto night reveals knowledge. There is no speech nor language where their voice is

not heard. Their line has gone out through all the earth and their words to the end of the world." Day and night, nature speaks knowledge in every part of the earth with a voice to men no matter what their language. This is general revelation to all men of every culture and language. This is paralleled later in the same psalm with special revelation which comes through the Holy Scriptures, "The law of the Lord is perfect, converting the soul; the testimony of the Lord is sure, making wise the simple." The general revelation from nature that reveals the glory of God is available to all men but the special revelation from the Scriptures is necessary to convert men's hearts to salvation.

The book of Romans develops the full good news of salvation and its resulting sanctification of mankind. The first three chapters of Romans establish the total lostness and depravity of mankind before developing the basis and means of salvation. Romans l shows that all the gentile nations have willfully rejected God. Romans 2 shows that the Jews, although a covenant people with more knowledge, likewise have rejected God and are lost. Romans 3 concludes that all men, Jew and gentile, are depraved and incapable of loving and serving God.

Romans 1 in verse 18 and following shows that man has a full revelation of God's eternal power and deity from nature and yet has willfully rejected that knowledge and pursues the most unnatural and perverse deeds of evil. "For the wrath of God is revealed from heaven against all ungodliness and unrighteousness of men, who suppress the truth in unrighteousness, because what may be known of God is manifest in them, for God has shown it to them. For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead, so that they are without excuse." Clearly, men can see the eternal power and deity of God in the nature and are under God's divine wrath because they have rejected that revelation, "Although they knew God, they did not glorify Him as God, nor were thankful, but became futile in their thoughts, and their foolish hearts were darkened. Professing to be wise, they became fools, and changed the glory of the incorruptible God into an image made like corruptible man-and birds and four-footed animals and creeping things."

Present day science, instead of acknowledging God as God, has denied that nature even reveals his existence, much less glorifying Him as God. Most modern day scientists, even Christians, attribute the origins of matter, life, and the cosmic structures to random acts of the nature. Those same scientists would not attribute the origins of a house, car, factory, clock, pencil, or airplane to random acts of nature. However, they would foolishly attribute the origins of much more sophisticated structures of trees, suns, planets, birds, humans, whales, galaxies, mountains, or snakes to random acts of the laws of nature, rather than the handiwork of a glorious God. Romans 1 states that all men can clearly see the invisible attributes of God, even His eternal power and deity, in nature from the beginning of the creation.

All of our laws of science are derived from two laws, the law of the conservation of matter and energy and the law of increasing entropy (disorder). Most of the laws of science are ideal laws of conservation and are derived from the first law, the law of conservation of matter and energy. The whole Universe is composed of matter and energy and in any interaction matter and energy are conserved. In fact the total quantity of matter and energy in the Universe is constant for all time. Science has never had any experimental or theoretical evidence to the contrary. Our laws of mechanics (momentum, angular momentum, and kinetic and potential energy), gas laws, field laws (electrical, magnetic, or gravitational), wave phenomena, electric circuits and theories, or ideal fluid laws are all based on the first law of conservation of matter and energy.

These ideal laws apply to ideal, perpetual motion systems and must be modified by the second law of increasing entropy (disorder) in order to apply accurately to the real world in which matter and energy change from ordered states to disordered states. Friction, free expansion of gases, and irreversible energy exchanges all degrade ordered energy and matter irreversibly to less ordered states. The quality of matter and energy degrades in every interaction. The physicist Eddington called entropy time's arrow because it makes events go in an irreversible forward direction in time. Although the first law states that the quantity of matter and energy is constant in the Universe for all time, the second law states that the quality of matter and energy in the universe will become irreversibly disordered. Isolated order can be produced in simple crystals in accordance with Gibbs free energy or in living systems by ordered agents like DNA and degradable energy supplies like food. However, the second law never allows complex molecules or biological systems to arise from random atoms without a degradable energy supply and a preexisting agent more complex and ordered than the resultant ordered system. Entropy never allows nature to win the throw of the dice to produce highly ordered systems by time and chance. The second law of entropy plays with a stacked deck of enormous odds that the quality of matter and energy can never win.

The Holy Scriptures recounts two historical events which are the genesis of these two laws of nature from which our other laws of science are derived. The first law of conservation of matter and energy began with the creation described in Genesis 1 and 2. God called into existence ex nihilo (out of nothing) all of the matter and the energy in the Universe and made them into our Universe of physical and biological systems in six days. He declared it good and very good. In other words, it was evidently in an ideal state of perpetual motion. Since that final sixth day of creation, apart from miracles, the first law of conservation of matter and energy has determined the quantity of matter and energy in the Universe. The total quantity of matter and energy that is in the Universe today is the same as there was a thousand years ago or will be a thousand years from now according to this law of creation. Only God creates matter and energy and he ceased on the sixth day, leaving us with the first law of conservation of matter and energy.

However, a second historical event, described in the scriptures, explains the origin of the second law of increasing entropy (disorder). Until Genesis 3, it appears that disorder was not allowed to attack matter and energy. God, by being in a perfect relation with His creation, maintained the creation of matter and energy in which increasing entropy (disorder) did not act. However, with the fall of man and the introduction of sin, the perfect relationship between God, His Creation, and man was broken. Genesis 3 describes the sin of man who failed to obey God's command and its terrible consequences by the breaking of this perfect relationship. The introduction of sin ended God's maintenance of the Creation against the disordering of matter and energy in man and the rest of the created Universe, including all the realm of nature. Romans 8 describes the future hope of the created Universe, animate and inanimate, to escape from this judgment of Genesis 3, "For the earnest expectation of the Creation eagerly waits for the revealing of the sons of God. For the Creation was subjected to futility, not willingly, but because of Him who subjected it in hope; because the Creation itself also will be delivered from the bondage of corruption into the glorious liberty of the children of God. For we know the whole Creation groans and labors with birth pangs together until now."

The law of increasing entropy (disorder) can be developed without empirical data. Any physical system of matter and energy can be arranged into a maximum number of combinations of energy states. With a couple of pieces of matter and at temperatures near absolute zero, there are very few combinations of energy states so that nearly perpetual motion conditions are possible near absolute zero temperature. The more parts to the system and the higher the temperature the greater are the number of energy state combinations. However, only a few of these combinations are ordered, the rest are disordered. So from shear statistics almost any system will end up in a disordered state in any interaction.

For example, in a child's room his teddy bear can be in 1,000 places in the room but only a couple of places are where his mother wants it, when she organizes the room. The same is true for his play truck and his play airplane. With 1,000 combinations for the teddy bear times 1,000 for the truck times 1,000 for the airplane there are 1,000,000,000 combinations of order with only three toys. Of those, maybe only 10 combinations are ordered combinations for the mother. With any play by the child, the entropy (disorder) of his room will increase by placing those toys in one of the nearly 1,000,000,000 unordered combinations. His mother will always have to expend energy to place his room in order. If his clothes, bed, and other toys are added to the possible combinations, entropy will make it an eternal certainty that the time and chance actions of a child will never produce an ordered room. Everything in the room will wear out (again due to entropy) before the mother will find an ordered room by time and chance.

On a slightly larger scale, the molecules in a brick at room temperature have a tremendous amount of energy. However, they are vibrating randomly. If they could all vibrate in the same direction upward together, the brick would go through the ceiling. Even if just one-half or one-fourth of them vibrated together, they

would hurdle the brick through the ceiling. The possibility of this spectacular event is so small that it would take 10 years for that event to take place, because the disordered states (random vibrations) are enormous compared to the ordered states (vibration in the same direction). In spite of the absurdity of this event, several decades ago a group in France had someone watching a brick on a white table to see if it would hop. No one should bank on the odds of beating entropy.

God evidently has the power to maintain matter and energy in a state of order with no entropy increase, such as before the introduction of sin into the Universe. He will again maintain the new heavens and new earth with the redeemed people in the future eternal state without corruption, decay, and other effects of entropy. But, presently, the matter and energy of the physical Universe is controlled by the law of increasing entropy as a consequence of the historical Fall of Man and the entrance of sin, which broke the perfect relationship between God and His Universe.

Romans 1 is correct. Our very laws of science are derived from God creating the matter and energy in the Universe and from God, in judgment, withdrawing His maintenance of matter and energy from the ravages of increasing entropy. The intricacies of the Universe, which exceed both in complexity and in vastness anything which man can build, are clear testimonies to God's power and deity. We can not even dream of building a simple cell from scratch with our advanced technology or creating a sun with our most powerful machinery. Why should we not fall to our knees in worship and adoration before the One who did? Need not we, who are sure to die at the hands of entropy, be repentant toward the Judge who has brought the judgment of death to the whole Universe because of sin? The whole realm of natural creation from the dust beneath our feet, the life about us, and the celestial beauties above us tell us of God's power and deity! How can those who profess to be so wise about the Universe be so foolish about the Maker of this Universe?