UNIVERSALITY OF THE SECOND LAW

The Second Law of Thermodynamics is unalterable, unchangeable by any created being. The solidity of this law is such that the greatest men of science have humbly acknowledged its rule. Here are several statements by men of science on this subject:

"The most important and best-proved law in science . . the most powerful and most fundamental generalization about the universe."

> "The Law of Energy Conservation—'Energy can be converted from one form into another, but can neither be created nor destroyed,'—is the most important and best-proved law in science.
>
> "This law is considered the most powerful and most fundamental generalization about the universe that scientists have ever been able to make." —**Isaac Asimov, "In the Game of Energy and Thermodynamics You Can't Even Break Even, " Journal of Smithsonian Institute, June 1970, p. 8.*

It never breaks down under any circumstances.

> "There is thus no justification for the view, often glibly repeated, that the Second Law of Thermodynamics is only statistically true, in the sense that microscopic violations repeatedly occur, but never violations of any serious magnitude. On the contrary, no evidence has ever been presented that the Second Law breaks down under any circumstances." —**A.B. Pippard, Elements of Chemical Thermodynamics for Advanced Students of Physics (1986), p. 100.*

None of us can overcome the effects of the Second Law.

> "What the second Law tells us, then, is that in the great game of the universe, we not only cannot win; we cannot even break even)" –*I. Asimov, "In the Game of Energy and Thermodynamics You Can't Even Break Even*, " in Journal of Smithsonian Institute, June 1970, p. 8.*

There is no region of the universe where it does not apply.

> "Entropy is a property which is defined for and true of each and every part of the universe. There is no evidence whatever that there is a region of the universe where the second law does not apply. Laws of science are universals and the denial of this fact

is question-begging." —*J.P. Moreland, Universals, Qualities, and Quality Instances: A Defense of Realism (1985).*

"One of the most fundamental, best-established laws in all of science."

"Thermodynamics is an exact science which deals with energy. The second law of thermodynamics is one of the most fundamental, best-established laws in all of science. The second law involves a concept known as entropy. Entropy can be understood in terms of energy, disorder, or information. The second law states that the entropy of the universe for any closed system therein (where an isolated system is one which has neither mass nor energy flow in or out of the system) is increasing. Put differently, the amount of energy available to do work is decreasing and becoming uniformly distributed. The universe is moving irreversibly toward a state of maximum disorder and minimum energy." — *B. Davies, God and the New Physics, p. 11.*

It is so broad and general, it can be stated in a variety of ways.

"It is a very broad and very general law, and because its applications are so varied it may be stated in a great variety of ways." —*E. S Greens, Principles of Physics (1982), p. 310.*

"There are many ways of stating what is called the Second Law of Thermodynamics . . all of them are equivalent although some very sophisticated mathematics and physics is involved in the showing the equivalence." —*Isaac Asimov, "In the Game of Energy and Thermodynamics, You Can't Even Break Even," Journal of the Smithsonian Institute, June 1970, p. 8.*

Nothing defeats its operation.

"No matter how carefully we examine the energetics of living systems we find no evidence of defeat of thermodynamic principles." —*Harold Glum, Time's Arrow and Evolution (1962), p. 119.*

"The most secure generalization that we have."

"The two laws of thermodynamics are, I suppose, accepted by physic as perhaps the most secure generalizations from experience that we have. The physicist does not hesitate to apply the two laws to any concrete physical situation in the confidence that nature will not let him down." —*P.W. Bridgman,*

"Reflections on Thermodynamics," American Scientist, October 1953, p. 549.

Applies "to the whole world, and even to the whole cosmic universe."

"In its most modern forms, the Second Law is considered to have an extremely wide range of validity. It is a remarkable illustration of the ranging power of the human intellect that a principle first detected in connection with the clumsy puffing of a steam engine should be found to apply to the whole world, and even to the whole cosmic universe." —*A.R. Ubbelohda, Man and Energy (1955), p. 148.*

These crucial laws even govern sub-atomic particles.

"Thousands of laboratory experiments, performed in different ways and measuring all the quantities involved, have confirmed that the laws of conservation of energy and momentum do hold true in the domain of elementary particles . . It is clear that the laws of conservation of energy and momentum, introduced . . to describe collisions between macroscopic bodies, also apply with remarkable accuracy to the collisions and interactions of sub-atomic particles." —*G. Feinberg and *M. Goldhaber, "The Conservation Laws of Physics, " in Scientific American, October 1983, pp. 39, 42.*

It tells where everything is headed, but it does not tell when.

"The second law of thermodynamics points the direction of events in time, but does not tell when or how fast they will go." —*H.F. Blum, Time's Arrow and Evolution, (1982), p. v., 16.*

"It is important to realize, however, that thermodynamics cannot predict the rate at which a reaction will proceed and does not tell us anything of the mechanism of the reaction." —*B. Mason, Principles of Geochemistry, 2nd Edition, (1980), p. 88.*

Here are several statements about the universal and unalterable nature of the First Law:

"This [first) law is considered to be the most powerful and most fundamental generalization about the universe that scientists have ever been able to make." —*Isaac Asimov, "In the Game of Energy and Thermodynamics You Can't Even Break Even, "in Journal of Smithsonian Institute, June 1970, p. e.*

"Energy appears in various forms: heat, light, kinetic energy, mechanical work, chemical energy, and so forth. Energy can change its form but not its quantity—this is a statement of the first law of thermodynamics, which until quite recently could be accepted without qualification. We know, now, that matter is another form of energy, but that does not alter this fundamental principle which is also called the law of conservation of energy." —*Harold F. Blum, Time's Arrow and Evolution, (1982), p. 14.*

"The physicist's confidence in the conservation principles rests on long and thoroughgoing experience. The conservation of energy, of momentum, and of electric charge have been found to hold, within the limits of accuracy of measurement, in every case that has been studied. An elaborate structure of physical theory has been built on these fundamental concepts, and its predictions have been confirmed without fail." —*G. Feinberg and *M. Goldhaber, "The Conservation Laws of Physics," in Scientific American, October 1983, p. 38.*

ENTROPY IS ALWAYS INCREASING

The Second Law produces entropy, or increasing disorder. This point is important, since evolutionary theory is a flat denial of it.

The leading science writer of the mid-20th century says, "All changes are in the direction of increasing entropy." That would then have to include evolutionary changes, yet those changes are, by definition, supposed to produce decreasing entropy.

"As far as we know, all changes are in the direction of increasing entropy, of increasing disorder, of increasing randomness, of running down." —*Isaac Asimov, "Can Decreasing Entropy Exist in the Universe?" in Science Digest, May 1973, p. 78.*

Here is a description of the First and Second Laws and of the entropy produced by the Second Law:

"In any energy conversion—such as, electric energy into light energy, or magnetic energy into energy of motion—some of the energy is wasted. It is not lost—that would be contrary to the first law; but it is converted to heat that is dissipated in the environment.

"The capacity of any system to perform work is its free energy. The portion of the energy that is unavoidably lost as non-useful

heat is reflected in measurement of entropy—a term first used in 1850 by the German physicist Rudolf Julian Emmanuel Clausius.

"Clausius pointed out that, in any process involving a flow of energy, there is always some loss, so that the entropy of the universe is continually increasing. This continual increase of entropy is the second law of thermodynamics, sometimes referred to as the 'running-down of the universe' or the 'heat-death of the universe.'" *—*Isaac Asimov, Asimov's New Guide to Science, (1920), p. 399.*

Here are several definitions of entropy:

"In any physical change that takes place by itself the entropy always increases. (Entropy is "a measure of the quantity of energy not capable of conversion into work")" *—*Isaac Asimov, "In the Game of Energy and Thermodynamics, You Can't Even Break Even" Journal of the Smithsonian Institute, June 1970, p. 8.*

"Each quantity of energy has a characteristic quality called entropy associated with it. The entropy measures the degree of disorder associated with the energy. Energy must always flow in such a direction that the entropy increases." *—*F.J. Dyson, "Energy in the Universe," Scientific American, Vol. 224 September 1971, p. 52.*

"Entropy, in short, is the measurement of molecular disorder. The law of the irreversible increase in entropy is a law of progressive disorganization, of the complete disappearance of the initial conditions." *—*Ilya Prigogine, "Can Thermodynamics Explain Biological Order?" Impact of Science on Society, Vol. XXIII, No. 3., 1973, p. 162. (Faculty of Sciences, University Libra de Belgique; Prigogine is one of the world's leading thermodynamicists.]*

"A major consequence of the second law of thermodynamics is that all real processes go toward a condition of greater probability. The probability function generally used in thermodynamics is entropy. Thus orderliness is associated with low entropy; randomness with high entropy. The second law of thermodynamics says that left to itself any isolated system will go toward greater entropy, which also means toward greater randomness and greater likelihood." ***–*Harold Blum, "Perspectives in Evolution," American Scientist, October, 1955, p. 595.***

> "Increase in entropy means a transition from a more orderly state to a less orderly state. . In any naturally occurring process, the tendency is for all systems to proceed from order to disorder." —*R. B. Lindsay, "Entropy Consumption and Values in Physical Science, " American Scientist, September 1959, p. 382.*

> "All real processes go with an increase in entropy. The entropy also measures the randomness or lack of orderliness of the system, the greater the randomness the greater the entropy; the idea of a continual tendency toward greater randomness provides the most fundamental way of viewing the second law." —*Harold F. Blum, Time's Arrow and Evolution, (1962), p. 15.*

Here is the Second Law in action:

> "Man has long been aware that his world has a tendency to fall apart. Tools wear out, fishing nets need repair, roofs leak, iron rusts, wood decays, loved ones sicken and die.. We instinctively resent the decay of orderly systems such as the living organism and work to restore such systems to their former or even higher level of organization." —*V.R. Potter, "Society and Science," in Science, November 20, 1964, p. 1018.*

> "The second law of thermodynamics . . says, roughly speaking, that in any change the Universe becomes a slightly more disorderly place; the entropy goes up, the information content goes down. This natural tendency towards disintegration and chaos is evident all around us: people grow old, cars rust, houses fall down, mountains erode, stars burn out, dodos run down." —*P. Davies, "Chance or Choice: Is the Universe an Accident?" in New Scientist, 80:506 (1978).*

There are no known violations of the Second Law.

> "Please be advised that there are no known violations of the second law of thermodynamics. Ordinarily the second law is stated for isolated systems, but the second law applies equally well to open systems. However, there is somehow associated with the field of far-from-equilibrium phenomenon the notion that the second law of thermodynamics fails for such systems. It is important to make sure that this error does not perpetuate itself." —*D. Ross, "Letter," Chemical and Engineering News, July 7, 1974; p. 37.

The Second Law provides us with a one-way street.

> "Sir Arthur Eddington showed insight when he called this [second thermodynamic] law 'time's arrow.' for it helps illustrate nature's time sense—the one-wayness of events. When events take place, they do so in a way that serves to distinguish between backwards and forwards. The ancients even made lists of events which never take place in reverse: Rivers do not flow uphill, plants and men do not grow backwards, forest fires do not turn ashes into fully grown trees." ***—Howard Path, Blind Faith (1990), p. 87-88.***

The entropy process is irreversible.

> "It is one of this law's consequences that all real processes go irreversibly . . Any given process in this universe is accompanied by a change in magnitude of a quantity called the entropy. . All real processes go with an increase of entropy. The entropy also measures the randomness or ladle of orderliness of the system, the greater the randomness the greater the entropy." *—*Harold F. Blum, Time's Arrow and Evolution (1982), p. 14.*

"All observed systems go from order to disorder."

> "There is a general natural tendency of all observed systems to go from order to disorder, reflecting dissipation of energy available for future transformation—the law of increasing entropy." *—*R. B. Kindsay: "Physics—To What Extent is it Deterministic," in American Scientist, Vol. 156 (1973), p. 100.*

Everything, everywhere in the universe, is under this entropy rule. A recent book on stellar evolution backs this up:

> "The stars, once burned out, will never spring back into life. Technically, stellar revival is not impossible—only so improbable that it amounts to the same thing. The reason is entropy. The second law of thermodynamics is a simple proposition: In any dosed system, the state of the system will evolve toward increasing disorder.
>
> "In a closed room, for example, one might take all the air and compress it into a single corner, an orderly state, because the air is limited to a specific location. But if the air was left alone, the random motions of the individual molecules would spread the air throughout the room until it was evenly dispersed. That would be the state of maximum disorder, since any given molecule could

end up anywhere. [Theoretically] Nothing in the laws of physics prohibits these random motions from repositioning all the air back into the corner—and in fact, the air in any real room on Earth could do just that, leaving its occupants gasping for breath. But considering the trillions upon trillions of molecules involved, such a coincidence is so wildly improbable that it will never happen.

"What applies to sir molecules in a room also applies to energy in the universe. When a star dies, having dispersed its concentrated energy into space, it will not suddenly regather that energy and roar back to life." —**Roberta Conlan, Frontiers of Time (1991), pp. 105-108.*

Star Date summarizes the problem for us:

"You may know the word `entropy.' Its a word that physicists use when talking about the amount of disorder in a system. R appears to be a basic physical law that, in our universe, entropy always appears to increase as a system evolves.

"In other words, once you scramble an egg, it stays scrambled; it doesn't turn spontaneously back into a whole egg again. Likewise, tidy rooms get messy; you have to keep cleaning your house over and over main. Or consider a sugar cube dropped into a cup of coffee; it dissolves and disappears. It never turns back into a cube again.

"The list goes on. But the idea is, in our universe, when things are left to themselves, they tend toward disorder. That's entropy.

"Yet, for the last several decades, the most widely believed theory about the birth of the universe says that it began in a Big Bang; [which would be] a state of unimaginable chaos.

"Later that chaos had to evolve into the extremely orderly structures we know today: majestically rotating galaxies made of billions of stars; stars that cycle through various predictable (theoretical] stages of evolution; and, last but not least, those most complex of all known organisms: human beings, who contemplate it all.

"So how can a universe that tends toward disorder, have evolved such orderly structures? That's one kind of question being asked today in cosmology, the study of the whole universe." —**Star Date radio broadcast, October 9, 1990.*

EVOLUTION CLAIMS TO BE ABOVE THE SECOND LAW

Zealous evolutionists claim that their theory stands above the Second Law of Thermodynamics, that it is triumphantly resistant to all inroads by entropy, and they even maintain that their theory is above all law! Some of them declare that evolution operates on unknown laws we have not yet discovered!

Evolution runs counter to entropy, for by it nature is constantly increasing in complexity and perfection.

> "This direction in evolution can thus also be characterized by an increase in complexity and independence of the environment." —*J. C. Lacey, Jr. and *D. Mullins, Jr. "Proteins and Nucleic Adds in Prebiotic Evolution, " in Molecular Evolution: Prebiological and Biological (1972), p. 172.*

Life forms are continually achieving higher levels, better life, and greater and greater perfection in all respects.

> "In the complex course of its evolution, life exhibits a remarkable contrast to the tendency expressed in the Second Law of Thermodynamics. Where the Second Law expresses an irreversible progression toward increased entropy and disorder, life evolves continually higher levels of order. The still more remarkable fact is that this evolutionary drive to greater and greater order also is irreversible. Evolution does not go backward." —*J.H. Rush, The Down of Life (1982), p. 35.*

This evolutionary trend to greater complexity is said to even be the supreme ruler over molecules, elements, inorganic substances, and everything in the universe)

> "Back of the spontaneous generation of life under other conditions than now obtain upon this planet, there occurred a spontaneous generation of elements of the kind that still goes on in the stars; and back of that I suppose a spontaneous generation of elementary particles under circumstances still to be fathomed, that ended in giving them the properties that alone make possible the universe we know." —*George Weld, "Fitness in the Universe," Origins of Life, Vol. 5, 1974; p. 28. (Harvard biologist)*

Life is a "force" which does not bow to the Second Law. (If that is so, living things ought to be immortal and eternal.)

> "Life might be described as an unexpected force that somehow organizes inanimate matter into a living system that perceives, reacts to, and evolves to cope with changes to the physical environment that threatens to destroy its organization." —**Mars and Earth, National Aeronautics and Space Administration (1975), p. 5.*

It is all done magically by evolution, yet * Rifkin declares evolution's magic touch is applied in spite of evidence to the contrary.

> "We believe that evolution somehow magically creates greater overall value and order on earth. Now that the environment we live in is becoming so dissipated and disordered that it is apparent to the naked eye, we are beginning for the first time to have second thoughts about our views on evolution, progress, and the creation of things of material value. . Evolution means the creation of larger and larger islands of order at the expense of the ever greater sass of disorder in the world. There is not a single biologist or physicist who can deny this central truth. Yet, who is willing to stand up in a classroom or before a public forum and admit it?" —**Jeremy Rifkin, Entropy: A New World View (1980), p. 55.*

*Weisskopf wonders aloud how it can be that evolution can work, when the Second Law says it can't.

> "The evolutionary history of the world from the 'big bang' to the present universe is a series of gradual steps from the simple to the complicated, from the unordered to the organized, from the formless gas of elementary particles to the morphic atoms and molecules and further to the still more structured liquids and solids, and finally to the sophisticated living organisms. There is an obvious tendency of nature from disorder to order and organization. Is this tendency in contradiction to the famous second law of thermodynamics, which says that disorder must increase in nature? The law says that entropy, the measure of disorder, must grow in any natural system." —**Victor F. Weisskopf, "The Frontiers and Limits of Science," American Scientist, Vol. 85, July/August 1977, p. 409:*

*Toulmin is fascinated with the way in which "astronomy has proven" that forces are at work which are outside of law. (Those "forces" he refers to are the peculiar theories of matter exploding out of nothing (Big Bang), and interstellar gas pushing itself together to form stars;—theories which have never been observed to have occurred, and run totally contrary to physical laws. See chapters 1-3, dealing with astronomy.)

> "It seems to me astronomy has proven that forces are at work in the world that are beyond the present power of scientific description; these are literally supernatural forces, because they are outside the body of natural law." —*S. Toulmin, "Science, Philosophy of," in Encyclopedia Britannica Vol. 18 (15th ad. 1974), p. 389.*

*Jastrow agrees.

> "The world had a beginning under conditions in which the known laws are not valid, and as a product of forces and circumstances we cannot discover." —*Robert Jastrow, God and the Astronomers (1978), p. 114.*

* Ubbelohde notes that the "steady state" theory of the origin of the universe (see chapter 1, Origin of the Universe) is in direct violation of the Second Law.

> "A recent suggestion is that for the Universe considered as a whole the law of entropy increase is brought to a standstill by the 'continuous creation' of matter. The hypothesis of 'continuous creation' has in fact been introduced in the attempt to neutralize the law of entropy trend on the cosmic scale." —*A. R. Ubbelohde, Man and Energy, p. 177.*

The concept of evolution stands in total opposition to the Second Law of Thermodynamics:

> "Evolutionism is the doctrine that the universe, inducting inorganic and organic matter m ale m manifestations, is the product of gradual and progressive development." —*E. Olson, and *J. Robinson, Concepts of Evolution (1975), p. 10.*

*Wilson explains that evolution is "the strongest natural explanation" (even though it disagrees with natural law), and is but an expression of the laws of nature.

> "Evolution, which is the strongest natural explanation, holds—that the gross features of the universe—including galaxies, solar systems and planets; the transition from the non-living matter to the living organisms; and the diversity of life forms, including human beings—is expressed [required] by the. laws of nature." —*D. Wilson, "The Origin of Life," Did the Devil Make Darwin Do it? (1983), p. 88.*

Evolution is claimed to be able to operate in total opposition, to the Second Law and increasing entropy.

"'The evolution of life is an anti-entropic process, running counter to the second law of thermodynamics with its degradation of energy and its tendency to uniformity:" —*Julian Huxley, Introduction, Teilhard de Chardin, Phenomenon of Man, (1959), p. 27.*

THE SECOND LAW AND OPEN SYSTEMS

Evolutionists are waging war on two fronts in regard to the Second Law. On one hand, they freely declare that evolutionary theory is above natural law—,and the Second Law in particular. On the other hand, they say that, yes, the Second Law may apply to some other parts of the universe, but it surely does not apply to plants end animals in our world, since they are "open systems." A third defense is that the Second Law applies to nothing in our world, because the sun shines upon it, making it an "open system." Oddly enough, the Second Law was discovered in our world! Of course, if that was true, then nothing in the universe would be under the Second Law, because light from the stars penetrates every comer of it. We have already discussed this at length in the text of this chapter, but here are a few additional statements by scientists:

It matters not whether a system is closed (isolated) or open (non-isolated), entropy is still increasing, and therefore the Second Law is still in charge.

"The quality of entropy generated locally cannot be negative irrespective of whether the system is isolated or not." —*Arnold Sommerfeld, Thermodynamics and Statistical Mechanics (1958), p. 155.*

Plants and animals continually use energy, and are continually dying.

"Like any other machine, the living system must have a supply of energy for its operation. If it does external work as, for example, in bodily movement or in the expulsion of waste products, free energy must be expended." —*Harold F. Blum, Time's Arrow and Evolution (1951), p. 87.*

All systems go from order to disorder.

"There is a general natural tendency of all observed systems to go from order to disorder, reflecting dissipation of energy available for future transformation—the law of increasing entropy." —*R. B. Kindsay: "Physics—To What Extent is it Deterministic," in American Scientist, Vol. 158 (1973), P. 100.*

Macroevolution (the evolving of one species into another) cannot occur because of the Second Law controls all closed systems (and everything in our world is in a closed system).

Where are these mysterious "closed systems" that are impervious to the Second Law?

> *McGowan [an avowed evolutionist] goes on to ridicule the creationist position in respect to the second law of thermodynamics. He comments that this law only applies to 'closed' systems and implies that energy alone is sufficient to ensure vertical evolution. However to achieve upward complexity he needs not only energy, but a high level of input of genetic information and organization. Anyway, where in the world can we find these mysterious 'closed' systems? As far as science can tell, everything on this Earth interacts with everything else. Properly closed systems appear not to occur in nature, whether in geology, chemistry or biology." *—A. W. Mehlert, Review," Creation Research Society Quarterly, June 1987, pp. 24-25.*

> "Macroevolution is unlikely because of the well-known second law of thermodynamics, which holds that disorder (more formally known as entropy) increased in closed systems." *–W. Frair and P. Davis, Case For Creation (1987), p. 94.*

*Lindsay explains that the very fact that plants and animals grow old and die proves that the Second Law applies to them.

> "As was pointed out earlier in the book, the principal reason for accepting the second law of thermodynamics is that it has always worked wherever it has been possible to make the necessary measurements to test it. We assume therefore that it holds where we are unable to make such measurements.
>
> "All experience points to the fact that every living organism eventually dies. This process in which the highly developed order of the organism is reduced to a random and disorderly collection of molecules. We are reminded that we are 'dust' and to 'dust' we ultimately return" *—*R.B. Lindsay, "Entropy Consumption and Values in Physical Science," American Scientist, September 1959, p. 384.*

Entropy continually bears sway over every system large or small, except in those instances in which an outside influence is continually at work to keep repairing a particular system (such as maintenance men always repairing an apartment house).

> "The most careful examination of all naturally occurring processes (i.e., those in which external influences are not allowed to intervene) has only served to confirm our confidence

> in the inexorable over-all increase in the entropy of the universe." —*R. B. Lindsay, "Entropy Consumption and Values in Physical Science, " American Scientist, Vol. 47, September 1959, p. 379.*

Kofahl and Segraves applies the Second Law to the chance formation of life:

> "This Second Law of Thermodynamics is of great import also for any theory of spontaneous origin of life. Such a theory proposes that chance arrangements of physical conditions and mixtures of simple inorganic chemicals—maintained for billions of years—made possible, probable, even inevitable the formation of some complicated, energy-rich proteins and other biomolecules from which the original living cells then were formed by random combinations.
>
> "However, this chemical evolution would require the spontaneous production of organic compounds extremely rich in free energy and low in entropy, and the spontaneous assembling of fantastically complex structures of living organisms. It is most difficult to imagine how this [chemical evolution] could occur spontaneously without violating the Second Law, to say nothing of actually demonstrating such a process experimentally. It is, of course, pure imagination. Since the Second law has not yet been faulted a invalidated, theories of spontaneous chemical origin of life call for extreme skepticism on the part of honest scientists." —*R. E. Kofahl and K. L. Segraves, The Creation Explanation (1975), pp. 3538.*

McCann explains that the "open" vs. "closed" system argument is ridiculous—because everything is the same. While other scientists call everything in the universe a closed system, McCann says it is all open. Actually, it matters not whether everything is called closed or open; for the fact remains that everything is the same! And if space and matter is in the same type of system, then everything is under the Second Law. Whether systems be called open or closed, there surely is enough evidence that our world is under it. The rocks crumble, buildings fall to pieces, plants and animals age. You will want to read the following statement very carefully; it is very explanatory:

> "Anyone who has ever had a discussion with a Darwinist will almost surely have been confronted with the question of open systems and closed systems, or isolated systems and nonisolated systems [as they are also called]. Darwinists brandish this bit of lore in particular when the question of the Law of Entropy comes up. They say that the Law of Entropy does not apply to open systems, and because living systems are

open systems they tell us it does not apply to living systems. This turns out to be an effective diversionary, obfuscatory tactic, because all too often people do not understand exactly what is meant by an open or closed system, and thus the discussion is effectively derailed.

"An open system is one which can interchange energy with other systems. The earth and everything on it, including every form of life, all constitute open systems because they obtain heat from the sun and radiations from outer space, and can radiate heat to other systems. In contrast, a dosed system does not carry on exchanges with its surroundings, that is, it does not interact with any other system.

"We can dispose of this matter of open and closed systems and how it affects our concerns rather quickly. The only natural system which is a closed system is the universe itself. This is because there is no other system from which the universe can obtain energy. On the other hand, everything within the universe, including the earth and everything connected with the earth, including living systems, are open systems. To illustrate, we know that the earth and what it encompasses receives heat energy from the sun of 13 x 10= calories per year.

Actually, the Law of Entropy operates in regard to all systems anywhere. It applies to open systems as well as closed systems. That is why physicists maintain that even the universe itself is slowly running down in terms of treadle energy, and so is the sun. Thus, for Darwinists to claim that living systems are excluded from the workings of the Law of Entropy because living systems are open systems does not make sense." *—Lester J. McCann, Blowing the Whistle on Darwinism (1988), pp. 77-78.*

Struggling to explain why evolution could occur in our world, in spite of the Second Law, some evolutionism have come up with the science-fiction yarn that a mysterious space warp of too much entropy occurred somewhere else in the universe,—and the other side of the warp hit our planet and emptied us of it, thus enabling evolution to occur! But entropy is not a physical solid, like a pile of beans; it is an effect of the outworking of a special law. If those effects are not found on our planet, then why do we see them everywhere, and how could our scientists discover the Second Law and its effects right here?

"Evolutionists . . [say that] the Earth, in particular, is an open system; and that in an open system strange things may happen to the entropy, and to everything else. . Some [evolutionists) say that there was a great increase in entropy in the Sun, or in outer

space, or somewhere; so that a spontaneous decrease in entropy on the Earth [therefore occurred] and is not surprising. The idea seems to be that an increase in entropy in one place can atone, so to speak, for a decrease in another. It is rather as if one were to expect a small pot of water, put onto the fire, to freeze, provided a larger pot put beside it boil . . But, surely an increase in entropy in one place has to do with an (alleged) decrease in another only if there is some connection of cause and effect between them. And, needless to say, such a connection has not been demonstrated." *—H. L Armstrong, "Evolutionistic Defense Against Thermodynamics Disproved," . in Creation Research Society Quarterly, March 1980, p. 227.*

Humphreys shows that, as an open system, the solar energy pouring upon our world has the effect of increasing entropy, not decreasing it.

"Although textbooks often state the second law in terms of a closed system, it is possible to formulate the law in terms of an open system . .

"The only way to decrease entropy in any system is to have a flow of entropy out of the system which is greater than the sum of the entropy coming into it and the internally-produced entropy. Such an entropy outflow is equivalent of putting information and order into the system from outside it. But as long as entropy inflows and outflows are accounted for, the second law holds. So the second law does apply to open systems. .

"Let us consider the earth and its atmosphere as an open system which is receiving energy from the sun. Since energy is flowing into the system, . . there is a positive entropy flow also going into the system. If we use the known energy flux from the sun, we can estimate the rate of entropy increase on the earth due to incoming solar energy alone. The result fume out to be about 140 trillion calories per degree Kelvin per second. This is a large flow of entropy—but it is in the wrong direction to produce evolution. Evolutionists want the sun's energy to produce greater and greater order upon the earth; this requires that entropy be decreasing in our open system. But solar energy does just the opposite; it increases the earth's entropy! . .

"There is no evidence that temporal local violations of the law exist. A well-known physicist wrote, concerning exceptions to the second law:

" 'In fact, no violation can be brought about in this case, nor with any of the ingenious and often subtle engines which have been devised with the object of circumventing the law. More over, if consequences of the law are so unfailingly verified by experiment that it has come to be regarded as among the most firmly established of all the laws of nature.' *[A.B. Pippard, Elements of Classical Thermodynamics (1957), p. 30.] " —D. Russel Humpreys, "Using the Second Law More Effectively," in Creation Research Society Quarterly, March 1978, pp. 209-210. [Humphreys' article includes mathematical calculations and diagrams in support of the above statements.)*

McCann applies the Second Law to genes, and shows that information storage and transfer is involved, and that mutational sources produce gradual, ongoing entropy effects on them.

"In order to construct a single, average protein, a gene would in turn consist of between 300 and 1500 of its own chemical sub units, called nucleotides.

"How many genes are there? The small Drosophila [fruit] fly, which has been studied more than any other creature in terms of its genetics, has been estimated by experts to have between 8 and 10 thousand genes in its makeup. This is far fewer than the number estimated for the human, of about 40 to 50 thousand genes. Some say this figure should be as high as 100 thousand.

"It is necessary to realize that a gene is an information source, analogous to a pattern. The gene provides the cell with a template for making a particular protein. It might be, for example, the protein necessary for muscle construction. Thus, in the action of genes we are dealing with the transfer of information.

"With the growth of the computer industry the field of information theory has become more and more knowledgeable about the limitations of information transfer. One of the basic tenets which has developed is that you cannot produce a sensible mode of information transfer by chance. It the factor of chance is introduced into the preparation of an information instrumentality it can only result in chaos, that is, it produces only unintelligibility.

"It is possible to get an idea of the kind of complexity we are dealing with in the case of a gene, and what we are expecting if we think a radiation or mutagen can beneficially influence the genetic makeup of an organism. To do this, let us look at what

pertains for an animal of about the complexity of a fruit fly, an animal far less complex than the human . .

"For our hypothetical creature, this would give us a figure of 900 critically important nucleotide subunits for each gene, with about 9,000 genes making up the total genetic complement of our theoretical organism. Multiplying 900 by 9,000 it means there would be about 8,100,000 vulnerable chemical subunits or nucleotides serving as potential targets for incoming radiations or penetrating chemical mutagens . .

"Any contact by a radiation or chemical mutagen on the wrong part of any of the eight million nucleotides is likely to cause a lethal or grassy disruptive effect, [thus] it is easy to see why the Law of Entropy works the way it does. That is why as demonstrated in this instance, the Law insists that you cannot produce an increase in complexity from the action of random radiation or indiscriminate mutagens. You get only a disruption of the existing order." *—Lester McCann, blowing the Whistle on Darwinism (1988), pp. 52 5a*

THE SECOND LAW AND CRYSTALLIZATION

In desperation, evolutionists have pointed at crystal formation as proof that this world is not under the control of the Second Law. They maintain that crystallization proves evolutionary theory.

When various chemicals are placed in solution, and the fluid is then permitted to evaporate, crystals will form. They do this automatically, and produce very predictable shapes. In doing this, the chemicals are obeying a law. But in obeying crystallization laws, they are not disobeying the Second Law! Wear and tear gradually wears down the completed crystals, and they crumble back into dust. What do the scientists have to say about this?

Three evolutionist writers accept the erroneous theory, as applying to crystals, but, in the second paragraph, they reject it as applying to living creatures—where defiance of the Second Law is urgently needed by evolutionary theory.

"The point is that in a non-isolated system there exists a possibility for the formation of ordered, low-entropy structures at sufficiently low temperatures. This ordering principle is responsible for the appearance of ordered structures such as crystals as well as for the phenomena of phase transitions.

> "Unfortunately this principle cannot explain the formation of biological structures." —*I. Prigogine, *G. Nicolis and *A. Babloyantz, "Thermodynamics of Evolution," Physics Today" Nov. 1972, p. 23.*

*Stravropoulos replies to an ardent evolutionist who, in an article, wrote that because crystals automatically form, therefore living creatures automatically form also.

> "He makes it appear as though crystals and highly ordered organic molecules belong to the same class, when in fact they do not. When a crystal is broken up, the smaller crystals are physically and chemically identical to the original. This is never observed with (organic) molecules; when the original molecule is split up lesser molecules appear, and part of the original information is lost. To ignore such fundamental differences in an effort to arrive at some general overview a law is to create a false overview, a pseudo-law." —*G. Stravropoulos, "Letter, " American Scientist (197n, p. 874.*

*More explains that crystallization is an entropy process leading to a lower state, and that it involves inert, non-functioning materials. Therefore the crystallization process is not an exemplar for what occurs in living tissue.

> "Crystallization occurs because it leads W the lowest enemy state and to the most stable arrangement of atoms or molecules under the given conditions. Crystallization leads to simple, very uniform repeating structures, which are inert. These structures do not function, and are not designed by function." —*P. More, "Crystallization and the Second Law," Nature 199 (1983), p. 218.*

In order for a certain crystal to form, exactly the right chemical must be in liquid form, and the fluid must then gradually evaporate. Armstrong explains that an ordered (low-entropy) environment is needed to begin the crystallization—which would be in agreement with the Second Law, which always begins with lower entropy.

> "It is sometimes claimed that when a crystal forms from a solution, there is a spontaneous increase in order. In thermodynamic terms, the increase in order is associated with a decease in entropy . .
>
> "It must be pointed out that crystallization, as it commonly happens, involves irreversible processes. Now in thermodynamic calculations, it is risky, if not completely invalid, to calculate on the basis of irreversible processes. The best thing is to consider

reversible processes which will give the same result, and to calculate from them . .

"To have the crystals form, showing some order, it is necessary that the situation incorporate beforehand a considerable amount of order. So it is not true that order will arise spontaneously out of disorder. In particular, out of the utter disorder envisaged by those who maintain that the universe began with an explosion, the present degree of order could never have arisen spontaneously." *—H.L. Armstrong, "Evolutionistic Defense Against Thermodynamics Disproved. 1. in Creation Research Society Quarterly, March 1980, pp. 228-227.*

But two leading scientists explain that this ordered environment for crystal formation can in no way explain biological evolution.

"In a non-isolated system there exists a possibility for formation of ordered, low-entropy structures at sufficiently low temperatures. This ordering principle is responsible for the appearance of ordered structures as crystals as well as for the phenomena of phase transitions.

"Unfortunately this principle cannot explain the formation of biological structures." *—*L.G. Nicolis, Prigogine, and *A. Babloyantz, "Thermodynamics of Evolution," Physics Today, 25(11):23-28 (1972).*

THE SECOND LAW DESTROYS EVOLUTIONARY THEORY

Evolutionists find in the Second Law one of the biggest obstacles to convert the world to their viewpoint. They have decided that the only way out !s to denounce that law as an insignificant detail that is overruled by the great principle of Evolution. But knowledgable scientists in the field declare that the Second Law totally eliminates the possibility of the origin or evolution of life, as explained by evolutionary theory.

*Lindsay draws the battle lines for us:

"Evolution, in the broad sense, implies increasing organization and complexity in the universe and is in effect a doctrine of continuous creation; conversely, the first law of thermodynamics affirms that creation is no longer normally occurring, and the second that the original creation is decreasing in organization and complexity.

> "Thermodynamics is a physical theory of great generality impinging on practically every phase of human experience. It may be called the description of the behavior of matter in equilibrium and of its changes from one equilibrium state to another. Thermodynamics operate with two master concepts or constructs and two great principles. The concepts are energy and entropy, and the principles are the so-called first and second laws of thermodynamics."— **R.B. Lindsay, "Entropy Consumption and Values in Physical Science," American Scientist, September 1959, p. 378.*

Evolution requires continual, inherent improvement within both matter and biological substances. The Second Law says No.

> "One problem biologists have faced is the apparent contradiction by evolution of the second law of thermodynamics. Systems should decay through time, giving less, not more order." — **Roger Lewin, "A Downward Slope to Greater Diversity," in Science, September 24, 1982, p. 1239.*

> "How can the forces of biological development [evolutionary theory] and the forces of physical degeneration [the Second Law] succeed by operating at cross purposes? It would take, of course, a far greater mind than mine even to attempt to penetrate this riddle. I can only pose the question." —**Sydney Harris, "Second Law of Thermodynamics," in San Francisco Examiner, January 27, 1984 in a nationally syndicated column].*

Chapter 10 (DNA and Protein) explained why, mathematically, it would be impossible for the necessary coding to be produced by chance selection. Coffin tells us that the Second Law would forbid the needed chemicals from concentrating sufficiently to produce amino acids, and thence, proteins. Entropy would also break down anything produced before it could go on and make further biologic improvements.

> "They [the evolutionists] know that evolution has no satisfactory explanation of origins, that the pushing of this problem out into space or onto other heavenly bodies does not solve it. They are acquainted with the second law of thermodynamics, which would work against the build-up of amino acids and proteins needed before that original final spark of life could develop on earth." — *H. G. Coffin, Creation—Accident or Design? (1989), p. 459.*

*Oparin and *Hull agree:

> "Any transition from one stage of biopoiesis to the next usually entails the growth of a complex and organized system. After the second law of thermodynamics a reverse decomposition process much more probable than the direct synthetic one." —*A. I. Oparin: "Problem of the Origin of Life: Present Spate and Prospects," in Chemical Evolution and the Origin of Life (1971), p. 6.*

> "The conclusion from these arguments presents the most serious obstacle, if indeed it is not fatal, to the theory of spontaneous generation. Fret, thermodynamic calculations predict vanishingly small concentrations of even the simplest organic compounds. Secondly, the reactions that are invoked to synthesize such compounds are seen to be much more effective in decomposing them.

> "The physical chemist, guided by the proved principles of chemical thermodynamics aril kinetics, cannot offer any encouragement to the biochemist who needs an ocean full of organic compounds to form even lifeless coacervate." —*D. Hull, "Thermodynamics and Kinetics of Spontaneous Generation," in Nature, Vol. 188 (1960), pp. 693-694.*

A continual controversy wages in the academic halls of the evolutionists over ways to side-step the Second Law, and thus salvage their theory. But *Grew declares it has not been circumvented.

> "But an answer can readily be given to the question 'Has the second law of thermodynamics been circumvented?' Not yet." —*Frank A. Grow, "On the Second Law of Thermodynamics," in American Laboratory, October 1982, p. 88.*

Evolution requires a reversal of entropy, but the odds are against it.

> "Henry Bent, a chemist, calculated on the basis of the second law that the chance for a reversal of entropy, such that one calorie could be converted completely into work, is comparable to the odds for a group of monkeys randomly punching at the typewriters to 'produce Shakespeare's works 15 quadrillion times in succession without error." —*S.W. Angrist, "Perpetual Motion Machines," in Scientific American, (1988), pp. 218, 120-121.*

There are many chemicals in our bodies which would instantly inactivate or destroy one another if brought together, yet there they are, on the cliff-edge of

collapse, yet not doing so during the life of the organism. The effects of the Second Law would forbid that such inimitable chemicals could ever come together by chance and form living systems.

> " 'All molecules result from an electrochemical tendency to neutralization. They are therefore expressions of tendencies toward stability.' Unhappily for materialists, however, life is characteristically unstable, and 'it is incredible that the complex of substances, all tending towards a state of stability, would produce the permanent chemical instability which is characteristic of animate matter.' Thus it is inconceivable that an organic compound should ever be formed in the absence of life:' No condition of inorganic matter is even thinkable in which carbon, oxygen and hydrogen could combine to form a sugar rather than water and carbon dioxide." —**Discovery, May 1962, p. 44. (A review of R. Schubert-Soldem's book, Mechanism and Vitalism.)*

Knowing that evolutionists try to use crystal formation as an example of Second Law violation, three scientists declare that even if that were so, it would not explain how living systems could be exempt from that law.

> "The point is that in a non-isolated system there exists a possibility for formation of ordered, low-entropy structures at sufficiently low temperatures. This ordering principle is responsible for the appearance of ordered structures such as crystal as well as for the phenomena of phase transitions
>
> "Unfortunately this principle cannot explain the formation of biological structures. The probability that at ordinary temperatures a macroscopic number d molecules is assembled to give rise to the highly-ordered structures and to the coordinated functions characterizing living organisms is vanishingly small. The idea of spontaneous genesis of life in its present form is therefore highly improbable, even on the scale of the billions of years during which prebiotic evolution occurred." —**Ilya Prigogine, *Gregoire Nicolis and *Agnes Babloyants, "Thermodynamics of Evolution, " Physics Today, Vol. 25, November 1972, p. 23.*

***Prigogine is professor on the Faculty of Sciences at the University Libra de Belgique and is one of the world's leading thermodynamicists. He sees the complexity of living organisms as too extensive to be exempt:**

> "But let us have no illusions—our research would still leave us quite unable to grasp the extreme complexity of the simplest of organisms." *—*Ilya Prigogine, "Can Thermodynamics Explain Biological Order?" p. 178.*

Holboyd approaches the matter from the standpoint of mutations. He tells us that the Second Law theoretically forbids the possibility that chance mutations could ever produce beneficial results in living organisms. The theory is matched by the evidence: That is exactly what occurs only negative effects are produced by mutational activity.

> "The second law of thermodynamics has been fairly established in physics and chemistry. According to this law, physical and chemical systems spontaneously go from less probable to more probable states. Buildings, roads, bridges, dams, and machines are all destroyed by acts of nature, consistently with this law. As a result, it is not possible for a physical scientist to accept without convincing evidence the idea that natural events, considered blind and mindless, ever make beneficial mutations. Only the detrimental effects of mutations are consistent with the second law. This matter is complex and it needs more thought than it has ever been given." *—Howard B. Holhoyd, "Darwinism is Physical and Mathematical Nonsense," in Creation Research Society Quarterly, June 1972, p. 12.*

THE SECOND LAW REQUIRES A BEGINNING

It is of interest that not only does the Second Law require an end; it also requires a beginning! A ticking pocket watch had to be originally designed and made by an intelligent mind. That watch also had to be initially wound up. The manifold purposive designs in nature require that original manufacture by an outside intelligence. The Second Law requires that all animate and inanimate nature be originally wound up.

*Stansfield defines the problem:

> "Creationists continually refer to the laws of thermodynamics in their arguments against a natural origin for living systems.
>
> "The First Law of Thermodynamics, sometimes called the Law of Conservation of Energy, states that energy can be transformed form one kind to another, but it can neither be created nor destroyed. Since matter and energy have been interconvertible, the First Law can be modified to state that neither matter nor energy can be created or destroyed.

> "The Second Law of Thermodynamics states that in converting one form of energy to another, some of it is lost as unusable heat. Entropy is the thermodynamic quality of randomness or disorder within a system. The Second Law therefore implies that as energy is being transformed throughout the universe, entropy is increasing. These Laws argue strongly for a created universe!" —*W. Stansfield, The Science of Evolution (1977), p. 57.*

Pitman explains that the cosmos could not possibly be infinitely old, as many evolutionists require. It had to have a production and wind-up beginning. If so, an outside super-powerful Intelligence had to produce it.

> "The Second Law of Thermodynamics (the law of energy decay) states that, with time, all systems tend, unless there is an external input of energy, to run down. For example, the paraffin wax in a candle is composed of hydrocarbon molecules, which, by virtue of their structure, possess much chemical energy. When M, the candle will burn and I energy will be converted into light and heat energy. The candle burns spontaneously. but it will never 'unburn' itself. All spontaneous processes tend to change order into disorder and organized energy into random heat energy. The entropy of a system is a measure of its degree of disorder, and we expect to find a general increase in entropy.
>
> "Jeremy Rifkin, an evolutionists, has written: 'The entropy law will preside as the ruling paradigm over the next period of history. Albert Einstein said that it is the premiere law of all science, Sir Arthur Eddington referred to it as the supreme metaphysical law of the entire universe.
>
> "What meaning has this law for the question of origins Firstly, if the cosmos were infinitely old we would expect to find it had completely run down. Unwound, it would have suffered a 'heat-death.' That it has not implies that it is not infinitely old and therefore must have had a beginning. If the first law precludes the cosmos from having started itself, we are led to the conclusion that an outside, non-material power generated it.
>
> "The second law, implying that the universe had a beginning, precludes the possibility of infinite, eternal matter . .
>
> "Statistical thermodynamics shows that the organized complexity (order) of a structured system tends to become disordered. A correlation of this is that the information conveyed by a communicating system tends to become distorted and

incomplete." —*M. Pitman, Adam and Evolution, (1984), pp. 1131.*

"At some time in the past, [it must] have been wound up in some manner unknown to us."

> "The universe is like a clock which is running down, a clock which, so far as science knows, no one ever winds up, which cannot wind itself up, and so must stop in time. It is at present a partially wound-up clock which must, at some time in the past, have been wound up in some manner unknown to us.
>
> "Everything points with overwhelming force to a definite went, a series of events, of creation at sometime a times not infinitely remote. The universe can not have originated by chance out of its present ingredients, and neither can it have been always the same as now." —**Sir James Jeans, Eos, or the Wider Aspects of Cosmogony (1928), p. 52.*

*Davies says it in bolder terminology:

> "The Universe cannot have existed forever-there must have been a creation." —**P. Davies The Runaway Universe (1980), p. 27.*

"A universe that is running down demands a Creator who 'wound it up' at the beginning."

> "Contrary to popular belief, not a single star, planet, or galaxy has ever been seen forming spontaneously out of cosmic debris. Such imaginary evolutionary processes do not even work on paper! Why, then, are we continually told that we live in evolving universe rather than a degenerating universe? Because of the implications of such an admission. A universe that is running down demands a Creator who 'wound it up' at the beginning. And astronomers today have a morbid fear of the stigma of creationism." —*H. R Siegler, Evolution or Degeneration: Which (1972), P. 52*

The Second Law increases conviction that there is a Creator.

> "A final point to be made is that the second law of thermodynamics and the principle of increase in entropy have great philosophical implications. The question that arises is how did the universe get into the state of reduced entropy in the first place, since all natural processes known to us tend to increase

> entropy? . . The author has round that the second law tends to increase his conviction that there is a Creator who has the answer for the future destiny of man and the universe." — **Gordon J. Van Wylen, Thermodynamics (1959), p. 189.*

Brown explains that there had to be a beginning, or at some time in the past there would have been too much energy in the universe.

> "If the entire universe is an isolated system, then, according to the Second Law of Thermodynamics, the energy in the universe that is available for useful work has always been decreasing. However, as one goes back in time, the amount of energy available for useful work would eventually exceed the total energy in the universe that, according to the First Law of Thermodynamics, remains constant. This is an impossible condition. Therefore, it implies that the universe had a beginning." —*Walter T. Brown, in the Beginning (1989), p. 12*

THE LAWS AND THEIR MAKER

Whence came these astounding laws that govern the smallest atom to the greatest world? Laws cannot make themselves! Think about that awhile.

*Einstein stood in awe of the amazing perfection, utility, and harmony of natural laws:

> "The scientist's religious feeling takes the roan of a rapturous amazement at the harmony of natural law, which reveals an intelligence of such superiority that, compared with it, all the systematic thinking and acting of human beings is an utterly insignificant reflection." —**Albert Einstein, The World As I See It, p. 9.*

Enoch agrees:

> "For instance, the size of the universe as revealed by the 200 inch telescope reaching out to a stance of two billion light years, with its billions of stars and their planets, all moving in their own orbits with such clock-like precision, without any confusion, speaks of an all-wise and Almighty Creator who not only created them, but also keeps them going. Such marvelous accuracy and precision cannot come into being through fortuitous chance operations, as evolutionists contend. None of the theories put forward by the cosmologists, be it Laplace's 'Nebular Hypothesis' or Fred Hoyle's 'Steady State Theory' or Garnow's 'Big Bang

> Theory' can adequately account for such marvels,." *–H. Enoch, Evolution or Creation, (1966) pp. 109-110.*

These amazing laws point us to a Creator who made them.

> "If the earliest evolutionist was Anaximander, creationism has been in the books since there were any. Another Greek philosopher, Anaxagoras [c. 500-428 B.C.], believed a teleological principle which he called 'mind' brought order and harmonic molar into original empty chaos. Two and a half thousand years later, Albert Einstein (1879-195,5) fen much the same, using words that all but the most hard-bitten scientist would respond to:
>
> " 'The scientist's religious feeling takes the form of a rapturous amazement at the harmony of natural law, which reveals an Intelligence of such superiority that, compared with it, all the systematic thinking and acting of human beings is an utterly insignificant reflection." *—Michael Pitman, Adam and Evolution (1984) p. 21 [Quotation: "Albert Einstein, The World as I See It" (1979 ed:), p. 21*

It is of interest that, in the Bible, Romans 8:20-22 may, among other things, also refer to the Second Law:

> "Creation was made subject to vanity, not willingly, but by reason of Him who hath subjected the same in hope. Because the creation itself also shall be delivered from the bondage of corruption [decay] into the glorious liberty of the children of God. For we know that the whole creation groaneth and travaileth in pain together until now." *—Romans 8:20-22.*

"A law presupposes an agent. . Without this agent . . the law does nothing."

> "It is a perversion of language to assign any law, as the efficient, operative, cause of anything. A law presupposes an agent; for it is only the mode, according to which an agent proceeds; it implies a power; for it is the order, according to which that power acts. Without this agent, without this power, which are both distinct from itself [from the law], the law does nothing; is nothing." *—William Paley, Natural Theology, chapter I, item VII.*

Morris describes this First Cause, the One who made the laws of nature and all that those laws govern:

> "[In evolution] matter itself becomes its own Cause, and the creationist may well ask: 'But, then, who made Matter?' In either case, therefore: one must simply believe—either in eternal.. omnipotent Matter or else in an eternal, omnipotent Creator God. The individual may decide which he considers more reasonable, but he should recognize this is not completely a scientific decision either way.
>
> "In justification of his own decision, however, the creationist utilizes the scientific law of cause-and-effect This law, which is universally accepted and followed in every field of science, relates every phenomenon as an effect to a cause. No effect is ever quantitatively 'greater' nor qualitatively 'superior' to its cause. An effort can be lower than its cause but never higher.
>
> "Using causal reasoning, the theistic creationist notes that:
>
> "The First Cause of limitless Space must be infinite. The First Cause of endless Time must be eternal. The First Cause of boundless Energy must be omnipotent. The First Cause of universal Interrelationships must be omnipresent. The First Cause of infinite Complexity must be omniscient. The First Cause of Moral Values must be moral. The First Cause of Spiritual Values must be spiritual. The First Cause of Human Responsibility must be volitional. The First Cause of Human Integrity must be truthful. The First Cause of Human Love must be loving. The First Cause of Life must be living.
>
> "We conclude from the law of cause-and-effect that the First Cause of all things must be an infinite, eternal, omnipotent, omnipresent, omniscient, moral, spiritual, volitional, truthful, loving, living Being!
>
> "Do such adjectives describe Matter? Can random motion of primeval particles produce intelligent thought or inert molecules generate spiritual worship?" *—Henry Morris, Scientific Creationism (1985). pp. 19-20.*

Heraclitus has a word to speak to the evolutionists who today flee behind their theories to avoid facing the truth that there is a God to whom they must someday answer:

> "My friend Heraclitus, who had a . . suit. . first showed the judges that his cause was just, and then at the finish cried. 'I will not entreat you: nor do I care what sentence you pass. It is you who are on your trial, not I!'—and so he ended the case. "—*Epictetus, Golden Sayings of Epictetus (1935 edition).*

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