

SCIENTIFIC LAWS, THEORIES, & MISSING REFERENTS

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PART 1 – SCIENTIFIC LAWS

In High School, students who are taking basic courses in science are soon introduced to the concept of scientific laws. Over the course of human history, close observers of Universe have identified what appears to be invariable phenomena, and they have codified a series of laws based on these observations. Although these laws are helpful in terms of describing how Universe behaves, they also conceal some important truths about Universe.

Section 1A – The Fundamental Laws

The 1st Law of Thermodynamics – This law, also known as the Law of the Conservation of Energy, states essentially that the total amount of energy in any closed system or domain¹ remains constant over time. Within the system, energy can neither increase nor decrease. Note that energy here is used comprehensively and includes mass, which is interchangeable with energy in accordance with Einstein’s formula $e=mc^2$ (where “e” equals energy, “m” equals mass, and “c” equals the speed of light).

The 2nd Law of Thermodynamics – This law essentially states that any isolated system spontaneously moves toward thermodynamic equilibrium, at which point all movement within the system ceases. In the case of Universe as a whole, the state of thermodynamic equilibrium is the point at which Universe becomes inert and therefore dead – often referred to as its *Heat Death*.

Most scientists believe that this law does not apply to open (non-isolated systems), such as organisms, providing its heat loss is matched by its environment’s heat gain in the same amount, so that the total amount of energy in Universe remains constant. Some scientists, however, disagree. Dr. John Ross of Harvard University writes, “... 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. ... There is somehow associated with the field of far-from-equilibrium thermodynamics 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.”²

The Constructal Law – Recently Adrian Bejan³ proposed a third fundamental law of Universe which describes the tendency of things that flow to create configurations that enable them to flow more easily and quickly. He asserts that his Constructal Law explains, not only much of the apparent design in nature, but why these configurations emerge and how they will evolve in the future.

Section 1B – The Nature of Scientific Laws

The first thing to note about scientific laws is that they are verbal and abstract, not non-verbal and concrete. They are mental concepts. They exist only in the minds of divine and human beings.

¹ An isolated or closed system contains a finite, constant amount of energy. There can be no transfer of energy between it and its surrounding environment. Most scientists consider Universe to be an isolated or closed system in which the amount of energy in it remains constant. Moreover, they believe that it lacks a surrounding environment – i.e. nothing exists outside of it. That means that Universe must be finite, which I regard as correct (elsewhere I argue that *infinity* is an operational concept and possesses no referent in the non-verbal, physical world). Nonetheless, some scientists talk and write about Universe being infinite, but I do not know how they adjust their understanding of the 2nd Law of Thermodynamics accordingly.

² Dr. John Ross, *Chemical and Engineering News*, 7 July 1980, p. 40.

³ Bejan, Adrian & Zane, J. Peder, Design in Nature – How the Constructal Law Governs Evolution in Biology, Physics, Technology, and Social Organization, Doubleday, New York, 2012.

Here I must introduce an important distinction. God has the ability to translate his concepts into reality, but humans do not. God-the-Father produced the Design and Script for Universe, and God-the-Son and God-the-Holy Spirit translated that Design into reality during Creation Week and have been translating that Script into reality ever since then. Humans can produce concepts, but they cannot make those concepts real or actual – i.e. evident to our brain through our five senses. Much mischief has been created by ignoring this fact.

The second thing to note is that scientific laws cannot do anything. They cannot make anything happen. There is absolutely no connection between (a) stating something verbally and numerically in the realm of abstractions, concepts, ideas, etc. and (b) something non-verbal or numerical happening in the realm of actualities, objects, phenomena, etc. Only a sentient being can make the connection between an abstract command and a concrete action. If a man tells a ball to bounce, nothing will happen. If a man tells a boy to bounce a ball, the boy will bounce the ball only after certain things happen. (1) The boy must receive in his ears the sound waves generated by the man speaking. (2) The boy's ears must then send signals to his brain. (3) The boy's brain must translate the signals in his brain into sounds in his mind, which happens *by an instantaneous and mysterious process*. (4) The boy's mind must process the sounds, recognizing that the sounds are carrying information and deciding whether or not to act in conformity with this information. (5) The boy's mind must translate the decision in his mind to signals in his brain, which happens by the same *instantaneous and mysterious process* as in step three. (6) The boy's brain must then forward these signals to his arm and hand, which then bounce the ball. The critical factor here is the interaction between brain and mind in steps three and five. Without that interaction, the man will not get the ball to bounce, just as a scientific law will not get Universe to act in accordance with it.

If you are having trouble following me, try answering the following questions: Where can you find the Law of the Conservation of Energy outside of a formulation of it by a person with a mind, either orally or in writing – e.g. in a speech, on a blackboard, or in a textbook? Could it be chiseled on a stone tablet somewhere? If so, where is the tablet, who carved it, and who enforces it? The *abstract* idea has to be (a) formulated by a mind and then (b) enforced by a mind, which means creating a non-verbal, non-numerical, *concrete* force.

Section 1C – The Use of the Word “Law” in Science Is Misleading

Here, I must be blunt. I think attributing the way things behave to *scientific laws* is highly misleading. Calling observations about the way Universe behaves “laws” suggests that the formulation of the law by a human being in some way determines what happens, but does not explain how it does so. What is the nature of the law's enforcement?

For example, the Constructal Law exists as an abstract concept in Bejan's mind, on the pages of his book, and in the minds of his readers. Now where is the non-verbal, concrete referent of that concept that supposedly acts on other non-verbal, non-numerical, concrete, entities like rivers, trees, and creatures? Moreover, if the referent can be found, precisely how does it act on the

other entities? I do not think these questions can be satisfactorily answered, and I wonder how many of Bejan's readers get fooled by this *verbal sleight of hand*?

Likewise, consider another example, which is the general idea behind Bejan's Constructal Law. The term *self-organizing* is being used by scientists from cosmologists to microbiologists to explain the clear existence of design in their field of study without resorting to a designer. Well, what does *self-organizing* mean? For instance, how does an assemblage of inanimate material organize itself? What causes one hydrogen atom and two oxygen atoms to organize themselves into a water molecule that exhibits three different states – solid, liquid, and gas – depending on its temperature? What causes an inorganic compound suddenly to transform itself into an organic compound? Indeed, what do we mean by the word “life,” which is the difference between inorganic compounds and organic compounds? We do not have a clue! Yet highly educated scientists talk about (a) interstellar dust particles *self-organizing* themselves into complex, astronomical objects like solar systems and galaxies and (b) primitive primates *self-organizing* themselves into intellectually sophisticated humans. I wonder how many millions of students get fooled by this verbal *sleight-of-hand* every year.

As you can see, attributing behavior to a law hides the fact that we do not understand why Universe behaves as it does.

There is, of course, a very obvious solution to the above situation. The Bible indicates that God-the-Son, Jesus of Nazareth, (a) made Universe according to God-the-Father's design and specification, (b) manages Universe according to God-the-Father's script, and (c) sustains Universe with the power of His Word.⁴ In other words, so-called scientific laws are simply human observations of the way God normally does things. God-the-Son tells Universe how to behave. Unlike the man telling the ball to bounce, however, He possesses the unlimited power necessary to enforce His will on Universe and everything in Universe, for He is omnipotent. Flowing from the foregoing is the obvious fact that there are no impersonal forces in Universe. When something happens in Universe, most of the time God has commanded it to happen. In the few cases where humans are involved, humans may appear to make things happen, but they are actually under God's control, just like everything else.

The fact that rocket engineers can design, build, and fly rockets which travel from Earth to the moon and back using human descriptions (verbal and mathematical), of how the Solar System behaves does not change what I am saying here. These descriptions are approximations of how Universe usually behaves. They represent attempts by humans to think God's thoughts after him. To the extent that their formulas are congruent with what God is telling Universe to do, they will be successful in engineering a craft that can travel to the moon and back successfully.

PART 2 - CAUSE VERSUS CHANCE

⁴ KJV Hebrews 1:1-4.

Attributing something to chance is another instance of verbal sleight of hand. Consider the two words *cause* and *chance*.

Section 2A - Cause

My dictionary⁵ defines the word *cause* as follows: “**1a** - a reason for an action or condition, **1b** - something that brings about an effect or a result, **1c** - a person or a thing that is the occasion of an action or a result; *esp.* an agent that brings something about, **2a** - a ground of legal action, **2b** - CASE, **3** - a matter or question to be decided, **4** - a principle or movement militantly defended or supported.” To simplify the foregoing, I would say that a “*cause* is something that makes something else happen.”

Section 2B - Chance

My dictionary defines the word *chance* as follows: “**1a** - something that happens unpredictably without discernable human intention or observable cause, **1b** - the assumed impersonal purposeless determiner of unaccountable happenings : LUCK, **1c** - the fortuitous or incalculable element in existence : contingency, **2** - a situation favoring some purpose : OPPORTUNITY (needed a ~ to relax), **3** - a fielding opportunity in baseball, **4a** - the possibility of an indicated or a favorable outcome in an uncertain situation; *also* the degree of likelihood of such an outcome (a small ~ of success), **4b pl.** - the more likely indications (~s are he’s already gone), **5a** - RISK <not taking any ~s>, **5b** - a raffle ticket - chance adj - by chance: in the haphazard course of events (they met by chance, but parted by design).” To simplify the foregoing, I would say that, if something appears to be causeless, it is often ascribed to *chance*. Please note, however, that this statement *is not* the equivalent of saying that “*chance* is something that makes something else happen.”

The problem here is that “chance” lacks any concrete or objective referent in the real world. It is a concept in the human mind and is subject to mathematical computation, but it cannot be reified.⁶ A mathematician can calculate the *odds* or *chance* of something happening, but that is not the equivalent of showing that what happened was caused by *odds* or *chance*. *Chance* is similar to the word *nothing* in that respect. By definition, *nothing* lacks any concrete or objective referent in the real world. In fact, saying that *chance* caused something to happen, or that something happened *by chance* is the equivalent of saying that *nothing* caused something to happen. A more honest and simpler statement would be, *I don’t know* what caused it to happen.

PART 3 - THE THEORY OF EVOLUTION

⁵ Webster’s Ninth New College Dictionary, Merriam-Webster, Springfield MA, 1987.

⁶ To reify means “to treat (a) an abstract, conceptual, immaterial, subjective idea in the minds of thinking beings as (b) an actual, concrete, material, objective phenomenon in reality, outside of anyone’s mind.” Doing so is a classic mistake in reasoning that is ubiquitous in the modern world.

Most scientists argue that science must confine itself to physical phenomena, that it must never, under any circumstances, posit metaphysical explanations for anything. The atheists among them argue that a metaphysical realm is a fantasy. The agnostics among them argue that a metaphysical realm, if it exists, is unknowable. Given this view, scientists are left with two main alternatives to account for Universe's existence.

Section 3A - Universe Is Eternal

Some cosmologists believe that Universe has always existed. It had no beginning. There are at least two things wrong with this belief.

First, Einstein realized that Universe consists of a space-time plenum or continuum. Although *space* and *time* are useful concepts, they do not exist independently of one another in the real world. Right away that tell us that time as we experience it does not exist outside of Universe.

Second, the term *eternity* is related to the term *infinity*. Both are concepts which cannot be reified. Elsewhere, I argue that infinity is an operational concept with limited application in the real world, which I can demonstrate with a simple example. Consider the numerical series -2, -1, 0, +1, +2. In the theoretical or conceptual realm, you can manipulate the series by adding a digit to its beginning and/or its end *ad infinitum*. Actually, however, you cannot, because you live in the actual or concrete realm and will die at some point, at which time the so-called infinite series will stop and become finite. Moreover, in the actual or concrete realm, your ability to manipulate the series is even more limited. Suppose that you apply your numerical series to something physical like pennies or pebbles. You will quickly run into practical limits. As the number of them grows, you will need help in searching for more of them, transporting them to your counting base, and then storing them. Your expenditures on staff, shipping, and storage will increase exponentially, and managing this operation will soon tax you beyond your capacity to sustain it. Eventually, of course, the pennies or pebbles will become unavailable because the total number of either pennies or pebbles is finite. Before that, however, your counting will stop when you die, and the series will stop and become finite. *Nothing about or inside Universe is infinite or eternal.*

Section 3B - Universe Is Causeless

Here, I am surprised that any scientists believes that something is causeless. Science is essentially the search for causes. If a doctor encounters a sick patient, he *knows* that something is causing the sickness, and he tries to identify the cause. In fact, he should not attempt to help the patient with medicine or surgery before he knows the cause, because he may damage the patient with the wrong medicine or surgical procedure. It *never* occurs to him that the sickness is causeless. Moreover, it never occurs to scientists in any other field that what they are studying is causeless. Only the cosmologists considers the possibility that something – i.e. Universe - is causeless because the only reasonable explanation for the origin of Universe is an omnipotent and omniscient Creator, and that possibility scares them because they are paying no attention to either his existence or his moral commandments.

PART 4 - THE THEORY OF DEVOLUTION

The 2nd Law of Thermodynamics is usually interpreted to mean that everything in Universe eventually moves from order to disorder, and entropy⁷ is the measure of that change. A sharper definition of its meaning would be that entropy is the measure of the invariable increase of disorder (or, conversely, the invariable decrease of order) in a closed system over time.

Conversely, the 2nd Law of Thermodynamics indicates that order in an isolated system can never increase over time. Thus, the decrease in order accounts for the irreversibility of natural processes, and the asymmetry between past and future.

As is clear from the above, all things show a tendency to decay and disintegrate, and all living things get sick, grow old, and die. Another way of expressing this is to observe that all things are *devolving*. Eventually all organisms will cease functioning and fall apart, and eventually all solids, liquids, gases, and plasma will dissolve into a subatomic soup. (As I indicated above, the end result of this entropic tendency is the death of Universe when everything will reach a uniform temperature and stop moving. At that point, Universe will become inert - forever.)

Thus, entropy is the measure of the devolution in Universe – i.e. both inorganic and organic material are moving constantly from order to disorder.

PART 5 – THE CURRENT ILLOGICAL STATE OF AFFAIRS

Sometimes, one must go to extremes to make one's point effectively. Please forgive me for employing this tactic here.

Section 5A - Everything Is Evolving

Whether scientists believe that Universe is either eternal or causeless, most of them agree that there must be a purely materialistic explanation or cause for everything inside Universe, including its flora and fauna. The preeminent theory of the day is evolution, which they expect will eventually explain everything. It leads them to posit an historical scenario which unfolded as follows:

- *Solely by chance and thus without cause*, Universe either (a) has existed forever or (b) popped into existence with a Big Bang;
- *Solely by chance and thus without cause*, the original contents of Universe slowly coalesced into an orderly arrangement of galaxies, stars, solar systems, planets, moons, comets, asteroids, etc.;
- *Solely by chance and thus without cause*, life sprang into existence with some inorganic molecules in a pre-biotic soup on Earth, becoming an organic cell;
- *Solely by chance and thus without cause*, the organic cell began to divide into other cells;

⁷ The word entropy is derived from the Greek *entropia*, which means "a turning toward" or "transformation."

- *Solely by chance and thus without cause*, the cells multiplied and formed ever more complex cells;
- *Solely by chance and thus without cause*, the complex cells organized themselves into early creatures;
- *Solely by chance and thus without cause*, the early creatures evolved into early primates;
- *Solely by chance and thus without cause*, the early primates evolved into apes;
- *Solely by chance and thus without cause*, the apes evolved into early man, who possessed limited intelligence and produced only the primitive art and artifacts which have been found in caves and graves throughout the world, and
- *Solely by chance and thus without cause*, early man evolved into Homo Sapiens – the Mankind of today who creates complex civilizations and sends rockets into interstellar space.

Section 5B – Everything Is Devolving

In the feverish attempt of the day to explain everything with the theory of evolution, scientists tend to forget about (a) the 2nd Law of Thermodynamics and its observation that everything is moving toward a temperature equilibrium and (b) the entropic principle that everything, whether bounded or not, is devolving or running down – i.e. exhibiting the tendency to lose order, decay, disintegrate, get sick, and die. This entropic view should lead them to expect a future scenario which might unfold in the following manner:

- *Solely by chance and thus without cause*, Mankind of today will slowly disintegrate into a less intelligent, less competent species which will produce somewhat primitive art and artifacts.
- *Solely by chance and thus without cause*, the less intelligent species will lose its self-consciousness and devolve into apes.
- *Solely by chance and thus without cause*, the apes will devolve into primates.
- *Solely by chance and thus without cause*, the primates will devolve into simple creatures.
- *Solely by chance and thus without cause*, the simple creature will devolve into complex organic cells.
- *Solely by chance and thus without cause*, the complex organic cells will devolve into single organic cells.
- *Solely by chance and thus without cause*, the single organic cells will devolve into inorganic molecules.
- *Solely by chance and thus without cause*, the inorganic molecules will devolve into chemical elements.
- *Solely by chance and thus without cause*, the chemical elements will devolve into a chaotic soup.
- *Solely by chance and thus without cause*, the chaotic soup will eventually reach a uniform temperature at which it will exist forever – i.e. motionless death.

Of course, you can accuse me of comparing two straw men here, which of course they are. Still, if you are honest about it, you will recognize that these two straw men are implied by the theories of evolution and devolution. In fact, the first conforms pretty closely to what modern

books and textbooks have to day about the nature of prehistory (see my essay entitled *The Academy' Problematic Word View* in the Quick Reference section).

Section 5C – Confusion

So here we have highly intelligent and educated people believing that Universe is *evolving* and *devolving* at the same time. On the one hand, it is inexorably *evolving* from disorder to order. On the other hand, it is inexorably *devolving* from order to disorder. Most surprising, they seem to be comfortable with the contradictions in their stance.

I am not comfortable with the above contradictions. I regard them as signs of utter confusion, and I believe that something is seriously wrong with the big picture in most branches of science.

PART 6 - THE MISSING PIECE IN THE ACADEMY'S WORLD VIEW

Section 6A - Zeno's Missing Piece

The Greek philosopher Zeno of Elea (c.490-430 BC) proposed a series of what are usually identified as paradoxes. Perhaps the most famous of these is the footrace between Achilles and the Tortoise, in which the tortoise is given a handicap of X distance. The race is described in spatial terms, with Achilles closing the gap between them by first X/2, then X/4, then X/8, then X/16, *ad finitum*. Thus, although Achilles approaches ever closer to the tortoise, he never catches it. Since we know that in an actual footrace, Achilles would quickly overtake, catch, and pass the tortoise, the story is called a paradox.

What is going on here. The basic problem with Zeno's conundrum is that the world which Zeno describes is not the real world. It is defined exclusively in spatial terms. 'Time' does not exist in it. Under those conditions, Achilles will never catch the Tortoise, let alone win the race. This result is only absurd because Zeno is getting you to compare the result of a footrace in a timeless world with the result of a footrace in the real world. An important element of reality is missing from the world in which Zeno's footrace occurs - i.e. 'time.' The real world is a space-time plenum or continuum. Zeno's world is a spatial world in which time is missing. It is a fantasy.⁸

Section 6B - The Academy's Missing Piece

To return to my topic, I think that what is wrong with the world which modern science and scholarship is describing is that it is a fantasy world, from which the most critical component of the real world is missing - i.e. the hand of its Creator, who is the Triune God of the Bible. Until scientists and scholars acknowledge (a) his obvious existence and (b) accept his description of

⁸ I use quotation marks around "space" and "time" in this paragraph because they are actually mental concepts that lack material referents. They are useful in describing how the space-time continuum that is Universe behaves, but they lack independent, physical existence.

how he created Universe and its contents (Genesis 1:1-2:3), and (c) how he now sustains it with the power of His Word (Colossians 1:17, Hebrews 1:3), most branches of scientific and scholarly investigation will remain mired in confusion.

Section 6C - The Consequences of Ignoring the *Missing Piece*

Part of my job as a Bible-believing Christian is to urge people to take the Bible seriously. It is the most profound book ever written. Because its human authors were inspired by God to write exactly what they wrote, which, in my opinion, includes every letter, word, phrase, paragraph, and chapter). Thus, each book of the Bible reflects its human author's verbal proficiency, personality, and profession, but at the same time proclaims God's truth about every aspect of his Creation, from the divine origin of Universe to the sinful nature of Mankind to the history of the last 6,000 years. It trustworthy in every respect. Moreover, its message is clear. If you honor God by acknowledging him as your Creator and Sovereign and by attempting to obey his commandments, you will be blessed in both this life and the next, but if you dishonor God by denying his existence and ignoring his commandments, you will suffer unpleasant consequences in both this life and the next.

Since I have been discussing the views of the Academy, whose members represent all fields of science and scholarship, I feel obligated to warn them of the fate that awaits them if they continue to deny his existence and to ignore the evidence of his hand in the things that he has made - i.e. their beauty, design, complexity, functionality, variety, etc. Thus I close with the following passage concerning them:

“...that which may be known of God is manifest in them; for God hath shewed it unto them. For the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made,⁹ even his eternal power and Godhead; so that they are without excuse: Because that, when they knew God, they glorified him not as God, neither were thankful; but became vain in their imaginations, and their foolish heart was darkened. Professing themselves to be wise, they became fools, And changed the glory of the uncorruptible God into an image made like to corruptible man, and to birds, and four-footed beasts, and creeping things. Wherefore God also gave them up to uncleanness through the lusts of their own hearts, to dishonour their own bodies between themselves: Who changed the truth of God into a lie, and worshipped and served the creature more than the Creator, who is blessed forever. Amen.” (KJV Romans 1:19-25)

⁹ Such things as the immensity of the macrocosm and the intricacy of the microcosm, to say nothing of inexplicable phenomena like life, consciousness, cerebration, etc.