

Conflict of Atomism and Creation-Science in History

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Abstract. The underlying worldview assumptions of creation-science are centered in *reality, causality* and *unity*—*logical* assumptions that became embedded in classical science and the Scientific Method. Creation-science has been opposed by atomism ever since Epicurus asserted that random events occur in matter. This randomized theory of matter developed by early atomists to support their pantheistic worldview persists in modern science where atomistic assumptions are implemented into current theories of matter, forces and cosmology. Recently, some creationists have returned to the logical basis of science and developed physical models of elementary particles and atoms to form an improved basic theory of matter. Numerous examples show how creationist worldview assumptions lead to superior explanations of the structure of matter and the nature of forces on objects.

Introduction. Both of the two ancient theories that explain life have underlying worldview assumptions and prominent spokesmen. Moses wrote the earliest extant defense of creation-science, with many ancient and modern writers developing and expanding his theme. In contrast, the foundations of atomism were described by the Roman poet Lucretius (*circa* 96-55 BC) whose poem *On the Nature of Things* [1] made him the principal spokesman for atomism (and evolution) during the last two millennia. More recently, Charles Darwin described evolution theory—a logical outcome of atomism, its assumptions, and objectives.

The conflict between creation-science and evolutionism is most often debated on the characteristics of animals, plants, soils, and rocks—large aggregates of matter. But ordinary matter and even the smallest of living cells are complex organized collections of atoms and elementary particles, and the properties of matter ultimately depend upon properties of the elementary particles composing the larger object. Logically, we would not expect to observe random, spontaneous events that increase an organism's complexity and survival potential if there were no chance events involving the components of that organism. Creation-science and evolutionism both need a theory of matter to explain the foundation of biology, zoology, and geology, and neither theory of origins can be more credible than the foundation upon which it rests.

Atomism and creation-science are competing worldviews leading to philosophies and two competing sciences on the nature of matter. Each is based on an underlying worldview with assumptions about nature, and each presents a theory of physical objects and their relationships. Modern science has developed an atomistic theory of matter that is unacceptable to creationists because it is based on irrational worldview assumptions and fails logical tests for truth, *i.e.*, consistency with experiments and theory.

Worldview Assumptions of Reality, Causality and Unity. All men operate from a set of assumptions for attaining a meaningful understanding of life. What we “know” about natural science and the universe we live in is derived from a minimal number of assumptions as the starting point for knowledge and meaningful understanding. “Such basic beliefs, or philosophical premises, are ultimately unprovable but clearly define the nature of a body of knowledge” [2].

Two conflicting views on the nature of matter have been promoted to reflect differing worldview assumptions about the *reality*, *causality* and *unity* of nature. These three premises (or their denial) pervade the thinking of atomists and creationists, as well as a host of philosophers who construct physical theories by selectively applying the atomist or creationist premises according to personal preference.

The disagreements that ensue from conflicting premises are endlessly debated in the disciplines of science, philosophy, and religion. Unable to integrate their various views of reality, and unable to achieve a consistent approach to life, influential philosophers have perverted true science and what was called *natural philosophy* into separated belief systems. What was formerly known as *natural philosophy* has become artificially partitioned into the separated “disciplines” of *philosophy*, *science* or *theology*, with further decompositions into math, religion, physics, and other academic departments.

“There are three such premises on which scientific knowledge rests and which determine the nature, potential, and the limitations of natural science” [2]. *Reality*, *causality* and *unity* are underlying assumptions of the Judeo-Christian worldview.

Reality. According to Beck, “The first of the unprovable premises on which science has been based is the belief that *the world is real and the human mind is capable of knowing its real nature*” [2]. From a creationist perspective, reality is the result of God’s creative acts and continuous sustenance of the universe. Thus, physical objects have an actual and durable existence without respect to human observation or contemplation. For a creationist, all things in the universe were created by God, not man (man’s creativity can only rearrange, using already created materials); and created things exist whether or not a man has any perception of them. Man has no role in creation, for the Bible states that

By him were all things created, that are in heaven, and that are in earth, visible and invisible, whether they be thrones, or dominions, or principalities, or powers—all things were created by him, and for him; and he is before all things, and by him all things consist [3, Colossians 1:16-17].

The physical creation includes not only what is seen, such as the mountains, seas and stars—but also what is not seen, such as elementary particles, gravity and the energy in magnetic fields.

Causality. The second premise regarding the nature of the universe is the *law of cause and effect*. “Stated formally, it is that *all observable phenomena are the effects of previous underlying measurable physical causes*. This premise reflects our basic belief that the world...operates by law and design, not by whim or chaos. Observable events

have measurable causes; it is as simple as that” [2]. The premise of causality is also given in Colossians 1:16-17 which states that the Creator is (1) the preceding cause for existence of all things and (2) the Sustainer by whom all things consist. Creation-science brings even the origin of matter and the laws of physics under the premise of causality by recognizing the Creator as the Prime Cause (or Prime Mover as the ancient Greeks termed God in relation to transmission of forces and generation of thoughts).

Unity. “The third basic scientific premise is that *nature is unified*. We live in one world.... What we find to be true here in this place will, under similar conditions, be true everywhere in the universe” [2]. Whatever the structure and nature of matter on earth, these characteristics will be the same for *matter* inside a distant star or nebula. With respect to *forces* on matter, the premise of unity “asserts the belief that the whole universe operates under a set of natural laws; for example, we are confident that biological systems cannot violate the laws of physics...” [2]. The premise of unity is strongly implied by the passage in Colossians which states that all things have a single origin, an Intelligent Being who created by design and intent, but not by whim or chance.

Knowledge of God Among the Ancient Greeks. With the death of Shem (about 1800 BC) and other eyewitnesses of the Great Flood and the ancient world that preceded the flood, opposition to the knowledge of God and His creation activity began to grow, though ever so slowly at first. One thousand years later, among “the early Greeks we have in the Theogony of Hesiod (8th Century BC) an account of the creation of the world that bears unmistakable and remarkably close similarities with the Genesis account” [4, p. 19]:

First of all the Void came into being...next earth...Out of the Void came darkness...and out of the Night came light and Day... [4, p. 19].

Xenophanes...who lived some two centuries after Hesiod, held a...loftier view of the Creator” [4, p. 19]:

...there is one God, greatest among gods and men, similar to mortals neither in shape nor in thought...he sees as a whole, he thinks as a whole, he hears as a whole.... Always he remains in the same state, changing not at all.... But far from toil he governs everything with his mind [4, p. 19].

But another Greek thought the knowledge of God brought fear and anxiety, and about the close of the 4th century BC, a Greek philosopher named Epicurus presented a challenge to the creationist model “with a cosmology whose effects were to reverberate throughout the coming Roman world for many centuries to come” [4, p. 23].

Natural Philosophy and Greek Science. “Is there a God? If so, what is he like? Does he answer prayers, or intervene in human affairs? ...Such questions were vigorously argued by the ancient Greeks” [5, back cover]. In those ancient times, personal views of philosophy, science and religion were all discussed together and called *natural philosophy*. It was the legacy of Rome’s greatest orator, Cicero, to record the debate on

the nature of reality that played a significant role in shaping Western civilization. One can scarcely understand the history and development of Western civilization without a consideration of the worldview assumptions in academic disciplines that today are split into philosophy, science, and theology.

Creation-Science Assumptions in Grecian Philosophy. The concept of *creation* suggests a God who existed *before* creation, who is so powerful that He is the reason the universe exists, so intelligent that certain of his creatures can talk and think, so self-consistent that His Being is the definition of truth, so personal that some of his creatures can appreciate his thoughts and communications, and so orderly that his creation can be considered a unified universe. The Creator is sovereign, and his existence is independent of and even transcends the physical world. This lofty concept of the Creator is the basis for the Judeo-Christian worldview assumptions of *reality*, *causality* and *unity*. These premises are clearly embedded in the writings of some Greek thinkers, such as Plato:

Let us therefore state the reason why the framer of this universe of change framed it at all. He was good, and what is good has no particle of envy in it; being therefore without envy, he wished all things to be as like himself as possible. This is as valid a principle for the origin of the world of change as we shall discover from the wisdom of men... [6, pp. 408-447].

Cooper describes the premises of creation-science in Plato's thinking:

Plato's...refined creationist model of origins...was of a higher concept altogether. For him, the Creator turned chaos into order simply because it was His good nature, and His good pleasure, so to do. He loved order rather than chaos, and to ensure the maintenance of that order everything He created was made according to an eternal and flawless pattern, Plato's justly famous Theory of Forms [4, p. 23].

Chrysippus spoke for the Stoic school of philosophy and presumed that the *law of cause and effect* was operating in the universe. His statement points to the direct relationship between causality and the existence of a Creator:

If there is anything in nature which the human mind, which human intelligence, energy and power could not create, then the creator of such things must be a being superior to man. But the heavenly bodies in their eternal orbits could not be created by man. They must therefore be created by a being greater than man. But what is such a greater being but a god? For if no gods exist, then what is there in nature greater than man? He alone is endowed with the supreme gift of reason. Only an arrogant fool would imagine that there was nothing in the whole world greater than himself. Therefore there must be something greater than Man. And that something must be God [5, p. 130].

Another Greek intellectual gave a precise statement of the *law of cause and effect*. "Hippocrates of Cos (*circa* 460-377 BC) was reputed to be the greatest doctor of his time." From his studies in medicine, he stated what many Greeks believed: "Every natural event has a natural cause" [7, p. 12].

From the Christian viewpoint of *objective reality, causality, and unity* observed in creation, Paul claims that all men are presented with the knowledge of God:

Because that which may be known of God is manifest in them; for God has shown 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, even his eternal power and Godhead, so that they are without excuse [3, Romans 1:19-20].

Creationist Assumptions in Grecian Physics. In the 5th century BC the premise of causality was taken seriously by Greek physicists as well as philosophers and doctors. They reasoned that matter cannot be infinitely divisible, so they called the smallest particles in nature “atoms” (*a – tom*: i.e., not cuttable) endowed with mechanical qualities of *impenetrability* and *transmission of action*. Atoms were thought to be “imperishable and impenetrable” [8, p. 45], what we might describe as “hard little objects.”

In a book titled *Physics*, Aristotle recorded a theory of *contact action* for the efficient causes of motion. He laid down four principles that “were greatly to influence future discussion on modes of action. These are” (1) the denial of the void, (2) every motion has a moving cause, (3) the mover must be in contact with the thing moved, and (4) for every motion there is an unmoved first mover [8, p. 64].

A contemporary physicist explains *contact action*: “In a world that has no vacuum spaces, every object would be, in the words of Aristotle, pushed, pulled, carried, or twirled by whatever was in contact with it. Therefore, if a body was seen to move, something else provided the driving force and stayed in contact with it” [9, p. 17]. To many Greeks and to later creationists, the theory of forces by *contact action* made perfect sense because it was evident to them that the *law of cause and effect* was at work.

Epicurus and Hedonistic Philosophy. Other Greeks, Epicurus in particular, found the creationists’ views to be excessively rigid and confining. So Epicurus offered a

simple gospel...for the attainment of personal happiness; and to Epicurus happiness consisted simply of freedom from trouble and anxiety.... Now the principle causes of anxiety are fear of the gods and fear of death. The first of these Epicurus proposed to banish by atomic theory [5, p. 37].

Epicurus likely was a true atheist, but he was compelled to acknowledge existence of the gods lest public morality be destroyed. So, by a modification to atomic theory, he “relegated them to a place of complete ineffectuality and disinterest in the cosmos” [4, p. 24] and thereby avoided conviction for impiety or blasphemy under existing laws. Epicurus’ philosophy for “the salvation of man” [1] taught that

Originally there was nothing in existence but infinite atoms all falling downward by the force of gravity; somehow into this system there entered a...swerve, which enable the atoms to coalesce and form bodies first inorganic, then organic, human and finally divine, for even the gods consist of atoms, though of the most rarefied

kind. The swerve was added by Epicurus to the deterministic atomism of Democritus, with the object of safeguarding human free will, so that man is at once the master of his own destiny and also free of interference by the gods and from any fear of divine punishment [5, p.37].

Epicurus was the first to claim that the smallest particles of matter move by their own power. He gave atomism its basic tenet, the premise that motions of the atoms are not the result of contact with other particles or any force but that motions occur randomly and spontaneously. Atoms were given powers previously reserved to the gods:

...only the law of chance governs the formation of specific atomic compounds. Thus, the inherent power of the atom to move by its own weight, plus its power to cling together with other atoms both like and unlike itself, plus the law of chance, can and do account, of and by themselves, without the intervention of any outside force or guiding intelligence, for every form of being that can be observed by one or another of our senses [1, p. xii].

The new philosophy was even said to explain the operations of a man's soul in the areas of volition, emotion and thought, for Epicurus

derived free will from the doctrine of the swerve of the atom, saying in effect that the power to make a deliberate choice of actions was inherent in the atom itself [1, p. xv].

As for the soul, Epicurus cheerfully admitted its existence, but asserted that since it did exist, it must be material. It too is made up of atoms... [1, p. xii].

Atomism and the Premises of Pantheism. The atomistic worldview of Epicurus offered a theory that described the fundamental nature of matter and the forces on physical objects. Cicero (104-43 BC) later called the new worldview and philosophy *Epicureanism* [5]. Since all thinking men have a worldview that includes some explanation of the physical world, Epicureanism has thrived to this day bolstered by modern science having found considerable evidence that the division of matter into smaller and smaller pieces appears to have a limit. But believing in the existence of atoms, and believing that atoms are imbued with independence, eternity and autonomous random behaviors are very different beliefs. Many Greeks believed that atoms “existed from eternity, for they had not been created” [10, p. 32]. Many modern scientists hold the same belief. Lucretius (*circa* 96-55 BC), who admired Greek science and promoted the hedonistic philosophy of Epicurus, supposed in like manner that nothing is ever annihilated and that matter exists in the form of invisible atoms.

While matter was considered to be eternal, in the atomistic view, life itself was not: “The [a]tomists supposed that life had developed out of a primeval slime—man as well as animals and plants. Man was a microcosm of the universe, for he contained every kind of atom” [10, p. 33]. This is the viewpoint of modern evolutionists, and it makes Lucretius, not Darwin, the principal spokesman for evolution during the last two millennia.

Lucretius favored the atomistic worldview because he found in it a theory of matter to explain the origin of man's "free will" and escape from moral constraints. Although Democritus originally taught that the natural motion of atoms is straight downward, Epicurus reasoned that sometimes, by chance, atoms might deviate from their normal path. As Lucretius wrote:

Here too is a point I'm eager to have you learn.
Though atoms fall straight downward through the void
by their own weight, yet at uncertain times
and at uncertain points, they swerve a bit—
enough that one may say they changed directions [1, p. 34].

Such a deviation was "without the intervention of any outside force or guiding intelligence" [1, p. xii]. This "great stroke of genius" [1, p. xii] by Epicurus was supposed to account for the observed variety of chemical compounds, animal life, and even "free-will" decisions of man through the laws of chance.

With this view, the fundamental atomic events supposedly occur independently and are considered to be beyond the control or intervention of an Intelligent Being. By postulating random and chance events for atoms, Epicurus denied the *law of cause and effect* at a foundational level. Since everyone observes cause and effect relationships on a frequent and enduring basis, atomism relies on what is not commonly observed—atoms that are too small to be directly seen—in hope of making a convincing case for non-causal events. Lucretius explains in "The Nature of Things" that

Atomic nature all lies far below our powers of observation; hence since atoms cannot be seen, their movements, too, escape us [1, p. 36.]

By an excessive use of deduction and extrapolation, Lucretius was able to define and gain respect for his atomistic theory of matter on the basis of arguments about invisible particles. But the cost was enormous; four centuries after Epicurus introduced the atomic "swerve," many Greeks had come to despise the knowledge of the Creator; for although "they knew God, they glorified him not as God, neither were [they] thankful..." [3, Romans 1:21]. Paul summarized the impact of atomism on mankind by writing that "even as they did not like to retain God in their knowledge, God gave them over to a reprobate mind, to do those things which are not seemly, being filled with all unrighteousness, fornication, wickedness..." [3, Romans 1:28-29].

Although the hedonistic philosophy of Epicurus faded during the Middle Ages, its basic tenets have returned to dominate modern philosophy, science, and ethics. The Epicurean philosophy survives as modern humanism, while its premises for science (or more accurately materialistic pantheism) have come to dominate modern science. In regard to the nature of the physical universe, the basic philosophy and a surprising number of Epicurus' ideas have achieved a dominating influence today among highly regarded scientists, philosophers and theologians.

Modern Science and Philosophies. About the turn of the nineteenth century, new discoveries in physics came so fast that scientists were unable to explain laboratory measurements solely on the basis of Classical Physics and the then-known established

laws of physics. So, early in the twentieth century, when atomists were able to describe newly discovered characteristics of light and matter by the assumption of random events and the use of mathematical equations (instead of physical models consistent with proven laws), modern science re-adopted the atomistic worldview.

Although the new science theories (a) required many assumptions, (b) were based on postulates known to be incorrect, and (c) contained numerous inconsistencies, scientists nevertheless combined features of particle physics, quantum mechanics, and the special theory of relativity to create the very successful (as in the popular, but not necessarily true) *Standard Model of Elementary Particles*. Today, logical criteria for scientific propositions are effectively abolished. The new science is validated more by success in explaining a large body of experimental data rather than by the test of truth embodied in *Mach's Criterion* (quoted in a following section) that requires consistency of theory with *all* the data.

A few examples illustrate the modern atomistic approach. Modern physicists assume the electron has no size; but, a point-like particle cannot spin, or have a magnetic moment or angular momentum. Experiments show the electron to exhibit all of these properties. Electron scattering experiments have shown that all the elementary particles have a finite size. Atoms are said to have orbiting electrons or a 'cloud' of electrons, though proven laws of science require a charged orbiting or otherwise accelerating particle to radiate energy and spiral into the positively charged nucleus. Atomists simply "postulate" (i.e., declare it to be so) that atoms with orbiting electrons do not radiate energy and are stable.

Modern atomists also proclaim, like Epicurus, that elementary particles, such as electrons, spontaneously deviate from prescribed paths. In modern models of the atom, the electron deviates from its circular orbit about the nucleus with a spontaneous (non-causal) leap to and from an elliptical path in a theory known as "quantum mechanics." But other times, the elementary particle or a composite object will be described as a wave without any consideration given to the position or motion of smaller particles inside the object.

While the *Standard Model* postulates that electrons have inertial mass (or spin, magnetic moment, stability, *etc.*) as an assumed or inherent property, the *law of cause and effect* requires an explanation that is consistent with proven laws. The *Scientific Method* does not permit bias or theories that employ disproved assumptions. Instead, it develops and depends upon laws observed in nature and the application of these laws in theories and models. Modern science has quietly abandoned the Scientific Method, and it is no longer included in most modern texts or applied in evaluating research. But the Scientific Method used in creation-science and classical physics, based on the Judeo-Christian worldview, is a rational approach with reasons derived from cause and effect relationships for events such as particle motion and emission of light.

The atomistic worldview has persisted to the modern day, especially in academic and scientific communities and the media—which explains why new translations of Lucretius' poem keep appearing. The atomistic view is not universally accepted, and is opposed by the Judeo-Christian worldview with its underlying assumptions, the chief of

these being the *law of cause and effect*. This law is rejected both by ancient and modern atomists who insist, wrongly, that all physical objects have a minimum randomness in their properties as specified (supposedly) by the *Heisenberg Uncertainty Principle*, that they emit light spontaneously and move randomly, and that life arose by chance and evolved into its current forms by chance processes. Atomism is incompatible with Judeo-Christian thought because the former views matter as independent of God, either because it exists from eternity and denies creation by an Intelligent Designer, or because its motions and events are independent of control by a Sovereign Being.

Eastern Mysticism. While the debate continues in the West, Eastern civilization became dominated by a philosophy of reality that is fundamentally subjective in its approach to *evaluating* natural phenomena and in respect to *regarding* natural phenomena. Vedantic thought regards mental images and perceptions as the essence of reality [11]. However, the philosophy of physical reality in modern science (largely dominated by Western atomism) is so close to Eastern ideas of *subjective reality* that many modern intellectuals of the East and West are joining forces to promote a pantheistic view of the universe.

New Age Philosophy. Those who reject a personal Creator have expanded on Epicurus' idea that the soul has a material nature. The terms "Mother Nature" and "Mother Earth" have long been used to express the idea that matter and forces follow Nature's laws and are independent of God's control. But in *New Age* thinking, "Nature" with a capital "N" has come to mean more than a description of natural phenomena, and Nature is imagined to have a soul. A "Cosmic Mind" is imagined, where thoughts and meditations are shared (e.g., the movie *Avatar* promotes this view). Some environmentalists are "tree huggers" concerned less with ecology than with offending Gaea, goddess of the earth. If atoms are the substance of souls (as Epicurus claimed), then surely the soul of the baby whale must be as important as the human soul also composed of atoms. It is evident that Epicureanism is the origin of modern ideas loosely combined as *New Age Philosophy*.

New Philosophy of Modern Physics. It was inevitable that abandoned principles would be replaced by new principles that supported the new quantum mechanics. In 2004, Professor Frank Wilczek identified three premises that guide the physics establishment:

1. Anthropics
2. Randomness
3. Dynamical Evolution

Writing in *Physics Today*, Wilczek reveals the prevailing worldview principles:

It is possible, I suppose, that apparent limitations will prove illusory and that, in the end, the vision of a unique, deterministic Universe fully accessible to rational analysis, championed by Baruch Spinoza and Albert Einstein, will be restored. But to me it seems wise to accept what appears to be overwhelming evidence that projection, quantum uncertainty, and chaos are *inherent in the nature of things*, and to build on those insights. With acceptance, new constructive principles appear, supplementing pure logical deduction from fine-grained analysis as

irreducible explanations of observed phenomena. By accepting the occurrence of projection, we license *anthropic explanation*.... By accepting *quantum uncertainty*, we license, well...quantum mechanics.... By accepting the implications of *chaos*, we license evolutionary explanations.... In constructing explanations based on *anthropics, randomness, and dynamical Evolution*, we must use intermediate models incorporating many things that can't be calculated. Such *necessary concessions to reality* compromise the formal purity of the ideal of understanding the world by analysis and synthesis, but in compensation they allow its spirit much wider scope [12, emphasis added].

Is there Truth in Modern Science? The Scientific Method has been replaced with “explanations based on *anthropics, randomness, and dynamical Evolution*.” And “necessary concessions to reality” are now accepted as legitimate science in the mainstream science community. Many contemporary physicists are *not* interested in truth-in-science and reduce science *to storytelling*. Writing in **Science**, Günter Wächtershäuser informs us:

The objective scientific principle of a search for the truth is replaced by the subjective aesthetic principle of a well-constructed story [13].

And, writing in **Physics Today**, Mano Singham declares that

scientific theories evolve according to how well they answer, at any given time in history, the immediate questions of interest to scientists. As a result, the present impressive array of theories has developed to satisfactorily answer the questions that interest us now. But that does not mean that science is goal-directed and thus progressing toward the “truth.” The present theories were not predetermined to be discovered, any more than the first amphibians that crawled out of the oceans many years ago had the concept of humans encoded for future emergence. Science works—and works exceedingly well—because of its naturalistic approach, predictive nature, and methods of operation. *To be valid, science does not have to be true* [14, emphasis added.].

Creation-Science and Philosophy. A principal goal of physical science, known by the shorter name of “physics,” is to achieve a theory of matter and forces on matter that describes *physical* reality in a way that is consistent with experimental observations and free of internal contradictions. True science is based on the scientific principles of *reality, causality* and *unity* of the physical universe. Models and theories of science must explain the nature of matter, the nature of forces on matter, the nature of energy (light, heat, radiation, *etc.*), and the interaction of light and matter.

The *Scientific Method* is based on rational consistency of theory and natural phenomena (experimental results), the scientific principles listed above, and logical rigor established by mathematical formulation and careful definitions. Models and theories consistent with creation-science must be built upon fundamental laws (first principles) that hold under all

conditions and for all scales.

These criteria are the foundations of new physics known as *Common Sense Science*, and scientific criteria have been applied to develop a proper and successful theory of matter. We presented a new physical model for elementary particles, the atom, and the nucleus because the current relativistic quantum models are incompatible with some of the experimental data and violate the logical basis of science as expressed in Mach's Criterion for scientific theories:

Only those propositions should be employed in physical theory from which statements about observable phenomena can be deduced [15, p. 699].

Mach's Criterion for scientific propositions is similar to the rules of logic employed in doing proofs in Euclidean geometry. It forbids the use of any assumption or sub-theory proven false in the development of a new scientific theory. In the case of relativity theory, quantum mechanics, and the Dirac theory of the atom, some of the assumptions employed were known to be false. The primary assumption was that all elementary particles were point-like.

Common sense tells us that no elementary particles are point-like [16]. A point-particle is a figment of our imagination. Furthermore, electron scattering experiments have shown that elementary particles have finite size, interior charge, and an elastic charge distribution. An inverse relationship exists between a particle's size and rest mass energy. For example, Coulomb's Law operates in a small charged particle to generate a large force of expansion that would be infinitely large if the charge were confined to a point. Therefore, when an electron is treated as a point-like particle in modern theories, modern physics finds that it is necessary to omit or subtract unwanted mathematical terms associated with infinite energy [17].

In 1977, Thomas G. Barnes [18] began publishing his research on electromagnetism and elementary particles. This remarkable work abandoned atomistic assumptions of randomness and relied on Judeo-Christian worldview assumptions based on physical reality, causality, and unity of the universe. The new physics provides a proper foundation for creation-science and is re-establishing true science with a causal theory of matter that provides consistent explanations of the major natural phenomena known today.

Significant scientific progress on a theory of creation-science theory of matter has been made by integrating Judeo-Christian worldview assumptions into a philosophy of science. David Bergman used the measured characteristics of electrons and protons along with the laws of electricity and magnetism to develop the spinning charged ring model of elementary particles [19, 20]. Rotation of charge in a very thin ring provides a physical model of the electron and proton with the observed characteristics of size, mass, spin, and magnetic moment. The model also provides causal explanations for the fundamental natural phenomena of spectral emission, photoelectric effect, blackbody radiation and the interaction of light with matter [16, 19, 20].

The model reflects two characteristics of an elementary particle that are vital to developing representations of the atomic configurations. The physical size of electrons places a limit on the number that will “fit” in each atomic shell. And the electron’s charge rotation gives each ring-particle a magnetic dipole that links it into a stable position within its atomic shell. From experiments with ring magnets and logical considerations of the force laws and electron characteristics, Joseph Lucas was able to develop a general model of the atom that accounts for the fundamental properties of atoms and the general features of the Periodic Table of the Elements [21].

Charles W. Lucas, Jr. and Joseph Lucas applied the same approach used to discover the configuration of electron shells of atoms to determine the configuration of elementary particles in the nucleus. Their nuclear shell model correctly accounts for the spins of many hundreds of nuclides. The credibility this fact attaches to the *Lucas model of the atom* is obvious when we remember that previous models give wrong predictions in about one-third of cases where nuclide spins have been measured.

“The *Bergman spinning ring model of the electron* is so successful that it probably comes close to representing the actual dynamic structure of the electron” [22, p. 273]. The new *Common Sense Science (CSS)* models of matter significantly out-perform the Standard Model and Quantum Model because they

- ♦ Are physical models with structure that explains the tangible nature of matter.
- ♦ Are consistent with all known experimental data and well-established laws of physics based on data. Features of the CSS models and the associated theory of matter are consistent and free of self-contradictions. (The law of non-contradiction is fundamental to the Scientific Method.)
- ♦ Are simple and explain a large body of fundamental phenomena without contradiction or contrivance—in preference to numerous theories, multiple assumptions, and various models employed in quantum theory.
- ♦ Have mechanisms for fundamental processes to occur within and between physical objects. The CSS models are consistent with the laws of physics, on *all scales*, for *all times*, and in *all domains*, accordance with the *law of cause and effect*, so that the order assumed to exist in the physical universe may be studied and described rationally. Atoms and elementary particles in the real world have finite size and an internal distribution of charge. They actively respond to the presence of one another by changing their size and rest-mass energies as they interact with one another.
- ♦ Predict the fundamental atomic constant (Planck’s constant) in terms of several physical relationships of the model.

Creation scientists not only *need* but *have* developed a theory of matter based on the underlying rational assumptions of *reality*, *causality*, and *unity*: i.e. the CSS models for the electron, proton, neutron, the nucleus, and atomic structure. The models are based on a classical electrostatics model of a rotating charged ring, and they predict the

fundamental phenomena observed in common human experience and measured in precise scientific experiments [16, 19, 20, 21, 22].

Atomism and creation-science can be compared and evaluated with respect to the premises of *reality*, *causality* and *unity* in the principal areas of cosmology (see Table 1), matter (see Table 2), and forces on material objects (see Table 3). These evaluations show that atomists' explanations of natural phenomena are often inconsistent with other atomistic premises, models and theories. Atomists variously adopt or reject the creationist worldview assumptions with little consistency in approach. Creation-science requires a consistent set of premises and their application in science.

Purpose of Science. Modern atomists contend that religious and moral views should not be the motivation or basis of a scientific theory of matter. But writings of the ancient atomists reveal this motivation [1] and their modern counterparts [2] show an intense antagonism to *scientific* creation-science. Although opposition to religion is often presented in the guise of unbiased “science” that (supposedly) objectively studies nature, an unscientific bias has been evident in the writings of atomists. The implied purpose of Lucretius' poem *On the Nature of Things* [1] was to combat what Lucretius perceived to be “the bondage of religion.” In the second stanza of his poem he claimed that “human life lay foul before men's eyes, crushed to the dust beneath religion's weight” [1, p. 2]. Mason reminds us that the Greeks admired by Lucretius “used the atomic philosophy mainly to combat religion, not to extend man's understanding and control of nature” [10, p. 62].

Summary. Creation science and atomist theories of matter have been compared and evaluated against the philosophical criteria of consistency and the law of non-contradiction. The new CSS physical models for the electron and atom described in this paper permit a consistent belief system that integrates philosophy, science and Judeo-Christian religious beliefs. In spite of intense, enormous efforts and massive promotion of their theories, atomists have not been able to develop a consistent, rational theory of matter to integrate atomistic theories of matter with atomistic views of reality. Atomists have never really desired to produce a causal theory of matter or forces, but prefer theories that support their philosophy of ethics. The destructive Enlightenment Philosophy and Modern Science produced a separation of science and philosophy. But the new creationist proposals have reestablished Natural Philosophy by repairing the breach between science and philosophy.

Because validating criteria have been neglected in the search for truth and because theories have been built without foundations, the resulting belief systems are fragmented into academic disciplines that are mutually exclusive and even internally inconsistent. The Creator told a parable that warns against theories built on a weak foundation (sand). An accomplished scientist, mathematician, and philosopher has well described the failures of modern science [23]:

A Scientist's Illusion

In days gone by when I was young
I understood the nature
Of reality around me.
I could perceive, experience, and conceive,
Devise, predict, and analyze,
Create models that would synthesize.
Qualitative, quantitative methods
I attacked and mastered well.
There were no problems that
I could not someday solve,
Until one day I realized
All this was illusion
My models were not real,
They were mathematic symbols,
Nothing more.
And even though they functioned well
And the numbers generated
Were accurate and right,
The Universal truth I sought
Was still beyond my grasp.
Approaching asymptotically
I never will arrive
Until at last, my soul matures
And I meld my thoughts with God. —A. G. Holtum, *Ph.D.*

Conclusion. From the inception of Epicureanism around 300 BC to the mature form of evolutionary pantheism in the twentieth century, atomism has opposed the knowledge and sovereignty of God, especially by the corruption of science and philosophy. The atomists use science not to control nature, not for man's benefit, and not for the discovery of truth. By asserting that matter is independent of God, and that life developed by natural processes, atomists propound a philosophy of materialistic pantheism with a goal of freedom from moral constraints.

In marked contrast, creation-science integrates science, philosophy and true religion under Judeo-Christian worldview assumptions on *reality*, *causality* and *unity* to achieve a consistent approach to life and reality. Creationist models and theories are far more credible on the basis of logical consistency with premises, theory and observations of the universe we live in.

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Table 1
Comparison of Atomism and Creation-Science in Cosmology

<i>Physical Feature</i>	<i>Ancient Atomism/ Epicureanism</i>	<i>Modern Atomism/ Quantum Mechanics</i>	<i>Classical Electrodynamics/ Creation-science^{1,2}</i>
Origin of elementary particles	Matter is eternal. "The gods most certainly never made the world...it stands too full of flaws." (X,NC,X)	The Big Bang followed a "quantum fluctuation" or matter always existed. (NR,NC,NU)	Created once by an Intelligent Being (R,C,U)
Origin of elements, molecules and compounds	Inherent powers of atoms to swerve, cling to other atoms, plus chance (R,NC,X)	Stellar nuclear synthesis (NR,X,NU)	Created once by an Intelligent Being (R,C,U)
Origin of life	Repeatedly and spontaneously arises from the slime (R,NC,NU)	Arose on earth and other planets from the slime by chance, against great odds (X,X,NU)	Created once by an Intelligent Being (R,C,U)
Change in life forms	Offspring is new "kind of fruit" as "atoms stream together to build each new thing we see" (R,NC,NU)	Life evolves to greater complexity by chance, mutation & natural selection (X,X,NU)	Change is limited to devolution as inferior genetic information is passed to offspring (R,C,U)
Number of universes	Numerous (NR,NC,NU)	"Steadily increasing number of parallel universes" (NR,NC,NU)	One heaven and one earth (R,C,U)
Souls	Made of atoms of the rarest kind. Free-will results from random motions of the atoms. (R,NC,X)	Materialistic pantheism as in "Mother Nature" or "Cosmic Mind" (NR,NC,X)	God created man in his own image and likeness (R,C,U)

Notes for all tables:

1. Models and theories of Common Sense Science assumed in some cases.
2. Events of creation are considered causal because God is the Prime Cause. After God created, causality sustains the universe through His force laws.
3. Premise behind the theory indicated in order of (reality, causality, unity):
 - Premise on Objective Reality: R.....indicates Reality
NR...indicates Not Real
 - Premise on Cause and Effect: C.....indicates Causality
NC...indicates Non-Causal
 - Premise on Unity: U..... indicates Unity
NU...indicates Not Unified
 - Premise not identified: X.....indicates no assessment or not applicable

Table 2
Comparison of Atomism and Creation-science in Matter

Physical Feature	Ancient Atomism/ Epicureanism	Modern Atomism/ Quantum Mechanics	Classical Electrodynamics/ Creation-science^{1,2}
Number of elementary particles	Many of various shapes (R,NC,NU)	About 500 known when short-lived particles are included. Even more particles are discovered during more violent collisions. Incredibly complex theory of quarks is an attempt to achieve simplicity. (X,X,NU)	A single model (spinning charged ring) accounts for all 4 of the stable charged particles: electrons, protons, the rare positron, and the rare antiproton. (R,C,U)
Size & shape of elementary particles	Wide variety of hard small objects of various shapes (R,C,NU)	Point-like electron when it is a particle, otherwise a wave whose size changes with its energy (NR,NC,NU)	Electron and proton are spinning charged rings of charge with finite size (R,C,U)
Angular momentum (spin) and magnetic moment of elementary particles	Spin was unknown, but forces are transmitted by contact action. (R,C,U) Moment was unknown; made no attempt to explain magnetic moments. (X,X,X)	Inherent values assumed because laws of physics deny spin and magnetic moment to point-particles. Invented QED to explain spin. (NR,NC,NU)	Correct spin and magnetic moment derived from laws of electricity and physical size of proton and electron (R,C,U)
Stability of elementary particles	Offered no explanation, but deduced stability of invisible atoms from observations that matter does not perish (R,NC,U)	Acknowledges problem since concentration of charge at a point would make a particle explode from Coulomb Forces (X,NC,NU)	Balance of electric and magnetic forces hold the elementary particles together (R,C,U)
Inertial mass and momentum of objects and charged particles	Objects always go to their proper place in nature (R,NC,U)	Inertial mass is an assumed, inherent property of a point-like object (NR,NC,X)	Inertial mass is an effect derived from motion of charged particles and attached, surrounding electro-magnetic fields. (R,C,U)

Blackbody radiation	Offered no explanation (X,X,X)	Assumes quantization of energy with particle amplitudes larger than atom they reside in (NR, NC, X)	Predicts radiation energy from ring model and known laws of electricity (R,C,U)
Spectral emission	Offered no explanation (X,X,X)	Explained on basis of irrational assumptions regarding quantized orbits (NR,NC,X)	Spectral wavelengths are explained in terms of charge distributions and size of spinning charged ring (R,C,U)
Nature of elementary particle	Impenetrable and imperishable small atoms (R, C, X)	Dual nature of particle or wave (NR,NC,NU)	A charged object with specified size, shape, structure, and attached fields (R,C,U)
Existence of things	Objects are eternal, impenetrable and imperishable. (R,NC,U)	Elementary particles don't really exist until measured. Wave changes into an object during the process of measurement. (NR,NC,NU)	Measurement may add energy, but elementary particles and matter are still tangible objects with attached fields. (R,C,U)

Table 3
Comparison of Atomism and Creation-Science in Forces

<i>Physical Feature</i>	<i>Ancient Atomism/ Epicureanism</i>	<i>Modern Atomism/ Quantum Mechanics</i>	<i>Classical Electrodynamics/ Creation-science^{1,2}</i>
Force and Inertial Mass	All objects naturally attempt to move to their proper place in the universe. (X,NC,NU)	Inertial mass is assumed property of matter. Relativistic mass increase a result of non-causal assumptions in Special Theory of Relativity. (NR,NC,NU)	Relativistic inertial effects for mass and size are predicted by applying classical electrodynamics to ring model. (R,C,U)
Gravitation Force	Weight is an object's (inherent) property that makes it fall.	Einstein's General Theory of Relativity based on "curved space" describes the force of gravity. (X,C,NU)	Lucas' Universal Force Law explains gravitation by Classical Electrodynamics and atomic vibrations. (R,C,U)
Force between close atoms	Forces are exerted by direct mechanical contact between hard little objects. (R,C,NU)	The strong force, weak force, and electromagnetic force apply to atoms and nuclei. (NR,NC,NU)	All forces are electromagnetic. Direct mechanical contact of atoms occurs when extended fields of electrons in outer shells repel each other. (R,C,U)
Movement of particles	Atoms "swerve" randomly and spontaneously by inherent powers. (NR,NC,NU)	Orbiting electrons of Bohr model make a 'quantum leap' by inherent powers. (NR,NC,NU)	Charged elementary particles move into balance in the presence of electric and magnetic fields. (R,C,U)
Force between distant particles	Was not recognized. There are no voids in the universe. Air fills space. (R,C,U)	Various forces cause actions across space in different situations (X,C,NU)	Energy residing in electric fields extend across distance to exert a force on charged particles. (R,C,U)
Forces on electrons	The only electrical force known was magnetism. Ancient atomists were unaware of electrons or force between charged particles. (X,X,X)	Electric & magnetic forces apply sometimes but cannot predict the force between objects with wave nature (NR,NC,NU). Photons carry forces here. (NR,NC,NU)	Classical electrodynamics based on Coulomb's law, Ampere's law & Faraday's law account for forces on all charged particles at all scales. (R,C,U)
Forces on protons	The only electrical force known was magnetism. Ancient atomists were unaware of protons or forces between charged particles. (X,X,X)	Electric & magnetic forces apply sometimes but cannot predict the force between objects with wave nature (NR,NC,NU). Mesons carry forces here. (NR,NC,NU)	Classical electrodynamics based on Coulomb's law, Ampere's law & Faraday's law account for forces on all charged particles at all scales. (R,C,U)

Forces inside the nucleus of atoms	Unaware of the existence of a nucleus, but assumed contact actions applied everywhere. (X,X,X)	In the atom's nucleus, the Strong and Weak forces apply. (NR,C,NU)	Classical electrodynamics provides a balance of forces inside the nucleus when charged ring models are used (R,C,U)
Forces inside protons and neutrons	Unaware of existence of elementary particles, but assumed contact actions applied everywhere. (X,X,X)	Electric & magnetic forces apply sometimes but cannot predict the force between objects with wave nature (NR,NC,NU). Gluons carry forces here (NR,NC,NU).	Spinning charged ring model accounts for balance of forces on the proton. The neutron is explained by a paired electron and proton. (R,C,U)
Interaction of light and matter	Except for heating effect of sunlight, were unaware of any interaction (X,X,X)	Photons, mesons, gluons emitted spontaneously are the force carriers (NR,NC,NU)	Law of magnetic induction shows how magnetic fields interact with charged ring to account for spectral lines and photoelectric effect. (R,C,U)