

CONFLICT OF ATOMISM AND CREATIONISM IN HISTORY

DAVID L. BERGMAN, BA, MS
COMMON SENSE SCIENCE
POST OFFICE BOX 1013
KENNESAW, GA 30144-8013

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ABSTRACT

The underlying worldview assumptions of creationism are centered in *reality*, *causality* and *unity*—logical assumptions that came to be imbedded in science and the scientific method. Creationism has been opposed by atomism since Epicurus (342-270 B.C.) asserted that random events occur in matter. The early atomists developed a theory of matter to support a pantheistic worldview; in modern science, atomistic assumptions are implemented into current theories of matter, forces and cosmology. Recently, creationists have returned to the logical basis of science and developed physical models of elementary particles and atoms for a basic theory of matter. Numerous illustrations show how creationist worldview assumptions lead to superior explanations of the structure of matter and the nature of forces on objects.

INTRODUCTION

Each of two ancient theories that explain life have underlying worldview assumptions and prominent spokesmen. Moses wrote the earliest extant defense of creationism, while many ancient and modern writers have developed and expanded his theme. The foundations of atomism were described by the Roman poet Lucretius (*circa* 96-55 B.C.) whose poem *On the Nature of Things* 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 creationism and evolutionism is most often debated on the characteristics of animals, plants, soil, 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. Creationism and evolutionism both need a theory of matter to explain the foundation of biology, zoology, and geology; neither theory of origins is more credible than the foundation it rests upon.

Atomism and creationism 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."
[5]

Two conflicting views on the nature of matter have been promoted to reflect worldview assumptions about *reality, causality and unity* of nature. The 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 separate belief systems of philosophy, science, math, religion, and other academic disciplines. What was formerly known as *natural philosophy* has become *philosophy or science*.

"There are three such premises on which scientific knowledge rests and which determine the nature, potential, and the limitations of natural science." [5] *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*." [5] 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 imperishable 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. [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 angels, gravity or 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 and chaos. Observable events have measurable causes; it is as simple as that." [5] 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. Creationism 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 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." [5] 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...." [5] 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 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 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:" [10, 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... [9, p. 15]

"Xenophanes...who lived some two centuries after Hesiod, held a...loftier view of the Creator": [10, 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. [3, p. 61]

But another Greek thought the knowledge of God brought fear and anxiety, and about the close of the 4th century B.C., 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." [10, 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 deeply argued by the ancient Greeks." [20, 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 of Western civilization or the rise of New Age philosophy without a consideration of the controversy over worldview assumptions in academic discussions that today are split into philosophy, science, and theology.

Creationist Assumptions in Grecian Philosophy

The concept of creation suggests a God who is 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*. Clearly these premises are imbedded in the writings of 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.... [15, pp. 408-447]

Cooper describes the premises of creationism 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. [10, 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. [20, p. 130]

Another Greek intellectual gave a precise statement of the *law of cause and effect*. "Hippocrates of Cos (c. 460-377) 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." [21, 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. [Romans 1:19-20]

Creationist Assumptions in Grecian Physics

The premise of causality was taken seriously by Greek physicists as well as philosophers and doctors. The physicists believed that the smallest objects of matter (the Greek word for this is *atoms*) were endowed with mechanical qualities of *impenetrability* and *transmission of action*. The atoms were thought to be "imperishable and impenetrable," [14, 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. [14, 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." [13, 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. [20, 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" [10, p. 24] and thereby avoided conviction for impiety or blasphemy under existing laws. Epicurus' philosophy for "the salvation of man" [11, p. ix] 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. [20, p.37]

Epicurus was the first to claim that the smallest particles of matter move on their own. 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. [11, 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. [11, 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.... [11, p. xii]

Atomism and the Premises of Pantheism

The atomistic worldview offers a theory to describe the fundamental nature of matter and the forces on physical objects. Cicero (104-43 B.C.) called the new worldview and philosophy *Epicureanism* after the Greek philosopher Epicurus. [20]

Lucretius admired Greek science and the hedonistic philosophy of Epicurus. All thinking men have a worldview that includes some explanation of the physical world. In the 5th century B.C., some Greeks reasoned that matter cannot be infinitely divisible, and they called the smallest particles in nature "atoms." Modern science has found considerable evidence that the division of matter into smaller and smaller pieces has a limit. Many Greeks believed that atoms "existed from eternity, for they had not been created." [19, p. 32] Many modern scientists hold the same belief. Lucretius 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." [19, p. 33] As this is the viewpoint of modern evolutionists, the reader may appreciate that Lucretius, not Darwin, has been 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 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. [11, p. 34]

Such a deviation was "without the intervention of any outside force or guiding intelligence." [11, p. xii] This "great stroke of genius" [11, 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.

The fundamental events for atoms supposedly occur independently and are 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 (*circa* 96-55 B.C.) 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. [11, 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...." [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...." [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

Around the turn of the 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 this 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 adopted the atomistic worldview.

Although the new science theories required many assumptions, were based on postulates known to be incorrect, and 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 popular, but not necessarily correct) *Standard Model of Elementary Particles*. Today, logical criteria for scientific propositions are 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. Many modern science texts no longer print *Mach's Criterion* because it no longer is a part of the *Scientific Method*. [18]

A few examples illustrate the modern atomistic approach. Modern physicists assume the electron has no size; but, a point-like particle cannot have a magnetic moment or angular momentum, though experiments show the electron to have both. Electron scattering experiments have shown that all the elementary particles have finite size. Atoms are said to have orbiting electrons, though proven laws of science require a charged orbiting particle to radiate energy and spiral into the nucleus. Atomists simply postulate 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 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; but, it develops and depends upon laws observed in nature and the application of these laws in theories and models. Classical physics, which is 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, but 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 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 came to be 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. [2] 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. 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 should be evident that Epicureanism is the origin of modern ideas loosely combined as *New Age Philosophy*.

CREATIONISM—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 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. [1, 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 one was that all elementary particles were point-like.

Common sense tells us that no elementary particles are point-like. [7] A point-particle is a figment of our imagination. Furthermore, electron scattering experiments have shown that elementary particles have finite size, multiple charges inside, and a somewhat 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. So, when an electron is treated as a point-like particle in modern theories, it is necessary to omit or subtract unwanted mathematical terms associated with infinite energy. [12]

In 1977, Thomas G. Barnes [4] 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 creationism and is re-establishing true science with a causal theory of matter that provides consistent explanations for the major natural phenomena known today.

Significant scientific progress on a theory of matter has been made by integrating Judeo-Christian worldview assumptions into a philosophy of science. The measured characteristics of electrons and protons were used with the laws of electricity and magnetism to develop the spinning charged ring model of elementary particles. [6,8] 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. [6,7,8]

The model reflects two characteristics of an elementary particle that are vital to developing representations of the atomic configurations. The physical size of electrons place 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 ceramic 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. [17]

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 models of matter are superior because they

- ◆ Are physical models with structure in order to explain the tangible nature of matter.
- ◆ Are consistent with experimental data and proven laws of physics based on data. Features of the models and the associated theory of matter are consistent and free of self-contradictions. (The law of noncontradiction 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 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 passively 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.

Creationists not only need but have developed a theory of matter based on the underlying rational assumptions of *reality*, *causality*, and *unity*. This paper refers to new physical models for elementary particles, the atom, and the nucleus. The models are based on a classical electrodynamic rotating charged ring, and they predict the fundamental phenomena observed in common human experience and precise scientific experiments.

Atomism and creationism can be evaluated with respect to the premises of *reality*, *causality* and *unity* in the principal areas of cosmology (Table 1), matter (Table 2), and forces on material objects (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. Creationism 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 [11] and their modern counterparts [5] show an intense antagonism to **scientific** creationism. Although opposition to religion is often presented in the guise of unbiased "science" that 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* 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." [11, p. 2] And 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." [19, p. 62]

THE SEARCH FOR TRUTH IN SCIENCE

The creationist and atomist theories of matter have been compared and evaluated against philosophical criteria of consistency and the law of noncontradiction. The new 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 of science and philosophy.

Because validating criteria are neglected in the search for truth and because theories are built without foundations, the resulting belief systems are fragmented into areas 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: [16]

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 about 300 B.C. 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, the atomists propound a philosophy of materialistic pantheism with a goal of freedom from moral constraints.

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

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REFERENCES

- [1] _____, **International Dictionary of Physics & Electronics**, 2nd Edition, 1961, Van Nostrand, New York.
- [2] _____, **The Mystery of Creation**, Mananam Publication Series IX:1, January, 1986, Chinmaya Mission West, Los Altos, California.
- [3] Barnes, J., **Early Greek Philosophy**, 1987, Penguin Classics, Harmondsworth, England.
- [4] Barnes, T.G., Pemper, R., and Armstrong, H., **A Classical Foundation for Electrodynamics**, *Creation Research Society Quarterly*, 14:1(1977) pp. 38-45.
- [5] Beck, S.D., **Natural Science and Creationist Theology**, *Bioscience*, 32 (1982) pp. 738-742.
- [6] Bergman, D.L., **Spinning Charged Ring Model of Elementary Particles**, *Galilean Electrodynamics*, 2:2(1991) pp. 30-32.
- [7] Bergman, D.L., and Lucas, Jr., C.W., **Physical Models of Matter**, to be published in *Hadronic Press Supplement*, Palm Harbor, Florida.
- [8] Bergman, D.L., and Wesley, J. P. 1990. **Spinning Charged Ring Model of Electron Yielding Anomalous Magnetic Moment**, *Galilean Electrodynamics*, 1:5(1990) pp. 63-67.
- [9] Brown, B., **Hesiod: Theogony**, 1953, Bobbs-Merrill Co., New York.
- [10] Cooper, B., **After the Flood**, 1995, New Wine Press, Chichester, England.
- [11] Copley, F.O., (tr.), **Lucretius: On the Nature of Things**, 1977, W.W. Norton & Co., New York.
- [12] Dirac, P.A.M., **Classical Theory of Radiating Electrons**, *Proc. Royal Society*, 168:148, 1938.
- [13] Graneau, P., and Graneau, N., **Newton Versus Einstein**, 1993, Carlton Press, Inc., New York.
- [14] Hess, M.B., **Forces and Fields**, 1970, Greenwood Press, Westport, Connecticut.
- [15] Lee, D., (tr.), **Plato: Timaeus and Critias**, 1965, Penguin Classics, Harmondsworth, England.
- [16] Holtum, A.G. (editor), **The Holtum Book of Poems and Essays**, 1st Edition, 1997, published by A.G. Holtum, Ph.D., Roswell, GA.
- [17] Lucas, J., **Physical Models for Atoms and Nuclei**, *Galilean Electrodynamics*, 7:1(1996) pp. 3-12.
- [18] Lucas, Jr., C.W., **Origins** video, 1987, Cornerstone TV, Wall, PA.
- [19] Mason, S.F., **A History of the Sciences**, 1962, Macmillan Pub. Co., New York.
- [20] McGregor, H.C. (tr.), **Cicero: The Nature of the Gods**, 1972, Penguin Classics, Harmondsworth, England.
- [21] Meadows, J., **The Great Scientists**, 1992, Oxford University Press, New York.
- [22] Wesley, J.P., **Selected Topics in Advanced Fundamental Physics**, 1991, Benjamin Wesley, Publisher, Blumberg, Germany.

Table 1
Comparison of Atomism and Creationism in Cosmology

<i>Physical Feature</i>	<i>Ancient Atomism</i>	<i>Modern Atomism</i>	<i>Creationism</i> ^{1,2}
Origin of elementary particles	Matter is eternal . "The gods most certainly never made the world...it stands too full of flaws." (X,NC,X) ³	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)	Once created 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 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 Creationism in Matter

<i>Physical Feature</i>	<i>Ancient Atomism</i>	<i>Modern Atomism</i>	<i>Creationism</i> ^{1,2}
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 fields (R,C,U)
Size & shape of elementary particle	Wide variety of hard small objects of various shapes (R,C,NU)	Point-like when it is a particle, otherwise a wave whose size changes with its energy (NR,NC,NU)	Spinning charged ring 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 surrounding electric 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)
Number of elementary particles	Many of various shapes (R,NC,NU)	About 500 known when short-lived particles are included. Ever 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, and the rare positron and antiproton. (R,C,U)
Existence of things	Objects are eternal, impenetrable and imperishable (R,NC,U)	Don't really exist until measured. Wave changes into an object during the process of measurement or observation. (NR,NC,NU)	Measurement may add energy, but elementary particles and matter are still tangible objects with corresponding fields. (R,C,U)

Table 3

Comparison of Atomism and Creationism in Forces

<i>Physical Feature</i>	<i>Ancient Atomism</i>	<i>Modern Atomism</i>	<i>Creationism</i> ^{1,2}
Contact action	Forces are transmitted by direct mechanical contact between hard objects except that atoms "swerve" randomly and spontaneously (R,NC,NU)	Space and matter are filled with voids where forces act between objects. Relative distance & motion between two objects determines force (X,X,X)	All forces are transmitted by forces of electricity and magnetism. "Direct mechanical contact" is result of electrons in outer shells repelling each other (R,C,U)
Action at a distance	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 extends across distance to exert a force (R,C,U)
Forces when electrons are involved	The only electrical force known was magnetism. Ancient atomists were unaware of electrons or forces between charged particles (X,X,X)	Electric & magnetic forces apply sometimes but cannot predict the force between objects with wave nature (R,C,U). 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 when protons are involve	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 (R,C,U). 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 (R,C,U). Gluons carry forces here. (NR,NC,NU)	Charged ring model accounts for balance of forces on the proton. The neutron is explained by a paired electron and proton. (R,C,U)
Gravitation	Weight was an object's (inherent) property that made it fall or press	Einstein's General Theory of Relativity based on "curved space" describes the force of gravity (NR,NC,NU)	Creation science has not produced a mature theory of gravitation although electrical theory has promise. (X,X,X)
Inertial force	All objects would naturally attempt to move to their proper place in the universe (X,NC,NU)	Assumed property of matter. Relativistic mass increase a result of non-causal assumptions in STR. (NR,NC,NU)	Relativistic inertial effects for mass and size are predicted by applying classical electrodynamics to ring model (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 inertia (R,C,U)

