

THE TRINITY REVIEW

For though we walk in the flesh, we do not war according to the flesh, for the weapons of our warfare [are] not fleshly but mighty in God for pulling down strongholds, casting down arguments and every high thing that exalts itself against the knowledge of God, bringing every thought into captivity to the obedience of Christ. And they will be ready to punish all disobedience, when your obedience is fulfilled. (2 Corinthians 10:3-6)

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The Bible and the Idolatry of Science

By Ronald L. Cooper

Editor's note: With students going back to school, and today's emphasis placed upon the sciences, this article is apropos for Christians to assess our thinking, especially in the area of the sciences. Do we believe that science furnishes us with truth? What do the Scriptures say? "O Timothy, keep that which is committed to thy trust, avoiding profane and vain babblings, and oppositions of science [knowledge in modern translations] falsely so called: Which some professing have erred concerning the faith" (1 Timothy 6:20, 21). Also think of the first empirical "scientific" experiment performed: "And the woman saw that the tree was good for food, and that it was pleasant to the eyes, and a tree to be desired to make one wise, she took of the fruit thereof, and did eat, and gave also unto her husband with her; and he did eat" (Genesis 3:6). Where did such an empirical experiment get us? Into an estate of sin and misery. Science does not furnish us with truth; rather, God reveals truth to his people in his Word.

The reader should also read or reread the following Trinity Reviews: "Science and Truth"; "The Scientist as Evangelist"; "The Hoax of Scientific Creationism"; "The Sagan of Science"; and "The Biblical View of Science."

Introduction

Once started, the idea that science is able to discover truth has never disappeared both within Christian and non-Christian circles, and even when refuted, it revives and reasserts itself more strongly than before. In his Foreword to Gordon Clark's *The Philosophy of Science and Belief in God*, John Robbins says both "Christians and non-Christians alike commonly believe that science is an ever-growing body of knowledge about the universe. Scientific knowledge...has been extracted from Nature...by a group of extremely intelligent, highly educated, disinterested, and

scrupulously honest men and women."¹ In the nineteenth century, and even before that time, it was believed that science, especially physics, not only discovers truth, but it was increasingly considered to be the sole gateway into all knowledge. This unproven, but nevertheless widely accepted proposition, has intimidated many theologians who felt the need to reinterpret the Bible, particularly *Genesis*, to accommodate the views of science. Modern creation research societies, controlled by scientists who are Christians, also promote the false idea that there is such a thing as true science. Henry Morris of the Institute for Creation Research (ICR), states "True science always supports the Scriptures."² Jeff Miller of *Apologetics Press*, referring to the first and second laws of thermodynamics, says, "As far as science can tell, its laws have never been

¹ John W. Robbins, Foreword, Gordon H. Clark, *The Philosophy of Science and Belief in God*, The Trinity Foundation, [1964] 1996, vii.

² Henry M. Morris, "True Science," *Days of Praise* (October 10, 1995), Institute for Creation Research. John W. Robbins, in his article, "The Hoax of Scientific Creationism," *Trinity Review*, August 1987, charged that the scientific creation movement, which was attempting to get it into the curriculum of public schools, and subsequently failed, deserved to fail because it was deceptive. Henry Morris, one of the leaders of the scientific creation movement took strong exception to Robbins' argument of deception, stating that there was no other way to make creation acceptable in the public schools than by leaving out the Bible from the argument (Henry M. Morris, "Is Creationism Scientific?" *Acts & Facts*, Institute for Creation Research, Vol. 16, No. 12, December 1987. In his response to Robbins, Morris retorted that there is a true science and the pseudoscience of evolutionary humanism, which shows again that he considers science as a source of truth, as well as the Scriptures. However, Robbins correctly points out that science can never discover truth, so scientific creationism is an oxymoron.

violated. They are without exception.”³ Numerous theologians, writing in the *Christian Scholar’s Review*, argue the laws of science are true and must be integrated with theology, with both learning from the other.⁴ Even Reformed theologian, R. C. Sproul, who argues that chance cannot be the cause of anything, seems to embrace the possibility that science can find truth. “Chance as a real force is a myth. It has no basis in reality and no place in scientific inquiry. For science and philosophy to continue the advance in knowledge, chance must be demythologized once and for all.”⁵

Historical Attacks on Scripture from Science

Beginning in the Middle Ages the first major attack on the authority of Scripture was launched by Copernicus who challenged the Ptolemy model, which held the Earth to be the center of the universe. The heliocentric view, while temporarily opposed by Rome, gained momentum, and it was given a tremendous boost by Isaac Newton, who, due to his law of action at a distance, required all planets, including the Earth, to revolve around the Sun.⁶ Andrew White wrote a comprehensive history documenting the attack of science on theology, which included the Copernican attack.⁷ By the nineteenth century

heliocentricity was assumed by most people to be an established fact.⁸

The second significant attack on Scripture was from geology, based in part on the writings of James Hutton⁹ and Charles Lyell,¹⁰ which challenged the literal twenty-four hour, six-day creation and young Earth, with the inference that the age of the Earth was millions of years old.¹¹ Terry Mortenson analyzed the writings of nineteenth century geologists, and stated it was the Galileo affair of challenging the Earth as the center of the universe that led to the idea that true science (physics) can help in giving the true interpretation of the Bible. Scripture tells us about spiritual matters, while science tells us how the world works. It was the growing authority of science that led to the second challenge regarding the age of the Earth. Just as astronomy brought forth observational proof that the Earth revolves around the Sun, so it was that observational proof from geology demonstrated the Earth to be old.¹² This was followed by the third major attack on Scripture, *viz.*, Darwinian evolution,¹³ the idea that man evolved from natural processes, denying a literal Adam and Eve. Because of these three major assaults, many theologians found it

³ Jeff Miller, “Couldn’t There Have Been Exceptions to the Laws of Science?” *Apologetics Press*, 2010 <http://apologeticspress.org/APContent.aspx?category=12&article=3713>.

⁴ A typical example is, Alan G. Padgett, “The Mutuality of Theology and Science: An Example from Time and Thermodynamics,” *Christian Scholar’s Review*, Vol. XXVI, No. 1 (1996), 12-35. According to Padgett, “...there needs to be an ongoing dialogue between theology and science in which each discipline learns from the other” (31).

⁵ R. C. Sproul, *Not a Chance*, Baker Books, 1994, 214. It is interesting that Sproul refers to Clark who rejected empirical epistemology. “Because of the subject-object problem Clark insisted that via sense perception we can never get beyond probabilities. Certainty comes only through reason and the Bible.” Neither of these statements is true. Clark argued that we can never get beyond sense perception because nobody knows what it means, and Clark’s epistemology is not reason and the Bible, but the latter alone. Clark never mentions probabilities. In addition, Sproul appeals to John Montgomery, whose epistemology is empiricism, claiming that he is an “ardent defender of Scripture” (95). Both Sproul and Montgomery endorse the silly empiricist argument, “don’t you read [*i.e.*, have sense perception of] your Bible?”

⁶ In the solar system, the mass of the Earth was considered far too small for the Sun to revolve around it. Andrew White documented the attack of heliocentrism on the geocentrism of the Bible. Andrew D. White, *A History of the Warfare of Science with Theology in Christendom*, D. Appleton and Company, 1896, Chapter III.

⁷ See White, *A History of the Warfare of Science with Theology in Christendom*.

⁸ For a history of how the heliocentric view came to replace geocentricity, see Dorothy Stimson, *The Gradual Acceptance of the Copernican Theory of the Universe*, 1917. Also, J. L. E. Dryer, *History of the Planetary Systems from Thales to Kepler*, Cambridge UP, 1906. Despite the almost total acceptance of the heliocentric system, Dryer pointed out that the Tychonian system is from an observational view just as valid as that of the Copernican system (363).

⁹ James Hutton, *Theory of the Earth*, Burlington House, 1899.

¹⁰ Charles Lyell, *Principles of Geology*, John Murray, 1830.

¹¹ It is noteworthy that a revolution in geology has been going on since the latter half of the twentieth century, analogous to that of physics, which is discussed in this paper. It was formerly believed that the geological column based on uniformitarian assumptions and the fossil record gave an accurate description of the relative ages of the strata. This is now challenged in mainstream geology due to considerations of moving continents and cataclysmic extinctions of animal species. See, Brian J Skinner, “Can You Really Believe the Evidence? Two Stories from Geology,” *American Scientist*, Vol. 74, No. 4 (July-August 1986), 401-409. Skinner also states that the development or radiometric dating has revolutionized how geologists think about the Earth (403).

¹² Terry Mortenson, “British Scriptural Geologists in the First Half of the 19th Century: Part 1,” *CEN Tech. J.*, Vol. 11, No. 2 (1997), 224. According to Mortenson, a group of Christian geologists existed in the nineteenth century who defended the literal accuracy of *Genesis* 1–11, disputing the long ages estimated by the secular geologists. They were attacked and ridiculed as being incompetent, which is similar to the current attacks on the current young Earth creation ministries.

¹³ For a discussion of the influence of Eding to Taylor, it was the Reverend Robert Malthus who is mainly responsible for the origins of Darwin’s theory, based mainly on his view of man being a primitive brute who is under the control of deterministic principles of population growth and the growth of the food supply.

necessary to reinterpret *Genesis* to accommodate the supposed discoveries by science. According to Babinski, “The Bible’s geocentric passages were ‘reinterpreted’...by Christians, [and] next came the challenge of the age of the Earth.”¹⁴

Nineteenth and Twentieth Century Physics

In the latter half of the nineteenth century there was a strong movement among physicists to believe science has the potential to explain everything. It would be just a matter of time before physics could tell us all truths about the location and speed of every particle in the physical universe, and this would include human behavior because the mind is also made up of particles.¹⁵ However, this optimism regarding the prowess of science was short-lived because by the end of the nineteenth and into the twentieth century there were dramatic changes that resulted in a loss in the belief of certainty. Gordon Clark summarizes some of the major events among physicists in the abandonment of nineteenth century theories.¹⁶ The theories of special relativity (SR), general relativity (GR) and quantum mechanics (QM) were two of the most dramatic theoretical developments in the twentieth century. With relativity came the abandonment of the belief in absolute motion, the end of independence between time and space, and the speed of light being the same for all observers in all reference frames. With the advent of QM the position and speed of certain particles could no longer be determined simultaneously, and electrons, confined to discrete (quantized) orbits, could jump between them without traveling.¹⁷

It did not take long before philosophers of science prepared the science-discovers-truth coffin for burial. Thomas Kuhn explains science as competing paradigms, and when one becomes accepted, it becomes normal science.¹⁸ Normal science continues until some sort of crisis develops in which an extant theory cannot explain some new observations.¹⁹ According to Karl Popper, science consists of nothing but opinions or conjectures and

their refutations, and “...neither observation nor reason can be described as a source of knowledge, in the sense in which they have been claimed to be sources of knowledge, down to the present day.”²⁰ For Imre Lakatos, science is nothing but a set of research programs.²¹ Justificationism dominated philosophy for many years, but this idea fell into disrepute as it was concluded from inductive logic that “...all theories are equally unprovable.”²²

Further doubt was cast on science by probabilism, the view that scientific theories can be at most highly probable. This idea was destroyed by Popper, who stated that all theories are not only unprovable, but they are equally improbable.²³ In the view of Lakatos, one research program lasts until another considered more powerful replaces it. Well-known astrophysicist, Stephen Hawking, agrees that there is nothing true about science. “Any physical theory is always provisional, in the sense that it is only a hypothesis: you can never prove it. No matter how many times the results of experiments agree with some theory, you can never be sure that the next time the result will not contradict the theory.”²⁴ Hans Reichenbach says, “The way toward an understanding of the step from experience to prediction lies in the logical sphere; to find it we have to free ourselves from one deep-rooted prejudice: from the presupposition that the system of knowledge is to be a system of true propositions.”²⁵ The closest we can get to knowledge is to have a system of wagers (probabilities). After discussing developments in twentieth century nuclear physics, Max Born, says, “The riddle of matter is still unsolved, but it is reduced to the problem of ultimate particles.... We have reached the end of our journey into the depths of matter. We have sought firm ground and have found none.”²⁶ Philosopher Bertrand Russell, who rejected Christianity, said of the scientific method, “All inductive arguments in the last resort reduce themselves to the following form: ‘If this is true, that is true: now that is true, therefore this is true.’ This argument is, of course, formally

²⁰ Karl Popper, *Conjectures and Refutations*, Routledge, 1963, 5.

²¹ Imre Lakatos, “Falsification and The Methodology of Scientific Research Programmes,” Imre Lakatos & Alan Musgrave, editors, *Criticism and the Growth of Knowledge*, Cambridge UP, 1993.

²² Lakatos, 95. Some science philosophers have given contradictory statements. For example, James Jeans says, “Physics gives us exact knowledge because it is based on exact measurements.” This is followed by “Our studies can never put us into contact with reality, and its true meaning and nature must be forever hidden from us” (Sir James Jeans, *Physics & Philosophy*, The MacMillan Company, 1945, 7, 16). At the end of his book he says no conclusions can be made from modern physics regarding determinism, causality or free-will (217).

²³ Stephen Thorton, “Karl Popper,” www.Plato.stanford.edu (February 5, 2013), 4.

²⁴ Stephen Hawking, *A Brief History of Time*, Bantam Books, 1990, 10.

²⁵ Hans Reichenbach, *Experience and Prediction*, U of Chicago P, 1957, 404.

²⁶ Max Born, *The Restless Universe*, Dover, 1951, 277.

¹⁴ Edward T. Babinski “From Abandoning Geocentrism to Accepting Evolution: A Liberal Trend Among Christians?” viewed August 29, 2019, <https://cretinism-vs-evolution.blogspot.com/2012/03/liberal-trend-amongevangelicals.html>.

¹⁵ Gordon H. Clark, *The Philosophy of Science and Belief in God*, 39. Clark summarizes the mechanistic philosophy movement of the late nineteenth century (38-48). Even the human mind was nothing more than the physical properties fully explainable by natural processes. See also Gordon H. Clark, *Behaviorism and Christianity*, The Trinity Foundation, 1982. For a summary of Clark, see, W. Gary Crampton, “The Biblical View of Science,” *The Trinity Review* (January 1997).

¹⁶ *The Philosophy of Science and Belief in God*, 63-95.

¹⁷ Russell T. Arndts, *Geocentricity, Relativity and the Big Bang*, Lindquist Books, 2008, 117-127.

¹⁸ Thomas S. Kuhn, *The Structure of Scientific Revolutions*, Third Edition, U of Chicago P, 1996, 10.

¹⁹ Kuhn, 66-76.

fallacious. Suppose I were to say: 'If bread is a stone and stones are nourishing, then this bread will nourish me; now this bread does nourish me: therefore it is a stone, and stones are nourishing.' If I were to advance such an argument, I should certainly be thought foolish, yet it would not be fundamentally different from the arguments upon which all scientific laws are based."²⁷

Despite abandoning the belief in determinism and mechanism by most of those involved in science, Clark states that the general public seems to be aware that the great advances in technology in the twentieth century have something to do with the newly discovered laws in physics, especially Einstein's relativity.²⁸ What is not understood is this does not mean that new laws were added to old ones, but new ones replaced old ones.²⁹ Clark gives some examples, starting with Newton's first law of motion or law of inertia, which says a moving body continues in rectilinear motion until an external force is imposed on it.³⁰ This was replaced by SR, whereby all bodies are moving, so there are no fixed points by which rectilinear motion can be measured. Clark, quoting Newton, recognizes there is also a problem with the law of inertia for bodies supposedly at rest because all bodies are supposedly moving.³¹

Ernst Mach, commenting on Newton's absolute motion experiment,³² said we can think of an Earth-centered Ptolemaic system or the Copernican one because each is equally valid.³³ Mach did not believe in either absolute motion or absolute space, but it can be assumed that Newton's bucket is fixed with respect to the celestial bodies rotating around it. Possibly because Clark did not disagree with the accepted view of heliocentrism, he did not consider Mach's comments on absolute motion.³⁴ If we begin with the assumption of absolute rotation of the Earth, then the equator becomes oblate where the force of gravity is reduced, the Foucault pendulum³⁵ plane rotates, etc. "All these phenomena disappear if the [E]arth is at rest and the

other heavenly bodies are affected by absolute motion around it, such that the same *relative* motion is produced. This is, indeed the case, if we start *ab initio* with the idea of absolute space."³⁶ What we have here is a philosophical choice rather than science,³⁷ and both the Ptolemaic and Copernican systems are correct, the latter having been chosen due more to simplicity.³⁸ Even Einstein in comparing the Earth-centered to the Copernican system said, "But as motion is relative and any frame of reference can be used, there seems to be no reason for favoring one CS [coordinate system] rather than the other."³⁹ This paper does not focus in any detail on the arguments for a geocentric universe with the Earth immobile, a view rejected by secular astronomers. Sadly, even though there are approximately seventy verses of Scripture that defend a fixed Earth and a moving Sun, heliocentrism is accepted by most Christian astronomers and creation parachurch organizations.⁴⁰ CMI Ministries strongly defends heliocentrism, as demonstrated by Jonathan Sarfati⁴¹ and Robert Carter.⁴² Besides the error of asserting science is a source of truth, the typical excuse for ignoring the many Scriptural verses is that geocentrism is only phenomenological language, or possibly poetry. However, one Christian astronomer, Gerardus Bouw, defends geocentrism on the basis of Scripture,⁴³ and a geocentric mathematical model

³⁶ Mach, 231.

³⁷ In defense of Clark, he recognizes the concepts of absolute versus relative space and motion is more philosophical than scientific (*The Philosophy of Science and Belief in God*, 68).

³⁸ Mach, 232.

³⁹ Albert Einstein and Leopold Infeld, *The Evolution of Physics*, Simon and Schuster, 1938, 223.

⁴⁰ Donald B. DeYoung says, "observation clearly shows the [E]arth's movement," *Astronomy and the Bible*, The Baker Book House, 1988, 15. Paul M. Steidl says after Galileo stated the Earth moves, "it was demonstrated the [E]arth does move around the [S]un..." *The Earth, the Stars, and the Bible*, Presbyterian and Reformed Publishing Company, 1982, 6. Danny Faulkner, "Geocentrism and Creation," *Journal of Creation*, 15(2): 110-121 (August 2001). While supporting the heliocentric model, he admits the only difference between the heliocentric and Tychonian model is a coordinate change (120).

⁴¹ Robert Carter and Jonathan Sarfati, "Why the Universe does not Revolve around the Earth," CMI Ministries (February 2, 2015), www.creation.com. A further paper by Carter, "Refuting Absolute Geocentrism," CMI Ministries (September 6, 2016) was published. Carter, believing that there are two sources of truth—the Bible and science—states, "The geocentrist goes too far in rejecting sound scientific theory and data. In the end, they are left with a universe that cannot be explained scientifically" (11).

⁴² Gerald Aardsma of ICR states that modern science has rejected geocentricity due to its adoption of relativity. Gerald E. Aardsma, "Geocentricity and Creation," *Impact*, No. 253 (July 1994), Institute for Creation Research.

⁴³ Gerardus D. Bouw, "Derivation of the Geocentric Equations for a Daily-Rotating Universe," *Biblical Astronomer*, number 142. Gerardus D. Bouw, *A Geocentricity Primer*, The Biblical Astronomer, [1999] 2004. In discussing the MM test of the

²⁷ Bertrand Russell, *The Scientific Outlook*, W. W. Norton & Company, 1959, 74-75.

²⁸ Clark, 63.

²⁹ However, this does not mean the old laws are no longer used. For example, almost all applied physics and engineering make use of Newton's laws of motion.

³⁰ This is not really a law of physics, but only an arbitrary assumption.

³¹ Clark, 65-66.

³² In his bucket experiment, Newton twisted a rope connected to a bucket filled with water, and then he released it. At first the surface of the water stayed flat, and then it became concave indicating it was rotating. Newton argued the water was rotating relative to a fixed space.

³³ Ernst Mach, *The Science of Mechanics*, The Open Court Publishing Co., 1919, 542-543.

³⁴ Clark, 67.

³⁵ The Foucault pendulum supposedly proved the Earth rotates under a fixed pendulum, but this experiment is contrived and proves nothing. See Malcom Bowden, *True Science Agrees with the Bible*, Bromley Publications, 1998, 510-511.

can be constructed which is as equally valid as the heliocentric model.⁴⁴ If the Earth does not move, then we have absolute motion and absolute space. Newton could not demonstrate absolute motion because he believed in heliocentrism instead of geocentrism taught in Scripture, and he considered the solar system to be an isolated system independent of the rest of the universe.⁴⁵

With the acceptance of relative motion, Newton's first law had to be abandoned, and this was the alleged reason for Einstein's SR.⁴⁶ However, there was a much more important reason for Einstein's theory. In the latter nineteenth century, an experiment was conducted by two physicists, Michaelson and Morley (MM),⁴⁷ who attempted to measure the speed of the Earth as it was moving through the ether in its rotation about the Sun. These results shockingly indicated that the Earth was not moving. Steps were taken immediately to explain away these findings, one of the first being the invention of shrinking meter sticks that affected the measurement in such a way that the null result was obtained. Einstein eliminated the null result of MM by denying the existence of the ether in his SR theory. Special relativity made the Earth an arbitrary coordinate system rather than a fixed reference frame. According to Arndts, "The assumption that the [E]arth is in motion—along with the data from the Michaelson-Morley experiment—led directly to the postulates of special relativity."⁴⁸ Thus, the primary reason for SR was to avoid the unthinkable conclusion of MM that the Earth does not move, which would destroy the Copernican system.

The first postulate of SR is that the laws of physics are the same in all inertial reference systems, which means we cannot detect either absolute or uniform motion by any scientific test. However, significant problems arose with this new theory. First, while it is claimed SR has been

validated by various tests (e.g., by Hafale and Keating to test whether clocks slow down – time dilation, and the Frisch and Smith muon experiment), Arndts' evaluation is that there are so many difficulties with these tests, they are not credible.⁴⁹ Another serious problem for SR was the development of QM which, according to Heisenberg's uncertainty principle, small particles⁵⁰ are different from large particles in that they are ruled by probability functions rather than by fixed laws.⁵¹ Problems in the second postulate of SR, the speed of light being constant in all reference frames also came from QM, whereby electrons can change orbits instantaneously without traveling, and one particle can affect another far away simultaneously (known as spin), which also contradicted SR.⁵² Still another difficulty for the speed of light is that gravity has to be either infinite in speed or billions of times faster than light, or planets would not maintain their orbits.⁵³

While SR was designed to explain away the MM result of absolute motion, absolute motion by the inertial effect can be detected due to a change in direction or velocity.⁵⁴ In this case the observer inside the accelerating elevator space ship can detect the acceleration, indicating there is absolute motion, which still presented a problem for Einstein due to the MM null result.⁵⁵ If there is absolute motion, then there is absolute space as well, which is inconsistent with SR. The way Einstein dealt with this problem was to develop the theory of GR, which postulated that acceleration and gravity was the same thing. However, Arndts demonstrated that they are only the same under certain conditions and not the same under other conditions.⁵⁶ "The Alice-in-Wonderland conclusions found in general relativity are the result of the Alice-in-Wonderland assumption that acceleration and gravity are the same thing."⁵⁷ He says all this was necessary to avoid the unacceptable conclusion that the Earth is motionless at the center of the universe. Another serious problem is while SR abolished the ether, GR put it back in. Arthur

Earth's motion, Arndts says, "The Michaelson-Morley experiment produces a null result. The straightforward interpretation of these data is that the [E]arth rests motionless in the ether. In spite of the fact that researchers are unable to show that the [E]arth is moving, many scientists feel compelled to assume that the [E]arth is in motion" (Russell T. Arndts, *Geocentricity, Relativity and the Big Bang*, Lindquist Books, 2008, 34).

⁴⁴ Luka Popov, "A Newtonian-Machian Mathematical Analysis of Neo-Tychonian Model of Planetary Motions," *European Journal of Physics*, 34 (January 2013), 282-391.

⁴⁵ Isaac Newton, Proposition 43. In his Proposition 43, outside of *Principia*, Newton stated that a geocentric system is possible in which the Earth is the center and the universe rotates around the Earth. This was quoted in a paper by Roman Catholic apologist, Robert Sungenis, "How Can the Larger Sun Rotate Around the Smaller Earth?" February 19, 2016, www.galileowaswrong.com.

⁴⁶ Clark, 64-68.

⁴⁷ Arndts, 17-32. Arndts states that some authors mistakenly believe the MM experiment was designed to test for the existence of an ether, but the purpose of the test was to measure the speed of light through the ether.

⁴⁸ Arndts, 33.

⁴⁹ Arndts, 91-115.

⁵⁰ Arndts, 117-120.

⁵¹ Paul Tipler, *Modern Physics*, Worth Publishers, Inc., 1978, 186-187.

⁵² Arndts, 124.

⁵³ Arndts, 127-128.

⁵⁴ Supposedly, an observer can detect this acceleration by looking out the window of his accelerating elevator.

⁵⁵ Arndts, 133.

⁵⁶ Arndts, 133-151. In the thought experiment of Einstein, the observer inside the elevator accelerates at the same rate as gravity on Earth. But there is no reason why the observer inside could not change the acceleration. Another problem is that if two rocks at some distance apart are dropped simultaneously in the elevator, they will hit the floor at the same time, but rocks dropped under conditions of gravity point toward the center of the Earth. One absurd implication of this theory is the outward force on a person on a merry-go-round is due to changes in gravitational forces.

⁵⁷ Arndts, 151.

Eddington, a supporter of Einstein's relativity, said, "Some would cut the knot by denying the aether altogether. We do not consider that desirable, or, so far as we can see, possible; but we do deny that the aether need have such properties as to separate space and time in the way supposed."⁵⁸ Space was again a substance with physical qualities, including curvature when masses are nearby.⁵⁹ However, what is most important to note is the fact that there was nothing discovered in either SR or GR, and they were designed mainly to explain away the MM results.⁶⁰ Not only do SR and GR contradict each other, the various experiments conducted that supposedly have confirmed SR led to unintelligible results.

Another significant difficulty arose in twentieth century physics for subatomic particles, called the Heisenberg uncertainty principle, which found that the position and momentum of a particle could not be known simultaneously because any attempt to measure these led to a disturbance of the particle. Clark points out that the previous belief that both position and momentum can both be known is "...not a discovery based on observation, but an *a priori* thesis adopted for other reasons."⁶¹ Another major problem that began in the nineteenth century was whether light is a wave or a discrete particle (called a photon). Max Planck *circa* 1900 studied the relationship between heated bodies, and he observed different colors of light given off, which he considered to be different radiation frequencies. He constructed a model in which were small oscillators in the material that exchanged energy with an electromagnetic field not in discrete bundles rather than continuously. The size of each energy bundle was proportional to the frequency of radiation. Einstein combined Planck's work on frequency with Thomson's experiments with cathode rays, and the idea of the electron led him to develop the formula for the photon, $E = hv$.⁶² Despite these developments, the two theories are contradictory, and each demonstrated that the other

contradicts certain observations.⁶³ However, both are used in physics depending on which application is considered.⁶⁴ The fact that both theories are used for light led to similar ideas about other particles. Louis de Broglie postulated that because light has dual properties, then electrons should also have dual properties. Another related idea in the late nineteenth century on the study of the atom was that energy existed in quantized discrete states. In 1913 Niels Bohr developed the quantum energy model, which gave accurate predictions for the hydrogen atom, but failed for atoms with more electrons.

The new ideas from Bohr and de Broglie led Erwin Schrödinger in 1925 to develop an equation, a form of the wave equation in classical physics, which could predict quantum states for atoms with more than one electron, agreeing with experimental results.⁶⁵ According to physicist, Paul Tipler, "we can't derive the Schrödinger equation just as we can't derive Newton's laws of motion. The validity of any fundamental equation lies in its agreement with experiment."⁶⁶ In other words, Schrödinger's equation has nothing to do with any real processes of nature; it is used simply because it works. Even more bizarre, the square of Schrödinger's wave equation is magically transformed into a probability function that gives the likelihood of finding an electron in a particular location. The pre-twentieth century idea that light was a classical wave, and an electron was a classical particle disappeared, and each one "behaves like a classical wave when propagation is considered and like a classical particle when energy exchange is considered."⁶⁷ Commenting on the historical corpuscular theory of matter, Schrödinger states, "what are these corpuscles really, these atoms and molecules?—I must confess honestly I know the answer just as little as I know where Sancho Panza's second donkey came from."⁶⁸ He also comments on the nineteenth century notion that matter was considered to be of one solid substance, and there were true models that could explain all future movements of particles given the initial conditions. "Quite the contrary, we are now obliged to assert that the ultimate constituents of matter have no 'sameness' at all."⁶⁹ Regarding the idea of true models of reality, he says, "[T]his attitude has now been abandoned.... As our mental eye penetrates into smaller and smaller distances and shorter and shorter times, we find nature behaving so entirely differently from what we observe in visible and palpable bodies of our surrounding

⁵⁸ A. S. Eddington, *Space, Time and Gravitation*, Cambridge UP, 1921, 39.

⁵⁹ This statement was given in a speech "Ether and the Theory of Relativity," given in Berlin in 1920. This was reprinted in *Sidelights on Relativity*, Methuen, 1922. Thomas L. Swihart, *Quantitative Astronomy*, Prentice Hall, 1992, 258-262.

⁶⁰ In addition to showing contradictions in relativity theory, Arndts includes a discussion of four tests designed to confirm special relativity theory and their failures to do so (91-115). For an additional review of contradictions in relativity theory and the four experiments, see Malcom Bowden, *True Science Agrees with the Bible*, 445-481. Bowden also supports the geocentrism model, which is clearly taught in the Bible, and he reports on an experiment in 1913 by Sagnac that showed results consistent with their being an ether that surrounds the Earth, contrary to Einstein who abandoned it (449-515).

⁶¹ Clark, 70.

⁶² Tipler, *Modern Physics*, 118-119. E is total energy, h is Planck's constant, and v is the frequency of the photon.

⁶³ Clark, 70-72.

⁶⁴ Tipler, 70-72.

⁶⁵ Tipler, 202-237.

⁶⁶ Tipler, 204.

⁶⁷ Tipler, 190.

⁶⁸ Erwin Schrödinger, *What Is Life? & Other Scientific Essays*, Doubleday Anchor Books, 1956, 177. Sancho Panza was a character in *Don Quixote*.

⁶⁹ Erwin Schrödinger, *Science & Humanism*, Cambridge UP, 1952, 17.

that no model shaped after our large-scale experiences can ever be true.”⁷⁰

Besides the various contradictions among twentieth century physics theories, some concepts, such as energy, underwent significant definitional changes while maintaining the same names. Two glaring examples are energy and the first law of conservation of energy. Energy is nothing that can be observed. Investigators during the nineteenth century thought of it as some sort of physical substance, and before that it had the name *vis viva*, which is close to what is now called kinetic energy.⁷¹ Other forms of energy were invented, such as mechanical energy, chemical energy, potential energy, *etc.* Their sum represents total energy, which is nothing more than an arbitrary bookkeeping method. Bridgman, referring to a comment by Poincaré, says when the conservation of energy seems to fail, we just invent a new form of potential energy.⁷² The energy concept was becoming more and more intangible although the name remained the same. Commenting on the conservation of energy as the sum of kinetic and potential energy, Bridgman says the construct of the latter only has meaning in terms of operations, with the choice of its position being arbitrary.⁷³ Electrical engineer, Fred Fish, says, “[T]his law is not susceptible to mathematical proof, but all experience leads to the conclusion that it is true, and it is to be accept-ed as one of the ‘Articles of Faith,’ for the scientist and the engineer.”⁷⁴ Science philosopher, John Kemeny, says, “a brief look at the history of conservation laws will indicate that they hold not so much because of

any attribute of nature, but because of a human desire for conservation laws.”⁷⁵

Once QM was invented, the energy concept was becoming even more intangible, which presented major problems for the concept of the conservation of energy. According to Bridgman, “there are quantum phenomena which still may have to be treated by statistical methods, and this may mean having to give up conservation in detail. We have no experimental evidence...of what an electron is doing while jumping from one quantum orbit to another.”⁷⁶ Bridgman comments on other physical concepts, such as length, which in terms of physical operations is completely different if we compare the measurement of the diameter of ordinary physical objects with that of electrons. In the former case we can use some sort of ruler, but in the latter case we have to solve electrodynamic mathematical equations combined with experimental data.⁷⁷ This means the concept of length has different meanings depending on which operations are performed. Not only energy, but many other fictions were invented, such as forces, charges, electric fields, magnetic fields, atoms, heat, *etc.*⁷⁸ The force construct in physics is a made-up concept that came from the idea of pushing or pulling ordinary objects. Bertrand Russell said, “‘Force’ was known [before Einstein] to be merely a mathematical fiction...”⁷⁹ According to Kemeny, many concepts, such as force, are best described as fictitious.⁸⁰ For example, in Newton’s Second Law of motion there is no way to measure force independently of the law, so this is really a definition of force rather than a law. If we substitute mass x acceleration (ma) for force, then we don’t have to mention force at all. The concepts of force, energy, mass, *etc.* are “free creations of the human mind.”⁸¹ Instead of mass and acceleration, we could have meleration, M , standing for $(m + a)$, and accelass, A , meaning $(a-m)$. Now force F is not $m \times a$, but $\frac{1}{4}(M^2 - A^2)$. The definition of force is arbitrary and fictitious.⁸²

Bridgman, in agreement with Kemeny, says, regarding electric fields, “I believe that a critical examination will show that the ascription of physical reality to the electric field is without justification.... It seems to me that any pragmatic justification for postulating reality for the electric field has now been exhausted.... I cannot find a

⁷⁰ Schrödinger, *Science & Humanism*, 25.

⁷¹ Descartes, Leibniz, and others who followed them viewed *vis viva* as some kind of force that is somehow conserved. Another concept was developed called the principle of least action, which led to much confusion about the conservation principle. From Joules, the idea came that heat can be transformed into mechanical energy, and from Carnot developed the notion that heat flows from higher to lower temperatures but with the total constant. At the beginning of the nineteenth century, the concept of energy began to take on a form of a substance. Later in the century the idea of potential energy was added to kinetic energy, and it was believed by many that all phenomena, including all forces, could be reduced to energy and mechanics. The energy concept became the organizing principle of all physics. But as this happened, energy became less of a substance and more abstract. For an interesting discussion of how the concept of energy and conservation evolved historically, see Philp Mirowski, *More Heat than Light*, Cambridge UP, 1989.

⁷² P. W. Bridgman, *The Logic of Modern Physics*, The Macmillan Company, 1961, 115.

⁷³ Bridgman, 108-109.

⁷⁴ Fred A. Fish, *Fundamental Principles of Electric and Magnetic Circuits*, McGraw-Hill Book Company, Inc., 1920, 6. The first concept of energy to be conserved was kinetic energy, but when it was found this was not conserved, potential energy was added to keep conservation. Eventually other things were added to keep conservation, but the concept of energy had changed. People mistakenly believe that the law of conservation had remained the same.

⁷⁵ John G. Kemeny, *A Philosopher Looks at Science*, D. Van Nostrand Company, Inc., 1959, 55.

⁷⁶ Kemeny, 116.

⁷⁷ Kemeny, 5, 10, 21-22. Bridgman on this point is also quoted by Clark, *The Philosophy of Science and Belief in God*, 78-79.

⁷⁸ H. M. Schey, *Div, Grad, Curl and All That*, W. W. Norton & Co, 1973, 5.

⁷⁹ Bertrand Russell, *The ABC of Relativity*, Signet Science Library Books, 1958, 15. He also says that it was generally recognized before Einstein that all motion is relative.

⁸⁰ Kemeny, 131. Even Bridgman admits that concepts, such as fields correspond to nothing in the real world.

⁸¹ Kemeny, 138.

⁸² See note above.

single physical phenomenon or a single physical operation by which evidence of the existence of the field may be obtained independent of the operations which entered the definition.”⁸³ Also the electromagnetic field for moving particles has no correspondence to reality.⁸⁴ Regarding atoms, “This [the atom] is evidently a construct, because no one ever directly experienced an atom, and its existence is entirely inferential. The atom was invented to explain constant combining of weights in chemistry.”⁸⁵ Another fiction is the concept of heat. Bridgman says, “it is not possible in the general case to find anything which we can call heat as such.... The heat concept is in the general case a sort of wastebasket concept, defined negatively in terms of the energy left over when all other forms of energy have been allowed for.”⁸⁶ The first law of thermodynamics, $dE = dW + dQ$,⁸⁷ the conservation of energy, is supposedly the most well tested law in physics.

According to Henry Morris, everything God created, including all mass, can be expressed as energy, God finished his creation on day six, so the total amount of energy in the universe is constant, *i.e.*, no energy added and none destroyed. “Nothing is now being created and this is what was finally formalized by science in the first law of thermodynamics...the total energy remains unchanged; no energy is either created or destroyed, although its form may and does change. This is the first law of thermodynamics, the law of conservation of energy. This law has been validated on both the cosmic and sub-nuclear scales and is a truly universal law, if there is such a thing.”⁸⁸

Science philosopher, Kemeny, corrects this erroneous view: “The assumption that occurs most frequently in the modern physics text is that nature obeys certain conservation laws...but a brief look at the history of conservation laws will indicate that they hold not so much because of any attribute of nature, but because of a human desire for conservation laws.”⁸⁹ For Bridgman, “The first law of thermodynamics properly understood is not a statement that energy is conserved, for the energy statement without conservation is meaningless.”⁹⁰ In other words, the

first law is a definition. The Second Law of Thermodynamics, or the law of entropy, which is often used by confused Christian apologists to argue this is a proof that the universe had a beginning, is just as imaginary as the First Law. One definition is that it shows that heat, itself a fictitious concept, is always transferred from a body of higher temperature to a body of lower temperature, with both bodies in contact with each other. Another definition, based on statistical analysis, says maximum entropy⁹¹ will occur in the most probable state of a system.⁹² While the Second Law tells us that energy systems lose their ability to do work over time, there is a slight probability that entropy could reverse itself.⁹³ Nothing can be proved from the Second Law. One way of considering the concepts of physics is as a set of arbitrary rules for operating in a laboratory. Clark says the significance of Bridgman’s operationalism should not be missed. “Length, mass, electric charge and all the concepts of physics are descriptions of operations performed in laboratories. They are not descriptions of natural objects or physical realities.”⁹⁴

This article will continue in the November, December Trinity Review.

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⁸³ Bridgman, *The Logic of Modern Physics*, 57-58. Bridgman is also quoted on this issue by Clark, 77. Commenting further on electric fields, he says, there are two theories of how the field works, one being action through a medium and the other as action at a distance. There is no way that measurements can decide which of these two theories is correct. P. W. Bridgman, *The Way Things Are*, Harvard UP, 1959, 150-151.

⁸⁴ Kemeny, 136. It is assumed here that what Kemeny means by law is the same thing Bridgman means by physical operations.

⁸⁵ Kemeny, 59.

⁸⁶ Bridgman, *The Logic of Modern Physics*, 125.

⁸⁷ This equation states the change in energy is equal to the amount of work done on a system plus the amount of heat added to the system.

⁸⁸ Henry M. Morris, “The Bible is a Textbook of Science,” *Bibliotheca Sacra*, December 1964, 4.

⁸⁹ Kemeny, 55.

⁹⁰ Bridgman, 127.

⁹¹ Entropy is defined in different ways. In thermodynamics, it refers to the inability of heat to do mechanical work, and it can also be a general concept referring to disorder of some kind, perhaps a winding down of the universe or a messy bedroom.

⁹² J. P. Holman, *Thermodynamics*, Third Edition, McGraw-Hill Book Company, 1980, 190-238.

⁹³ Holman, 190.

⁹⁴ Clark, 79. Clark includes further discussion of operationalism and some objections that have been raised against it (81-95).