

The Experimental History of Einstein's Failed Quest to Find the True Formulas for the Vis Vivas Contained Within A Living Cosmos

Vis Viva and The Rise and Fall of Kinetic Energy Theory

During most of the Eighteenth Century, there were many debates and discussions among Natural Philosophers, Experimentalists, and Theoretical Physicists as to the correct description, formula, and the exact experimental measured values for "*Vis Viva*". This was a term coined by Leibniz meaning "*the living force*" that was imagined to be the foundation of our physical existence. *Vis Viva* was to be the "God" of Natural Philosophy and experimentally, *Vis Viva* was meant to encompass the three measured parameters of *momentum, force, and energy* in terms of *Mass, Space, and Time*.

The principle ideas in these debates were those proposed by Galileo, Descartes, Newton, Leibniz, and Emilie du Chatelet. The controversy centered around discovering of the correct mathematical formula for *Vis Viva* that could be used to measure and calculate its true intrinsic value. There were many different formulas proposed for *Vis Viva* but all were just different arrangements of *Mass, Space, and Time*, all with measured physical values of exactly (1.0∞) .

In 1807, Thomas Young tried to end the debate by changing the name of *Vis Viva* to "*energy*" and gave it Newton's formula for Force, $(e = mv^2)$. Then in 1849, Lord Kelvin changed the name to "*kinetic energy*" and gave it the formula of $(e = mv^2/2)$. The next mistaken identification of *Vis Viva* was made by Einstein in 1905 when he changed the name again to "*photon energy*" and gave it the formula of $(e = mc^2)$. Finally, Paul Dirac proposed that *Vis Viva* was two opposite kinds of pure energy he called "Matter" $(+e = mc^2)$ and "Antimatter" $(-e = mc^2)$.

However, all of ideas attempting to identify the true nature of *Vis Viva* were backwards and upside-down because they were based on the Newton/Einstein (*Energy > Force > Momentum*) physical paradigm. In the opposite (*Momentum > Force > Energy*) paradigm of Accelerometer Physics, *Vis Viva* is measured as Angular Momentum rather than being calculated as positive and negative energies. *Vis Viva* is the measure of a single unit of conserved Angular Momentum (mvr) and not the opposite calculations of two kinetic energies.

The Ten Possible Equations for Measured Physical Quantities Proposed to be Vis Viva

$$(mv), (mvr), (mv^2), (1/2mv^2/2), (mgh), (m\sqrt{2}gh), (mc^2), (1/2mc^2), (1/2mC^2), (m\lambda C/2\pi)$$

The first nine of these equations are all just different combinations and arrangements of the initial metaphysical assumptions of Mass, Space, and Time without any intrinsic natural values. The proper equation for *Vis Viva* is the tenth. The intrinsic Angular Momentum of all Photons, electrons and protons.

$$\text{Vis Viva} = h/2\pi = (m\lambda C/2\pi) = 1.05457182 \times 10^{-34} \text{ m}^2\text{kg/s}$$

$$(mv) = \text{Linear Momentum} = 1$$

$$(mvr) = \text{Angular Momentum} = 1$$

$$(mv^2) = \text{Force} = 1$$

$$(1/2mv^2/2) = \text{Kinetic Energy} = 1$$

$$(mgh) = \text{Kinetic Energy of Falling Body} = 1$$

$$(m\sqrt{2}gh) \text{ Linear Momentum of Falling Body} = 1$$

$$(mc^2) = \text{Total Photon Energy} = 1$$

$$(1/2mc^2) = \text{Energy of Photon Linear Momentum} = 1$$

$$(1/2mC^2) = \text{Rotational Energy of Photon Angular Momentum} = 1$$

$$(m\lambda C/2\pi) = \text{Photon Angular Momentum} = 1.05457182 \times 10^{-34} \text{ m}^2\text{kg/s}$$

Vis Vivas are the Eternally Conserved Matter/Antimatter Dualities of Existence

I have found from my analysis of the **Principle of Accelerometer Physics in a Living Cosmos** that the Cosmos contains two equal and opposite quantities of *Vis Viva*. **Positive Vis Viva** and **Negative Vis Viva**.

+Vis Viva $I\omega = (+E/M = CC) = Positive Angular Momentum of Matter (+charged protons)$
-Vis Viva $I\omega = (-E/M = CC) = Negative Angular Momentum of Antimatter (-charged electrons)$

Vis Vivas are the Two, Eternally Conserved, Equal and Opposite Units of Angular Momentum Comprising the Dynamic Circlon Structures of Positive Matter (protons), Negative Antimatter (electrons), and Neutral Matter (Photons). Nothing else exists!

Einstein's "Pure Massless Photon Energy" Does Not Exist

A Living Cosmos does not contain single fundamental interchangeable quantities of Inertial Mass ($M = e/c^2$) and Massless Photon Energy ($E = mc^2$) as Einstein initially imagined.

Kinetic Energies are just the two opposite calculations ($e = 1/2Mv^2$) < > ($e = 1/2mV^2$) measured from **Centripetal Force** (mv^2/r) that are used to separately quantify any two combinations of Linear Momentum ($p = mv$) contained within a conserved unit of Angular Momentum. Energy and Mass are the inseparable dynamic complimentary components of **Linear** ($P = E/M = v$), **Angular** ($I\omega = (E/Mr = v)$), and **Gravitational Momentum** ($P_G = (mv' = (e/m = (m\sqrt{2gh})/\sqrt{1-v^2/c^2})$).

Vis Vivas are Two Opposite Conserved Units of Angular Momentum

The true measurable dimensions of *Vis Viva* are Linear (**mv**), Angular (**mvr**), and Gravitational Momentum (**mg**). The above formulas represent the different aspects of the conservation of momentum. Together, the total momentum within the cosmos is an eternal constant that cannot be created or destroyed.

Momentum

(**Mv < = > mV**) is the formula for two bodies with different masses and different velocities but equal momenta moving in opposite directions along a single vector relative to Zero Momentum Rest. When measured together, their total momentum is zero and their positive and negative kinetic energies cancel each other.

Force

(**Mv^2 < = > mV^2**) is the formula for the two-way equal **forces** of a deceleration/acceleration interaction of momentum.

Kinetic Energy

(**Mv^2/2**) < > (**mV^2/2**) are formulas for the separate unequal **kinetic energies** calculated from an equal exchange in momentum.

Photon Energy

(**E = mcC**) = (**e = mc^2/2 + e = mC^2/2**) are the formulas for calculating **kinetic energies** of a photon's Linear (**mc**) and Angular Momentum (**mλC/2π**). Planck's Constant (**h = mλC**)

The Long Historical Quest to Discover the Fundamental Sources and Components of Our Existence

Since Homer, and even before, there has been a continuous search to establish a fundamental principles and theories to describe and calculate the nature of the physical realities of Mass, Space, Time, and Gravity. The first true progress was made around 400 BC by the Greek philosopher/scientist Democritus. Through careful personal observations and discussions with contemporaries, he was able to identify and describe the three basic components of the physical reality of the Cosmos. He imagined **Atoms** of matter and wave/particle light **Photons** moving through an infinite **Void of Space**. He also imagined stars to be far away worlds not too different from the Sun, Moon, and Earth. He based

his theories on information received through his five senses and combining these into a “common sense” interpretation of the world around him. Unlike his contemporaries, as well as the many theoretical physicists to follow, he did not make metaphysical assumptions for any magical, unseen, unmeasured, or un-sensed parameters in his descriptions of physical reality.

While at first, it might seem the basic theories of Democritus were simple and obvious conclusions that anyone might gain from careful observations of their immediate surroundings and the cosmos at large. However, he was the only philosopher/scientist to ever come up with this version of theoretical physics and cosmology and his ideas were not accepted by anyone. His books were banned and burned by Plato and Aristotle and over the centuries scholars were blacklisted, and expelled from universities for professing beliefs in his theories. Two Thousand years after Democritus proposed it, Giordano Bruno tried to promote the idea that the stars might be other worlds like our own, he was imprisoned for several years by the Catholic Church and then, in 1600 AD, he was burned at the stake for heresy.

For 2400 years, the ideas and theories of Democritus have been denigrated and disputed by every major philosopher, theorist, and scientist from Aristotle, Newton, Descartes, Thomas Young, Lord Kelvin, Einstein, Heisenberg, Dirac, and Feynman as well as most of the entire scientific establishment in the Twentieth Century. However, as I have been able to develop the *Principle of Accelerometer Physics for a Living Cosmos*, I have discovered many physical measurements that validate his theories one after another.

For 2000 Years After Democritus, the Theories of Aristotle Were Universally Accepted

The Democritus concept of uniform, solid, incompressible, and indestructible atoms was rejected by Aristotle who imagined that our total reality consisted of various mixtures of *Earth, Water, Air, and Fire* that could each be divided indefinitely without arriving at an indivisible “atom”.

(What Aristotle had actually described were the four states of matter: *Solid, Liquid, Gas, and Plasma*.)

Aristotle’s ideas remained pretty much intact until around 1600AD when Galileo and others starting making experimental measurements to see what was actually happening. In 1800’s John Dalton experimentally proved the existence of different indivisible atoms for each of the many chemical elements. It wasn’t until the beginning of the Twentieth Century that it was discovered that each of these different “atoms” was composed of equal numbers of just two fundamental particles: *Protons and Electrons*. Years later, it was discovered that atoms emitted *Photons* and then still later it was discovered that atoms also contained *Neutrons* but these were later shown to be made up of a Proton and an Electron. Then finally Paul Dirac imagined and then was able to calculate that besides Protons and Electrons, the Cosmos also had to contain equal numbers of hypothetical “Antimatter” particles called Positrons and Antineutrons that were finally discovered many years later. The single “atoms” of Democritus were ultimately shown to be Electrons, Protons, Positrons, and Antiprotons that could be assembled into more than 100 elements of both Matter and Antimatter. These could then be combined into a virtually infinite numbers of different distinct molecules.

The Democritus concept of atoms and eidôla (photons) moving through an infinite void of empty space became the most maligned and rejected of all of his theories. Aristotle denied the existence of a universal void and Homer had proposed the concept of an “aether” about three centuries earlier.

Ever since Aristotle, all philosophers, scientists, and theorists have embraced the concept of space being filled with some form of aether, multiple fields, physical dimensions or other “media”.

Einstein’s final metaphysical assumption of a *Spacetime Continuum* concluded that a combination of Mass, Space, Time, and Gravity emerged from a “singularity point” of Pure Energy at the beginning of time with an explosive inflation called the Big Bang. He imagined there was no infinite void of space or time either before or after his finite *Spacetime Continuum* suddenly emerged from a :singularity of unlimited, homogeneous, pure, and massless energy that was not a photon. This Big Bang Singularity then instantly expanded through “Guth Inflation” as it transformed, through an undefined process, into the Protons, Electrons, and Photons in today’s Cosmos. After this, Einstein imagined that the planets, stars, and galaxies were soon assembled by the continual moving, contracting, and “curving” of his magical multifunctional *4-Dimensional Spacetime Continuum* that could not be otherwise detected by any experimental measurement.

The Infinite Void of Democritus

When the Michelson-Morley experiment failed to detect the presence of an aether, Einstein simply rejected the term *aether* and replaced it with his own nearly identical concept he called the *Four-Dimensional Spacetime Continuum*. Then at a Leiden conference he said, “*According to the general theory of relativity, space without aether is unthinkable; for in such space (infinite void) there not only would be no propagation of light, but also no possibility of existence for standards of space and time.*”

Today, Big Bang cosmologists usually deny any existence of a universal void either before or after the Big Bang singularity suddenly appeared and produced an “inflation” that transformed the singularity’s point of Pure Energy into a cosmos of Mass, Space, Time, and Gravity that quickly became filled with equal numbers of electrons and protons, that then combined into atoms to emit photons,

Democritus appears not to have had any explanations for gravity or the original origin of atoms but since all of his works have been lost, he may too have explained these and many other things.

During the first part of the Twentieth Century, Einstein turned the physics of motion and energy upside-down with his metaphysical assumptions of pure massless photon energy and massless gravitational potential energy that both existed as “fields” contained not within an infinite void but as part of a finite “spacetime continuum”. Einstein’s assumption that everything ultimately consisted of calculated quantities of pure energy ($e = mc^2$) has persisted to the present day even though there has never been an experimental measurement of energy that did not involve a momentary change in conserved linear, angular, or gravitational momentum caused by an absolute deceleration or acceleration of mass.

All of today’s standard model Theories of Physics and the Big Bang require an aether-like medium and reject the Democritus principle of the absolute motion (momentum) of atoms and photons within an infinite void. It is believed that electrons, protons, and photons are constructed from fields emanating from the substance of a spacetime or aether medium rather than physical charge structures emanating between and connecting electrons and protons.

From the experimental principles of Accelerometer Physics, it is concluded that Democritus is the first and only theoretical physicist or cosmologist to get everything exactly right. His concept of eternal and indestructible particles of matter (electrons, protons, and photons) existing and moving independently within an infinite universal void has been rejected by all natural philosophers, scientists, and theoretical physicists all the way from Homer up to the present day. However, I believe that the contents of this book will show that Democritus was right from the very beginning and everyone else was wrong to at least one degree or another.

Rather than proposing any new metaphysical assumptions and theories, the experimental principles of *Accelerometer Physics and the Circlon Synchronicity of a Living Cosmos* provide only accelerometer measurements of Momentum, Deceleration/Acceleration, and calculations of Energy to measure the physical parameters of Gravity, and Photons in terms of the metaphysical assumptions of Mass, Space, Time, .

Accelerometer Physics is upside-down, backwards, and inside-out from the Standard Model Physics taught by Harvard professors that have a backwards direction of Cause and Effect for the physical interactions of momentum and energy. Their (*Energy > Force > Momentum*) experimental paradigm is the reverse of the (*Momentum > Force > Energy*) paradigm of *Accelerometer Physics*.

In *Accelerometer Physics* all interactions involve the Deceleration of Momentum as the Force that Accelerates an equal Momentum that is calculated as a kinetic energy..Change in Momentum is the cause of Force and Energy is the calculated effect of the change. *Linear, Angular, and Gravitational Momentum* are the eternal and conserved components of physical reality and *Joules of Energy* are just the momentary calculations for a relative changes in a momenta.

The evolution of matter and antimatter within a Living Cosmos occurred from fixed quantities of angular momentum being converted into the linear momentum of moving atoms and photons rather than the Big Bang’s pure singularity energy being converted into mass, space, time, photons, and gravity.

Accelerometer Physics does not contain any new theories of physics and cosmology. It is simply a new interpretation of the old standard principles of Experimental Physics established by the Scientific Method of Experimental Measurement.