Credibility of Common Sense Science

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"Who hath believed our report?" Sometimes we are asked what others say about Common Sense Science. Many want to know if our theory of matter is credible but lack confidence in their ability to make the evaluation themselves. This report identifies *scientific criteria* and includes an overview to enable an objective evaluation of CSS credibility.

The first convert to the CSS theory of matter was the renowned physicist and professor Dr. J. Paul Wesley:

> The Bergman (Bergman and Wesley, 1990) Spinning Ring Model of the electron is so successful that it probably comes close to representing the actual dynamical structure of the electron. Contrary to most submicroscopic models of elementary particles, that have to depend upon hypothetical forces, the Bergman model depends only upon well-known forces. For the first time a model of the electron is presented that is held together by (Weber) electrodynamic forces alone. An appropriate choice of the four adjustable ring parameters, the surface charge density σ, the radius of the ring or torus R, the radius of the cross sectional area r, and the rate of spin ω....yields the four observed properties of the electron, the charge e, the mass m, the spin $\hbar/2$ and the magnetic moment μ [1].

But many others reject the CSS description of physical reality as speculative, or controversial and unpopular. The website of one well-known organization recently stated that

> The 'Lucas model' of the atom is highly controversial and has had little peer review...by...scientists. Further, [certain] scientists qualified in nuclear and quantum physics...reject this model.
>
> Summary...the overwhelming thrust of this book [and the reference to the 'Lucas model'] falls into an extremely dubious, speculative and poorly argued category, one which may not be instantly obvious to the layperson, and much of what it argues is plain wrong.

Validation by the Scientific Method. The Scientific Method applies principles, logic, and consistent relationships between data and models to validate theory and models. It gives no credence to bias, opinion, or endorsement. It is blind to the eloquence, boldness, number of adherents, and financial support behind a proposition. These false criteria cannot establish the truth or credibility of any scientific theory. It matters little to *truth* whether an endorsement comes from a layperson or a professional with an academic degree.

The real (scientific) evaluation of a model or theory must depend upon consistency with empirical data from common experiences and laboratory experiments. Therefore, we present an overview of Common Sense Science, and we show the ability of CSS models and theory to accurately predict data with explanations that are self-consistent within the fundamental features of the CSS models and theory. In order to demonstrate the level of success achieved by Common Sense Science, we will make frequent comparison to the prevailing theories and models of physical theory.

Goals of Physical Theory. The fundamental goals of physics are to accurately describe and explain matter and to accurately describe and explain the motions of material objects.

Matter. The atomic nature of matter and many important properties of matter were discovered by the experimental work of chemists in the 19th Century. Chemists learned that less than 100 elements could form a larger variety of molecular compounds with a much larger number of physical, chemical, and electrical properties. The additional discovery of electrons and protons led to a theory of atomic structure based on these *elementary particles.*

Motions of Material Objects. Over several centuries, physicists led by Copernicus, Kepler, Galileo, Newton, Maxwell, and many others learned how to describe forces that govern the motions of material objects.

Physics As Science. As science, much physical theory was developed and tested by the Scientific Method. Classical physicists believed the universe was orderly and consistent, and they searched for the fundamental order they believed to exist in accordance with principles of *objective reality, causality,* and *unity* [2]. The most fundamental feature of Classical Physics was a strict interpretation of the *law of conservation of energy*. This law implies that the physical universe operates in accordance with *cause and effect* that describes a dynamic but *deterministic* order in the universe applying to both the atom and the cosmos, *i.e.* to the small as well as the large material objects.

Physics As Pantheism. About 300 BC, the principle of causality in matter was rejected by Epicurus who insisted that atoms, by their own power and the *principle of chance*, could and did move spontaneously [3]. This *principle of chance* became the dominate principle of physics early in the Twentieth Century under the name "Heisenberg Uncertainty Principle." HUP was applied to assert the origin of fundamental properties of the atom and space. Even the existence and origin of the universe (and perhaps other universes) are supposed to be the result of space undergoing a *chance* event called a "quantum fluctuation." Other "quantum fluctuations" are asserted to be occurring inside protons and neutrons [4]. Needless to say, the new, radical physics rejected determinism, absolutes, and the strict interpretation of the *law of conservation of energy.*

CSS as Science. About 1980, the authors began to apply the Scientific Method to incorporate the new empirical data from two centuries of research into a credible theory of matter and forces. The theory and models we developed, called "Common Sense

Science," are based on underlying axioms, principles, and logic that accurately predict the common and laboratory observations of nature:

- Character of fundamental things: All matter, forces, and energy are fundamentally electromagnetic in character.
- Elementary substances: Charge is the essential substance of the elementary particles.
- Conservation of energy: Neither space nor any physical object has the power to create energy. Physical mechanisms are necessary to exchange energy between objects.
- Properties of material objects: All natural phenomena are fundamentally electromagnetic in character and can be predicted by applying the laws of electromagnetics.
- Deterministic: There are no random events anywhere in the universe. Natural phenomena can be explained by the law of cause and effect.
- Unity and order: A few, consistent laws of physics maintain order in the structure of matter throughout the universe by force laws that do not change over time, domain, or scale.
- Objective reality: Material entities are real and do not change their nature, existence or properties in reaction to human perception or observation.
- Logical: Consistency with data from experiments, models, sub-theories, and definitions is a requirement.

Validation of Common Sense Science. Having stated the goals of physics, the approach of the Scientific Method, and the underlying assumptions of CSS, an evaluation of CSS and comparison to more popular theories can be conducted according to the criteria stated. Of course, one is free to reject *scientific criteria* and substitute other criteria that suit his purposes, as long as he doesn't claim that arbitrary criteria are scientific. But if the reader has not already thrown down this paper in opposition to scientific criteria, we are prepared to guide him through the evaluation of competing models for the *respect of scientific credibility.* Our review is conducted on the two fundamental aspects of Physical Theory: *matter* and *forces*.

Matter as Isolated Elementary Particles. According to CSS, elementary particles composed of charge circulating in a loop as described above are the building blocks of all material objects. The common elementary particles, electrons and protons, are both spinning charged rings with definite size, shape and boundaries. This means, among other things, that each electron and each proton is a tiny magnet. Magnetic fields generated by the moving charge hold every electron in a compressed volume of charge. Electric fields of equal magnitude balance the magnetic pinch force with an opposite and equal force. These forces keep the electron stable *and in existence*, as long as its shape is approximately a thin ring.

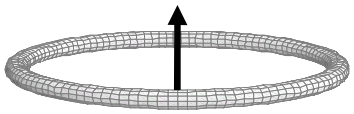

Figure 1
Spinning Charged Ring
Model of
Electron and Proton

Thus, the model accounts for a prominent characteristic of elementary particles: *they are stable* unless violently shaken—as in a collision with another high velocity particle.

According to the empirical laws of electromagnetism and the Spinning Charged Ring Model, matter creates fields and forces. The forces act upon other elementary particles, and the forces also act upon the source particle (in this case, the force is a "self-force" that binds the particle together). *Here is a remarkable claim for a unified physical theory that explains both matter and forces with a single theory. While other theories have been incapable of combining force laws into a unified force law, CSS is near completion of the unification of matter and motions by a unified physical theory.*

The forces that hold elementary particles together are *derived* [5,6,7]. In contrast, the Quantum Model of an electron is *speculative:* an assertion that the electron is a wave (what is waving is unclear) until someone or something observes the wave and turns it into a point-like object. This model is surely *speculative*, since the wave is not observed (it is no longer a wave if it is observed—the infamous "wave-collapse").

Furthermore, the "point-like" electron particle postulated by Quantum Theory is impossible since infinite force and infinite energy density cannot exist in the physical universe or in the context of physics. So, the point-particle speculation does not even have the credibility sometimes granted to ignorance!

Fundamental Properties. The electron has "fundamental properties" of *mass, magnetic moment*, and a fixed amount of *spin*. These properties are all *derived* from the Ring Model and the empirical laws of electricity and magnetism employed everyday by engineers. But according to Quantum Theory (QT), these are all "inherent" properties of the electron—assumptions to give the electron the properties that are measured. This is worse than *speculation* because the spin and magnetic moment of any object with zero size are zero: QT actually predicts *zero* spin and moment—the wrong values! This alone means the Quantum Model of the Electron is not scientific but rather a *bias* in denial of experimental data.

CSS has Same Model for Protons. Like electrons, protons are also spinning rings of charge. A proton is smaller; has a smaller magnetic moment, inductance and capacitance; has a greater mass; and emits spectral lines of shorter wavelength. A proton and electron have the same quantity of electric charge, magnetic charge (flux), and spin. Quite remarkably, in Common Sense Science *all the proton and electron properties are derived from the same model* and the properties are either identical or scaled by a single value, $k = 1836.15$ which is the ratio of proton mass to electron mass [8]. The Ring Model reveals the order, consistency, and unity expected by Science.

We emphasize that in CSS all the properties of the proton are *derived* from the same model used for the electron. This is a significant accomplishment toward the scientific goal of *unity* listed above.

The popular model of the proton given by the Standard Model of Elementary Particles

has been drastically revised to assert the present (fifth) version. Once considered an elementary particle, the latest version of the proton is a complex and stormy "sea" of virtual and short-lived particles [4]. Although the model has been repeatedly adjusted to assert (not explain) the proton's half-unit of spin, the Standard Model offers no explanation for the huge anomaly (2.79 times too high) of the proton's magnetic moment. But the CSS model accounts for the proton's magnetic moment under different environments and successfully accounts for the normal and anomalous moments [8]. Thus, predictions for magnetic moments of the electron and proton have been set forth by CSS and the Standard Model of Elementary Particles, and experimental results demonstrate that CSS is scientifically more credible than all other models.

Atomic Material. About 75 percent of matter in the universe is in the form of hydrogen, and this element is both the simplest form of ordinary matter and the most studied.

Structure of Atoms. Science literature and personal communications frequently express an interest in knowing the structure of atoms. Figure 2 shows the CSS model of hydrogen. "Contrary to popular belief and portrayal of hydrogen in the Periodic Table of Elementary Particles, single, stand-alone atoms of hydrogen are unstable and do not exist. Instead, hydrogen is commonly found in diatomic form—meaning that two "atoms" combine to form a stable molecule (see Figure 2). Each "atom" contributes one electron and one proton to achieve a stable configuration of four spinning, charged particles—each in the shape of a ring [10].

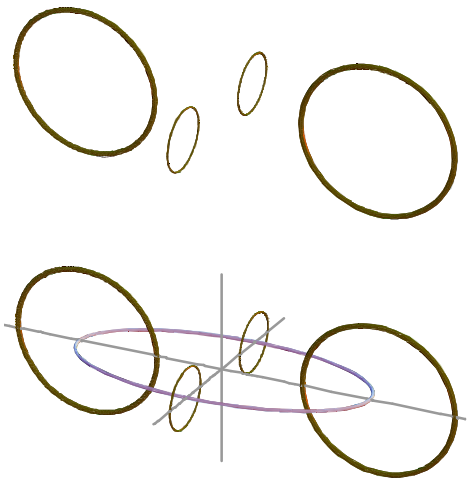

Figure 2

Upper diagram: Hydrogen gas molecule (not shown to scale)

Lower diagram: Same molecule with axes and principal line of magnetic flux added as visual aids.

Two ring electrons and two ring protons combine to form a molecule of hydrogen gas (H2). Measurements of proton and electron magnetic moments of hydrogen gas indicate that the proton is 658 times smaller than the electron.

"Electrostatic and magnetic forces between the rings hold each ring at a fixed position, as each particle acts like a dipole bar magnet with North and South poles that lock it to the rings nearest it. A computer simulation of all forces between the ring particles showed that the forces on a ring are in balance at the positions illustrated which achieve a minimum of potential energy. This means that each particle will return to its original position and orientation should an external force displace the particle." [10].

The CSS model of matter, described above for hydrogen, is *derived* from the laws of electricity and magnetism. The model accounts for the properties of hydrogen, including:

- Neutral Charge. Hydrogen has an equal number of positive charges and negative charges.

- Diatomic Construction. Hydrogen as an element is always composed of two atoms [see discussion in reference 10].

- Stability. Hydrogen is stable indefinitely because linear and angular forces between the two electrons and two protons combine to achieve minimum energy potentials.

- Diamagnetic. Hydrogen placed in an external magnetic field diminishes the ambient field strength as predicted by the model.

- Chemical Bonds. Hydrogen forms bonds with oxygen (as in water) and other elements (*e.g.* hydrochloric acid) by the interactions of electrical and magnetic forces from its component elementary particles.

- Electromagnetic Mass. The CSS model of hydrogen accurately predicts the total mass of the molecule by including the energy of particle self-fields and their energies of mutual interactions.

- Spectral Lines of Hydrogen. QT and CSS both make predictions of the radiation emitted by hydrogen. The CSS model "accurately predicts accurately predicts the same emission spectral lines as the Quantum Model including the fine structure and hyperfine structure. Moreover it goes beyond the Dirac Quantum Model of the atom to predict 64 new lines or transitions in the extreme ultraviolet emission spectra of hydrogen that have been confirmed by the Extreme Ultraviolet Physics Laboratory at Berkeley from its NASA rocket experiment data." [11].

The CSS models of matter consist of *physical* models whose electrical properties are *derived* and found to accurately *predict* experimental data. The QT model of matter *speculates* about a wave-particle dual nature of matter, assumes that the elementary particles have inherent properties unrelated to anything in the model itself, and that the properties of matter are predictable because of many complicated equations—equations which are adjusted from time-to-time with new terms, changed parameters, and always more short-lived particles to correspond with some new property measurement.

Atomic Weight of Atoms and Molecules. We have noticed that the elements listed in the Periodic Table of Elements have integer Atomic Numbers but do not have integer Atomic Weights/Mass. This presents a problem for QT and its assumption of *inherent mass* of elementary particles, because if mass is inherent then it is constant; and the mass of an element should be the sum of masses of its component particles. Robley Evans states: "We assume throughout that if a neutron, proton, electron, neutrino or meson enters a nucleus, the particle retains its identity and extra nuclear characteristics of spin, statistics, magnetic moment and rest mass." [12].

CSS employs the concept of electromagnetic mass to accurately predict the total mass of any assembly of elementary particles. With the equivalence of mass and energy

expressed by $E = mc^2$, we compute the total energy of any system of charged elementary particles consisting of *self-energy* of the particles and the *mutual energy* of coupled electromagnetic fields shared by every combination of particles. CSS has successfully performed this computation for the neutron [13] and for diatomic hydrogen [10]. QT attempts to account for the additional mass in assembled material by the addition of another particle with mass (and spin, *etc*.). Neutrinos were proposed first to provide the excess mass in the neutron, but the latest QT models of neutrons and protons combine many extra particles in an attempt to account for the measured mass, spin, magnetic moment, *etc.,* actually measured for the material objects [4].

CSS has a scientific method, described above, for predicting atomic and molecular weights by the computation of electromagnetic mass. In contrast, the assumptions of Quantum Theory prevent correct predictions of atomic and molecular weights. By scientific criteria, CSS is more credible.

Nuclear Material. The description of atomic structure is incomplete without a model of nuclei that explains the source of nuclide spins and *radioactivity*. Joseph Lucas has developed a successful model of nuclear structure [14], and researchers Edward Boudreaux and Eric Baxter have used this model to explain and predict the "time required for half the nuclei in specific isotopic species to undergo radioactive decay." [15].

Geometrical Packing Model. "A physical Geometrical Packing Model for the structure of the atom [including the nucleus has been] developed based on the physical toroidal Ring Model of Elementary Particles.... The [model describes] the physical geometrical arrangement of protons and neutrons in the physical shells of the nucleus. It accurately predicts the nuclear 'magic numbers' indicative of nuclear shell structure as well as suggesting the physical origin of the nuclide spin and the liquid-drop features of certain nuclides.... *The new model explains the origin of nuclear spin in agreement with practically all observed nuclei*, whether stable or unstable.... Quantum and Nuclear Shell Models cannot do this with so few assumptions" [14] and make incorrect predictions of spin in hundreds of cases.

Nuclear Binding and Half-lives. "Strong electromagnetic forces inside the atom hold its nucleus together. When the forces are barely strong enough, a particle may escape the nucleus.... Such an event is called *fission*. The process that causes fission is called *radioactivity*. The rate of radioactivity is quantified by an atom's *half-life*." [15].

Boudreaux and Baxter used the CSS nuclear model to perform computations that predict the binding energy and half-lives of 14 nuclides including the potassium-40 isotope that is used in the Radiometric Dating Method. These computations give the most accurate predictions to date of measured decay rates. Thus, theoretical computations based on the CSS nuclear model have confirmed the basic nuclear structure of the isotopes selected for analysis.

> Boudreaux validated the calculated results by various comparisons to the experimental data. He concluded that "As shown in Table 1, all calculated data

were found to be in excellent agreement with the observed data." [15].

For all cases where a comparison has been made, CSS predictions of measured nuclear half-lives are more accurate than the predictions of QT.

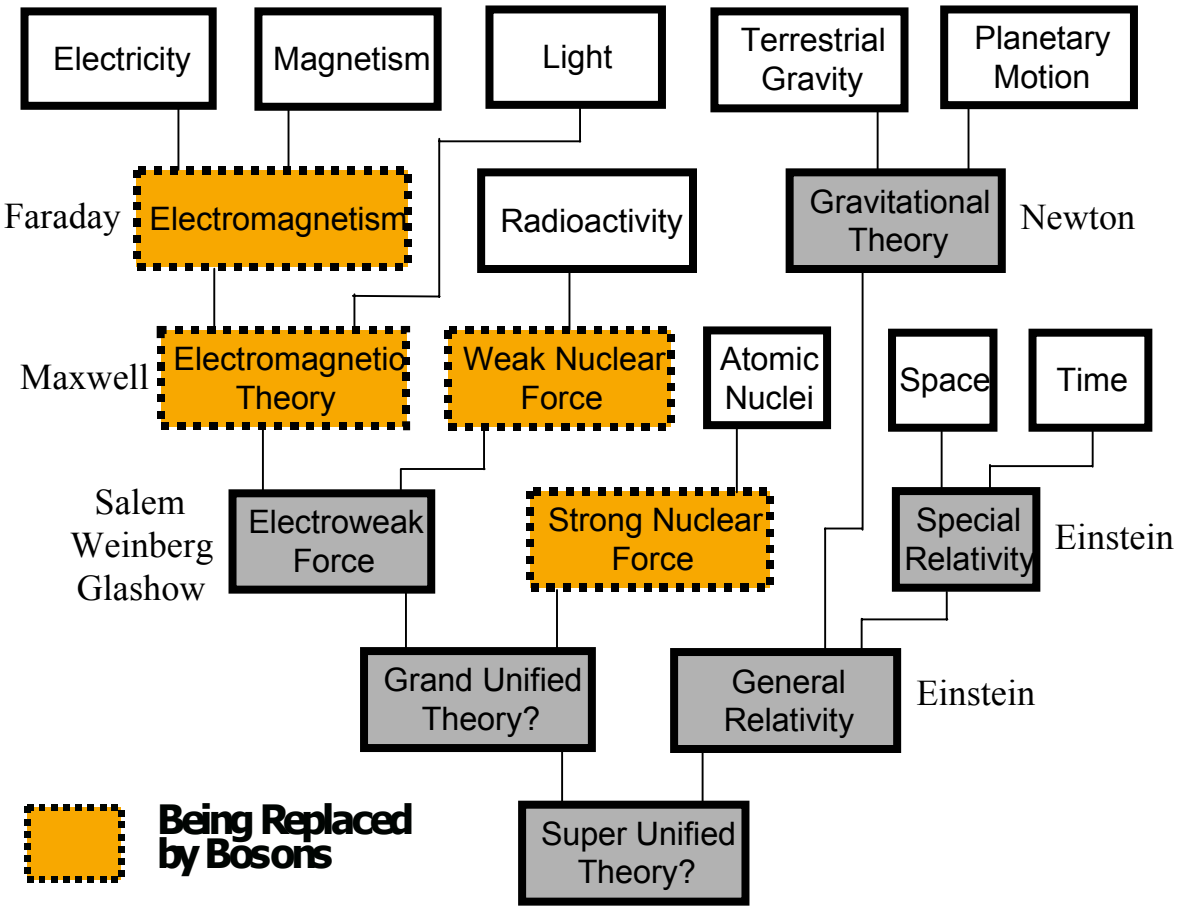

Figure 3. Unification of the Forces of Nature.

The chart shows a popular concept hoped to unify forces that predict fundamental natural phenomena. Evidently, unification of forces is more a goal than an achievement. (Basic features of this chart were taken from the website of Rutherford Accelerator Laboratory.)

Forces on Material Objects. In accordance with the principle of unity, Physics has long sought for a single force law. Many recognize that "the force law" must acknowledge *field energy residing in space* in order to account for the force between widely separated objects in the vacuum of space, *i.e.* action-at-a-distance. According to the classical principle of *cause and effect*, "the force law" incorporates some reason for exerting forces on particles, avoiding the label of "spooky" applied by Albert Einstein to non-causal effects on the motions of objects. A unified and scientific force law must explain not

only the forces between two objects but also the self-force within an object that resists attempts to change the velocity of that object. Force laws such as *Coulomb's force between two charged objects* depend upon the distance between two objects. But *Newton's law of inertial force* recognizes only the mass and acceleration of a single object. "The force law" represents an idea that a single cause accounts for all the forces between and on objects. Furthermore, the scientific principle of unity demands that "the force law" apply over all time, in all domains, and over all ranges from submicroscopic to cosmological scales.

CSS Theory of Forces. As stated by the first principle of Common Sense Science (as given above), force is fundamentally electromagnetic in character. One of us (Lucas) *derived* and published a force law, "derived from the fundamental empirical laws of classical electrodynamics, *i.e.* Gauss's laws, Ampère's law, Faraday's law, and Lenz's law, assuming Galilean invariance" [16]. This law exceeds all previous force laws in accurate predictions of forces based on the relative position and relative velocity of two charged objects. The latest research by Dr. Lucas extends the force law to the case of accelerated charges:

> I have found a simple way to extend the terms in the Weber Force Law to higher-order derivative terms if one assumes that the electric and magnetic forces are well-behaved regular functions. The first new term that I have obtained is the acceleration term. It has two parts. It agrees with the original Weber force law in the non-relativistic limit for acceleration perpendicular to *r* the separation of the charges, but is zero if the acceleration is in the *r* direction....
>
> I have checked the results for the acceleration term with the nonrelativistic classical Larmor formula for power radiated from an accelerated charge in circular motion. It agrees.
>
> Also I have checked the results for the acceleration with the fully relativistic Lienard power radiated as confirmed by accelerator experiments. It agrees with the total power radiated over all angles. As a result I am confident that the technique is valid. I will attempt to determine the radiation reaction term proportional to da/dt and then see if there is a pattern that I can sum to get an expression for all the terms.
>
> In any case we now have the most complete version of Weber's force law and the simplest explanation of radiation based on self-field effects of finite-size charged particles and the Galilean transformation. [17].

CSS not only accounts for the force between two charged objects, but we also have shown the origin of the inertial force that arises within an object and opposes efforts to accelerate the charge. Thus, we *derive* the electromagnetic mass for finite-size objects [18-21].

Standard Theories of Forces.
Modern physics proclaims the existence of four forces: *Strong, Weak, Electromagnetic,* and *Gravitational.* Actual practice in modern Quantum Theory also postulates that particles called "bosons" (e.g. photons and gluons) carry forces between material particles (e.g. electrons and protons). This hypothesis does not recognize the existence of a field but rather the existence of force-carrying particles [22].

Modern cosmologists have recently added another force field called by such names as "Dark Energy" and "Quintessential Energy" which acts like gravity that repels instead of attracts, in order to account for their belief in a universe whose rate of expansion is increasing (in hope of saving the Big Bang Theory). These various forces cannot be integrated into a single force, but the search for a unified field theory continues (ignoring the work of CSS).

Modern physicists with a preference for the philosophy of atomism assert that bosons carry electrical forces between the plates of capacitors and the poles of magnets [23]. But they admit their explanations defy common sense, especially in explaining forces of attraction. And one of us (Bergman) has publicly demonstrated with bar magnets and a strip of copper that bosons (photons in this case) cannot account for these forces. Quantum Theorists (Atomists) claim that bosons produce a quantum force, but they do not hesitate to use any other force as the need arises. See Figure 3 for a chart

Elementary Particles

Physicists have performed thousands of accelerator experiments with pions, kaons, muons*, etc. as well as pionic, kaonic, and antiprotonic atoms. The data require an electromagnetic explanation be-yond the basic structure of a simple Spinning Charged Ring [10, 25].

Experimental evidence suggests that a fiber of circulating charge may actually be divided into several fibers as a stable configuration or as a temporary configuration induced by external forces that "split" a single fiber. Under extreme conditions, the composite Spinning Charged Ring will be broken into pieces, and the resultant strings will retain the detailed structure that is measured over a short particle lifetime.

The two basic building blocks of elementary* particles are the positive and negative intertwining charge fiber loops.

Dr. Lucas has developed a credible theory of "elementary" particles (both stable and unstable) in terms of intertwining charge fiber loops or charge strings. In this model all the known, observed particles are constructed from intertwining charge fibers with specific combinations of various charge fiber combinations. In fact, from combinatorial geometry he showed that the current set of experimentally observed elementary particles exhausts the full set of these combinations [25]. No other theory can do this. In this model the electron and the proton are the simplest of the observed elementary particles, but they are not the building blocks of all elementary particles. The two basic building blocks are the positive and negative intertwining charge fiber loops.

*Caution! These so-called "elementary" particles depend upon electrons and protons for their existence. They are not independent particles that the word "elementary" suggests.

of the many ways Atomists compute forces.

Credibility of Force Theories. Based on the scientific principle of *unity*, the CSS theory of force is far more credible than the Atomists' theories of force which cannot be integrated despite strenuous efforts. The QT claim that *bosons carry forces between charged particles* cannot explain how massless photons can carry momentum from one particle to another particle, nor can a reasonable explanation of attraction force be conceived. But the theory of causal electromagnetic force, whereby a field exerts a force on a charged particle, is credible because it is continually observed in experiments and applied technology.

How Many Elementary Particles? The Electric Theory of Matter and Forces developed by Common Sense Science needs only *two particles*—electrons and protons—to predict fundamental properties and non-transient phenomena. (We believe in the reality of two other stable particles—the positron and antiproton—but we don't need these antiparticles for our theory of ordinary matter and atomic structure.) The same model, a Spinning Charged Ring, is used for all four stable particles, and electromagnetic field theory accounts for all the forces.

But Quantum Theory needs a total of *60 particles*, according to QT experts: The Standard Model of Elementary Particles identifies 36 particles of ordinary matter, including an antiparticle for each particle, and three different color properties for each quark. In addition, the Standard Model has 24 force-carrying particles. Even prominent Atomists think this is absurd:

> As a compact summary of everything we know, the Standard Model has two major defects: ...there are too many particles, too many forces [24].

Scientific research is a search for *order* in the physical universe. The CSS Theory of Matter and Forces based on two particles and two electromagnetic fields satisfies the Principle of Order and Unity far better than modern theories of the Standard Model with 60 particles, and 6 theories of force shown in Figure 3.

The CSS Model of Matter also explains the origin of other observed elementary particles (the non-stable, short-life particles) within a theory that the electron and proton are the source and the simplest of the elementary particles [see sidebar on Elementary Particles and reference 25].

Conclusions. By scientific criteria and the Scientific Method, Common Sense Science is superior to Quantum Theory in the following areas:

- One force law instead of many
- One force law consistent with *the law of conservation of energy*
- One force law consistent with *the law of cause and effect*

- One force law unvarying over time, domain, and scale
- Empirical evidence of particle motions consistent with electromagnetic field theory but inconsistent with the Heisenberg Uncertainty Principle
- Properties and features of elementary particles are derived instead of speculated (e.g. assumed inherent properties).
- Physical models exist without assumed power of atoms and space (*e.g.* no quantum fluctuations, no wave-particle duality).
- Correct prediction of fundamental properties such as mass, spin, and magnetic moment
- Accurate prediction of spectral lines of hydrogen including 64 lines recently discovered that Quantum Theory did not predict
- Correct prediction of all nuclide spins (thousands measured)
- Accurate prediction of nuclide half-lives
- Ordinary matter is composed of two particles instead 60 required by Standard Model.
- A single theory of electromagnetism has explained nearly all natural phenomena and has been applied with great advances in technology, unlike Quantum Theory.

Validation by the Endorsement Method. Science is not a democratic process. The majority of scientists do *not* determine truth and usually hold to the wrong ideas when new advances are made. Common Sense Science does not play the game of "political correctness" in science, because science claims to have a handle on *truth*. Moreover, in rare candid moments, some modern physicists admit they have abandoned the search for truth—which suggests that endorsements cannot always be trusted:

> Likewise, scientific theories evolve according to how well they answer, at any given time in history, the immediate question of interest to scientists. As a result, the present impressive array of theories has developed to satisfactorily answer the questions that interest us now. But that does not mean that science is goal-directed and thus progressing towards the "truth." The present theories were not predetermined to be discovered, any more than the first amphibians that crawled out of the oceans many years ago had the concept of humans encoded for future emergence.
>
> Science works—and works exceedingly well—because of its naturalistic approach, predictive nature, and methods of operation. *To be valid, science does not have to be true* [26, emphasis added].

But many inquisitive people consider themselves unqualified to make any evaluation in the "difficult" field of physics, and they hope that some endorsement (peer review, for example) will increase the expectation that a physicist is reporting the truth. For those who insist on this approach, we point out some of the independent reviews and endorsements of our work.

With regard to peer review I [Lucas] have approximately 50 articles published in peer-reviewed journals. One of those was just published [January, 2003] in Galilean Electrodynamics [16] with the title "Weber's Force Law for Finite-Size Elastic Particles." In this article a proof was given that the Theory of Special Relativity is incorrect and the classical Galilean transformation shows that Relativity Theory missed all the higher-order derivative terms involving acceleration, radiation, and radiation reaction, *etc.* Galilean Electrodynamics is an international secular journal of physics.

I would also like to [report] that my son Joseph was awarded one of the Grand Prizes at the International Science Fair in 1995 held in Hamilton, Ontario, Canada. Two Nobel Laureates in physics reviewed his project on a new theory of the atom and nucleus [the CSS model]. NASA, who was paying for this particular prize, had sent two Ph.D. scientists from their organization to help select the winner.

This past summer I was an invited speaker at an international science meeting in the Canary Islands that was sponsored by the government of Spain and the German sponsors of the "Physics as a Science" international workshop. At this meeting I presented the first version of my classical electromagnetic theory of elementary particles. It was well received.

At the meeting I met a publisher that was so impressed with my work that he offered to publish my book A New Foundation for Science. This book will tie together much of my work.

I was also invited by the Soviet Academy of Sciences to present a similar paper at an international conference in St. Petersburg, Russia this past summer. Due to a conflict, I was unable to attend. However, I did attend two years earlier and presented an invited paper at that time.

I have been an invited speaker at international conferences in Cologne, Germany, twice.

These meetings are all secular science meetings. Only scientists whose research is considered important are even invited to come.

I serve as a referee for a secular physics journal.

As you see my work is peer-reviewed and is published in many places. Sometime this month I am expecting the first version of my new theory of elementary particles to be published in the Journal of New Energy based in Salt Lake City [25].

From the Internet

Science—Space.com

Hubble Pictures Too Crisp, Challenging Theories of Time and Space

Wed Apr 2, 9:35 ET

By *Robert Roy Britt*
Senior Science Writer, Space.com

Clarity is what astronomers and the public have come to expect from the Hubble Space Telescope (news - web sites). But the sharpness with which Hubble photographs distant galaxies has scientists pondering why the pictures are not blurry, as some new calculations suggest they should be, and whether some basic assumptions about space, time and gravity might have to be rethought.

Three photographs, of very distant stars and galaxies, were analyzed to test a fundamental aspect of Quantum Theory, which is a collection of widely held ideas about physics at the invisible level of atoms, and how these ideas relate to conceptions of physics on the grandest scales of the universe.

Conventional thinking is that space and time can be thought of together as a sort of foam. As light travels through the foam, it ought to be disrupted, ever so slightly, such that by the time it crosses much of the universe it would render only blurry pictures when gathered by a precision telescope. Put simply, Hubble ought to see a pixilation effect when photographing distant objects.

It does not. Hubble pictures are crisp and clear, no matter the distance to the object.

And that, say two separate teams of researchers, might mean there are flaws in Quantum Theory.

The newest study was led by Roberto Ragazzoni of the Astrophysical Observatory of Arcetri, Italy and the Max Planck Institute for Astronomy in Heidelberg, Germany. Ragazzoni told SPACE.com the expected quantum effect is like a subtle version of the blurring caused by Earth's atmosphere, which makes stars twinkle.

When light arrives from a distant object, Ragazzoni explained, some parts of the light's wave should be retarded with respect to others, because each would take slightly different paths through the foam. Light will appear to come from positions around the actual source, causing a blur.

Ragazzoni's team studied Hubble pictures of a galaxy more than 5 billion light-years away and, separately, an exploding star 42 million light-years distant.

"You don't see a universe that is blurred," he said. "If you take any Hubble Space Telescope Deep Field image you see sharp images, which is enough to tell us that the light has not been distorted or perturbed by fluctuations in space-time from the source to the observer."

The research will be published April 10 in the journal Astrophysical Research—Letters. Similar results came a few weeks ago from scientists using a slightly different technique at the University of Alabama in Huntsville. Richard Lieu and Lloyd Hillman used separate Hubble images and a more complex analyzing technique to examine galaxies that are at least 4 billion light-years away. They did not find the expected quantum effect either.

Light is said to move in very small but measurable quanta, or quantum bits. Time is supposed to move in correspondingly miniscule quantum bits. The bits fit in with Einstein's theory of General Relativity, which describes physics at the large scale of the universe. Einstein said time, gravity and the fabric of space are different manifestations of the same phenomenon.

Common Sense Science publishes a subscription newsletter/journal called FOUNDATIONS OF SCIENCE. It has hundreds of subscribers who are scientists that are willing to pay money to find out what we are doing in a timely fashion. Some of them even make contributions to further the research.

Character of Pantheism. Pantheism, and its related philosophies *Atomism* and *Epicureanism*, is ultimately defined by two main ideas. *First* is the idea that matter consists of many small particles with various inherent properties and powers. *Second*, the *power of these small particles* is exerted randomly and spontaneously according to the *law of chance* and the quantum of action described by the Heisenberg Uncertainty Principle. The conclusion and goal of these ideas is a universe not under control and therefore without order, *i.e*. the end of *determinism*.

Character of Science. Classical Physics held as axiomatic the concept that the universe displayed a fundamental order that could be classified, described, and explained. Science was conducted as a search for this *reality*, *causality*, and *unity* throughout the universe.

Validation of Science. At least two lines of research reveals that Science (as expressed by Common Sense Science) has triumphed over Atomism. *First*, experimental evidence reveals the failure of the Heisenberg Uncertainty Principle [see sidebar on Hubble Pictures and reference 27] (a primary tenet of Atomism) and the evident order and unity throughout a very complex universe. *Second*, the physical models and force laws of Common Sense Science provide the theoretical foundation to accurately describe the physical universe as revealed by measurement of physical phenomena.

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