

Selected Correspondence on Common Sense Science #1

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Abstract. Common Sense Science has recently derived and published a successful model of the electron and used this spinning charged ring model to derive the Universal Force Law. This work is entirely based upon the fundamental laws of electromagnetics and replaces the troubled modern models and theories: i.e. the Standard Model of Elementary Particles, Quantum Theories, Special Relativity Theory, and General Relativity Theory. In this paper, the Principal Scientists of the new models and theories reply to correspondence received in recent months.

One Universal Force. Hi, Dave. I presume it was you that sent Charles Lucas's paper titled **Mach's Principle and the Concept of Mass**, FOSN, Vol. 16, No. 3 (Aug. 2013). Many thanks.

I have been convinced for some years of the ludicrous nature of attempts to explain our universe in terms of the simple *law of universal gravity*. Lucas's simple paper does seem to have provided the breakthrough into a better understanding of *one universal force*. It certainly gives mathematical support for the claim by the Electric Universe Group that the shape of the galaxies is not a problem if the electromagnetic nature of the cosmos taken into consideration.

I met Charles Lucas at Albuquerque last year where he was first in line to say he didn't believe deluges happened the way I had deduced and presented in my paper. My concept hasn't gone away and modifications explain such things as the mythical land of Mu and why Lake Titicaca was evidently recently at sea level. But how to present it!

I will subscribe to **Foundations of Science** in due course as I believe the journal is worthy of support.

Of course I am able to download the papers made available and have done so. I wish my physics was up to the standard needed to read them critically; but I get the picture, and it is very exciting to see some real progress.

I am particularly taken by your assessment of the variable mass of electrons, and by extension to other particles as set out in your and Dennis Allen's paper **Electron in the Ground Energy State—Part 2**. I downloaded this after receiving a copy of Part 4 from you in May. Thank you for that.

No doubt the CERN collider is an example of how much we are willing to pay to defend a flawed concept. Are we now due for a batch of new particles and dodgy mathematics?

*Henry Broadbent
Australia*



Gravity Dilemma. I seem to remember that gravity cannot be shielded. An internet search agrees. Yet I believe electromagnetism can be shielded. If so, how can gravity be of electrodynamic origin?

*Russel Moe,
Wildwood, Florida*

Reply by Dave Bergman. More than once I have asked myself the same question. Eventually I resolved the dilemma in this way: First, recall that matter is composed of elementary particles—mostly electrons and protons.

Second, every electron and every proton has self-generated electromagnetic fields surrounding the charged particle and spreading outward into an increasing volume of space with field intensities that decrease in accordance with the inverse square law that applies also to gravity.

Third, these electromagnetic fields have an *oscillating component* and a *non-oscillating component*, corresponding respectively to radiation of energy (including **light** energy) and **gravity**.

Fourth, actual measurements show that shielding of an oscillating electromagnetic field ranges from *no shielding* to *partial shielding* to *high shielding* in correspondence with the **wavelength** of the oscillation [D. G. Fink, Editor-in-Chief, **Standard Handbook for Electrical Engineers, Tenth Edition**, McGraw-Hill Book Company, p. 29-23, fig. 29-40 (1957).]



Reply by Dr. Lucas. Good question. The answer is that the experiments of William J. Hooper as described in his book **New Horizons in Electric, Magnetic and Gravitational Field Theory** identify that all three types of electric and magnetic fields have different empirical properties. For instance in Chapter 1 Hooper lists 14 empirical properties of *E* fields. In Table 1 he gives what these properties are for electrostatic *E* fields, *E* fields dependent on dA/dt , and *E* fields dependent on motion $V \times B$. In particular he notes in property 6 that the motionally caused *E* fields cannot be shielded.

There is an interesting story regarding this *E* field that cannot be shielded. When Hooper discovered this effect, he invented and patented a speedometer for airplanes. When a plane was flying with respect to the surface of the earth, Hooper's speedometer measured the $V \times B$ term due to the velocity of the plane with respect to magnetic field lines of the earth being crossed.

He arranged a demonstration with the military. They flew Hooper's speedometer and compared its readings with respect to other methods. The military testers confirmed that Hooper's speedometer worked very well. However, when Hooper applied for a government contract to supply the military with these speedometers, his application was rejected by the scientific reviewers, because they said that the metal hull of the military aircraft would shield the effect. According to Maxwell's theory of electrodynamics, all three forms of the electric field have the same identical properties. The scientific reviewers ignored the fact that the military testers had tested Hooper's speedometer inside a metal-hulled military airplane, and it worked inside that shielded environment.

In our derivation of an improved and more general version of the electrodynamic force law, we treat each of the three types or sources of electric fields separately as distinctly different types of E fields.

It is the term proportional to $R(R \times V)$ in the universal electrodynamic force law that gives rise to the force of gravity. It is equivalent to Hooper's motional E field.

A URL to a scanned copy of Hooper's book is <http://www.rexresearch.com/hooper/horizon.htm>.

This copy of the book is not very readable. I have started word processing it in Microsoft Word. Attached is a .pdf file of the first part of the book that includes Chapter 1 so that you can see Table 1 in a much more readable form. I still need to word-process the rest of the book that covers the various experiments.



Inertial and Gravitational Mass.

Dear Dr. Lucas, I meant to write last week when I received the latest FOSN. The sub-heading in the box on the back page leaves out the word "Union."

More important is a sentence on p. 4 that seems equivocal to me, due to strange word usage and/or syntax:

"Thus the interaction force that Einstein referred to above that gives rise to the force of inertia is the charge to vibrating neutral electric dipole force."

The next sentence is also a bit confusing, because it makes reference to "the next section." But, there is no clearly labeled, "next section." I suppose you should have a bold title of "Gravitational Mass" at this point, to correspond with the previous "Inertial Mass."

So, what is this really intended to mean, "the charge to vibrating neutral electric dipole force?" From Barnes, I would have described it as due to the back electromagnetic force (emf) generated by the acceleration of charged particles of finite size in their own fields. He was considering individual, isolated, charged particles. Dave Bergman's work seemed to extend this

specifically to the helical charged particles. Thus, inertial mass was not fundamental, but a specific, calculable property of the unit charged particles due to their electro-magnetic structure.

Your approach differs in considering a net neutral, but finite size, structured combination of particles, interacting with all the other such dipole particles in the universe. Thus, the amount of inertia demonstrated by a particle's resistance to motion is not even a specific amount, calculable from the charge, speed of light c and physical dimensions, but depends on the amount and distribution of all the other particles in the universe.

Can we reconcile both approaches by saying individual charged particles do demonstrate inertia in the way suggested by Barnes and Bergman; whereas, in mixed, neutral bulk they act in the way you suggest?

Is my understanding correct? If so, the above sentence might be restated: "Thus the interaction force that Einstein referred to above that gives rise to the force of inertia of any specific dipole pair is due to the vibration of that pair, and all the other vibrating, neutral, electric dipoles in the rest of the universe." Would that be a more clear and correct way to say it?

Since all the quantities in Eq. (1) are squared, and the R is a positive, absolute number, your inertial mass is always positive. However, I am now at a loss to see why, in your revised book, you re-insert the minus sign in front of e -squared in the second line of Eq. 8-11, when you had gotten rid of it in Eq. 8-10. And, I now also wonder why Eq. (1) in the article shows division by two c -squared terms, when there is only one c -squared divisor in the comparable expression of Eq. 8-11.

Phil Drake
Santa Ana, California



Reply by Dr. Lucas. I reviewed and approved the draft of the article, but not the back page advertisement for the book.

There is a hierarchy of interactions in electrodynamics in order of decreasing strength as follows:

1. Charge to charge – Coulomb force
2. Charge to neutral electric dipole – inertial force
3. Neutral electric dipole to neutral electric dipole – gravitational force
4. Charge to neutral electric quadruple – dust or plasma aggregation & rotation
5. Neutral electric dipole to neutral electric quadruple – dust aggregation & rotation
6. Neutral electric quadruple to neutral electric quadruple – dust aggregation & rotation etc.
7. The charge to vibrating neutral electric dipole force is second order in the hierarchy.

The sentence "In the next section the interaction force that gives rise to the force of gravity will be considered." should have been "On the grand scale the interaction force that gives rise to the force of gravity is defined in terms of inertial mass as...."

The proposed replacement sentence

“Thus the interaction force that Einstein referred to above that gives rise to the force of inertia of any specific dipole pair is due to the vibration of that pair, and all the other vibrating, neutral, electric dipoles in the rest of the universe.”

would perhaps be better stated

“Thus the interaction force that Einstein referred to above that gives rise to the force of inertia of any specific dipole pair is due to the interaction of that dipole with all the other charges in the universe.”

In a similar manner one could say that

“The interaction force that gives rise to the force of gravity on any specific electric dipole pair is due to the interaction of that electric dipole with all the other electric dipoles in the universe.”

The notion of mass is somewhat poorly defined in science. In the Standard Model of elementary particles and Einstein’s theory of relativity, mass is an inherent property of a point-elementary-particle. Thus the specifics of the interactions within the structure of the particle are not taken into account. However, if one measures the *mass* of an atom, it is not the sum of the masses of the electrons, protons, and neutrons, but something less indicating that if the mass of a particle depends on internal structure, it changes within the environment of the atom. If one measures the total *charge* of an atom, it is exactly the sum of the charges of the electrons, protons, and neutrons in the atom. *Thus mass is not an inherent fixed quantity like charge!*

From the definition of the force of inertia $F = ma$, mass m is a measure of resistance to motion in some environment. In fluid dynamics the resistance to motion of a particle depends on the density of the fluid around it. Thus mass depends more on the environment than on fixed inherent local properties of the particle of mass. The total resistance to motion is not inherent to the particle, but depends on its environment.

In the work of Barnes and Bergman there is a feedback effect due to Lenz’s Law on a charged elementary particle causing it to have a mass of inertia. From Mach’s Principle we can see that there are two parts to this mass. The first is the local asymmetry term, and the second is the contribution on the grand scale from the rest of the universe. The first term will depend intimately on the internal structure of the particle. The second term will depend heavily on the symmetry of the universe.

There can be multiple types of contributions to inertial mass. In my work so far I have concentrated on the hierarchy of electrodynamic interactions, i.e.

1. charge to charge - Coulomb force
2. charge to electric dipole - force of inertia

3. electric dipole to electric dipole - force of gravity, etc.

Besides these supposedly primary contributions, there can be secondary and tertiary contributions just as in the case of the atom where there are fine structure and hyper-fine structure contributions. My electrodynamic force derivation of the force of inertia is able to explain the origin of the cosmic microwave background radiation and its spectrum, the unusual gyroscope experiments of Eric Laithwaite in defiance of Newton's force of inertia, the constant high velocity of the outer arms of spiral galaxies in defiance of General Relativity requiring the invention of dark matter, and the general expansion of the universe in defiance of General Relativity requiring the invention of dark energy.

By the time I complete my book **The Universal Force Volume 2 – An Electrodynamic Model of Elementary Particles** this year in which I hope to predict the masses of all the observed elementary particles, it should become clearer what is the relative order of magnitude of the various contributions to mass.

The inconsistencies of the “-” signs in equations 8-10 and 8-11 of Volume 1 have been noted and corrected in my master copy for the next edition. I apologize for not getting it perfect the first time you pointed out the irregularities.

Charles W. Lucas, Jr.
Mechanicsville, Maryland



Time Dilation According to General Relativity Theory. I find the work of CSS very compelling. Although relativity theory and quantum theory can give approximations under certain conditions, I think it is exciting that CSS gets at the most fundamental forces (electric and magnetic) and the most elementary particles (four). Derivation of the universal force law is also a major breakthrough in the quest for a unified force theory.

Subsequently, I am anxious to have some of my own questions answered concerning the following items:

1. Russell Humphreys teaches that an atomic clock will run faster on the mountain top where gravitational force is less and slower in the valley where gravity is greater. This is supposed evidence for time dilation from general relativity theory. CSS claims that time is absolute. How does one reconcile these notions if the observations of the atomic clock are real and consistent with cause and effect?

2. I did not understand and found less compelling the explanation about the decay of gravity. This is found in the article, The Electrodynamic Origin of Gravity, Part 1, such as the following:

“The force of gravity is shown to be a small average residual force due to the fourth order terms $[v^4/c^4]$ of the derived universal electrodynamic contact force between vibrating neutral

electric dipoles consisting of atomic electrons vibrating with respect to protons in the nucleus of atoms.”

I am sure this is incorrect and an oversimplification, but it reminds me of an explanation for the origin of wind: that wind is caused by the fluttering of leaves on the trees. This might sound reasonable if we didn't know that the truth was the opposite of that. Can you explain the force of gravity in laymen's terms?

I would also like to know in laymen's terms how the decay of gravity explains the cosmic background radiation and red shifts as in the following quote from the article named above:

“The vibrational mechanism that causes the gravitational force is shown to decay over time giving rise to numerous phenomena, including the expansion of the planets (including the earth) and moons in our solar system, the cosmic background radiation, Hubble's red shifts...”

*John Dingess
Hanover Park, Illinois*



Reply by Charles Wm. (Bill) Lucas, Jr. See the URLs below for the “politically correct view” that Russell Humphreys relies upon.

http://en.wikipedia.org/wiki/Hafele%E2%80%93Keating_experiment

http://en.wikipedia.org/wiki/Time_dilation_of_moving_particles

http://en.wikipedia.org/wiki/Pound%E2%80%93Rebka_experiment

For time dilation of moving particles, Special and General Relativity theories are point-particle theories. No real elementary particles such as protons, neutron, muons, etc. are point-particles. All have both finite size and internal structure. Since in my work these elementary particles consist of multiple charge current loops, the elementary particles experience an electromagnetic feedback effect when they move that compresses the particle and increases its binding energy and effective mass. The increased binding energy causes the half-life of the muon to increase with velocity. Special Relativity theory mathematically predicts the same result, but for the wrong reasons due to its use of many idealizations such as the point-particle idealization and that space is homogeneous and isotropic that does not correspond to reality.

The gravitational redshift—a tenet extrapolated from Einstein's theory of general relativity—claims that clock rates change with gravitational potential, as a result of space-time being bent by objects of large mass. Ed Dowdy has shown that for starlight passing near the sun there is no bending of the path of the light due to general relativity theory. The only bending of starlight that occurs is when the light passes through the electrical plasma rim of the sun due to

electromagnetic effects. At larger distances the predicted bendings of light due to general relativity theory are *not* observed.

With regard to the Pound-Rebka experiment at Harvard in 1959 to detect the redshift and blue-shift in light moving in a gravitational field due to clocks running at different rates at different places in a gravitational field, note that the Mossbauer effect was used. In 1958 Mossbauer had reported that all the atoms in a solid lattice absorb the recoil energy when a single atom in the lattice emits a gamma ray. The test is based on the following principle: When an electron in an atom transits from an excited state to a ground state, it emits a photon with a specific frequency and energy. When an electron in an atom of the same species in its ground state encounters a photon with that same frequency and energy, it will absorb that photon and transit to the excited state. If the photon's frequency and energy is different by even a little, the atom cannot absorb it (this is the basis of quantum theory). When the photon travels through a gravitational field, its frequency and therefore its energy will change due to the gravitational redshift. As a result, the receiving atom cannot absorb it. But if the emitting atom moves with just the right speed relative to the receiving atom the resulting Doppler shift cancels out the gravitational shift and the receiving atom can absorb the photon.

http://en.wikipedia.org/wiki/Doppler_shift

The “right” relative speed of the atoms is therefore a measure of the gravitational shift. The frequency of the photon “falling” towards the bottom of the tower is blue-shifted. Pound and Rebka countered the gravitational blue-shift by moving the emitter away from the receiver, thus generating a relativistic Doppler redshift. The energy associated with gravitational redshift over a distance of 22.5 meters is very small. The fractional change in energy is given by $\partial E/E = gh/c^2 = 2.5 \times 10^{-15}$. Therefore short wavelength high energy photons are required to detect such minute differences.

http://en.wikipedia.org/wiki/Electromagnetic_spectrum

When it transitions to its base state, the 14 keV gamma rays emitted by iron-57 proved to be sufficient for this experiment.

http://en.wikipedia.org/wiki/Electron_volt

http://en.wikipedia.org/wiki/Gamma_ray

<http://en.wikipedia.org/wiki/Iron-57>

Normally, when an atom emits or absorbs a photon, it also moves (recoils a little, which takes away some energy from the photon due to the principle of conservation of momentum).

<<http://en.wikipedia.org/wiki/Recoil>>

<http://en.wikipedia.org/wiki/Conservation_of_momentum>

The Doppler shift required to compensate for this recoil effect would be much larger (about 5 orders of magnitude) than the Doppler shift required to offset the gravitational redshift. But in 1958, Mössbauer reported that all atoms in a solid lattice absorb the recoil energy when a single atom in the lattice emits a gamma ray.

http://en.wikipedia.org/wiki/Rudolf_M%C3%B6ssbauer

[http://en.wikipedia.org/wiki/Lattice_model_\(physics\)](http://en.wikipedia.org/wiki/Lattice_model_(physics))

http://en.wikipedia.org/wiki/M%C3%B6ssbauer_effect

<http://en.wikipedia.org/wiki/Pound%E2%80%93Rebka_experiment#>

Therefore the emitting atom will move very little. However, the notion of a photon being emitted or absorbed on a single electron of an atom is not supported by the Mossbauer effect. The wave nature of light is supported by the Mossbauer effect where the crystal lattice acts as an antenna for emission and absorption of light.

In Dr. Lucas's electrodynamic theory of gravity, vibrating neutral electric dipoles are the source of the gravitational force. The movement of the vibrating neutral electric dipoles changes the strength of the gravitational field to match the red and blue shifts. Thus there is no role for Einstein's general relativity theory. This result is also consistent with the work of Ed Dowdye showing that there is no gravitational bending of starlight due to general relativity. Thus the so-called gravitational redshift of light supports only the electrodynamic theory of gravity, *not* General Relativity theory.

Charles W. Lucas, Jr.
Mechanicsville, Maryland



Public Acceptance of Common Sense Science. I have spent the last two month skimming through books I have read on Quantum Mechanics. I am thinking about adding an addendum to my forthcoming book revision, focused on the early history of electromagnetism. My thought being twofold: First, perhaps QM is more easily seen to be wrong by beginning with the early stages of its development. Second, CSS has to reach the larger non-technical portion of the Christian community—and I think drawings, pictures and homespun electrical comparisons can be helpful. To help me understand the history, I first devised a timeline of events. A copy is attached in case it is of interest to anyone. The reviewing of books impressed me with the interplay of experiments and theoreticians. The repeatable results of particle detectors attached to “atom smashers” impressed me. Of course, followers of the Bohr model don't need to dwell on the details of the atomic parts—after all, what is there to see in a mathematical point? They can pile up abstract bosons, muons etc. with no concern for a physical source.

But yet they seemingly can point to particle detector “tracks” and say, “Yup, there is the signature track of such-and-such. How can you doubt us?” I suppose they have a library of such particle images. However, CSS and its model of the Spinning Charged Ring (SCR) have to address the question: How are the various signature particle detector tracks accounted for in the structure of the various SCRs? When I think about it, I can imagine that SCR collisions result in either short circuits or open circuits! What happens when you “slice up” or “short out” a charge fiber—or try to rip away the fields? I know there is a lot on your plates, but I don’t recollect a discussion on this subject. FOSN Volume 8, # 2 is Bill Lucas’ technical discussion of the subject, but the lay audience—or the news-critic—needs a physical discussion.

In the addendum that I am contemplating, I am thinking of highlighting the following: A homespun explanation of electrical and magnetic phenomena relevant to the SCR.

Then look at the following with the SCR model: 1885 Balmer spectroscopy and emission lines of stars—because Bohr was impressed by these.

1897 J. J. Thompson discovers the electron with a vacuum tube.

1900 Planck develops equations to predict black-body radiation.

1905 Einstein explains photoelectric effect with photons.

1909 Geiger–Marsden gold-leaf experiment.

1913 Bohr proposes his solar model of the atom.

19xx Something on early work on natural sources of alpha, beta, gamma and x-rays applied to the atom’s nucleus

19xx Something on such as Anderson’s discovery of Positron in a particle detector.

*Russel Moe,
Wildwood, Florida*



PowerPoint Presentation. A presentation to the Midwest Creation Science Fellowship Tuesday evening, September 3, 2013, was attended by approximately 40 people who showed good interest in the work, and were appreciative of the presentation and information.

Yes, believe it or not, I presented all [97] slides, although some of them were up for only 15 seconds as ‘reference’ or ‘evidence’ information that we didn’t have time to cover in detail. The presentation portion lasted 55 minutes, and Q&A covered some (not all) of the additional slides for another 40 minutes or so.

*Glen C. Collins
Blairsville, Georgia*