

# Re: Spanning Two Eras of Relativity

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*Source:* <http://sci.tech-archive.net/Archive/sci.physics/2007-10/msg00087.html>

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- *From:* "Jong Kim" <[rh171@xxxxxxxxxxxx](mailto:rh171@xxxxxxxxxxxx)>
  - *Date:* Tue, 2 Oct 2007 03:57:50 -0700
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Herbert Spencer (1820–1903) authored:

*\*First Principles of a New System of Philosophy\** (1862)

[Based on his own 1857 essay, "Progress: Its Law and Cause", published in Westminster Review and on his reading of Charles Darwin, the 1859 publication of *\*On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life\**.]

Part I

The Unknowable

Chapter 1

Religion and Science

[http://www.constitution.org/hs/first\\_prin.htm](http://www.constitution.org/hs/first_prin.htm)

"First Principles of a NEW System of Philosophy"?

Spencer's treatise ought to be retitled,

"First Principles of an Antediluvian System of Philosophy",

for it is written:

9 The thing that hath been, it [is that] which shall be; and that which is done [is] that which shall be done: and [there is] no new [thing] under the sun.

10 Is there [any] thing whereof it may be said, See, this [is] new? it hath been already of old time, which was before us.

(Old Testament | Ecclesiastes 1:9 – 10)

At 2:16 am (Sep. 30, 2007), the Holy Ghost moved upon me, more than once, to post an excerpt from chapter 4 of *\*First Principles\**, by this noted Victorian philosopher of Evolution, Herbert Spencer, he that coined the phrase "survival of the fittest" (Spencer's influential description of Darwin's concept of "natural selection"), and the Holy Ghost did indicate to me subsequently at 2:31 am that the following citation suffices to drive home the point:

Chapter 4

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### The Relativity of all Knowledge

§22. The same conclusion is thus arrived at from whichever point we set out. Ultimate religious ideas and ultimate scientific ideas, alike turn out to be merely symbols of the actual, not cognitions of it.

The conviction, so reached, that human intelligence is incapable of absolute knowledge, is one that has been slowly gaining ground. Each new ontological theory, propounded in lieu of previous ones shown to be untenable, has been followed by a new criticism leading to a new scepticism. All possible conceptions have been one by one tried and found wanting; and so the entire field of speculation has been gradually exhausted without positive result: the only result reached being the negative one above stated – that the reality existing behind all appearances is, and must ever be, unknown. To this conclusion almost every thinker of note has subscribed. "With the exception," says Sir William Hamilton, "of a few late Absolutist theorists in Germany, this is, perhaps, the truth of all others most harmoniously re-echoed by every philosopher of every school." And among these he names – Protagoras, Aristotle, St. Augustin, Boethius, Averroes, Albertus Magnus, Gerson, Leo Hebraeus, Melancthon, Scaliger, Francis Piccolomini, Giordano Bruno, Campanella, Bacon, Spinoza, Newton, Kant.

[The aforementioned Sir William Hamilton was also a Victorian philosopher, a contemporary of, and therefore not to be confused with, the great mathematician–physicist Sir William Rowan Hamilton.]

It remains to point out how this belief may be established rationally, as well as empirically. Not only is it that, as in the earlier thinkers above named, a vague perception of the inscrutableness of things in themselves results from discovering the illusiveness of sense–impressions; and not only is it that, as shown in the foregoing chapters, experiments evolve alternative impossibilities of thought out of every fundamental conception; but it is that the relativity of our knowledge may be proved analytically. The induction drawn from general and special experiences, may be confirmed by a deduction from the nature of our intelligence. Two ways of reaching such a deduction exist. Proof that our cognitions are not, and never can be, absolute, is obtainable by analyzing either the product or thought, or the process of thought.

~~Herbert Spencer, \*First Principles\* (1862)

Yea, the Holy Ghost beareth record of this Scripture received by the One Mighty and Strong, who is the Apostle Art Bulla:

20 For this is denial of the Holy Ghost, yea, even thy sciences are organized according to this blasphemy, and are based upon the lie that all things which are eternal are denied by them, that there is no absolute truth.

Revelations of Jesus Christ 159:20

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(I received a sure witness of verse 159:20 from the Holy Ghost  
at 2:48 am, Sep. 30, 2007.

Section 159 is titled,

"The Law of Light, or Evolution?"

and was received on July 25, 1989, in Provo, Utah

by Art Bulla, Messiah to Ephraim and Manasseh, the house of Joseph:

"Light is the Law by which all Things are Governed, saith the Lord.")

6 Yea, thus saith the still small voice, which whispereth through and  
pierceth all things, and often times it maketh my bones to quake while it  
maketh manifest, saying:

7 And it shall come to pass that I, the Lord God, will send one mighty and  
strong, holding the scepter of power in his hand, clothed with light for a  
covering, whose mouth shall utter words, eternal words; while his bowels  
shall be a fountain of truth, to set in order the house of God, and to  
arrange by lot the inheritances of the saints whose names are found, and the  
names of their fathers, and of their children, enrolled in the book of the  
law of God;

~~Received by Joseph Smith, Doctrine and Covenants 85:6-7

1 WOE to the crown of pride, to the drunkards of Ephraim, whose glorious  
beauty [is] a fading flower, which [are] on the head of the fat valleys of  
them that are overcome with wine!

2 Behold, the Lord hath a mighty and strong one, [which] as a tempest of  
hail [and] a destroying storm, as a flood of mighty waters overflowing,  
shall cast down to the earth with the hand.

(Old Testament | Isaiah 28:1 - 2)

The following excerpt from Herbert Spencer's Victorian anti-Christ treatise  
\*First Principles\* (1862) is what first came to my attention:

Matter then, in its ultimate nature, is as absolutely incomprehensible as  
Space and Time. Whatever supposition we frame leaves us nothing but  
a choice between opposite absurdities.\*

<\* To discuss Lord Kelvin's hypothesis of vortex-atoms, from the scientific  
point of view, is beyond my ability. From the philosophical point of view,  
however I may say that since it postulates a homogeneous medium which is  
strictly continuous (non-molecular), which is incompressible, which is a  
perfect fluid in the sense of having no viscosity, and which has inertia, it  
sets out with what appears to me an inconceivability. A fluid which has  
inertia, implying mass, and which is yet absolutely frictionless. so that  
its parts move among one another without any loss of motion, cannot be truly  
represented in consciousness. Even were it otherwise, the hypothesis is held  
by Prof. Clerk Maxwell to be untenable (see art. "Atom," Ency. Brit.)>

....

We take for granted that there is an absolute course and an absolute

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velocity and we find it impossible to rid ourselves of this idea.  
Nevertheless, absolute motion cannot even be imagined, much less known.

~~Herbert Spencer, \*First Principles\* (1862)

I point out that Spencer misrepresented the aethereal natural philosophy of Clerk Maxwell, and more significantly, that as in Spencer's own case, there

is a correlation between affirming the myth of Evolution and denying aethereal or spiritual reality, and that this system of unfounded speculations

restored by Darwin and Spencer did successfully appeal to the subjective hearts and minds of many within the scientific community and of many laymen to debase natural philosophy into the current system of pseudoscience, half baked at best. These had extinguished the love of truth in themselves, the willfully deceived natural men and women of this world.

8 ... all is as one day with God, and time only is measured unto men.

(Book of Mormon | Alma 40:8)

Time measurement is affected by local properties of the aether at any given moment and therefore anisotropic or non-uniform, since space itself, or the properties of aether, is anisotropic in nature. Isotropy or uniformity of space in all directions is mathematically equivalent to truly empty space or vacuum.

[http://science.nasa.gov/NEWHOME/headlines/ast12oct99\\_1.htm](http://science.nasa.gov/NEWHOME/headlines/ast12oct99_1.htm)

[Zhou, S. W.; Huang, B. J., "Abnormalities of the time comparisons of atomic clocks during the solar eclipses", *Nuovo Cimento C*, vol. 15 C, no. 2, Mar.–Apr. 1992, p. 133–137.] Time comparisons of two atomic clocks were made during the solar eclipses of September 23, 1987, March 18, 1988, and July 22, 1990. Abnormal variations of the time comparisons during the solar eclipses are confirmed, not only on a comparison clock pair, but also on many comparison clock pairs by means of three different methods during three solar eclipses.

Neither Albert Michelson nor Dayton Miller obtained a null result in interferometer observations, although null result is widely taught in physics textbooks to this day. Dayton Miller attributed the slight but systematic detection of aether 'wind' about this planet, in his words, to Earth "entrained ether", and his massive set of data were years later validated by no less an authority than Maurice Allais of France, a distinguished experimental physicist–statistician and winner of the 1988 Nobel Prize for Economic Science. The concept of earth-entrained aether is perhaps best explained by the not so well-known David Tombe of Ireland, to paraphrase him through his in-depth studies of the works of James Clerk Maxwell (esp. the 1861 paper that analyzes in terms of hydrodynamics) combined with subsequent experimental discoveries --

Aether is actually the ideal or perfect fluid portion (no viscosity,

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therefore no heat dissipation, and also incompressible) plus the sea of aether vortices, wherein each vortex is a rotating positron–electron dipole. Each vortex has a net negative electrical charge. In this essay, I am not going to go into fluid mechanical source–sink explanation for positron–electron attraction via whirling flow of aether fluid, inside and outside of each vortex, as this requires further explanation of what the nature of electric charge is (for I'll do this in an upcoming essay). Suffice it for now that the Holy Ghost confirmed to me in September the Maxwell–Tombe aether vortex as reality and subsequently the same Spirit confirmed to me during a prayer, after having read Tombe, that there is an attractive force between any two electrons, as asserted by Tombe in contradiction of the current attraction/repulsion understanding of Coulomb's Law of Electrostatics. Tombe says that it has been observed in laboratories that negative charges do repel one another (involving numerous electrons), but he says this is only true under certain macroscopic conditions and never true when it comes to a pair of electrons. Soon after receiving these two revelations of Jesus Christ last month of September, I searched for relevant information and found that an interesting mathematical study had already been done:

### Electron Attraction and the Chemical Bond

D. Greenspan  
Mathematics Department  
University of Texas at Arlington

#### Abstract

Using electron attraction, we produce three sets of initial conditions for the ground state H<sub>2</sub> molecule which yield, over one complete period, bond lengths and vibrational frequencies which are correct to within 1%.

Computers & Mathematics with Applications  
Volume 41, Issue 12, June 2001, Pages 1515–1520

~~PDF file may be purchased at <http://www.sciencedirect.com>

Brigham Young:

"There is a spirit in man; and the inspiration of the Almighty giveth them understanding," and many who do not hold the Priesthood have ideas which are really true, yet they are not always certain whether they are true or not.

~~Journal of Discourses, Vol.2, Pg.184, Feb. 18, 1855

During the same Internet search, I also found or was reintroduced to, this time in the proper context, the BCS Cooper \*pairing of electrons\* that accounts for type-I superconductivity. (This successful model brought the 1972 Physics Nobel Prize to Bardeen and Cooper and Schrieffer.) Soon afterward, I read Tombe's reference to at least one of these two circumstantial evidences, I think at least the Cooper pair (of electrons)

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explanation of type-I superconductivity.

As for type-II superconductivity, rotating electron-electron pairs, i.e. vortices of Cooper pairs, turn out to be the impetus (driving force), courtesy of 2 of the 3 co-winners of the 2003 Nobel Prize for Physics, Abrikosov and Ginzburg, more especially the former:

[http://nobelprize.org/nobel\\_prizes/physics/laureates/2003/presentation-speech.html](http://nobelprize.org/nobel_prizes/physics/laureates/2003/presentation-speech.html)

.... experiments were performed on new superconducting materials with results that were not expected. It was Abrikosov who discovered the more complicated type of order that explains these deviations. By an insightful analysis of the Ginzburg-Landau equations he was able to show how vortices may form in the spatial distribution of the order parameter and how a magnetic field through these can penetrate the superconductor. The vortices are essentially of the same type as those we can see form in the water when we empty a bath tub. Abrikosov was able to give a complete explanation of how superconductivity and magnetism coexist in a new class of what he called type II superconductors. This amounted to a breakthrough in the study of novel superconducting materials.

[http://www.brookscole.com/physics\\_d/templates/student\\_resources/003026961X\\_serway/optional/levitation.html](http://www.brookscole.com/physics_d/templates/student_resources/003026961X_serway/optional/levitation.html)

Incomplete Magnetic Flux Exclusion, Type II Superconductors

Almost all the elemental metals which exhibit superconductivity (except Nb) are type I superconductors. There is another class of magnetic behavior for some alloys (such as NbTi), compounds (such as ..., called type II superconductors. The magnetic field penetrates type II superconductors in quantized units of magnetic flux called Abrikosov vortices, corresponding to swirls of supercurrent producing a flux value of ... The separation between type I and type II behavior is determined essentially by the ratio  $K_{II}$  of the ... the length over which the electrons of the Cooper pair which are responsible for superconductivity are "bound." Type I superconductors have  $K_{II} < 1$  whereas type II superconductors have  $K_{II} > 1$ .

~~Brian B. Schwartz

Department of Physics, Brooklyn College, and  
The American Physical Society

Last night on Oct. 1, 2007, as I was finishing up this post, I came across a subsequent mathematical paper by Prof. Greenspan:

A New Theory of the Molecular Bond

D. Greenspan  
Department of Mathematics  
University of Texas at Arlington

Abstract

In its simulation of the ground state hydrogen molecule, quantum mechanics, for example, assumes that the electrons repel. Though free electrons repel,

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the electrons in ground state H<sub>2</sub> are not free. We show then through careful computations that these electrons could attract.

Mathematical and Computer Modelling  
Volume 38, Issues 3–4, August 2003, Pages 229–232

~~PDF file may be purchased at <http://www.sciencedirect.com>

I bear record by the power of the Holy Ghost given me once again, now at 11:53 pm on Oct. 1, 2007, that free electrons attract also.

Take, for instance, any cathode ray. This beam of 'free electrons' is so narrow, and it could not be a narrow beam if 'free electrons' repel.

Based on what I know for sure, I would presume that as in condensed matter physics and also in the chemistry of molecular bonding, a cathode ray, i.e. a beam of 'free electrons' that amounts to a superconducting electric current, actually consists of a beam of Cooper pairs, and I tend to believe that these electron vortices are aligned along their axes of rotation, in a certain spatial orientation, in most cases, if not all, and again this "helix" alignment (Tombe's words) along the axes of rotation is due to electron–electron attraction, this time between vortices. I also presume that electron–electron pairs are at the foundation of electric current flowing through copper wire at room temperature, whether they are described as quantum mechanical Cooper pairs or not. (My statements in this paragraph are based on Tombe's comments and on what I know for sure, as revealed of the Spirit of God.)

In celestial mechanics (gravity), Tombe says the celestial bodies all have net negative charges and are subject to certain electrodynamic conditions that result in forces of \*attraction\* described mathematically by the inverse square relation shared by Newton's Law and Coulomb's Law. I am not going to go into why an electron has a greater net charge than a positron (briefly speaking, it's related to an electrical 'charge' being a measure of aether fluid flow rate, in or out, hence negative or positive, inflow, outflow), but it does, according to Tombe, and thus every aether vortex has a net negative charge, and the electrodynamic conditions are such that again, there is negative–negative attraction between the local sea of aether vortices and the planet Earth moving through space, and hence the concept of earth–entrained aether. For it is the variations in the density of aether vortices that accounts for the anisotropy or non–uniformity of space (and time measurement) observed in Allais's 1950's pendulum experiments and in NASA's COBE satellite data obtained by the recent Nobel winners Smoot and Mather. (Incidentally, each electron/positron is a vortex and therefore has a literal spin angular momentum, being a localized manifestation of aether fluid.) No wonder atomic electron orbits as well as molecular bonds are stable!

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Steven Weinberg:

[of the University of Texas, Austin,  
co-winner of the 1979 Nobel Prize for Physics,  
gave a revealing speech in 1999.]

A Designer Universe?

....

Above all, today we understand that even human beings are the result of natural selection acting over millions of years of breeding and eating.

.... There is no life force. As Richard Feynman has said, when you look at the universe and understand its laws, 'the theory that it is all arranged as a stage for God to watch man's struggle for good and evil seems inadequate.'

.... why is the world described by quantum mechanics? Quantum mechanics is the one part of our present physics that is likely to survive intact in any future theory, but there is nothing logically inevitable about quantum mechanics; ...

.... no one has been able to think of a logically consistent alternative to quantum mechanics that is only slightly different. Once you start trying to make small changes in quantum mechanics, you get into theories with negative probabilities or other logical absurdities. When you combine quantum mechanics with relativity you increase its logical fragility. You find that unless you arrange the theory in just the right way you get nonsense, like effects preceding causes, or infinite probabilities. ...

In an e-mail message from the American Association for the Advancement of Science I learned that the aim of this conference is to have a constructive dialogue between science and religion. I am all in favor of a dialogue between science and religion, but not a constructive dialogue. One of the great achievements of science has been, if not to make it impossible for intelligent people to be religious, then at least to make it possible for them not to be religious. We should not retreat from this accomplishment.

[Finis.]

~~Based on Weinberg's talk given in April 1999 at the Conference on Cosmic Design, of the American Association for the Advancement of Science in Washington, D.C.

[http://www.physlink.com/Education/essay\\_weinberg.cfm](http://www.physlink.com/Education/essay_weinberg.cfm)

7 Yea, and wo unto him that shall say at that day, to get gain, that there can be no miracle wrought by Jesus Christ; for he that doeth this shall become like unto the son of perdition, for whom there was no mercy, according to the word of Christ!

(Book of Mormon | 3 Nephi 29:7)

1878.

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....

But when thy Science lifts her pinions

===

pinion, n.

a bird's wing, especially the outer segment.

===

In Speculation's wild dominions,

We treasure every dictum thou emittest,

While down the stream of Evolution

We drift, expecting no solution

But that of the survival of the fittest.

Till, in the twilight of the gods,

When earth and sun are frozen clods,

When, all its energy degraded,

Matter to aether shall have faded;

We, that is, all the work we've done,

As waves in aether, shall for ever run

In ever-widening [322] spheres through heavens beyond the sun.

~~James Clerk Maxwell

(\*The Life of\*, by Campbell and Garnett, 1882, pg. 333)

11 The house of the wicked shall be overthrown: but the tabernacle of the upright shall flourish.

12 There is a way which seemeth right unto a man, but the end thereof [are] the ways of death.

(Old Testament | Proverbs 14:11 – 12)

33 And it came to pass that when Jesus had ended these sayings he said unto his disciples: Enter ye in at the strait gate; for strait is the gate, and narrow is the way that leads to life, and few there be that find it; but wide is the gate, and broad the way which leads to death, and many there be that travel therein, until the night cometh, wherein no man can work.

(Book of Mormon | 3 Nephi 27:33)

25 There is a way that seemeth right unto a man, but the end thereof [are] the ways of death.

(Old Testament | Proverbs 16:25)

Hannes Alfven, co-winner of the 1970 Physics Nobel:

.... the time when our world was born out of plasma. Because in the beginning was the plasma.

[Finis.]

~~The prophet of Plasma Evolution

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[http://nobelprize.org/nobel\\_prizes/physics/laureates/1970/alfven-lecture.pdf](http://nobelprize.org/nobel_prizes/physics/laureates/1970/alfven-lecture.pdf)

Louis Neel, co-winner of the 1970 Physics Nobel:

Religion and science are two very separate domains. The progress of science, no matter how marvelous it appears to be, does not bring science closer to religion but leads to dead ends and shows our final ineptitude at producing a rational explanation of the universe. I advise scientists and philosophers to read Ecclesiastes as well as St. Paul's first letter to the Corinthians 13:1-13---with great humility.

Source:

\*Cosmos, Bios, Theos: Scientists Reflect on Science, God and the Origin of the Universe, Life and Homo Sapiens\*, edited by Henry Margenau and Ray Varghese (LaSalle, IL: Open Court, 1994)

<http://www.mosquitonet.com/~prewett/leadingscientistquotes.html>

The late Louis Neel, the leading, Nobel-awarded investigator of molecular magnetism, both experimental and mathematical, did correctly doubt the validity of quantum physics.

12 For the foundation of matter, is it not spirit, saith the Lord God?

13 And all things are spiritual in nature, even unto me, saith the Lord God of Enoch and Moses.

Revelations of Jesus Christ 20:12-13

91 For true science and true religion, are they not the same things, O man?

92 For I the Lord God am the author of all truth, which cometh from me.

Revelations of Jesus Christ 3:91-92

More from Herbert Spencer's \*First Principles\* (1862):

Newton himself confessed the force of gravitation to be incomprehensible without the intermediation of an ether; and, as we have already seen, (§18), the assumption of an ether does not help us. Thus it is with Science in general. ...

Already we have seen that in so far as the members of a species are subject to different sets of incident forces, they are differentiated, or divided into varieties. Here it remains to add that such of them as are subject to like sets of incident forces, are segregated. For by the process of "natural selection," there is a continual purification of each species from those individuals which depart from the common type in ways that unfit them for the conditions of their existence. Consequently, there is a continual leaving behind of those individuals which are in all respects fit for the conditions of their existence, and are therefore nearly alike. The circumstances to which any species is exposed, being an involved combination

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of incident forces; and the members of the species having among them some that differ more than is usual from the average structure required for meeting these forces; it results that these forces are constantly separating such divergent individuals from the rest, and so preserving the uniformity of the rest – keeping up its integrity as a species or variety.

[Comment: But there are variations within any given species, for no two individuals are exactly alike.]

Just as the changing autumn leaves are picked out by the wind from among the green ones around them, or just as, to use Prof. Huxley's simile, the smaller fragments pass through a sieve while the larger are kept back; so, the uniform incidence of external forces affects the members of a group of organisms similarly in proportion as they are similar, and differently in proportion as they are different; and thus is ever segregating the like by parting the unlike from them. Whether these separated members are killed off, as mostly happens, or whether, as otherwise happens, they survive and multiply into a distinct variety, in consequence of their fitness to certain partially–unlike conditions, matters not to the argument. The one case conforms to the law that the unlike units of an aggregate are sorted into their kinds and parted, when uniformly subject to the same incident forces, and the other to the converse law that the like units of an aggregate are parted and separately grouped when subject to different incident forces. And on consulting Mr. Darwin's remarks on divergence of character, it will be seen that the segregations thus caused tend ever to become more definite.

~~Herbert Spencer, \*First Principles\* (1862)

I tend to think that George 'star wars' Lucas may well be aware of, and if so, must surely be proud of Herbert Spencer, who wrote in the same 1862 treatise:

So that the continuity of Motion, as well as the indestructibility of Matter, is really known to us in terms of Force. Here, however, the Force is of the kind known as Energy – a word applied to the force, molar or molecular, possessed by matter in action, as distinguished from the passive force by which matter maintains its shape and occupies space: a force which physicists appear to think needs no name.

....

§60. In the foregoing two chapters, manifestations of force of two fundamentally–different classes have been dealt with – the force by which matter demonstrates itself to us as existing, and the force by which it demonstrates itself to us as acting. ... That the space a body occupies is in part determined by the degree of that activity of its molecules known as heat, is a familiar truth. Moreover, such molecular rearrangement as occurs when water is changed into ice, is shown to be accompanied by an evolution of force which may burst the containing vessel and give motion to the

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fragments. Nevertheless, the forms of our experience oblige us to distinguish between two modes of force; the one not a worker of change and the other a worker of change, actual or potential. The first of these – the space-occupying kind of force – has no specific name.

In other words, the phenomena of Evolution have to be deduced from the Persistence of Force. As before said – "to this an ultimate analysis brings us down, and on this a rational synthesis must build up." This being the ultimate truth which transcends experience by underlying it, furnishes a common basis on which the widest generalizations stand; and hence these widest generalizations are to be unified by referring them to this common basis. Already the truths that there is equivalence among transformed forces, that motion follows the line of least resistance or greatest traction and that it is universally rhythmic, we have found to be severally deducible from the persistence of force; and this affiliation of them on the persistence of force has reduced them to a coherent whole. Here we have similarly to affiliate the universal traits of Evolution, by showing that, given the persistence of force, the re-distribution of Matter and Motion necessarily proceeds in such ways as to produce these traits. By doing this we shall unite them as correlative manifestations of one law, at the same time that we unite this law with the foregoing simpler laws.

~~Herbert Spencer, \*First Principles\* (1862)

James Clerk Maxwell:

Admitting heat to be a form of energy, the second law asserts that it is impossible, by the unaided action of natural processes, to transform any part of the heat of a body into mechanical work, except by allowing heat to pass from that body into another at a lower temperature.

~~Theory of Heat (1871)

Whittaker and the Aether

In 1910 the mathematician Edmund Whittaker published "A History of the Theories of Aether and Electricity", an excellent book describing in great detail the development of field theories (including magnetism and gravity) from Descartes up to the year 1900. Forty-three years later, in 1953, Whittaker published a revised edition of this work, and added a second volume, covering the years from 1900 to 1926, including the emergence of the theories of relativity and quantum mechanics. The second volume is notable for Whittaker's attribution of what we would call the special theory of relativity almost exclusively to Lorentz and Poincare.

... Whittaker's conclusion of the chapter in Volume I on mechanical models of the aether (culminating in Kelvin's vortex sponge):

Towards the close of the nineteenth century, chiefly under the influence of Larmor, it came to be generally recognised that the aether is an immaterial medium, sui generis, not composed of identifiable elements having definite

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locations in absolute space.

<http://www.mathpages.com/home/kmath571/kmath571.htm>

7 There is no such thing as immaterial matter. All spirit is matter, but it is more fine or pure, and can only be discerned by purer eyes;

8 We cannot see it; but when our bodies are purified we shall see that it is all matter.

~~Apostle Joseph Smith the Seer, on May 17, 1843  
(Doctrine and Covenants 131:7–8)

I thank God for E.T. Whittaker, not only a mathematical physicist of the first order as his countrymen and predecessors George Green, William Rowan Hamilton, George Gabriel Stokes, William Thomson (Kelvin) and James Clerk Maxwell but also an honest historian of science to chronicle how this all came about, so that his record adds credibility to the teachings of the latter-day Prophets of Israel, Joseph Smith and Brigham Young and Art Bulla:

A History of the Theories of Aether and Electricity from the Age of Descartes to the Close of the Nineteenth Century, By E. T. WHITTAKER. London, Longmans, Green, and Co., 1910. xiii+475 pp.

EITHER consciously or unconsciously, Whittaker must be imbued with a missionary spirit which leads him forth into dark places to enlighten them with opportune gospel. Three of his books, \*Modern Analysis\* (1902), \*Analytical Dynamics\* (1904), and this \*History\*, bear ample evidence to this. ... Indeed most modern works on analysis are modern to the point of abolishing analysis. The prime and unique feature of Whittaker's \*Modern Analysis\* is the welding together of modern method with the older analytic facility so that the whole may be of use to the physicist and astronomer.

We do not lack for works on mechanics; but Whittaker's is unique, and again the uniqueness consists in the amalgamation of the old with the new, of the admirable English problem-solving with the theoretical advances and advantages of integral invariants, continuous groups, and the like.

It is obvious that this power to judge values, to pick and combine the essentials in different points of view, is vitally necessary to the successful composition of a history of ether and electricity such as is here offered to the public. It is fortunate that one who has shown the power so clearly should have undertaken the work and brought it forth at a time particularly opportune.

There is no time at which a well-coordinated history of a vast branch of science can be considered inopportune, but the years when a great theory has at last conquered the world after considerable opposition and is taught far and wide by that conservative element who, had they been alive and teaching during its incipiency, would have ignored it or fought it, the

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years when the progressive element are looking forward to new points of view, to new theories, not yet thoroughly formulated,—these years are indeed the best in which such a history may appear.

Relative to the ether we are now in precisely this sort of period. Maxwell's theory of action through an all-pervading plenum has had its triumphal acceptance. Those who could not or would not understand the theory have for the most part passed away. One of the greatest and one of the last of them was Lord Kelvin. He was a deep student of fluid and of elastic media, he was ever seeking an intelligible mechanical conception of the ether; he apparently never found one which was completely satisfactory to him, and it is doubtful if he ever became a real sympathizer with Maxwell's ether. To all this the publication of his Baltimore lectures in 1904 bears witness.

These difficulties which bothered Kelvin and which troubled everybody in the early days of the theory have by no means all been resolved; they have merely been ignored. The real triumph has not been physical but psychological; we no longer ask those awkward questions which are inimical to the theory, we take the whole fabric as we find it and unquestioningly make application of it. If there be questions, they are of a different sort.

In recent years some active minds have been looking forward toward the formulation of new theories, toward the abolition of the ether. The theory of relativity and the hypothesis of energy quanta have been the two ideas upon which they have chiefly focused their attention. If they in their turn shall triumph, it will probably be not for the reason that all the questions which the opponents of the theories now bring forth shall have been satisfactorily answered, but because the questioners shall have ceased to question. We advance by ignoring our known ignorance and by concentrating upon our assumed knowledge.

We are living at a time of (at least attempted) transition, and that is the opportune time for Whittaker's \*History\* to appear. The author himself with his true insight and admirable balance seems to recognize this, and to state it well in the closing paragraphs of the work.

....

EDWIN BIDWELL WILSON.

Source: Bull. Amer. Math. Soc. Volume 19, Number 8 (1913), 423–427.

<http://projecteuclid.org/DPubS?service=UI&version=1.0&verb=Display&handle=euclid.bams/1183422263>

There is more to light than photons, which are of transverse undulations, saith the Lord, therefore deny not the Holy Ghost and the light thereof.  
(July 25, 2007)

"Observation of scalar longitudinal electrodynamic waves", co-authored by C. Monstein and J.P. Wesley and published in Europhysics Letters, 59 (4), pp. 514–520 (2002)

<http://saturn.ethz.ch/papers/monstein/7210.pdf>

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Teachings of the Prophet Joseph Smith, Section Six 1843–44 Pg.350:

### Meaning of the Word Create

.... the word create came from the baurau which does not mean to create out of nothing; it means to organize; the same as a man would organize materials and build a ship. Hence, we infer that God had materials to organize the world out of chaos — chaotic matter, which is element, and in which dwells all the glory. Element had an existence from the time he had. The pure principles of element are principles which can never be destroyed; they may be organized and re-organized, but not destroyed. They had no beginning, and can have no end.

Brigham Young (Journal of Discourses, Vol.1, Pg.118, Feb. 27, 1853):

The rebellious will be thrown back into their native element, there to remain myriads of years before their dust will again be revived, before they will be re-organized. Some might argue that this principle would lead to the re-organization of Satan, and all the devils. I say nothing about this, only what the Lord says—that when he comes, "he will destroy death, and him that has the power of it." It cannot be annihilated; you cannot annihilate matter. If you could, it would prove there was empty space. If philosophers could annihilate the least conceivable amount of matter, they could then prove there was the minutest vacuum, or empty space; but there is not even that much, and it is beyond the power of man to prove that there is any.

Brigham Young (Journal of Discourses, Vol.3, Pg.277, Mar. 23, 1856):

There is not a particle of element which is not filled with life, and all space is filled with element; there is no such thing as empty space, though some philosophers contend that there is.

David Tombe, a physics teacher and expert on Maxwell's work:

A mysterious aethereal fluid seems to be pouring in from elsewhere in the universe.

<http://www.wbabin.net/science/tombe11.pdf>

Brigham Young (Journal of Discourses, Vol.7, Pg.65, Jun. 6, 1858):

We have to learn that all the elements are eternal, though their varied earthly forms are organized to be dissolved. We must not place our affections upon these things until they are organized for eternity. If we will take that course, we shall be laying up treasures in heaven. Earthly things will be decomposed, and their reorganization will be by the power of the resurrection: then we shall begin to understand the proper use of element.

117 And behold, this hath been done on other worlds which have been created by the Power of the Most High and organized from the chaotic element.

Revelations of Jesus Christ 5:117

165 And as respecting that theory concerning the origin of man upon the earth in the which he is said to have sprung from orders that are called lower, behold, it is false and cometh from that Evil One who goeth up and down in the earth blinding the hearts of the children of men, in the which they raise their heads in wickedness before me, and deny the Holy Ghost and the Creator that made them.

166 Thus they become devils forever and ever, saith the Lord, and suffer the wrath of the Lord in eternity and are cast into that lake of fire, and their worm dieth not but they are consumed.

167 And the common man and woman is not guiltless before me in these things, saith the Lord, for in their sloth they have allowed themselves to be deceived, even in these things and by false religions.

Revelations of Jesus Christ 3:165–167

1 I waited patiently for the LORD; and he inclined unto me, and heard my cry.

2 He brought me up also out of an horrible pit, out of the miry clay, and set my feet upon a rock, [and] established my goings.

3 And he hath put a new song in my mouth, [even] praise unto our God: many shall see [it], and fear, and shall trust in the LORD.

4 Blessed [is] that man that maketh the LORD his trust, and respecteth not the proud, nor such as turn aside to lies.

5 Many, O LORD my God, [are] thy wonderful works [which] thou hast done, and thy thoughts [which are] to us-ward: they cannot be reckoned up in order unto thee: [if] I would declare and speak [of them], they are more than can be numbered.

6 Sacrifice and offering thou didst not desire; mine ears hast thou opened: burnt offering and sin offering hast thou not required.

7 Then said I, Lo, I come: in the volume of the book [it is] written of me,

8 I delight to do thy will, O my God: yea, thy law [is] within my heart.

9 I have preached righteousness in the great congregation: lo, I have not refrained my lips, O LORD, thou knowest.

10 I have not hid thy righteousness within my heart; I have declared thy faithfulness and thy salvation: I have not concealed thy lovingkindness and thy truth from the great congregation.

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(Old Testament | Psalms 40:1 – 10)

15 Woe unto them that seek deep to hide their counsel from the LORD, and their works are in the dark, and they say, Who seeth us? and who knoweth us?

16 Surely your turning of things upside down shall be esteemed as the potter's clay: for shall the work say of him that made it, He made me not? or shall the thing framed say of him that framed it, He had no understanding?

(Old Testament | Isaiah 29:15 – 16)

I learned a testimony concerning Abraham, and he reasoned concerning the God of heaven. "In order to do that," said he, "suppose we have two facts: that supposes another fact may exist — two men on the earth, one wise than the other, would logically show that another who is wiser than the wisest may exist. Intelligences exist one above another, so that there is no end to them."

If Abraham reasoned thus — If Jesus Christ was the Son of God, and John discovered that God the Father of Jesus Christ had a Father, you may suppose that He had a Father also. Where was there ever a son without a father? And where was there ever a father without first being a son? Whenever did a tree or anything spring into existence without a progenitor? And everything comes in this way. Paul says that which is earthly is in the likeness of that which is heavenly, Hence if Jesus had a Father, can we not believe that He had a Father also? I despise the idea of being scared to death at such a doctrine, for the Bible is full of it.

~~Teachings of the Prophet Joseph Smith, Section Six 1843–44 Pg.373

John Taylor, The Gospel Kingdom, Pgs.4–5:

IS MORMONISM PHILOSOPHICALLY TRUE? — It may be asked: Are all Mormons, then, philosophers?

To this we answer: Not in the general acceptance of the term. Mormonism is philosophically true, but all Mormons are not philosophers — neither do we consider it necessary. A man may understand first principles, without knowing the mysteries. He may also enjoy certain influences and powers and priesthood without being able to define the cause of those operations or their scientific bearings. We have taken the pains to investigate this subject, but the Mormons arrive at conclusions by a much shorter route. The above may be necessary to some. The Mormons know by obedience. They may not all be philosophers, but they know it by inspiration through obedience. ... By yielding obedience, by baptism administered by an authorized agent, and having hands laid upon him for the gift of the Holy Ghost by an elder legally qualified, the blessing will follow the administration, whether the person to whom it is administered or the administrator be a philosopher or not. Furthermore, God imparts his philosophy frequently to men of limited abilities. They follow his teachings — the result is, they confound the

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wise. It is not their philosophy, but God's; but being true to law, it is always obedient thereto. A boat with a hole in it will sink with a good man in it a sound boat will bear up a wicked man. Telegraphic wires will operate as they are operated upon, and might convey either a revelation of God or of the devil. So, when the apostles were put into communion with God, although illiterate, "they spake as they were moved by the Holy Ghost." Hence they became intelligent and "a mouth and wisdom was given to them that all their adversaries were not able to gainsay nor resist." They had the gift of the Holy Ghost, that brought things past to their remembrance, led them into all truth, and showed them things to come. They had a principle of living revelation, or a living fountain of true eternal principles. Those principles would always overturn the puerile principles of a corrupt philosophy and the ridiculous fantasies of a false religion and vanquish them; they might not always understand why it was the gift of God to them; but it was philosophical. Such is Mormonism.

— The Mormon, Vol. 2, No. 3, March 8, 1856.

Brigham Young (Journal of Discourses, Vol.4, Pg.203, Feb. 1, 1857):

What do you know on natural principles? I do not say natural philosophy, because my religion is natural philosophy. You never heard me preach a doctrine but what has a natural system to it, and, when understood, is as easy to comprehend as that two and two equal four. All the revelations of the Lord Almighty to the children of men, and all revealed doctrines of salvation are upon natural principles, upon natural philosophy. ...

All is doubtful, except what comes from the Almighty in His revelations to His people.

3 Behold, I would exhort you that when ye shall read these things, if it be wisdom in God that ye should read them, that ye would remember how merciful the Lord hath been unto the children of men, from the creation of Adam even down until the time that ye shall receive these things, and ponder it in your hearts.

4 And when ye shall receive these things, I would exhort you that ye would ask God, the Eternal Father, in the name of Christ, if these things are not true; and if ye shall ask with a sincere heart, with real intent, having faith in Christ, he will manifest the truth of it unto you, by the power of the Holy Ghost.

5 And by the power of the Holy Ghost ye may know the truth of all things.

6 And whatsoever thing is good is just and true; wherefore, nothing that is good denieth the Christ, but acknowledgeth that he is.

7 And ye may know that he is, by the power of the Holy Ghost; wherefore I would exhort you that ye deny not the power of God; for he worketh by power, according to the faith of the children of men, the same today and tomorrow, and forever.

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(Book of Mormon | Moroni 10:3 – 7)

23 Search the prophecies of Isaiah. Behold, I cannot write them. Yea, behold I say unto you, that those saints who have gone before me, who have possessed this land, shall cry, yea, even from the dust will they cry unto the Lord; and as the Lord liveth he will remember the covenant which he hath made with them.

(Book of Mormon | Mormon 8:23)

10 And he that believeth not my words believeth not my disciples; and if it so be that I do not speak, judge ye; for ye shall know that it is I that speaketh, at the last day.

11 But he that believeth these things which I have spoken, him will I visit with the manifestations of my Spirit, and he shall know and bear record. For because of my Spirit he shall know that these things are true; for it persuadeth men to do good.

12 And whatsoever thing persuadeth men to do good is of me; for good cometh of none save it be of me. I am the same that leadeth men to all good; he that will not believe my words will not believe me—that I am; and he that will not believe me will not believe the Father who sent me. For behold, I am the Father, I am the light, and the life, and the truth of the world.

13 Come unto me, O ye Gentiles, and I will show unto you the greater things, the knowledge which is hid up because of unbelief.

14 Come unto me, O ye house of Israel, and it shall be made manifest unto you how great things the Father hath laid up for you, from the foundation of the world; and it hath not come unto you, because of unbelief.

(Book of Mormon | Ether 4:10 – 14)

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