

"THE THREE ELEMENTS, A THEORY OF UNIFICATION"

By R. Jack Roberts v:3.5 copyright 2007

ABSTRACT

The very nature and beauty of our universe lies not in its complexity, but instead, in its simplicity. Consider that the universe as we know it is comprised of only three basic elementaries...that of Space, Energy, and Time.

By applications of reverse engineering, and empirically testable and deductive logic, the magical properties of space and time together with the true nature of energy is revealed.

In a flowing and concise manner this paper explains how the intrinsic mechanical properties of space are derived. Once the properties of space are known, the true nature of energy, and its many manifestations, become apparent. Construction and precipitation of atomic particles, nuclear forces, fields, atoms, radiations, magnetic fields, electricity and electric charges, and the underlying cause of inertia and gravitation can now be explained.

Many new and novel experiments and inventions become obvious with the insight afforded by the presentation of this paper.

"THE THREE ELEMENTS, A THEORY OF UNIFICATION"

By R. Jack Roberts v:3.5 copyright 2007

This paper is a philosophical treatise of cause and effect that proposes a mechanical model consistent with observation to explain the known properties of the universe.

In the Physical Universe as currently perceived, there is space, matter, and energy. Matter as mass (which occupies space) is convertible into energy, leaving two constituents only, space and energy. *Can energy be separated from space?* The answer to date is empirically "No". Energy always requires space to transpire, whether by propagation, conduction, translation, generation, or detection. If energy cannot be separated from space, and is required for any aspect of energy to transpire, then energy must, and can only be, inherent to and a part of space itself.

The most popular accepted definition of energy is "*The ability to do work.*" A close examination of energy reveals that energy always translates into motion. Whether by precipitation of matter in the form of particles, the motion of those particles, or the transference of energy from those particles in the form of contact or radiation, energy always takes the form of kinetic motion. The dissolution of mass results in energy and space as the constituents, and conversely as particles are formed, space and energy are consumed in the process. A conclusion that can be realized from this is that motion of space is the same as that which is defined as energy.

For motion of space to function as energy, space itself must possess or be endowed of certain properties. First of those properties is inertia, for when in motion it must remain in motion until that motion is kinetically transferred or dissipated. Second is the property of compressibility that allows for transference of motion over time. Without this property any action would result in reaction without delay, and become simultaneously part of the event itself, rather than a delayed reactionary event that satisfies the principle of cause and effect. Additionally it is accepted that space can and does exist as displaceable volume defined by X-Y-Z coordinates.

Motion, a result of cause and effect, is not an instantaneous event. Before motion can be realized as a linear process resulting in changing of relative position, necessity dictates, that a relative means of gauging the process must be devised. Mankind has

invented the concepts of time and distance to fulfill that function. Albert Einstein introduced the term "Space-time" to account for the fact that relative motion, as a time gauge, requires space for visualization and realization.

When particles coalesce into existence, as a form of energy and space, a question arises about the process.. *"How and why does the process of coalescence give form and substance to that which has none?"* Observation of falling rain provides insight as to how this may become possible.

Occasionally, when a drop of rain falls upon a wet surface or puddle, another drop is thrown up into the air. Upon landing this drop will dance erratically on the surface of the water for a short time and then disappear into the surface. The cause of this dancing effect is a spin imparted to the droplets. The spin results in a surface tension on the droplet with the spin energy defining it as an entity separate from the water from which it emerges. The dancing effect is a dissipation of energy necessary before the droplet can again merge with the water from which it came.

Spin of kinetically endowed space can give similar form to space resulting in particles that have definite form and surface tension. The size and shape of particles thus formed being determined by the properties of space and energy and any other factors that would influence their formation. The energy of a particle would be determined by the spin velocity of that particle. It can be determined macroscopically that a smaller particle with more inertial/kinetic spin velocity can have the same or more associated energy than a larger particle with less spin inertia.

A particle formed in this manner would of necessity spin on an imaginary axis in order to conserve its kinetic spin momentum. The area of greatest surface tension for the particle would be at right angles to the center of the imaginary axis near what could be termed the equatorial region of the particle (assuming a spherical shape) as the surface velocity there would be greatest. The area of least surface tension would be those areas nearest the imaginary polar axes as the surface velocity there would be less.

The interior of a particle would exhibit areas of high and low pressure. Those areas would correspond to the areas of highest and lowest relative velocities of the space comprising the interior of the particle.

A question arises. If particles are composed of globules (or vortexes) of rotating or spinning space.. how is it possible that atoms can form from such particles?

Empirically it has been shown that under suitable energy conditions the particles known as Neutrons will coalesce into existence. A conclusion that can be derived from this is that energy above a critical threshold within a given volume of space increases the probability of the precipitation of Neutrons within that space. The Neutron however is not a time stable particle outside the nucleus of an atom, having a half-life of just under fifteen minutes, and will decay via a process known as "Beta Decay" into a Proton, an Electron and hypothetically an Electron anti-neutrino.

The following is proposed to account for this atomic formation process..

A Neutron once formed is unstable and begins to wobble, because of impinging radiation, and gives up its energy by imparting spin motion to a much larger volume of surrounding space creating a Proton.

The Proton thus created is also slightly unstable, because of impinging radiation, and sets into motion surrounding space thereby creating an Electron. The created Electron is now a more slowly spinning shell enveloping the Proton. This creates stability of the Protons surface by spinning in the same direction as the Proton, thus reducing its relative surface velocity in relation to the surrounding space and partially shields the Proton from the radiation that contributed to its instability. The Electron thus created is transparent to inertial radiation that affects the Neutron and Proton.

If another suitably polarized Neutron is precipitated within close proximity of the first Neutron, the first Neutron to decay into a Proton may form around the second Neutron. This creates surface stability for the Neutron by reducing its relative surface velocity and

by shielding it from impinging radiation of insufficient energy to penetrate the Proton and Electron. The Neutron would of course float to the area of least internal field density, or an area approximating the dynamic center of the Proton.

The mass energy difference between the decayed Neutron and the total mass energies of the Proton/Electron pair (hypothetically) is given up to the surrounding space and radiated away as an Electron Anti-neutrino. In this model the free Neutron exhibits greater inertial mass than a nucleonic Neutron because once inside the nucleus it becomes partially shielded from inertial radiation. This eliminates the necessity of the hypothetical "Electron Anti-neutrino radiation" to account for mass/energy loss. An atom thus formed takes form as one particle inside another, similar to layers of an onion.

Atomic particles in the form of Protons and Electrons exhibit the property of opposing charges that are classified as positive and negative. Like charges are known to repel while unlike charges exhibit an attraction for one another. The Neutron seems to exhibit no charge in relation to the Proton and Electron but exhibits an affinity for the nucleus that is home to the Proton.

The positive and negative charge that accompanies the Protons and Electrons thus formed, can be attributed to a difference of rotational kinetic energy potential only. This is a result of differences of relative spin velocities of the particles. This explanation accounts for why electron orbits can not decay into the nucleus of an atoms.

Electrostatic charge as related to Protons and Electrons as particles may be defined as the difference of rotational kinetic energy potential related to those particles.

Space in relative motion may be further defined as a field. Space approaching an imaginary object placed inside the field may be termed "positive" relative to the space receding from the object which may be termed "negative". Space with kinetic spin energy comprising basic atomic particles can be defined as "Neutron, Proton, and Electron, Fields" respectively.

In the study of electricity and magnetism at the grade school level we are taught the "Right Hand Rule". This rule states: "If a wire is grasped in our right hand, and the thumb extended along the wire, with our other fingers encircling the wire, that a current of electricity flowing in the direction the thumb is pointing, will induce a magnetic field around the wire, in the direction of the encircling fingers." Electricity, electron flow in a conductor, as with other forms of energy, always flows from areas of higher energy potential to areas of lower energy potential.

The flow of electricity from a higher potential to an area of lower potential indicates that the area of higher potential somehow pushes the electron flow to the area of lower potential.

A pressure exerted on a compressible elastic medium creates a compression/distortion of that medium. The flow of electricity is considered elastic because the current flow is not instantaneous but instead requires an elapse of time to propagate through a conductor. When electrons become compressed so as to become pancake or disc shaped as a result of a difference of electric potential being applied to a conductor, the detection of a magnetic field so induced is a detection of collectively the fields inherent to the compressed electrons.

Here an empirically testable conjecture is made: *"A field so defined as being space in relative motion is detectable as, and is the same as, a magnetic field."*

A magnetic field produced by the compression of electrons will be circular or elliptical in nature (in the absence of anything that would influence the shape of the field otherwise) because the electrons are still associated with and part of the atom.

The Neutron, Proton, and Electron, fields can then also be defined as magnetic fields particular to those particles defined by their kinetic energy.

Because induced magnetic field lines always have the same orientation in relation to direction of current flow in a conductor, the following conclusions may be derived. "Only

those atoms with correct orientation polarity wise, as determined by spin, contribute electrons to current flow in a conductor." A second conclusion may be determined from the right hand rule: *"Atoms in a conductor can only emit electrons that contribute to current flow in a conductor from identical polar ends as determined by direction of spin when viewed from that polar end."* Another determination made possible from this observation is: *"An atom in a conductor can only accept an electron from the opposite polar end from which an electron may be emitted."* It has not been empirically noted that a current flowing in a conductor can induce a magnetic field in a direction contrary to the "Right Hand Rule. Current flow, according to this model, occurs as a transmission of Electrons from one suitably polarized atom to another.

A relevant question that presents itself here is: *"How can an electron maintain a separate identity, in an electron shell, rather than fusing into a single identity with the other electrons?"*

The answer according to this model of an atom is: *"Because each additional electron must envelop another electron."* Conservation of momentum dictates that as the size of the shell increases, the relative rotational velocity of the electron decreases, providing each electron with a different relative surface velocity and therefore sufficient surface tension to maintain an individual identity.

GRAVITATION

Thus far in this atomic and particle model nothing has been seen that would allow an atom to exert an influence over another atom or particle from a distance greater than the radius of the outermost field of that atom or particle. The cause behind an apparent attraction of mass for mass has remained an enigma for centuries while many qualified people have sought an answer to the mystery. Perhaps then gravity might be a push instead of a pull? What force can travel for great distances and be capable of pushing massive particles?

Most people with a grade school education are aware of electromagnetic radiation. They are aware that heat and light reach Earth in the form of electromagnetic waves. They are aware that above and below the frequencies responsible for heat and light are many frequencies that are detectable and that all those frequencies grouped together are referred to as the "electromagnetic spectrum." Mankind has learned to manipulate a wide range of frequencies in the electromagnetic spectrum to do his bidding.

Electromagnetic radiation is the only force known that can exercise such influence over small or great distances and is capable of creating the effect of gravitation. The force that pushes this radiation outward from the source and allows it to exert a push on a receptor is called radiation pressure.

One form of electromagnetic radiation according to this model may be explained in the following manner. When space is displaced energetically and rapidly, the area of high pressure or compression created by the rapid displacement, travels in a radial fashion away from the point of displacement as a means of dissipating the energy imparted to the displaced compressible space. The energy dissipation of the "radial wave" obeys an inverse square relationship in relation to energy/distance from the point of origin.

A conjecture, in accordance with the mechanics of this model where electromagnetic radiation can not propagate without space as a medium for propagation, is offered here: *Because electromagnetic radiation is compression waves of space through space, then all waves, including electromagnetic radiation, must dissipate energy to facilitate locomotion.*

The dissipation of energy from the compressed area, or greater pressure behind the wave, that keeps it moving to areas of lower potential, then is what is known as radiation pressure. This pressure exerts a push or acceleration on any resistance encountered. This wave is magnetic in nature because it creates motion of space, and/or compression of space that varies over time, which is the same as a magnetic field.

Electromagnetic waves of frequencies known as radio waves, when passing through a conductor, will induce an electrical potential in that conductor. The pressure of the wave as a varying magnetic field passing through the conductor will compress and displace electrons creating an electric potential.

Empirically it can be concluded that electromagnetic radiation exists throughout the observable universe. We can make this conclusion because light from distant stars, a form of electromagnetic radiation, can be viewed from Earth and also from space. It can also be concluded that gravity existed as far back in time as the universe is observable as well as locally in our solar system and galaxy.

Inertia, that property of a massive body to resist acceleration in proportion to the collective mass of the body, and gravitation as experienced near Earth's surface, are roughly equivalent. Gravity, a gradient acceleration field, is thought to be dependent upon the sum of the masses of the accelerated bodies and appears inversely proportionate to the distance between them. It is observed to be an effect local to the vicinity of massive bodies while inertia is experienced as a universal effect, anytime massive particles or bodies, experience acceleration. An equivalence of gravitation and inertia is accepted as undeniable empirically. An acceptance of this equivalence leads to a conclusion that one is an effect of the mechanism of the other. Gravity then must be an effect of inertia (in this model proposed to be the result of radiation pressure) because gravity is a local effect while inertia as confirmed by observation is universal.

Radiation producing the effect of inertia can be concluded to be existent in space anywhere there is space/distance to allow acceleration.

Any massive body accelerating from a relative "state of rest", or steady state motion in this sea of radiation, will experience more radiation from the direction toward which it is being accelerated, because of the Doppler effect. Combined, with less radiation from the direction from which it is being accelerated, the total effect of inertia (the resistance to acceleration) is created. Once acceleration ceases a new state of rest occurs.

The following conclusion can account for this observation if radiation is indeed the underlying cause of inertia. *Any given volume of space before relative acceleration, when compared to an identical volume of space after acceleration, must contain approximately identical quantities of radiation in number, frequency, and wavelength. This allows for resistance to acceleration from a relative state of rest and for non-impeded steady state relative motion before and after acceleration via doppler shift of all contributing radiation.*

Any radiation, capable of accelerating encountered massive objects, would create an effect of inertia/gravitation. Acceleration of one massive body toward another would be the result of a shading effect of inertial radiation. According to this model: *Gravity is a gradient acceleration field precipitated by blocking of inertial radiation by massive bodies. Gravity, is detectable whenever the gradient acceleration field, inherent to two or more massive bodies, coincide.*

RADIATION

Light is empirically accepted to exhibit characteristics of both waves and particles. It is also accepted that light is both absorbed and emitted in discrete quantized packets of energy known as photons. The *Photoelectric* effect is thought to be empirical evidence of photons as entities interacting with individual receptor atoms. It is also accepted that photons as entities can travel great distances for long periods of time with little or no reduction in energy. Reduction in light from distant sources is thought to be a result of reduced quantities of photons received. Included in the photonic spectrum of EMR is *Infrared Radiation* that we detect as heat.

Energy we know always flows from a higher potential to a lower one. It is also

empirically known that everything around us has a measurable temperature. We know that a hot object will radiate or conduct heat to anything surrounding that has a lower temperature thus allowing it to cool once the source of heat is removed. Two questions then arise: *How and why is energy absorbed on an atomic level?* and: *Why does an atom emit or radiate absorbed energy?*

According to this model of an atom: Any radiant energy injected into and absorbed by an atom must have enough energy to overcome the resistance offered to absorption by the atom.

Therefore: *The interior of the atom must represent an area of lower energy potential, to the higher energy potential radiant energy (EMR), than the space surrounding the atom.*

It is known empirically that objects and materials expand when heated and contract when cooled. From these effects it can be deduced (according to this model) that *any radiant energy absorbed by an atom must be absorbed into the atom along with its' carrier medium.* This would account for expansion of an atom when heated. Here we can propose the following analogy. *An atom can be compared to a balloon with the EMR (radiant energy) being forced into it compared to air under pressure inflating the balloon.*

If the energy absorbed into an atom is composed of free space without spin, then a loss of kinetic spin, or mass/energy, of the atom should be noted. The absorbed free space would of necessity be imparted acceleration once inside the atom. This is not in keeping with observation. It can therefore be concluded that the absorbed radiation has polarized spin, before absorption, matching that of the host particle. Any emission of absorbed radiation would therefore also have spin characteristics of the atom or particle from which it is emitted. This observation leads to an conclusion that radiation in space is conducted/propagated in the form it is generated. A radial displacement results in a radial wave (radio wave) while linear or emissive radiation results in linear displacement (quantized radiation or photons). Absorption or emission of radiation by a particle results in an increase or decrease of particle size generating a secondary wave, a radial displacement wave, that travels to or from the point of displacement.

The dissipation of energy necessary to facilitate locomotion of photonic radiation (via this model) would arise from an increase of wavelength proportionate to time/distance from the point of generation of the radiation resulting in a red-shift of that radiation.

Thus far nothing mechanical is indicated, within an atom or particle, that would force the emission of radiation once absorbed. *What force could apply constant pressure to the shells of atoms and particles forcing emissions?* Inertial/gravitational radiation can supply this force via radiation pressure.

When the pressure that injected photonic radiation into an atom is removed, the external pressure of inertial/gravitational radiation on the shell of the atom will cause the atom to deflate by ejecting the absorbed radiation. This allows the pressure inside and outside the atom to become equalized. In this analogy: *The more radiation contained in an atom available to be radiated away, the greater the measurable temperature or the higher the energy state of the atom.*

Conversely the opposite must be true. *The less radiation or energy contained in an atom available to be radiated or emitted, the cooler the measurable temperature and the lower the energy state of the atom.*

The lowest temperature attainable by an atom therefore is when the atom contains no available radiation that can be emitted or radiated. This state on the Kelvin Scale is ABSOLUTE ZERO, the base state of an atom.

Here it is interesting to note the following effect: *As gravitational or inertial radiation decreases, the tendency of an atom to expel contained radiant energy decreases as well.* Via radiation shielding this effect can account for the increased interior temperatures of planets and other heavenly bodies of sufficient mass.

The outer shell of an atom, that is the electron shell, can produce known electromagnetic effects via displacement, charge, absorption, emission, and compression. A question then arises about protons and neutrons: "*Do Protons and Neutrons absorb and emit distinct quantized, polarized energy in a fashion the same as the electron shell and if so, is this energy detectable empirically?*" According to this model the answer is yes. Any particle will exhibit a dynamic similarity to other particles including the ability to absorb and emit suitably spin polarized, quantized, radiation. Because of the relative sizes and different kinetic rotational energies of these particles, any quantized energy so absorbed and emitted would of necessity possess very high energy and frequency and be particular to absorption and emission by similar particles. Currently an empirical method of detection is by observation of the effects of inertia and gravity.

It is possible empirically to determine the presence of Neutrons in atoms by determination of the inertial mass of the atom. From this observation it may be determined that the Proton is transparent to the inertial radiation/s with which Neutrons interact. The Electron, as a shell encompassing the Proton can likewise be determined to be transparent to the inertial radiation affecting the Proton and Neutron.

To distinguish the quantized like nature of the radiation absorbed and emitted by like particles the following names are proposed to distinguish this radiation from *quantized photon energy* absorption or emission by atoms:

"Neurad" for neutron radiation, as absorbed and emitted, by neutrons:

"Prorad" for proton radiation, as absorbed and emitted, by protons:

"Electrad" for electron radiation, as absorbed and emitted, by free electrons: (it remains to be seen whether this last distinction is necessary but is believed to be necessary to account for electron inertial mass interaction as a free particle not associated with an atom)

All of the above radiation falls into the upper limit of that which is currently labeled Gamma Radiation.

The energy-wavelength-frequency relationship of Neurad, Prorad, and Electrad, type radiation is determined by and related to particle energy, and is inversely related to spin velocity and the mass-energy state of that particle.

CONCLUSION

From application and acceptance of the above model it may be concluded that energy can only be a result of, and defined as, kinetic, compressible, space in relative motion. It may further be concluded that space in relative motion, or compression of space that varies with time, is a magnetic field. It has been shown that particles may be composed of space in relative motion and atoms composed of nested particles. Action at a distance between particles and atoms being mediated via nodes of compression of space, propagated through space, known as electromagnetic radiation. It has been shown how particles may coalesce into existence, from space and energy, and how such particles may give rise to atomic structure. It has been shown how particles and atoms may exhibit the properties of charge as a difference of energy potential. It has further been shown how the property of inertia may be imparted to mass, via radiation pressure, and how that property can lead to the effect of gravitation as a shielding effect. It is believed that all known forces can now be considered united, pending empirical verification, for they are all just different manifestations of energy, and energy is nothing more or less than space in relative motion, that being the same as a magnetic field.

Earth's magnetic field, according to this model, is a result of an entrained dynamic Aether/space where atmospheric drag over time has set into motion a volume of space that is swept along with Earth. This space dynamically interacts with Earth via her rotation. Surface tension defines this field as an entity separate from that space through which it travels. Implied by this model is that the magnetic field of a sun or planet is

directly related to atmospheric density and rotational velocity of that body. The Aurora Borealis and The Aurora Australis viewed near Earth's poles are believed to be views of the polar vortexes of the entrained dynamic Aether, that results in Earth's magnetic field, interacting with solar winds.

Inertial mass and approximate mass/weight equivalence as experienced on Earth's surface implies the following conclusion is undeniable. *Gravitational potential as experienced on or near Earth's surface, is near maximum for a body with mass equivalent to, or greater than that of Earth.* This leads to a further conclusion: The penetration of a massive body by inertial or gravitational radiation is a gradient effect whereby greatest gravitational acceleration is experienced on or near the surface of that body. The acceleration decreases proportionately within the body as distance from the surface increases because of radiational shielding up to the point of maximum penetration by gravitational/inertial radiation. If the mass is less than this maximum the neutral point would be the center of mass for that body. A consequential conclusion of inertial/gravitational radiation having a maximum penetration level is: *The mass density of the sun and planets in the solar system may be much greater than is currently accepted.*

The concept of magnetic fields presented above offers great opportunities for invention and implementation of new and novel devices relating to energy and propulsion. The invention of space capable magnetic propulsion devices of low power consumption may indeed be feasible. Not to be overlooked is possible manipulation of mass interactions with inertial radiation, quite possibly, the strongest existent force in the universe.

References

1. Max Planck "Treatise on Thermodynamics" Dover Publications
2. Paul G. Hewitt "Conceptual Physics" Addison-Wesley
3. John E. Emswiler "Thermodynamics" McGraw Hill
4. Nasa "Hydrogen in the Universe" www.nasa.gov
5. Wikipedia "Hydrogen" www.wikipedia.org
6. Xavier Borg "EMRP Gravity Theory" www.blazelabs.com
7. M.W.Evans "Magnetization of an Electron Plasma by Microwave Pulses: Faraday Induction" Foundations of Physics Letters v. 8 no.4 August, 1995 pg. 359-364
8. Wikipedia "Energy" www.wikipedia.org
9. James c. Maxwell 1954 "Treatise on Electricity and Magnetism" Courier Dover Publications
10. Mendel Sachs 2004 "Quantum Mechanics and Gravity" Springer