THE "GROUNDWORK" FOR ANSWERING SOME OF PHYSICS MOST CONFOUNDING PROBLEMS

The reader may wonder why this paper is in the chemistry section. This paper is being written in *direct relation* to the paper An Intensive Scrutiny of the Atom. In that paper (which is meant to be a chemistry paper), it is the new concepts pertaining to the more developed model of the atom that will provide answers to some of physics most significant questions. Therefore, since this paper is a result of that paper, it is in the chemistry section. However, since physics problems are being addressed, the chemist may not be inclined to read this particular material.

Prior to addressing the problems, it would be appropriate that one thing be stated. It is self evident that the theories outlined in the previous paper are extremely unorthodox. As was stated in the introduction to the chemistry section, this would automatically induce inordinate resistance. However, this paper may provide "validation" of that paper. If the new model of the atom outlined in An Intensive Scrutiny of the Atom can answer significant physics problems, wouldn't that, *at the very least*, justify giving that model serious consideration, despite its highly unorthodox nature?

I- A THEORY OF HIGH TEMPERATURE SUPERCONDUCTIVITY

The title of section I is incrementally misleading. Although there *will* be a theory of high temperature superconductivity outlined, the theory proposed will accomplish more. It will provide a *consistent* theory of low temperature fermion coupling to establish a composite boson regardless of whether low temperature fermion coupling transpires in classical superconductivity, high temperature superconductivity, or BEC.

We'll start with classical superconductivity. Although I am in fundamental agreement with BCS, I am not in complete agreement with it. With the discovery in the late '80's of high temperature superconductivity, it would seem that BCS is not completely accurate. Superconductivity is superconductivity regardless of whether it transpires at zero degrees kelvin, 100 degrees kelvin, or possibly more. Since BCS cannot explain high temperature superconductivity it would seem that at the least it must be modified, and at the worst it would be completely dismissed and a quest for a new model would be pursued. I do *not* advocate the latter (completely dismissing it) but I do advocate the former.

The concept of Cooper pairs (and subsequently composite bosons) will be maintained. What will be dismissed is the coupling mechanism between the electrons. Namely, virtual phonons. I would also be opposed to virtual phonons as a result of my analysis of the Heisenberg uncertainty principle and section V of that paper. If the reader has read that paper, then you are cognizant of my opposition to $\Delta E \Delta t \geq \frac{1}{2}\hbar$. Since the concept of virtual phonons *rely* on that equation, I would inevitably seek a new model even if high temperature superconductors had not been discovered. The new coupling mechanism is the following.

The new coupling mechanism pertains to a subtle dynamical interplay between the lines of force from the two electrons and the lines of force from one neutrino on each electron (which are required for the establishment of a composite boson). At room temperature electrons cannot pair as the lines of force from the electrons will induce a repulsion (the reason they don't completely repel is because the lines of force from the neutrinos will maintain a binding force at longer distances, as was stated in the previous paper). However, at very low temperatures the dynamical interplay between electrons (or more importantly, their lines of force) changes quite dramatically. At very

low temperatures, the repulsion between electrons vanishes and there is nothing but attraction. This is as a direct result of the *external* dynamics between two electrons becomes very similar to the *internal* dynamics of a *singular* electron. (The reader should have realized something by now. You should be reasonably familiar with the previous paper on the atom.) *Within* an electron the lines of force from the electrons do not make direct contact at the point of the closed loops. This prevents repulsion. Instead, the lines of force slip over and past each other thereby leaving nothing but attraction as a result of the lines of force from the neutrino. It is a similar situation with superconductivity. When the temperature is sufficiently low, the "agitations" of the electrons (due to thermal motion) are dramatically reduced. Once the thermal motion is sufficiently reduced, the lines of force from the electrons will no longer make contact directly at the point of the closed loops. Instead, they will slide over and past each other thereby preventing repulsion between the electrons. There will then be nothing but the attractive force created by the lines of force from the neutrinos on the electrons. Consequently Cooper pairs/composite bosons will be created. This would be the modified version of BCS. To be slightly more succinct, what I have postulated is the following.

> *The achievement of a **precise** spatial orientation in order to eliminate repulsion and exclusively attain attraction.*

The reader's natural question would be, how could this model be extrapolated to high temperature superconductors? I am not an expert in this field and consequently I am not in a position to provide explicit details (that will be left to the experts). However, a broad model of high temperature superconductivity based upon the model just outlined is as follows. The coupling mechanism between electrons is the exact same as in classical superconductivity. Namely, the achievement of a precise spatial orientation in order to eliminate repulsion and exclusively attain attraction. However, whenever there is a question of "electron agitation", there are two diverse factors which would contribute to this agitation. Specifically, thermal agitation *and* electromagnetic agitation. In high temperature superconductors, the overall *macroscopic* system induces a significant reduction of the *electromagnetic* agitation of the electrons. The primary ramification of this (as it pertains to superconductivity) is that the valence electrons are already (reasonably) close to achieving the spatial orientation required for the attainment of superconductivity. However, since there is still some degree of *thermal* agitation, this agitation must be eliminated in order to achieve the *precise* requisite spatial orientation.

In the high temperature superconductors, although the coulomb repulsion between electrons is, of course, the same, the overall macroscopic system causes the valence electrons to be much closer together. The atoms (or more importantly, the electrons) are orientated in such a manner (the precise details of which I am oblivious to) so as to reduce the electromagnetic agitation among the valence electrons. This causes the electrons to be much closer to each other than they would be in other materials. The reader's question may be, how specifically can an overall macroscopic system cause valence electrons to be much closer together? An analogy will be presented in order to illustrate how a system can cause electrons to be much closer together.

Let's assume we have a closed box. We have two magnets suspended from the top of the box by two different strings. The same poles from each magnet are facing each other so that there is repulsion. Furthermore, the box is sufficiently large so that the movement of the magnets is not impeded in any way. If this situation prevailed, the magnets would move away from each other when the same poles faced each other. However, let's change the situation by significantly reducing the overall dimensions of the box. The dimensions are sufficiently reduced so as to minimize the overall state of motion of the magnets when they repel each other. Although the magnetic moment of the magnets has not changed, the magnets within this "system" are forced much closer together. If the magnets do not possess the same freedom of movement that they previously possessed (due to the reduced dimensions of the box) they simply will not be able to move as far away from each other as they could when the box was larger. Every time they "want to" (speaking loosely) move away, the box will prevent them from moving too far away and will maintain them in reasonably close proximity to each other. In a similar way with high temperature superconductors, the overall macroscopic system is such that even though the coulombic repulsion is the same, the valence electrons (or specifically the "d" orbitals since that is the current belief) from different electrons are closer together as compared to other materials. If the macroscopic system is such as to force the electrons closer together, there would be a smaller motion of the electrons as a result of a reduction in electromagnetic agitation. If there is an inherently smaller motion of the electrons, what does that mean for high temperature superconductivity? As previously stated, it means that the electrons are already close to achieving the requisite spatial orientation which will eliminate repulsion and exclusively attain attraction. Consequently, the degree to which thermal agitation must be reduced in order to achieve this state is not nearly as substantial as it is with classical superconductors.

Although I have not developed precise details to explain how electrons on the outer orbitals of atoms are much closer to each other as compared to other materials, an approximate picture can be presented. The atoms of high temperature superconductors experience a high level of repulsion due to the overall macroscopic system of these materials. Ironically, this high level of repulsion does not cause the atoms to be further apart, but rather forces the atoms much closer together. The rationale behind this is as follows. When two atoms in high temperature superconductors "want to" (speaking loosely) move away from each other due to a high level of repulsion between them, they will immediately come within physical proximity of another atom which will also induce a strong repulsion and force the atom back to its previous position. This "situation" would prevail throughout the entire superconductor. Every time an atom "wants to" move away it will experience tremendous repulsion from another direction. Since this specific repulsion is transpiring in every direction, this will inevitably result in the atoms (or specifically, electrons on the outer orbitals) being much closer together. (As previously stated, the experts can develop the specific details.)

In the previous paper, it was pointed out that there were certain "beautiful" aspects to the new model of the atom being proposed (to utilize a term of Steven Weinberg's). An example would be the establishment of symmetry between magnetism and electric charge despite the *alleged* violation of angular momentum. In a similar way, there is a rather attractive component to this model (which was previously mentioned) despite its unorthodox nature. What has been developed is a *consistent* theory of low temperature fermion coupling to establish a composite boson. This doesn't only apply to the different temperatures of superconductivity. It also applies to BEC. As the reader is aware, fermions can (and do) accomplish BEC when they couple with each other to form a composite boson. Has an effective theory been developed to explain this coupling

mechanism? Or is the BEC community content with claiming something abstract such as, the wave functions of the fermions overlap? With this model, something more tangible has been developed. When it comes to superconductivity at any temperature or fermion coupling in BEC, we can state the following. The thermal motions of the electrons are sufficiently reduced so that the lines of force from different electrons (or *composite* fermions when dealing with BEC) slide over and past each other thereby preventing repulsion between the electrons. At that stage, the lines of force from the neutrinos induce nothing but attraction between the particles.

II-QUANTUM GRAVITY

The reader may not have accepted the argument presented in the previous paper pertaining to the fact that matter should not exist (in accordance with our *current* theoretical model) as the valence electrons should repel each other and prevent the establishment of solids and liquids. If the reader did not accept the argument presented, then an argument (from the previous paper) will be repeated which may fortify that position. For decades physicists have sought a theory of quantum gravity which will explain gravity on the quantum level while simultaneously explaining the large scale successes of general relativity. The *initial stages* of the development of this theory have, (as far as I'm concerned) always been right in front of their eyes. What if there was some sort of attractive force among atoms as was stated in An Intensive Scrutiny of the Atom? Furthermore, what if this precept could be extrapolated to large scale structures to explain how they curve space? Wouldn't that achieve the long sought after theory of quantum gravity? That is precisely what has been achieved in the new model of the atom. The details are as follows.

It is completely superfluous to delve into the details of gravitational attraction on the atomic/quantum scale. This has been dealt with in the previous paper in some length. There is attraction between atoms because of neutrinos. The attraction is reasonably weak. This weakness is the "trade off" for having lines of force which possess a longer range than the shorter (yet stronger) lines of force on electrons. What is necessary is to explain how these lines of force from the neutrinos explain gravity on the very large scale and account for the experimental successes of general relativity.

Firstly, let me state that this more developed model of gravity is not meant to function in the same capacity as other quantum theories that I've previously outlined (specifically in An Intensive Scrutiny of the Atom). Those other quantum theories bear no similarity *whatsoever* to quantum field theory.[*] However, with this theory of gravity, the best concepts of Newtonian and Einsteinian gravity will, (to some "reasonable") extent be incorporated into the new model, but they will also be greatly developed.

With regards to Newtonian gravity, the concept of gravity being directly proportional to mass is exceedingly simplistic. Gravity is the result of the attractive force of the neutrinos, not the mass per se (questions may *automatically* be arising in the reader's mind and they will be subsequently addressed). This does not mean that we eliminate Newtonian gravity. It is acceptable to continue teaching it to high school students as a simple model of gravity. However, at some stage during one's university training in physics, the following will have to be taught. Since all atoms have electrons as an integral component of their composition, that automatically entails the presence of neutrinos which are the *true* attractive force of gravity. Therefore, it is not entirely

[*] As an "aside", a chasm of this magnitude is, in all probability, *necessary* if the Heisenberg uncertainty principle is wrong.

correct to state that it is mass which induces gravity, but rather an inherent component of mass, neutrinos.

Since neutrinos are the factor which causes gravity, there is a second element of Newtonian gravity which must be modified. Let's assume we have two planets in outer space "facing" each other (i.e. they are stationary and *not* orbiting each other). What portion of the neutrinos will induce the gravitational attraction? It will only be the portion of the neutrinos on the planet which the other planet can (loosely speaking) "see". In other words, at any one moment, it would be the portion of the planet *directly facing* the other planet. That would be less than half the circumference. The reader would no doubt have opposition to this position. If it is only less than half the circumference which is responsible for gravity, how is (the entire) mass of the planet germane to gravity? Let's assume that less than half the circumference of a planet is 1,592,356 square miles. How is 1,592,356 million square miles established? By having a planet which is 10,000,000 miles in circumference. Therefore, mass has *not* been ignored in this new equation for gravity. Even though it is the neutrinos on less than half the circumference which is responsible for gravity (that is at any one moment when two masses are facing each other), a substantial amount of mass is required to establish this. A precise equation for the new model is as follows. Firstly, let's review some rudimentary math. The equation for circumference is $2\Pi r$. In this equation, what is "r" equal to? Obviously $r = C/2\Pi$. The equation for Newtonian gravity is $f = GM_1M_2/r^2$. Therefore, the new equation which will conform to experimental facts is the following.

$$f = \frac{GM_1M_2}{\left[\frac{C_1}{2\Pi} + \text{surface to surface} + \frac{C_2}{2\Pi}\right]^2} \qquad (1)$$

In terms of *mathematics* there is no difference between this equation and the equation for Newtonian gravity. If one applies a certain set of numbers to Newtonian gravity and then applies those same numbers to this equation, one will obtain the exact same numerical answer. Although there is no mathematical difference between the two equations, the *physics* changes quite dramatically. Large masses would no longer gravitationally collapse towards the centre. Instead, gravity is merely a force which attracts objects to the *surface* of a large body. This would explain why, in my model of the origins of the universe, the hydrogen conglomerate from which the universe originally arose would not experience a gravitational collapse towards the centre. The atoms would merely be strongly attracted/ "held" at the surface. Any astronomer may feel that this would throw a great portion of stellar evolutionary theory into "chaos" since stellar evolutionary theories *rely* on a gravitational attraction towards the centre. I don't believe there is any reason to panic. Our theories of stellar evolution do not have to be radically altered. Transitions can be made from main sequence to red giant to white dwarf via the rotation of the star which induces a centripetal force. This forces all of the matter in the star closer to the centre, in a similar manner to gravity.

Another equation could be presented which is in accordance with the previous equation, yet illustrates to a *slightly* better extent how neutrinos (as opposed to mass in general) are involved in

establishing gravity between two bodies. If we wish to ascertain the gravitational attraction between two bodies *for a completely static system*, the following equation can be utilized.

$$f = \frac{G\left(\frac{C_1}{2\Pi}\right)\left(\frac{C_2}{2\Pi}\right)}{d^2} \qquad (2)$$

(In this equation, the distance in the denominator represents the distance between the surfaces.) As was previously stated, this equation can *only* be utilized to ascertain gravity for a static system. Furthermore, this equation provides some indication of what the equation will be for *any* two bodies regardless of whether or not they're spherical. If the bodies are not spherical, the bracketed equations in the numerator will be reflective of the surface areas which face each other. For example, if we have two wooden blocks which face each other, the bracketed equations in the numerator will be length times area (LA). This equation represents to a slightly better extent how neutrinos are involved in the gravitational attraction between two bodies.

The reader would presumably be shocked by these equations since it is contrary to what we've believed about gravity for centuries. As an example, the paper on the origins of the universe was once shown to a professor of cosmology and general relativity. He wanted to know why I advocated the attainment of fusion via a centripetal force instead of a gravitational collapse (neither this paper nor An Intensive Scrutiny of the Atom was included in what he read). I informed him that if I were to do a colloquium and that question were to be raised at the end, my response would be, I can answer your question, but will require additional colloquia in order to answer the question. Since my 50 minutes for this colloquium are up, I can't answer your question. He responded with, if you say that they will say that everything you've just said is bunk. I really didn't want to delve into my theory of gravity as it would take far too long to explain it to him. However, I saw that he was emphatic. Therefore, I wrote down equation one for gravity on the board without explaining any details. He was shocked by the equation. He then asked, if you plane away half the planet, are you saying the gravitational attraction won't change? I stated, as long as the planets merely sit there without rotating or orbiting each other, yes. He then responded with, now I'm less receptive to this theory (the origins of the universe) than when you first walked in. It may be very shocking to entertain the possibility that planing away half a planet within a given system will have no bearing on the final gravitational attraction (given the provision the two planets are static and not rotating or orbiting each other). But this would not be the first time in the history of physics when there have been shocking experimental results. As mentioned in the paper on the origins of the universe, the experimental results of the Stern-Gerlach experiment (the quantization of angular momentum) came as a substantial shock. However the following is an even more cogent example of how *thinking* about a certain aspect of theoretical physics dictates that a certain result *cannot* be correct, yet the performance of the experiment shows that the result *is* correct. In 1819, Augustin Fresnel presented to the French Academy a theory outlining the wave components of light. Simeon Poisson opposed the theory on the following grounds. If the wave theory of light was correct, then light from a point source which fell on a solid disk should diffract around the edges, constructively interfere, and produce a small bright spot at the centre of the shadow. Logically speaking, this seemed highly unlikely, just like it seems highly unlikely that planing away half a planet will have

no effect on the gravity of a static system. However, when Francois Arago performed the experiment, there was a bright spot at the centre, even though nobody expected it to be there.

Given equation one, prior to outlining further details of quantum gravity, it would be appropriate to state something else as it pertains to this web site. This pertains to the paper to The Origins of the Universe in the astronomy section. Equations three and four are nor entirely correct given this new theoretical framework. It was not stated in that paper as that was not the place to b e outlining a new theory of gravity. Therefore, instead of $s = \sqrt{2GM/r}$, we should (in accordance with this new theoretical framework) have $s = \sqrt{2GM/(C/2\pi)}$.

Even though we will not be able to plane away half a planet any time in the near future in order to test this theory, there are other ways of assessing whether this theory should be dismissed, or given further serious consideration. Does this theory explain the large scale successes of general relativity? It *does* explain how mass curves space. Not only does it explain how large masses curve space, it also explains how any size mass (with the exception of gases since there is a lack of cohesion due to constant diffusion) curves space. Since the curvature of space with smaller masses is minimal, the gravitational force exerted is negligible.

The curvature of space is the result of a greater concentration of neutrinos towards the central part of a mass and fewer neutrinos on the outer edge of a mass. Let's start with a simple example to illustrate this concept. Let's assume we have a square block of wood (as was stated, any mass will curve space to one extent or another). If we contrast the central part of this block, with the outer periphery, what will we find? There is a greater concentration of atoms (and subsequently neutrinos) towards the central part than there is on the outer periphery. Since that is the case, the central portion will obviously exert a greater gravitational attraction on another body than the outer periphery would. Newtonian gravity only assesses the overall gravitational attraction of a body, not individual portions. However, Einsteinian gravity does state that masses curve space. A mass whose centre induces a greater gravitational attraction than its periphery would explain how that mass curves space. This concept would even apply to something as small as a toothpick. There is a greater concentration of atoms/neutrinos towards the centre than there are on the two ends of the toothpick. Therefore, the toothpick curves space. The reason gravity is not felt near these small objects is that the number of neutrinos present is grossly insufficient to induce a measurable gravitational attraction. The reader may be opposed to this position as it doesn't seem to explain how a planet (something spherical) would curve space. There wouldn't seem to be an "edge" or a centre which would have a greater concentration of atoms/neutrinos. However, the reader must keep the following uppermost in mind. When dealing with two planets, *at any one time* only a *certain portion* of each planet will "face" each other in such a manner as to induce a gravitational attraction. That portion is half the circumference divided by Π . That particular portion will, in essence, be comparable to a square block, vis-a-vis a greater concentration towards the centre than towards the outer periphery (*of that designated area*). This would explain how spherical objects curve space. Therefore, this theory of neutrinos being responsible for gravity has, in essence, explained general relativity's principle of mass curving space. The reason for the inclusion of the term "in essence" is as follows. Mass doesn't curve space per se. A body simply exerts a greater gravitational attraction via the central part than the outer periphery, thereby creating a *perception* of a body curving space.

Even though, increment by increment the details of quantum gravity are being filled in (and most importantly, how this new theory successfully incorporates elements of Newtonian and

Einsteinian gravity into the framework), the reader no doubt still maintains strong reservations. What about the "range" of these lines of force? Am I expecting the reader to believe that the lines of force from the neutrinos on earth extend half the distance to the moon and the lines of force from the neutrinos on the moon extend half the distance to the earth and interact with each other? I am certainly not advocating such a position. If that is not the theory, then how do the lines of force from the neutrinos on the earth interact with the lines of force from the neutrinos on the moon? The most common particle in the universe (as far as we know) is the neutrino. Space is absolutely *permeated* with neutrinos. Even in a vacuum, there are an inordinate number of neutrinos per square centimetre. It is through these "loose" neutrinos that the neutrinos on electrons can interact with each other, even at considerable distances. As an example, the lines of force on the neutrinos that are a part of the electrons on the earth interact with the "free" neutrinos immediately "adjacent" to them. These neutrinos interact with the next "layer" (loosely speaking) of neutrinos which interact with the next "layer" etc. Naturally, the neutrinos on the electrons of the moon will interact in a similar manner with the "free" neutrinos in the "layer" that is "adjacent" to them which in turn will interact with the "free" neutrinos with the next "layer", etc. The natural question to be raised is, at what point in space do the "free" neutrinos interact with each other in order to induce a gravitational effect between the two masses? Let's briefly diverge from the example of the moon and the earth and change the system to two planets which are equal in mass. If we were dealing with two equal planets, then it would be at the half way point that the "free" neutrinos interact in order to induce a gravitational effect between the two planets. However, when dealing with two unequal masses, the dynamics of the system change. The larger mass will induce a longer gravitational range than the smaller mass. Therefore, it would be beyond the half way point that the "free" neutrinos would interact with each other in order to induce a gravitational effect upon the two masses. At *exactly* what point this will be will have to wait for the development (and subsequent incorporation) of a quantitative analysis into this theory. Therefore, when dealing with gravity exerting its force over a considerable distance, neutrinos on a mass exert their influence via the "free" neutrinos which permeate all space.

The reader would still experience opposition to this as there seems to be a rather significant flaw in the theory. If this were the mechanism by which gravity exerted its influence over considerable distances, its strength would not be reduced in accordance with the $1/r^2$ law. Since neutrinos are in equal density throughout space, there is no reason to believe that the force of gravity would ever be reduced (in accordance with this theory). Since it is an experimental fact that gravity is reduced in accordance with the $1/r^2$ law, this theory must be wrong. Although precise details have not been worked out, an approximation of how this theory conforms to the $1/r^2$ law can be provided. When dealing with gravity, there is an inordinate chasm between the interaction of the lines of force from neutrinos which are "stationary" on electrons and the "free" neutrinos which permeate space. The neutrinos in space are in constant motion whereas the neutrinos on electrons do not move (as was stated in An Intensive Scrutiny of the Atom, this is a flaw which I cannot explain for the time being but must be explained some time in the future). Since the neutrinos of space are in constant motion, the coupling mechanism between them and the neutrinos on electrons would not be as efficient as neutrinos which were on electrons. This doesn't mean there wouldn't be a coupling mechanism, it merely means the coupling mechanism wouldn't be as efficient. An analogy from the previous paper will be repeated to illustrate this. Let's assume we have a bar magnet which is suspended by a string. Another magnet is *swung* by the suspended

magnet. Would there be an attraction when opposite poles faced each other? Yes. However, contrast that with bringing another suspended magnet within range of the other suspended magnet. The attraction would transpire much more readily since one magnet is not in motion thereby increasing the time over which there can be an interaction. It is a similar situation with the neutrinos of space. Since they are in constant motion, the coupling mechanism is present, yet "inefficient". The coupling mechanism is present since, (a) the lines of force which form the closed loops are relativistic, and (b) space is permeated with neutrinos. However, the further the distance from a designated mass, the more inefficient the coupling mechanism becomes. This is for the simple reason that incremental inefficiencies in the coupling mechanism will eventually become greatly exacerbated as the distance from the mass increases. In an attempt to clarify this to some larger extent, the following further details (utilizing "loose" terminology) are provided. Let's assume there are 1000 "layers" of free neutrinos between the neutrinos on the electrons of the earth and some physical area in space which is too far away from the earth to be affected by the earth's gravity. As a direct result of the neutrinos being free, an object at ten "layers" from the earth would experience a one per cent reduction in the gravitational attraction induced by the earth. An object at fifty "layers" would experience a five per cent reduction in its gravitational attraction. An object at 400 "layers" will experience a forty per cent reduction while an object at 900 "layers" will experience a 90 per cent reduction. As has already been stated, the coupling mechanism among neutrinos will be greatly exacerbated the further one moves from stationary neutrinos as a direct result of neutrinos being in constant motion (or, relativistic). Therefore, the fact that the force of gravity decreases when distance increases has been explained by this theory.

The reader may be curious about another element of the theory. When neutron stars or black holes are formed, their mass is no greater than certain main sequence stars. Yet their gravity is significantly greater. Since the number of neutrinos has not increased, how can their gravity be so much greater? In An Intensive Scrutiny of the Atom, it was stated that the electron has a much greater magnetic moment than the proton (despite the fact that the magnitude of their charges is the same) because there are the same number of lines of force distributed *over a smaller area* on the electron. It is this factor which creates the greater magnetic moment of the electron. In a similar way, when dealing with neutron stars or black holes, the same number of lines of force from neutrinos are being distributed over a much smaller area (when contrasted with a main sequence star). Therefore, the gravity of neutron stars and black holes is much greater.

The last paragraph was somewhat misleading (as it pertains to a main sequence star's gravity). There are no "stationary neutrinos" on the outer periphery of the sun as there are on a planet's surface. Consequently, since "stationary" neutrinos are the source of gravity, how is it possible to explain the sun's (or any star's) gravity with this model? Furthermore, when the bending of light was verified during the eclipse of 1919, how could this theory explain that phenomenon? Precise details will have to be worked out in the future. However, rest assured that an explanation can be provided, even if the explanation is devoid of precise details. In the paper on light, it was stated that the neutrino is very similar to a photon. In fact, the neutrino was labeled a failed photon. At the moment of its creation, it was lacking a sufficient amount of energy to render it a photon. Therefore, the lines of force which exist on a photon are similar to the lines of force on a neutrino. This is in contrast to the lines of force on magnets, electrons, and protons. The lines of force on the latter are much stronger, and have a shorter range. Therefore, the lines of force from neutrinos/photons cannot interact with the lines of force from magnets, electrons, and protons. However, the lines of force from neutrinos and photons *can* interact with each other. Since the

lines of force from photons are similar to the lines of force from neutrinos, they also can function in the capacity of inducing a gravitational force. Therefore, a very rough approximation of the sun's gravity is as follows (it will be presumed that the reader is reasonably familiar with the paper on light). When a photon's internal energy is causing the photon to be at its crest or trough, lines of force will be created at that point (crest or trough). As stated in the paper on light, these lines of force are different from other lines of force explained at this web site. Although circular loops are formed, they are not closed. Nevertheless, the loops will interact with the closed lines of force from neutrinos in order to induce gravity. (The reader may wonder how this is possible since they temporarily exist when the photon is at its crest or trough. However, there are an inordinate number of photons within a star/beam of light thereby creating a situation where there will be a sufficient number of lines of force to induce a gravitational effect.) Therefore, the lines of force from the photons of the sun interact with the lines of force from the free neutrinos in space which in turn act on the lines of force from the light beam thereby causing it to bend towards the sun. It would be a similar mechanism by which the sun exerts a force on the planets (specifically, the lines of force from photons interact with the free neutrinos of space, which in turn interact with the stationary neutrinos on a planet).

Is this theory of gravity worthy of consideration? Let's assess what it explains. A theory of quantum gravity is provided. The best features of Newtonian gravity are incorporated (albeit in a more developed form). The curvature of space is explained which would seemingly reconcile quantum mechanics with general relativity. The precise mechanism by which a mass exerts its gravitational effect on a distant mass is explained as well as why gravity weakens with distance. Furthermore, an approximation of how the sun (light) induces gravity is also explained. Once again, is this theory worthy of serious consideration? It seems that this theory explains more about gravity than any other existing theory.

Almost all readers would be of the following view. This theory cannot be given serious consideration as there is absolutely no quantitative analysis. This aspect has already been dealt with in the introduction to the chemistry section. It is impossible to incorporate a quantitative analysis as no mathematical framework exists to analyze a many bodied problem. As stated in the introduction, I myself am discontent with this situation. However, for the reasons presented in the introduction to the chemistry section, I decided to proceed with the presentation of this material to the scientific community. For the readers who are still of the view that this material should not have been presented until the requisite quantitative analysis was developed, read what major scientific problem is solved in section III. At that stage, see if you're still of the view that this material should have been completely held back until it incorporated an accurate mathematical framework.

III-THE MISSING MATTER

Given what was stated in the previous section, the reader should *automatically* know the answer to this question. The reader's position may be as follows. How could it possibly be the neutrino which is responsible for the missing matter? The neutrino is massless and, after a careful

analysis, has *already* been completely dismissed as being a viable candidate for the missing matter. However, the reader should keep the following in mind. In the previous section, the theory of gravity has been greatly developed. To state that gravity is caused by matter is fundamentally correct. However, it is also terribly simplistic. The more refined model dictates that gravity is the result of neutrinos which are present on all electrons. Therefore, even though neutrinos are massless, they are responsible for the missing matter as a new model of gravity is being developed which dictates that neutrinos are responsible for gravity.

There is a little more to state on the missing matter under the astronomy section. It will not be dealt with here as one of the purposes of this paper is to show that the new model of the atom developed in the previous paper is viable and worthy of serious consideration despite its highly unorthodox nature. Since it has been shown that the more developed model of the atom explains the missing matter, we will move on and leave certain details pertaining to the missing matter for the paper in the astronomy section.

IV- A GRAND UNIFIED THEORY

All "four" forces are the result of one primary force (the reason for placing quotes around the word four will eventually be explained). That primary force would be lines which establish closed circular loops. The reason for the differences in the strengths of the various forces is primarily (but not exclusively) the result of the differences in the strengths of the lines of force. (There will be no particular order in which the forces are explained.)

The electromagnetic force has already been fully explained under the papers on magnetism (in the physics section) and the paper An Intensive Scrutiny of the Atom. There is no more to be explained about this theory that hasn't already been covered in those two papers. In An Examination of the Magnetic Field, the basic theory was outlined. In An Intensive Scrutiny of the Atom, it was shown how this theory is successfully extrapolated to quantum entities such as the electron and proton.

Regarding gravity, there isn't much more to be explained about that either. Almost all the necessary details have been outlined in the section on quantum gravity. However, there is one critical detail which was not included. This pertains to why gravity is the weakest of the forces. An explanation is as follows.

Independent of the lines of force from neutrinos being weaker than the lines of force from magnets and quantum entities, there are two other reasons why gravity is the weakest of all the forces. Both reasons pertain to the chirality of neutrinos and the subsequent ramifications of this chirality. Firstly, when dealing with magnets/quantum entities, there are two *sets* of lines of force emerging from (or entering) a designated end. One set will propagate in a clockwise direction and the other will propagate in an anticlockwise direction. However, with neutrinos, there is only one set of lines of force propagating in an anticlockwise direction. Consequently, two sets of lines of force would obviously be much stronger than one set of lines of force. Secondly, when dealing with chiral entities, the coupling mechanism between the lines of force is of a highly inefficient nature. Magnets/quantum entities experience a *direct* interaction among their lines of force thereby creating a strong attraction. However, the coupling action between chiral lines of force is not direct in a manner similar to magnets/quantum entities. Therefore, the attraction is of a much weaker nature. The following diagram should provide some rudimentary indication of the dichotomies of the two different attractive forces.

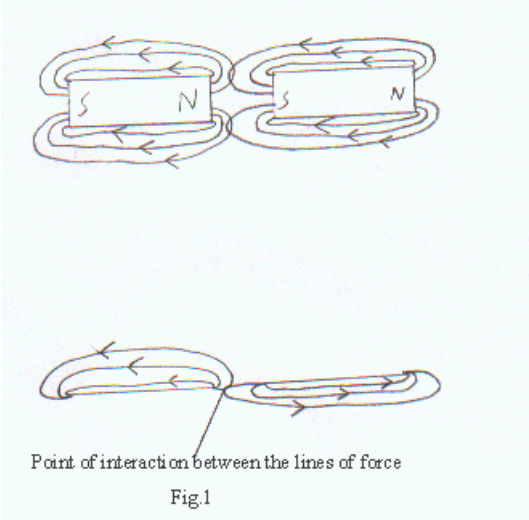

Fig.1

As the reader can see, the lines of force from magnets can readily couple with each other. Although the lines of force from neutrinos can (and do) couple with each other, the coupling mechanism is very inefficient, even with stationary neutrinos.

Consequently, why is gravity so weak? For three reasons. Firstly, the lines of force from neutrinos are much weaker than the lines of force from magnets. (The other two reasons pertain to the chirality of the neutrinos.) Secondly, magnets/quantum entities possess two sets of lines of force whereas chiral neutrinos only possess one set of lines of force. This would inevitably render the coupling mechanism between neutrinos (which induces gravity) to be significantly weaker. Thirdly, the chirality of neutrinos would cause the coupling mechanism to be of a highly inefficient nature since there is no *direct* interaction among the lines of force as there are with magnets/quantum entities.

The latter paragraph may raise an interesting question. Of these three factors, is there any particular "order" which will establish which is the most important and which is the least important factor in establishing the weakness of gravity? Yes. In an attempt to render the answer reasonably lucid, an analogy will be drawn to illustrate the dichotomies between the lines of force from neutrinos and the lines of force from magnets/quantum entities. In this analogy, we will assume that we have two different men who are required to lift a fifty pound dumbbell from the floor. The difference in the strength of the lines of force will be represented by stating that one man is stronger than the other (this will *not* represent how weaker lines of force possess a longer range). The fact that neutrinos merely possess one set of lines of force will be represented by the weaker man only being allowed to utilize one arm to lift the weight, whereas the stronger man will be permitted to utilize both arms. The inefficiency in the coupling mechanism will be represented by stating that the weaker man may only utilize his little finger from one hand to grip the bar, whereas the stronger man grips the bar in the normal way (his entire hand from both arms). Of these three factors, which will play the greatest role in impeding the weaker man's ability to lift the weight? The fact that he can only grip the bar with his little finger will play the most substantial role in negating the lifting of the weight. Consequently, when dealing with gravity, the inefficiency in the coupling mechanism is the most important factor in establishing the weakness of gravity. The second most important factor is the difference in the strength of the lines of force (in our analogy this would be

represented by one man being weaker than the other one). The least important factor in establishing the weakness of gravity is the fact that there is only one set of lines of force from the neutrinos in contrast to the two sets of lines of force from magnets/quantum entities (although this is the least important factor, it is, nevertheless, a contributing factor).

The completion of the explanation of a grand unified theory will be rather difficult. The difficulty will not pertain to the difficulty of the concepts involved, or in rendering the explanation lucid. The difficulty lies in the highly unorthodox nature of what will be presented. In the final analysis, what will be presented is completely contrary to a great deal of what have been critical elements of physics for decades. On the other hand, the remaining aspects of this theory will *inherently* unify certain forces. Secondly, highly unorthodox material which strongly opposes critical physics theories has *already* been presented at this web site. Therefore, yet another radically different idea would be in fundamental accordance with the unorthodox nature of previously presented concepts.

When the forces were referred to at the beginning of this section, there was a reason the word four was placed in quotes. The theories previously outlined dictate that there are not four fundamental forces in nature. There are only two (as stated in the last paragraph, the remaining material is very unorthodox). The current four forces can be explained in terms of these two forces. The reason for the difference in the strengths of the forces pertains to certain intricacies.

We'll start with the strong nuclear force. The strong nuclear force is predominantly the result of the electromagnetic force. However, the same force that is responsible for gravity also plays a minor role in the establishment of the strong nuclear force. Firstly, it will be shown how the strong nuclear force is the same as the electromagnetic force.

Previously, it was believed that the strong nuclear force *could not* be explained in terms of the electromagnetic force since the neutron was neutral. However, the new material presented (specifically in An Intensive Scrutiny of the Atom) shows that there *are* electromagnetic forces involved with the neutron. However, as a result of the combination of positive and negative charge, we *perceive* the neutron as being devoid of charge. Therefore, the strong nuclear force *is* (predominantly) the result of electromagnetic forces in the manner explained in the paper just mentioned.

The specific reason that the force behind gravity also has a (minor) role to play in the establishment of the strong nuclear force is as follows. Neutrons not only attract protons, but they also attract each other in a very weak manner. Although this was already explained in An Intensive Scrutiny of the Atom, it will be briefly reviewed. It is the neutrinos from the sub-components of the electron (on the neutron) which attract each other in the same manner that electrons on the outer periphery of an atom attract other electrons on the outer periphery of another atom. Since it is this specific "mechanism" which is responsible for gravity, then gravity is also a (minor) component of the strong nuclear force.

The strong nuclear force is different from the electromagnetic force or the gravitational force for the following reason. It is the neutron which is responsible for the strong nuclear force. The neutron is completely different from other charged particles (it is predominantly the proton and electron which are the "other" charged particles being referred to). It is different from the proton in that there are charges at its "widths" in contrast to the proton which is devoid of charge in the same areas. It is different from the electron in that there is a positive and negative charge at two different opposite poles. It is these "qualities" of the neutron which enable it to function in the capacity of the binding force of the nucleus (in the manner outlined in An Intensive Scrutiny of the Atom).

A natural question may be posed. If the strong nuclear force is predominantly the result of the electromagnetic force, why is the strong nuclear force so much stronger than the electromagnetic force? When heavier elements are created from lighter elements during the course of high energy reactions, neutrons are created and subsequently "forced" (loosely speaking) closer to protons. Since they are "forced" into a spatial orientation of this nature, the interaction between neutrons and other particles would be different than the interaction amongst other particles that have not been "forced" into this type of spatial orientation. The intricacies of the dynamics are as follows. Whenever we are dealing with particles that are outside the nucleus, there will be a subtle dynamical interplay between attraction and repulsion. This is a direct consequence of the lines of force on the particle itself and the lines of force on the neutrinos at the exterior poles. Two electrons cannot come very close to each other as the lines of force from the particles will induce a repulsion. The opposite poles of two different protons cannot approach each other too closely as the different neutrinos at the two exterior poles will repel each other. However, the situation with the neutron/strong nuclear force is different since, as has already been stated, the neutrons are "forced" closer to the protons. Consequently, the lines of force from the particles of opposite poles will be strongly attracted to each other. Although the lines of force from the neutrinos will induce some degree of repulsion, the (stronger) attractive lines of force from the particles themselves will induce a strong level of attraction. Therefore, the simple answer to why the strong nuclear force is so much stronger than the electromagnetic force (despite the fact that they're fundamentally the same) pertains to spatial orientation. Free particles cannot approach each other too closely for the reasons previously outlined. Neutrons within the nucleus *can* establish themselves in close proximity to other particles as a direct consequence of being "forced" into this spatial orientation during the course of high energy reactions.

In the same way that the strong nuclear force is truly the electromagnetic force (with certain differences), the weak nuclear force is really an example of the same "mechanism" behind gravity, with certain differences. When dealing with an analysis of the neutron, we must focus our attention on the antineutrino within the neutron. It is this antineutrino which enables the neutron to exist at all. The situation is as follows. When dealing with the neutron, the sub-components of the electron are not exactly the same as an actual electron. The sub-components of the electron on the neutron are further apart than the sub-components of an electron. Given this greater distance between the sub-components, a binding force is required to maintain the sub-components of the electron within physical proximity of each other, and thereby maintain the existence of the neutron (at least for a period of time when dealing with free neutrons). That binding force is the free antineutrino propagating between the sub-components of the proton. The (long range) lines of force from the three electron antineutrinos (two on the electron's sub-components and the free antineutrino) are all propagating in the same direction (right handed). Consequently, the sub-components of the electron are attracted to each other via the "intermediary" antineutrino and the "cohesiveness" of the neutron is maintained (even if this "cohesiveness" is temporary when dealing with free neutrons). The reader may feel that the "mechanism" just outlined cannot be viewed in a similar capacity to gravity as the antineutrino is also responsible for the decay of the neutron. Although this is true, it does not invalidate the "binding force"/ "cohesiveness" of the neutron being maintained by the antineutrino. The decay of the neutron simply transpires (via the mechanism described in An Intensive Scrutiny of the Atom) since anything which is relativistic will induce a pressure when it interacts with something. This is inevitable when the antineutrino propagates between the sub-components of the proton. Consequently, although the antineutrino is the cause of

the neutron's decay, without the antineutrino's interaction within the neutron, the neutron wouldn't exist at all.

Given this analysis, our view of the weak force can be greatly revised in a similar way that our view of the strong nuclear force was greatly revised. Previously, it was believed that the strong nuclear force could not be viewed in a capacity that incorporated electromagnetic forces due to the neutrality of the neutron. However, the previous new analysis has caused that to be questioned. In a similar way, this new analysis of the weak nuclear force should result in a new view of the weak nuclear force. It is a question (which was just answered in the previous paragraph) of what is the "binding force" of the neutron. As the reader can see, it is the same force as gravity. To be specific, the lines of force from chiral antineutrinos interact with each other to cause attraction. Even though the lines of force are right handed (in contrast to the left handed lines of force of gravity), it is still basically the same force. The reader's next question may be, if gravity and the weak nuclear force are essentially the same, what accounts for the fact that the weak nuclear force is so much stronger than gravity? Only an approximate answer has been developed at this stage. Details may be added and/or modified in the future. There is one primary reason why the weak nuclear force is so much stronger. It pertains to the force of gravity having a much more inefficient coupling mechanism than the weak nuclear force. Although this is the primary reason, there are two reasons why the coupling mechanism of the weak nuclear force is more efficient. The first reason pertains to distance. Let's compare a person holding a rock in his hand (gravity), with the binding force of a neutron. The antineutrino within the neutron is much closer to the other two antineutrinos than the neutrinos of the rock and the earth. Although the space between the rock and the earth is filled with neutrinos, the coupling mechanism is more inefficient since these neutrinos are in constant motion. This inefficiency is exacerbated with increasing distance. Although the antineutrino within the neutron is also in constant motion, it is, as has already been stated, much closer to the other antineutrinos. The reader would claim that this doesn't adequately explain why the weak nuclear force is much stronger than gravity. What if the rock was directly on the earth? There wouldn't be a question of free neutrinos in constant motion (that is the free neutrinos between the rock and the earth when the rock is held in the hand). There is a second reason the coupling mechanism is inefficient which has already been stated towards the beginning of this section. Since neutrinos are chiral, the coupling mechanism between the lines of force are inefficient (in contrast to the coupling mechanism of magnets, electrons, and protons) due to the spatial orientation of the lines of force. The reader may feel that this exact same problem would exist with antineutrinos within a neutron. This is only partially true. When dealing with lines of force, they emerge from one end and enter the opposite end of the "entity" creating them. The *free* antineutrino within the neutron is interacting with two stationary antineutrinos. Therefore, although there will be an inefficient coupling mechanism at one "end" the coupling mechanism will be efficient at the other "end". The interaction will be as follows. The lines of force which *emerge* from the "front" of one stationary antineutrino will be able to *efficiently* couple with the lines of force which *enter* the "back" end of the free antineutrino. Therefore, although there would be some degree of inefficient coupling among the lines of force at one "end", there would also be efficient coupling at the other "end". This situation would not exist with a rock sitting on the ground. This would be the second reason for explaining why the coupling mechanism of the weak nuclear force is more efficient and, more importantly, stronger.

The four forces of nature have been explained as a single manifestation of the same underlying phenomenon. Specifically, lines of force which close back on themselves to form

closed loops. The differences in the strengths of the forces can be attributed to factors such as (a) the intrinsic energy of the "entities" producing the lines of force (neutrinos or electrons/nucleons) which will either result in weak/long range lines of force or strong/short range lines of force, or (b) other factors such as (i) spatial orientation (ii) distance (as when comparing gravity with the weak nuclear force, or the electromagnetic force with the strong nuclear force) and (iii) the existence of one set of lines of force as opposed to two sets of lines of force. Therefore, this theoretical framework clearly shows how it is possible to attribute all known forces as different manifestations of the same underlying force.

I realize that many (if not almost all) physicists are very much opposed to almost everything that has been outlined in the chemistry section for the primary reason that the material is so unorthodox and contrary to established theories. (I am primarily referring to the material under An Intensive Scrutiny of the Atom from which almost everything else under the chemistry section was developed.) Consequently, it is inevitable and natural to expect vehement opposition. I can only state a few things which may (incrementally) assist in giving serious consideration to these theories. Firstly, although the material is very unorthodox, look at how much the new model of the atom explains. As the title of this paper states, the new model of the atom provides the groundwork for answering some of physics most confounding problems. Existing theories of physics can't even *begin* to explain some of these problems (the missing matter, a GUT). Secondly, let's view my work from the perspective of one of the greatest physicists of all.

A few years ago, I attended two superstring colloquia by Leonard Susskind. During the standard question and answer period at the end of his first lecture, some idiot in the audience asked the following. If Einstein were alive today, would he be working on this? Obviously it's a stupid question as Susskind would have no way of knowing whether Einstein would be working on superstrings or not. Even though it's a stupid question, the basic concept is useful in one respect or another. If Einstein were alive today, could we predict how he would react to contemporary physics? To one extent or another, yes. We all know of Einstein's vehement opposition to the Heisenberg uncertainty principle. Even though he consistently lost debates to Bohr, until the day he died, he was unwavering in his unequivocal belief that the principle is wrong. Therefore, we can accept that Einstein would reject *any* theory of contemporary physics which relies on the Heisenberg uncertainty principle. Furthermore, he would ardently seek to develop an alternative model to explain the known facts. This was his view as it pertained to QED. He was determined to see it overthrown and replaced with a new model that did not so much as incorporate, let alone rely upon the Heisenberg uncertainty principle. It is for this reason that I believe that if Einstein were alive today, there is an excellent chance that he would give very serious consideration to these models. The reader may feel that it is very conceited of me to state such a thing. However, this is not the result of conceit. It is for the precise reason stated. These models do not rely on the Heisenberg uncertainty principle. It is for this specific reason that I believe Einstein would embrace these models if he were alive today.

Finally, let's compare the standard model to this model of the atom. There are a few things which the standard model can explain in a superior fashion than my model. An example would be the precise magnetic moment of the electron. As stated in the paper on magnetism, my model is in its infancy and for the time being, cannot predict the electron moment of the atom the way the

standard model can. However, with the exception of effects of this nature, the reader should keep the following in mind when he chooses to oppose my work *merely* because it's unorthodox.

My model can explain everything the standard model can explain.
The standard model cannot explain everything my model can explain.

What remains is not particular germane to the preceding material. In fact, it has nothing to do with physical science. I will be outlining two true stories. The intent will be to illustrate what it may take to have phenomenally unorthodox concepts recognized. (This was already briefly done in the introduction to the chemistry section when I explained how Houdini came to be recognized in England.) Therefore, the reader can easily skip the rest of this material if so desired.

The first event pertains to Muhammad Ali and his fight with George Foreman. George Foreman was the Mike Tyson of his day. Namely, he was a *very* powerful puncher and one of the strongest heavyweights in the history of boxing. Prior to Ali's fight with him, there was true concern from the part of Ali's people. I even read a story (which may or may not be apocryphal) stating the following. Prior to the fight, (and unbeknownst to Ali) some people from Ali's camp were intent on giving the referee five thousand dollars. This was not meant to be a bribe per se. It was meant to induce the referee to be more vigilant than normal. If Ali encountered serious trouble, the referee was to stop the fight immediately. When the fight actually began, Foreman was the first man to ever render an Ali "trademark" useless. He was the first fighter who could *effectively* cut off the ring and prevent Ali from "dancing" (a high state of mobility in moving around the ring). At that stage, Ali went to the rope, and rope-a-dope was born. Since the reader is presumably an intellectual (or at least professes to be one) your knowledge of sports may be limited. Therefore, the nature of rope-a-dope will be briefly explained. Ali went to the rope and ensured that his head was out of range of Foreman's punches. He allowed Foreman to pummel his stomach and sides. What this accomplished was the following. Foreman was incapable of knocking out Ali as his head was not within range of Foreman's punches. However, by constantly punching Ali elsewhere, he would gradually tire and lose strength. Ali would then knock him out. Now, how does any of this pertain to accepting unorthodox concepts?

Angelo Dundee was Ali's trainer and is viewed as the greatest mind in the history of boxing. When Ali first went to the rope, for the first time in his life, he heard genuine fear from his corner. GET OFF THE ROPE!!!!!! When Ali came back to the corner Dundee yelled at him. What the hell do you think you're doing on the rope! That's how you blew the first Frasier fight! Get off the rope or else I'm calling this fight off! (In Ali's first fight with Frasier a simpler form of rope-a-dope was implemented and Ali lost the fight.) Ali put his foot down. Shutup! I know what I'm doing! The reader should keep in mind, this strategy was spontaneously introduced by Ali and *not* previously discussed with Dundee. As the fight progressed and Ali stayed on the rope, nobody could comprehend his strategy. Even Frasier, who was commenting, couldn't grasp what he was doing. Until Foreman was knocked out, Frasier claimed, the rope, I don't know what he's doing on the rope. However, there was one person who eventually saw what was transpiring. Dundee saw what was previously described. Ali wasn't being knocked out. But Foreman was gradually tiring. If Ali could hold on, he would prevail.

Dundee possessed a *strong evidentiary foundation* to insist that rope-a-dope would not work (just like scientists have a strong evidentiary foundation for their theories). Dundee point blank said that Ali blew the first Frasier fight by lying on the rope. Furthermore, prior to Ali's emergence on the scene, the paradigm in boxing was, "kill the body and the head dies." Therefore, Dundee possessed overwhelmingly cogent reasons for opposing rope-a-dope. However, he was also the greatest mind in the history of boxing. Even though he possessed cogent reasons to oppose rope-a-dope, he was the one individual who could think about and analyze Ali's actions. By approximately the fifth round, he came to the realization that Ali would prevail if he could hold on and endure the thrashing his body was taking.

Dundee was able to realize this (when nobody else could) by virtue of the fact that he was a genius (at least in relation to boxing). Therefore, he could think and analyze better than others. I realize that physicists would be vehemently opposed to my models. However, I believe that I have supported my positions reasonably well. If the reader is also capable of thinking and analyzing, then at the very least my theories should be given serious consideration, even if they're unorthodox. Since the vast majority of the readers aren't geniuses in the same way that Dundee was a boxing genius (some of you aren't even particularly bright despite your doctorates in science), there is another true incident that I can relate which may facilitate the acceptance of these theories.

During the mid '70's, the world's most prominent magician was Doug Henning. In various material I have read, it is my understanding that when he first emerged magicians were fundamentally opposed to him. The reason for this was his overall presentational style. Instead of wearing the traditional tuxedo (or at least a suit and tie) he wore "loud", colourful clothes. Instead of presenting a well groomed image, his hair was shoulder length. He implemented his magic in a manner that is similar to the manner in which a magician performs for children, as opposed to what is appropriate for a full scale evening show for adults. Now, in the same way that Angelo Dundee possessed a strong evidentiary foundation that what Ali was doing was wrong, magicians had overwhelming evidence that Doug Henning was causing the art of magic to regress. The father of modern magic is someone the reader has never heard of. Robert Houdin. He single handedly rendered magic a respectable art form. Prior to him, magic was in the following state. The conjurers were street performers who wore outlandish clothes/costumes (just like Doug Henning). They didn't bother to groom themselves and also had shoulder length hair and a general unkempt appearance. Although Robert Houdin brought many changes to magic in order to render it a respectable art form, some of the changes pertained to his appearance. He made it serious by only performing indoors so that people would buy tickets to the performance as opposed to throwing money into a pot on the street. He ensured he was well groomed and maintained a reasonable length of hair. Furthermore, his attire was comprised of proper, elegant evening wear. (As stated, these were only some of the changes he made.) After Robert Houdin, this became the standard to which all other magicians were held. Proper grooming, proper attire, and in general, a certain "serious tone" to the show. Doug Henning contradicted all of this. From all outward appearances, he was causing magic to *regress* a few hundred years to the time before Houdin when magic was not a respectable art form. He seemed to be degrading magic and, as far as I know, there was opposition to him from the magic community. What he was doing was *very* unorthodox (just like my theories) and the community possessed overwhelming evidence to state that what he was doing was wrong. However, "overnight" the magical community's attitude towards Doug Henning changed. The reason for this dramatic turnaround can be attributed to a singular word. Success. The audiences loved him and flocked to see him perform. Furthermore, when he started doing

television specials, the popularity of magic began to soar. Doug Henning was single handedly responsible for a renaissance in magic. It was then that magicians came to the realization that he wasn't degrading the art of magic (as they previously felt) but merely introducing a new presentational style that wasn't so pedantic. This change in attitude was brought about because of his success.

By the same token, I am asking the physics community to realize something about my highly unorthodox theories. They are successful in explaining a great many things that existing theories of quarks, leptons, and gluons can't even begin to explain. Look at this paper and realize how a singular model of the atom can explain so much, from high temperature superconductors (or *any* type of low temperature fermion coupling), to quantum gravity, to the missing matter, to a GUT. The standard model can't explain any of this. Therefore, regardless of how opposed you are to the unorthodox nature of my work, can't you realize it is successful in explaining a great deal and is, at the very least, worthy of serious consideration.