A Description of Physical Reality Without Mass Stuff, Charge Stuff, and Field Stuff

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It is speculated that physical reality consists of energy and information only, and not any mass stuff, charge stuff, or field stuff. Masslike particles are concentrations of energy. Writing $E = mc^2$ suggests that m is 'real' while E is 'calculated'. Rewriting as $m = E/\sqrt{c}$ suggests that E is 'real' while m is 'calculated', which is the point of this paper. Energy travels from place to place in the form of photons and quite possibly in other forms that have not yet been fully identified. Information travels from place to place as a packet which might be called an infoton. There are hints that infotons travel much faster than light. Observed forces (gravity, electric, magnetic, etc.) are produced by an infoton causing a masslike particle to expend a small portion of its energy as propulsion in a specified direction. This is entirely analogous to sending an instruction to a space craft, telling it to fire its rocket in a particular direction for a specific period of time. This adds another theory to the question of how gravity works, inaddition to a pull, a push, far-action, and warped space.

1. Introduction

There are a significant number of engineers and scientists today who believe that our present understanding of physical reality is incomplete at best and seriously flawed at worst. There are magazines and technical journals like *Galilean Electrodynamics*, *Infinite Energy*, *Journal of Scientific Exploration* and societies like The International Tesla Society (now defunct), The Society for Scientific Exploration, and The Natural Philosophy Alliance that the dissidents support. And many who consider themselves in the mainstream sense that things are not as they should be. Many physicists dream of producing a Grand Unified Theory where all is explained in a coherent fashion.

One topic with considerable disagreement is that of gravity. There are four contending theories of how gravity works:

1. Gravity is a pull.
2. Gravity is a push. (Le Sage)
3. Gravity is due to warped space. (Einstein)
4. Gravity is a far-action. (Newton)

Each of the four concepts for gravity have strong proponents, who are more than capable of delineating deficiencies in other concepts. The book **Pushing Gravity** [1], edited by Matthew R. Edwards, contains 23 papers by as many different authors who agree that gravity is a push, while arguing among themselves about the details.

The last category, far-action or action-at-a-distance, is championed by the father and son team of Peter and Neal Graneau [3].

And none of the four theories is capable of explaining the levitation examples described by Gersi [2] or Home [5]. Nor can they explain poltergeist or psychokinesis events.

A second topic where the standard explanations are distasteful to some of us is that of forces between charged particles at close range. Coulomb's Law states that the force between two charged particles q_1 and q_2 separated by a distance r is

$$F = \frac{q_1 q_2}{4\pi\varepsilon r^2} \tag{1}$$

where ε is the permittivity of space between the particles. If q_1 and q_2 have the same sign the force is repulsive, if opposite sign the force is attractive.

Consider a free electron approaching a proton. Under the right circumstances, the two particles will combine to form a hydrogen atom. But if all we knew was Coulomb's Law, we would think that the electron would experience a stronger and stronger force until it finally hit the proton, somewhat like a meteor hitting the surface of the moon. Instead something happens and the electron assumes a relatively fixed distance from the proton. We scramble to devise ad hoc explanations for the failure of Coulomb's Law, talking confidently of strong forces, weak forces, centrifugal forces, etc. with very limited physical basis for the explanations. What, exactly, causes the strong force? The weak force?

These are only two among many examples of physical phenomena that may be poorly described in the scientific literature. When one thinks about all the great minds who have wrestled with these concepts over the past four centuries, one is reminded of how presumptuous it is to think that one might actually contribute to the goal of a better description of physical reality. But I will press on toward the goal, anyhow. This will be a general conceptual outline of how things might be put together. Considerable work remains to flesh out the concepts.

2. Some Postulates

As we look at the present situation in Physics, we have to ask if some of the things we know for sure really are not the way things really are. We always approach problems with basic assumptions, some so obviously true that there is no need to even state them. Mankind was in that state for many centuries, 'knowing' that the sun revolved around the earth. I think that almost all of us would agree that an electron has mass and charge. We may not know the structure of the mass or the exact dimensions, but we 'know' there is a small amount of 'mass stuff' in the electron. Likewise, we 'know' there is a precise quantity of

'charge stuff' somehow located in or on the 'mass stuff'. Further, we 'know' the electron has an electric field that completely fills the universe. And last, we 'know' the electron mass has a gravitational field that also completely fills the universe. How the 'mass stuff' and 'charge stuff' got manufactured in the first place and then combined in precise amounts to form the electron are issues that we do not discuss!

Is there a way to describe the electron and other masslike particles and their interaction with the rest of the universe without the assumption of 'mass stuff' and 'charge stuff'? Let's assume there is and see how far we can go.

The photon has no charge and no (or very little) mass. We therefore have to describe it in terms of energy. By Einstein's equation $E = mc^2$ we can always think of a mass equivalent of energy or an energy equivalent of mass. It would seem redundant to require physical reality to have both mass (with an energy equivalent) and energy (with a mass equivalent).

With the preceeding vague discussion we will jump to a general description of how the world might be put together and then try to justify it.

Postulate 1. In reality, there is no such thing as 'mass stuff' or 'charge stuff'. There is only energy (or energy stuff).

Postulate 2. There is no such thing as electric field, magnetic field, or gravity field. The observed forces from which we infer the existence of fields are due to energy in motion.

Postulate 3. Observed entities such as electrons, protons, neutrons, atoms, and molecules are stable concentrations of energy. (Exception: free neutrons and radioactive elements are unstable). We will refer to them as masslike particles.

Postulate 4. There are three distinct packets of energy in motion. One, the photon, is well known to conventional science. The other two are inferred from their effects, much like we have inferred fields in the past. The first is what we might call a graviton, which supplies the observed forces of gravity and electric and magnetic 'fields'. The second is what we might call an infoton, which carries information. Both gravitons and infotons can, and probably do, travel much faster than the speed of light.

Postulate 5. Masslike particles continually emit and absorb infotons, including their energy and momentum. Infotons have excellent ability to penetrate matter, not as good as neutrinos but much better than photons.

Postulate 6. Space is full of gravitons traveling in all directions. The total energy density is quite high. The masslike particle must be enabled by an infoton to absorb or deflect one or more gravitons from a particular direction relative to the impact point of the infoton.

A masslike particle emits an infoton that is encoded with information about the particle. An infoton from a free electron has information on it that tells the mass, charge, and spin of the electron. An infoton from a water molecule has information about the molecular weight and the lack of charge (unless ionized). As a carrier of information, the infoton does not need to contain large amounts of energy, but, of course, must contain some small amount of energy.

The energy stuff must be in some pattern. A sphere of constant density of energy stuff inside and zero density outside really cannot convey much information. A structure like a soliton or a vortex comes to mind, but those shapes have a similar problem of carrying significant amounts of information. The structure may resemble a segment of a DNA strand. The shape, size, and internal structure of an infoton can be subjects of research for years to come.

Each masslike particle has a desired energy content. When an infoton happens to hit 'just right' and is absorbed, the particle energy is increased by the energy content of the infoton, upsetting what is probably a delicate energy balance. To maintain the energy balance, the particle emits an infoton with the same energy as the incoming infoton, but encoded with the information for the particle doing the emitting. When the original command was given (Let there be light!) an appropriate number of infotons and gravitons were created to sustain the physical processes that we observe around us. Today we see infotons being absorbed and emitted in equal numbers, and likewise gravitons. The rates of infotons absorbed and emitted per second are high enough to give an adequate smoothness to physical processes. But observations like Brownian motion hint that the rates may not be extremely high for small particles.

While the masslike particle is in a higher energy state from the absorption of an infoton, it has 'raised energy shields' that deflect a greater number of gravitons coming from a direction related to the direction of the incoming infoton. If both the emitting and receiving particles are free electrons, the larger shield is set up around the point of entry of the infoton. More gravitons coming from the direction of the emitting electron are deflected by the receiving electron than the gravitons coming from other directions. The deflected gravitons impart a force in the opposite direction from the emitting electron, what we call a repulsive force.

If on the other hand, the receiving particle is a positron, proton, or positively charged ion, the infoton from a free electron will set up a 'raised energy shield' on the opposite side of the receiving particle. More gravitons coming from the opposite direction will be deflected by the receiving particle, producing an attractive force toward the free electron.

3. Current Elements

Forces on free electrons, protons, and ions are relatively easy to describe with a system of infotons and gravitons. When we move to electrodynamic forces, in particular the forces on current elements, things become more complicated. First we need a brief history lesson. A much more detailed history is given by the Graneaus in [4].

In 1820, Ampère discovered an expression for the force between two current elements $i_m dm$ and $i_n dn$.

$$\Delta F_{m,n} = -i_m i_n \frac{\mu_0 (dm)(dn)}{4\pi r_{m,n}^2}\left(2\cos\varepsilon - 3\cos\alpha\cos\beta\right) \qquad (2)$$

The force is in Newtons if the currents i_m and i_n are in Amps. The distance between the centers of the two current elements is $r_{m,n}$, in meters. The angle α is the angle between $i_m dm$ and $r_{m,n}$. The angle β is the angle between $i_n dn$ and $r_{m,n}$. The angle ε is the angle between $i_m dm$ and $i_n dn$ if one of them were translated to lie directly on top of the other. These angles are shown in Fig. 1.

This formula is valid when $i_m dm$, $i_n dn$, and $r_{m,n}$ all lie in the same plane, which makes it easier to visualize the angles. If some current element $i'_n dn$ is not coplanar with $i_m dm$ and $r_{m,n}$, it can always be separated into two vectors, $i_n dn$ lying in the same plane with $i_m dm$ and $i_{np} dn$ perpendicular to that plane. It turns out that there is no force between perpendicular current elements, so we can restrict ourselves to the two dimensional case rather than the three dimensional case. We just have to remember to project any nonplanar current element unto the plane before using the formula.

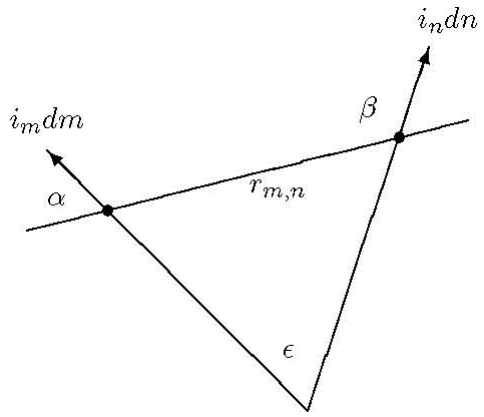

Fig. 1. Angles of Force Equation

If the two elements are part of the same straight section of conductor, just separated by rm,n, then the term involving the angles becomes

$$2\cos 0 - 3\cos 0 \cos 0 = -1 \tag{3}$$

If the two elements are parallel, carrying the same current and separated by $r_{m,n}$, the term involving the angles becomes

$$2\cos 0 - 3\cos 90 \cos 90 = 2 \tag{4}$$

The signs are opposite, indicating the forces are in opposite directions. Two parallel elements carrying the same current in the same direction attract each other with twice the force that two elements of a single straight wire and the same separation repel each other. If one element swings around the other, keeping the direction and separation the same, the force goes to zero near the angle $\alpha = \beta = 35.3°$. If one of the currents reverses in direction, then the forces reverse also. Parallel conductors carrying currents in opposite directions repel each other.

Current elements never exist in isolation. One can only observe the total force on a complete circuit. This is calculated by integrating $\Delta F_{m,n}$ over all the current elements in each of the two complete circuits. It turns out that more than one force equation will yield the same total force. And it may be that a different force equation will allow simpler computations than the Ampère force equation. With this in mind, Grassman derived a second force equation in 1845. The Grassman force equation always yields the same net force as the Ampère force equation when integrated over the complete current loops. For various reasons the Grassman formula has become the force equation in all the EM Theory books. Unfortunately, there are experimental and philosophical reasons why the Grassman equation is actually incorrect.

The experimental reason is that Grassman predicts zero force between current elements in a straight conductor while Ampère predicts a repulsive force, a force trying to snap the conductor into multiple pieces. When the Graneaus ran large currents through thin conductors, the conductors did snap into short segments, as Ampère predicted. A similar effect has been noted in the high failure rate of rail guns. These have very strong and stiff mounting brackets to withstand the high transverse forces. The longitudinal forces predicted by Ampère tend to warp and bend the conductors between these brackets.

The philosophical reason is that Grassman's equation does not obey Newton's Law, that would require all forces between current elements to be directed along the line connecting the elements. We want to explain forces between current elements using infotons and gravitons, so it is important that we start with the correct force equation. We will assume that Ampère's equation is the correct one.

In discussing the launch angles of infotons from a current element, it might be helpful to place an imaginary sphere around each current element, as shown in Fig. 2. The sphere would totally enclose the current element. If we consider the current element as a vector in the direction of current flow, the tip of the vector arrow just touches the north pole of the sphere. We use the angle θ to describe the angle of a location on the sphere going from the north to the south pole, where $\theta = 0$ at the north pole and $\theta =$ 180° at the south pole. We use the angle ϕ for the angle around the sphere that corresponds to longitude on the earth's surface. It varies from 0 to 360° . The point on the sphere where $\phi = 0$ occurs is totally arbitrary, just as Greenwich, England was an arbitrary choice for the starting point on the earth's surface.

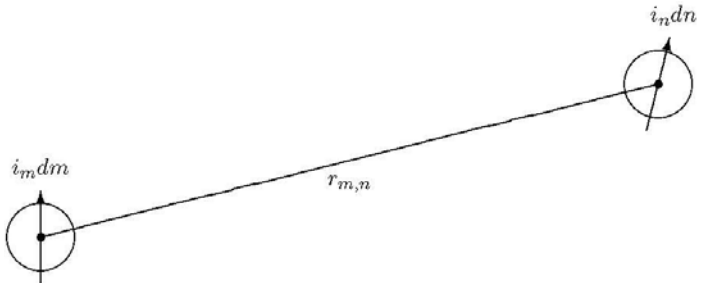

Fig. 2. Imaginary Spheres around Current Elements

What can we say about infotons being launched from a current element? Photons from a short antenna tend to be radiated from the side and not off the ends. This cannot be the case for infotons from a current element since elements along a line interact strongly. This may be a topic for further research, but for now we will assume that a current element will launch infotons uniformly in all directions. There will be just as many infotons per m² leaving the north pole area as from an equatorial area.

Infotons carry energy so when they penetrate a current element the energy is increased. To maintain an energy balance the element will need to emit an infoton quickly. It might be the case that the outgoing infoton is reflected back along the same path as the incoming infoton. If infotons are arriving at the current element from all over the universe, it would seem that arriving infotons would be fairly uniformly distributed over the sphere. If the departing infotons leave along the same path, they will also

be uniformly distributed. The information content of the departing infotons will be changed, of course, to reflect the fact they are departing in a particular direction from a current element. They might also be encoded with the amplitude of the current.

The encoding scheme might resemble a DNA string with several types of data bits (A, B, C, D, etc.) or it might be binary (0 and 1). There are other possibilities, such as physical size and shape.

The infoton leaves and strikes another current element, which immediately reformats it and sends it back along the same path. Since the travel time is less than that for most infotons to arbitrary points in the universe, it is conceivable that a sort of resonance is established between elements such that the number of infotons along the path between elements is greater than that in other directions. The number of infotons and the number of gravitons per infoton must somehow work out to give the correct force on each current element.

What happens when an infoton strikes a current element? It must contain information about the launch angle _, equivalent to the angle _m on the imaginary sphere surrounding the current element. This infoton arrives at the receiving element, hitting it at the angle _, equivalent to _n. It must enable the receiving element to accept gravitons at the point of incidence, if the force is to be repulsive, or on the opposite side of the sphere if the force is to be attractive. It is interesting to conceive of the various ways such an action might occur. One would be to consider the sphere surrounding the current element as having some significance, like being composed of energy stuff. The sphere might look like a drop of water or a water filled balloon. An impulse hitting the sphere at a point will launch a ripple (tsunami) around the surface of the sphere. When the ripple reaches the opposite point on the sphere, a bulge or dip in the surface will appear. If multiple infotons are hitting the same point at regular intervals, some sort of standing wave might be established. The two distinctive points of such a standing wave are the point of incidence and the point diametrically across the sphere. It becomes at least remotely believable that gravitons could be being accepted on the opposite side if the force needed to be attractive.

But how do we account for the variation in force with _ and _? The character of the ripple launched will differ with the shape and orientation of the infoton. The ripple produced by a log falling in the water differs from that of a spherical rock. The infoton might be oblong in the north-south orientation when the force is to be attractive and oblong in the transverse direction when the force is to be repulsive. This would appear to be simpler than some coding and decoding scheme that required generating and interpreting ones and zeros.

4. Pair Production

To be of any value, this 'energy only' concept needs to be able to explain all the experimental phenomena of nuclear physics in a straightforward manner. We will start with pair production and the explanation given by Shortley and Williams in their Engineering Physics textbook. (I knew Dudley Williams as a Physics Professor during my tenure at Kansas State University). Their explanation is as follows [6]:

"In 1932, Carl D. Anderson discovered a new elementary particle in the cosmic radiation. This particle is called a positron; it has a mass equal to that of the electron and a positive charge equal in absolute magnitude to the electron's negative charge. The positron has a transitory existence in the presence of terrestrial matter, and therefore had not been previously observed in investigations of atomic structure. Anderson found that positrons are created in a process called pair production, in which a high-energy photon disappears and an electron-positron pair is created. In other words, the electromagnetic energy of the photon is converted into matter. The energy relation for this process is

$$(hf)_{\text{Photon}} = \left(m_0c^2 + E_K\right)_{\text{Electron}} + \left(m_0c^2 + E_K\right)_{\text{Positron}} \qquad (5)$$

"Since the rest energies of the positron and the electron are each equal to 0.511 MeV, the energy of the photon must be greater than 1.02 MeV.

"When traversing matter, a positron is ultimately annihilated, along with an electron, by a process with the following energy balance:

$$\left(m_0c^2\right)_{\text{Electron}} + \left(m_0c^2\right)_{\text{Positron}} = 2(hf)_{\text{Photon}} \qquad (6)$$

"It is observed that two photons appear as the result of the annihilation of the positron-electron pair; each photon has an energy of approximately 0.5 MeV, which indicates that the electron and positron have little kinetic energy when they are annihilated. Hence kinetic energy terms have been omitted on the left of the above equation.

"Energy (including rest energy), momentum, and electric charge are all conserved in the processes of pair production and annihilation. Pair production takes place only in the vicinity of some heavy nucleus such as that of lead; recoil of the heavy nucleus in connection with the pair-production process is necessary in order to satisfy simultaneously the conditions for conservation of energy and momentum. In annihilation, the two photons travel in opposite directions, as is required for conservation of momentum."

The explanation for pair-production using 'energy only' would be that a photon containing adequate energy (> 1.02 MeV) can be split into two equal energy portions of 0.511 MeV each plus any residual of excess kinetic energy. The two portions are identical except for the information carried by the emitted infotons that indicates charge. We started with energy and ended with energy. There is no need to postulate creation of either matter or charge.

Likewise for annihilation of the pair. We start with two portions of energy, configured in what we call a mass and charge form, and end with two portions of energy, configured as photons. The only thing that happened was that energy changed shape. There was no need to 'uncreate' matter and charge. This explanation of energy changing shape is certainly far simpler than an explanation of creation and uncreation of mass and charge!

5. Nuclear Forces

Shortley and Williams make the following statement about nuclear forces [6]:

> "Thus far, we have described the nucleus only by saying that it is composed of protons and neutrons; we have said very little about the forces that hold these particles together. The nature of these forces is not clearly understood. The known facts, largely established by scattering experiments similar to those of Rutherford, are these: (a) a proton at a relatively large distance $r > r_0 \sim 10^{-15}$ m from the center of a nucleus of charge is acted on only by the force of ordinary electrostatic Z_e repulsion, but at a shorter distance the proton is strongly attracted by so-called *strong* forces; (b) a neutron at a large distance $r > r_0$ from the center of a nucleus experiences no appreciable force, but at a shorter distance the neutron is strongly attracted by *strong* forces similar to those experienced by a proton. These short-range *strong* forces, which are the same for protons and neutrons, are different from and much stronger than any forces that could arise from gravitational, electrostatic, or magnetic effects. They must be very strong to hold the protons together in a nucleus in spite of the comparatively large electrostatic forces of repulsion experienced by protons at a very close distance."

One possible explanation for strong forces is the following. Assume that an infoton resembles a strand of DNA. The nucleon somehow produces this strand, which sets on the surface of the nucleon until launched. The particle may have a hairy appearance if several infotons are attached to the surface, awaiting launch. The trigger for launch may be an incoming infoton. The incoming energy is immediately sent back out, probably very nearly on the same path. But if an approaching particle reaches the end of the infoton, it cannot be launched, rather like one attempting to fire a rifle whose end has been packed with dirt. If the approaching particle is no longer receiving infotons from the transmitting particle, it is not activated to receive gravitons. Coulomb forces end abruptly when two charged particles are separated by the length of an infoton. At this stage of our knowledge, an infoton length on the order of the radius of a hydrogen atom is not unreasonable. It is plausible that an infoton from some particle within a nucleus will become entangled with the infoton from an approaching electron, perhaps forming a structure something like a double strand helical DNA string. The electron is then 'permanently' attached to the nucleus. No ad hoc explanations like strong forces and weak forces are needed.

6. Energy Shape of Nucleons

We need a shape or structure that is valid from the lightest masslike particle to the heaviest, from an electron to massive atoms past uranium on the chemical periodic table. Let us look at a few comments Shortley and Williams made on this topic [6].

> "[T]he nucleus is characterized by a definite radius that can be determined from studies of the scattering of fast particles; for example, when fast neutrons are scattered, their observed behavior is very much that to be expected if the scattering nuclei were solid spheres of radius $r_0 = 1.2 \times 10^{-15} \sqrt[3]{A}$ m. As we noted earlier, this value corresponds to a constant value for nuclear density; hence the volume per nucleon is approximately constant in all nuclei…
>
> "The above description of the nucleus bears so much similarity to a description of a liquid droplet that Bohr and Wheeler proposed a liquid-droplet model for the nucleus. The liquid droplet model accounts very nicely for the formation of a compound nucleus during a nuclear reaction; when a particle is shot into a nucleus, an excited compound nucleus is formed and persists for about 10^{-14} s, after which time another particle is shot out. The droplet analogy is that of a fast molecule striking a droplet, entering the droplet, raising the energy and temperature of the droplet, and thereby causing the evaporation of another molecule from the surface of the droplet. The various excited energy states of a nucleus are interpreted on the Bohr-Wheeler model as vibrational states of the droplet.
>
> "A major success of the liquid-droplet model is in its description of the fission process. Bohr and Wheeler assumed that very heavy nuclei are almost unstable and that, when a slow neutron enters, the nuclear droplet is set into a mode of oscillation that causes a splitting into two smaller droplets. The model indicates that the two large fragment droplets would be of unequal size—as is observed in the case of fission fragments—and furthermore that several very minute droplets would usually be formed—corresponding to the emission of neutrons.
>
> "A charged liquid droplet can rotate and vibrate. The quantum-mechanical description of rotation and vibration has been used with considerable success in accounting for the observed excited states of heavy nuclei. The liquid-droplet model is less successful in accounting for the properties of light nuclei containing few nucleons. It also fails to account for 'direct' nuclear reactions in which energy is imparted to a single nucleon and the reaction is completed without the formation of a compound nucleus."

In summary, it appears reasonable to assume a spherical shape for all masslike particles, with allowance for rotation and vibration. Exotic models for an electron like a very thin ring in rapid rotation about its central axis are probably unnecessary.

7. Mental Infotons

We now need to enlarge our thinking, to allow for a type of infoton that contains even more information than what we have been looking at. We have seen infotons that travel between the elementary particles electrons, protons, and neutrons. They carry information about gravity and charge forces. The same infotons might also be traveling between atoms and molecules.

In the discussion so far, we saw one infoton that was more sophisticated, the infoton between current elements. This infoton probably represents a larger region, many atoms or molecules in a conductor. It must contain additional information, about the magnitude and direction of current flow.

The next level up in complexity is what we might call the mental infoton. It carries information about one or more of the following characteristics of solids:

- Forces, gravity and charge

- Conductivity
- Stiffness/melting point
- Magnetism

There are many well-documented observations about physical reality that cannot be explained with the existing models of mass, charge, and fields. The standard attitude has been: If you cannot explain a happening with existing scientific models, then the happening did not happen! The result of this attitude is that all reports of UFOs, poltergeists, and levitations are automatically and immediately considered to be hoaxes, misinterpretations, etc. We take the approach that some of these reports are accurate descriptions of physical reality. If the reports cannot be explained with existing scientific models, then we need to look carefully at the models!

Poltergeist phenomena have been well documented for centuries. These phenomena usually occur in the presence of a child or teenager, and often include unusual forces. An object like a coffee mug may lift off a table and float across a room before dropping to the floor. This sort of levitation is impossible to explain with Newton's theory of gravity, but might be explainable with infotons and gravitons. We will assume that the poltergeist agent (the teenager) subconsciously decided to levitate some object and sent the appropriate infoton to the object. For this concept to work, the object must have some sort of structure to its energy content. A coffee mug is more than a random collection of elementary particles. It has a solid structure, perhaps crystalline in character. The constituent atoms and molecules vibrate together. Any impulse at one point is immediately communicated to every other point. There is an overall energy structure and communication paths throughout the object. Any incoming energy pulse will somehow impact the whole object. (Remember that our model is energy alone, no mass and no charge!). We speculate that what we call a mental infoton (energy with information) will hit the object and the information will immediately be transferred to every atom in the object.

The mental infoton sent to the coffee mug might override the 'ordinary' infotons coming from masslike particles in the earth and creating the effect of mass or weight by the deflection of gravitons from above. The mug then becomes weightless. If the override signal was precise and complete, there would be no net force on the mug, such that it would remain where it was. But any imprecision or any air currents would move the mug off the shelf. The observed motions would be expected to be quite variable from one event to the next. One time the mug might immediately fall to the floor. Another time it might bump the ceiling and a wall or two before drifting down to the floor. The time frame is probably a second or two, or a few seconds at most. It would be extremely rare for the mug to be 'stuck' to the ceiling for a period of minutes. This suggests that the life of a mental infoton is a few seconds at most and might be far less. The poltergeist agent might be transmitting identical mental infotons to the mug at a high rate (thousands per second) which have the effect of maintaining a gravity override until a few ms after the string ends. Determining the decay or restore rate will be an interesting research project.

If the mental infoton is able to override the gravity function, it might be able to override other functions. One would be conductivity. There are many reports from UFO sightings where being near a UFO caused the car electrical system to fail. The head lights would go out and the engine would die. When the UFO left the scene, the car lights would come back on and the car engine would start easily. One explanation would be that there was an override on electrical conductivity in the copper conductors in the car. When the copper became nonconducting, the lights would go off and remain off until the override signal disappeared. There is no obvious source of the 'mental' infoton in this case. It might be coming from the UFO, of course. Another possibility would be the occupant(s) of the car. A person experiencing a UFO will probably go into some altered state of consciousness, and while in that state may easily produce mental infotons.

The same condition may cause the magnetic effects seen during a UFO event. A compass in an airplane may rotate or swing violently. A compass placed near a car that has recently been near a UFO may do likewise. A sequence of mental infotons that specified a rotating point where gravitons are to be deflected could produce this effect.

One other observation that mental infotons might explain is that of Uri Geller's metal bending. Many people have watched him rub a fork until it becomes as soft as a wet noodle and takes strange shapes until it becomes firm again. According to various websites on the Internet, others have also learned to do the same thing. One explanation would be a mental infoton that lowered the melting point of the fork metal to just above room temperature. The metal would become soft and pliable until the override feature decayed away, after which the fork would be in a new and unusable shape.

8. Conclusion

A qualitative outline of a different explanation for scientific (and some nonscientific) observations of forces has been given. The idea is that we do not really have mass and charge, but only energy. Energy may be moving 'slowly' in the form of electrons, protons, neutrons, atoms, and molecules, or rapidly in the form of photons, infotons, and gravitons. Considerable work remains to determine the quantitative details of this speculation.

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