

SEE, — **HOW** the complexities of **FIELD THEORIES HID** from us, the fact that **relative motion** (phase) between all these spinning entities, in the micro & macro universe, gives us **all** the **attractive and repulsive Fundamental Forces**.

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**Field Theories** in html: <http://rbduncan.com/fieldtheory.html>

Also, **Field Theories** in Word: <http://rbduncan.com/fieldtheory.doc>

& **Field Theories** in Adobe pdf: <http://rbduncan.com/fieldtheory.pdf>

**Fitzpatrick's** 1966 book showed the **relative motion** laws of **A. Ampère** unified the forces.

[Fitz's first book in 1966](#)

[Fitz's 1966 book in PDF](#)



This was the way the site --below-- looked many years ago. - - Dan Fitz.

**Fitzpatrick's  
little known facts  
about well known science terms**

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The first thing I want to explain is something that Berkeley first proclaimed and now is called Mach's principle.

This principle states that not only do our surroundings (stars) cause our inertia but that surroundings are important in many other ways as well. . Even Maxwell saw that.

I'm now going to show you many reasons, all through this, why surroundings are so important. . We will look at energy first.

**What is energy?  
How is energy related to the surroundings?**

This is a binding, balanced universe both in the microcosm and the macrocosm.

All energy is Binding Energy.

[http://www.colorado.edu/physics/2000/isotopes/binding\\_energy.html](http://www.colorado.edu/physics/2000/isotopes/binding_energy.html)

Energy is merely an upset of this binding, balance.

Every orbit, orbital, spin, spin precession or orbital precession is caused by this binding, balance between close entities and similar entities in their surroundings.

This is universal in the microcosm as well as in the macrocosm.

Binding---like binding energy---can not be destroyed; it can only be shifted from the surroundings to close entities or from close entities to the surroundings.

Shifting binding either way is energy,

For instance, the element iron is midway between the fusion energy and fission energy elements.

Lighter elements than iron give off nuclear energy by shifting some binding from the surroundings to closer entities.

Heavier elements than iron give off nuclear energy by shifting some binding from closer entities to the surroundings.

Stars can get nuclear energy out of almost all the elements this way.

Stars are slowly transforming this entire universe into iron this way.

You can theoretically get fusion energy out of all the elements lighter than iron and fission energy out of all the elements heavier than iron.

Iron, however, is the atomic energy ash heap. . You can't get any atomic energy out of iron.

When the stars eventually convert everything to iron then all energy in this universe ceases.

It will be a cold dark universe then.

So energy is simply a binding change either way, to or from the surroundings.

That's all energy is.

Now we have to talk about binding, don't we?

### **What is binding?**

Centrifugal force is actually binding with the surroundings.

A gyroscope, for instance, holds its position to the surrounding cosmos (fixed stars).

So these surroundings that Berkeley, Mach and Maxwell said are acting to give us what we call inertia are really important after all.

Just as the surrounding field wires are important for causing electricity in a generator or alternator, so are the surrounding stars important in causing inertia.

In fact this was the very example Maxwell used when someone asked him why he thought Berkeley and Mach were right about the surroundings causing inertia.

### **But what causes this binding?**

Anything that spins or orbits can attract a similar entity via spin or orbital binding. . It can repel this way too.

Ampere discovered the rules for ascertaining when things would attract or repel almost two hundred years ago. . I used Ampere's Laws <http://www.rbduncan.com/Ampere.htm> troubleshooting avionics problems and they are as good today as when Ampere wrote them a good many years ago.

And these laws work here and in the microcosm and macrocosm as well. . They are truly universal laws.

Frequency is important too. . The faster these things spin then the more force they will exert to attract or repel.

### **Do these attractive bindings fall off with the square of the distance?**

No, these attractive bindings do not fall off in energy with distance. . They have a vast but limited operational range. . Only the number of pairs

attracting falls off with the square of the distance.

These bindings are always in quantum pairs. . It takes about 6 quanta from a star for your eye to see it is light from a star. . What happened in this case was six electrons on that star had their spin lined up exactly right to spin bind with six electrons in your eye. . Just enough energy was transferred to your eye so you saw a bit of light from the star. . No energy whatsoever was lost in that transfer over that vast distance. . What falls off with the square of the distance are the number of those transferring pairs of electrons.

To transfer light, heat or anything in the radio spectrum---from one electron to another---one spin up electron must bind with a spin down electron. . Their closest sides will be going in the same direction like gears meshing (not clashing) and they both must be on the same equatorial plane and the impedance of a portion of their closest sides must match.

### **Can you also have pole to pole spin binding?**

Yes, certainly but resonance energy quanta such as light, heat and radio waves cannot be transferred this way from electron to electron.

Light, heat, radio waves and Pi Bonding  
<http://www.science.uwaterloo.ca/~cchieh/cact/c120/pibond.html> are resonance upsets of the binding balance.

Gravity, magnetism, charge and Sigma Bonding  
<http://www.chm.davidson.edu/ChemistryApplets/MolecularO...s/overlap/sigma.html> are non resonant upsets of the binding, balance.

A not quite exact comparison is that---light, heat and radio waves are AC---pi bonding is pulsating DC---gravity, magnetism, charge and sigma bonding are pure DC.

In magnetism you can have pole to pole spin attractive or repelling actions. . The polar action is always the strongest in magnetism because the entire electron binds or repels this way and not simply a portion of its closest sides as in spin up spin down side to side binding or repelling.

You have electron to electron binding in chemical bonding as well. . Sigma bonding is a side to side binding while pi bonding is a polar binding. . But here the roles are reversed with the polar pi bonding being the weaker of the two simply because it is only a momentary, repetitious binding whereas the sigma, side to side, binding in the same plane is steady.

## **But our laws of magnetism show this to us already, don't they?**

No, they are telling you something else that is just the reverse, which only confuses you as to what is really going on.

## **They tell you opposites attract and that's right, isn't it?**

No, absolutely not; it's exactly the reverse. . Two electrons attract when their closest sides are moving in the same---not opposite---directions.

And they repel when their closest sides are moving in opposite---not the same---directions.

Opposites do NOT attract---they repel---when we see what is really happening.

This is exactly the REVERSE as to what is now being taught to kids in both high schools and universities. . It really messes these kids up when they try to analyze things.

Not only electrons but everything spinning works this way as well. . A good example of this are all the stars.

Our galaxy contains about a hundred thousand million stars and there are about a hundred thousand million galaxies just like ours.

And in this sum total of stars that we can see, not one violates the spin positioning required by Ampere's Laws.

This is absolute proof of Ampere's Laws.

<http://www.rbduncan.com/Ampere.htm>

Spinning entities like stars and electrons that are perfectly free will never be in such a position as to have their closest sides moving in the exact same direction as their nearest neighbor. . The exception to this are binary stars that rotate around each other. . The same for electrons that also rotate around each other and the nucleus.

Spins are important and the position of these spins are vitally important.

Quarks spin at even a faster speed than electrons. . They also spin bind with other quarks in distant atoms.

Gravity is quark to quark spin binding with quarks in nearby entities.

Inertia is quark to quark binding with quarks in the distant stars.

Remember, this binding remains the same strength no matter how vast the distance.

Only the number of binding pairs falls off with the square of the distance.

Gyroscopic inertia is quark to quark binding with quarks beyond the singularity inside black holes. . With binding you must have impedance matching and when you spin a gyroscope you have imparted extra energy to certain quarks in the rim of the gyro and they no longer can impedance match with the majority of slow moving, low energy, quarks but now at this higher energy they can impedance match with higher energy quarks beyond the singularity inside black holes.

This is why gyroscopic inertia can be so strong.

**Can you tell me why  $E = mc^2$ ?**

Yes, because the scalar standing wave resonance of the quark is exactly the square of the scalar standing wave resonance of the electron.

The formula  $E = mc^2$  is merely telling you that the movie picture frame rate (scalar resonance frequency (c) of the quark (m) is the square of the scalar resonance frequency---movie picture frame rate---of the electron's scalar rate (E).

This, however, is NOT a ratio of the spin rates of the two.

What this is telling you is that the quark rebuilds itself at the square of the rate the electron---and you---get rebuilt.

This is also telling you something else very important. . It is telling you that this speed of light is only a speed for electrons and you. . For the rest of the universe it is only a scalar resonance rate---movie picture (cinema) frame rate.

**How can the speed of light (c) be a speed only for electrons and us?**

Because your spacetime realm is being built for you the same way sound is built for you by a Superheterodyne radio. . The radio mixes frequencies together that you cannot hear to give you frequencies that you can hear as sound.

Since you are built of quarks and electrons---the basic two building blocks--- then these spin, orbital and spin precession and orbital precession frequencies mix together to give you this 3D + time world.

But this 3D + time Euclidean universe, of ours, only exists if we don't get too massive and stay slower than .01% of our available speeds.

So this tells you that Euclid's geometrical description and Newton's laws of motion do not accurately describe this universe that we find ourselves in.

Believe it or not but we are in a special spacetime realm that is being made by all these frequencies. . And this is our own little spacetime realm made just for us.

### **Are there other spacetime realms?**

Yes, there most certainly are.

But as Wheeler and Feynman told us, we may detect things in other spacetime realms but we will never be able to measure them directly in our spacetime realm here.

### **Could you give me an example of what you mean?**

Yes, Yale University teaches its astronomical students that the speed of gravity must be going much, much faster than the speed of light for a stable universe. . Van Flandern

<http://www.ldolphin.org/vanFlandern/gravityspeed.html> has proven this showing us that gravity has no aberration while light does.

The fastest speed in our electron based spacetime realm is the speed of light at  $3 \times 10^8$  meters per second.

But the fastest speed in the spacetime realm of the quarks whose spin binding causes gravity is  $9 \times 10^{16}$  meters per second.

As Wheeler and Feynman stated, we can detect this speed---shown to us by Yale and Van Flandern---but we can never measure this speed directly in our spacetime realm. . We can only notice it here. . And we do notice it here, not as a speed but as an acceleration,

This is why we can not discern the effects of gravity from an acceleration. . And this is Einstein's principle of equivalence.

**Saul Perlmutter <http://panisse.lbl.gov/public/sauldir/saulhome.html> tells us that Einstein's cosmological constant exists. . What is that?**

Einstein originally stated his cosmological constant was a force equal but opposite to gravity keeping all the stars apart. . But this was back long ago when everyone believed we were in a steady state universe.

But in the late 1920s things changed and after that the most popular belief was that we were in an expanding universe.

But recently Saul Perlmutter headed a group that studied supernovas and from what they found it looks like we are back in a steady state universe again because as Saul Perlmutter himself states, Einstein's cosmological constant does indeed exist between all the stars and galaxies holding everything apart.

**I thought that supernova group discovered this expansion was accelerating?**

That's right; they did. . But even Saul Perlmutter could see that the Big Bang was a PAST force and a present force is needed to accelerate.

With gravity now a bipolar force like the other invisible forces then Einstein's principle of equivalence is telling us that we would not be able to discern this force out there from an accelerating, expansion.

This is why Saul Perlmutter decided on Einstein's force and against the accelerating, expansion that his own group discovered.

**That sure is the first time I have ever heard of someone who discovered something say, the thing he discovered is something else. . Have you ever heard of anything else like that?**

Sure haven't. . That shows us the true character of Saul Perlmutter.

And Ampere's Laws show us that Saul Perlmutter is right too.

Ampere's laws tell us that our universe here should be steady state just like the microcosm.

Also important are the surroundings and Mach's principle. . If you believe in Mach's principle then you simply cannot believe in an expanding universe. . These two things are mutually exclusive.

The microcosm is entirely different from the macrocosm. . How can Ampere's laws show they are the same when they are not.

No, they are not that different. . Binary stars, for instance, behave exactly like electrons.

### **How is that?**

Electrons and binary stars both spin around each other pro grade not retrograde just like planets do around the sun with their closest sides going in the same direction (like gears meshing, not clashing) . . In other words one star is spin up and the other spin down exactly like electrons do.

So now not only do we backtrack a half a century to a steady state universe but we also backtrack a half a century to Bohr's concept of a solar system type of electron that actually revolves around (orbits) the nucleus.

### **Quantum theorists say the electron does not do this like Niels Bohr described way back then.**

The pendulum swings back sometimes.

There is no way we can see movement in the microcosm but we are certain that things are moving there because what we can see is the evidence that angular momentum has changed.

All we can see in the microcosm are color line shifts that indicate to us that the aforementioned angular momentum has changed.

There is no way we can see motion in the microcosm.

This is understandable because the microcosm is an entirely different spacetime realm and Wheeler and Feynman have told us that even though we may note something in another spacetime realm, we would never be able to measure it directly in our spacetime realm.

### **Well what exactly can we see then?**

Huygens showed us that what we see are wave fronts where all the waves in that front are in phase together.

But now that we know the speed of light is a constant independent of the speed of the source or observer then we know these cannot be true waves such as water waves because there is no medium such as the water to

transport these waves.

### **What transports these waves?**

Nothing is needed to transport them if the medium to transport them is manufactured along with the wave.

Our spacetime realm is nothing but a superheterodyne type of frequency mixing manifestation.

Out of phase resonances produce space but in phase resonances produce no space. . What we see is the average space these produce. . So more space than the average we see as a repelling force and less space than the average we see as an attractive force.

This is exactly the way the tensor math of general relativity portrays it as well.

This is why we see + and - charges and magnetic poles being different. . We see all forces in this bi polar manner.

### **But gravity isn't bi polar. . Isn't it a monopole force?**

Ah, but now we have Saul Perlmutter to thank for showing us it is not.

Saul Perlmutter's group showed us this expansion in this expanding, universe was accelerating.

But Saul perlmutter, himself, knew that while the Big Bang could have indeed caused such an expansion, a present force would be needed to accelerate it and the Big Bang was a PAST force.

So he published the fact that it was Einstein's repulsive force out there that was holding everything apart just as it does in the microcosm.

Saul Perlmutter realized that gravity was a bi polar force with Einstein's original cosmological constant repulsive force---equal but opposite to gravity---between all the stars and galaxies holding them apart.

He saw the principle of equivalence would not allow us to discern this force from an accelerating, expansion.

We can't tell the difference between Einstein's repulsive force out there and an accelerating, expansion.

So it has to be the force and not the accelerating, expansion because the Big Bang was a PAST force and not a present force.

Welcome back to 1900 and a steady state universe and where electrons actually revolve around the nucleus like binary stars.

Science religions, like phlogiston and the expanding universe don't die easily. . Goethe published that the eye sent out feelers. . His best friends had to tell him that Newton had it figured out. . It took several decades before all the universities in this world agreed with Newton.

But if Fred Hoyle was still alive, he'd be smiling now.

Fitz

<BR<

*[Over 4 Decades of Daniel P. Fitzpatrick's Books, Papers and Thoughts](http://www.amperefitz.com/4.decades.htm)*

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