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## Light and Spin

Version 3 updated – 8 August 2015

There are several reasons why Einstein's Special Theory of Relativity is invalid:

- 1) *The Dilation of Time Conundrum & Dilemma*
- 2) *The Relative Position Contradiction*
- 3) *The Relative Mass Catastrophe*
- 4) *The Photon Mass Catastrophe*
- 5) *The Relative Velocity Mystery*
- 6) *The Contraction of Space and Time Catastrophes*
- 7) *Fixed Space Logic*
- 8) *The Einstein-Podolsky-Rosen Paradox*

Having deconstructed these reasons in turn, I will then reconstruct matters into a thoroughly computable ontology.

The central method I am employing in this chapter is to simply test for internal logical consistency. The process whereby this ensues is to attempt to program a real-time data-model of Relativity in Visual Basic 6. And this is where most of the inconsistencies in Relativity become apparent.

This is quite a lengthy article, so before I begin I would first like to make the two points that are the easiest to grasp:

- {A}** Relativity proposes that space contracts as an object approaches the velocity of light. Such a contraction has never been observed. In fact many years after Relativity was first published, it was observed that space is expanding evenly in all directions.
- {B}** The Michelson Morley experiment can be explained by realizing that the medium through which light is moving, is itself simply moving with the Earth.

**{A}** proves Relativity to be unempirical. **{B}** is the explanation that replaces Relativity.

Perhaps before continuing, the reader may want to spend some time pondering these points carefully and methodically. It may be unwise to carry on reading until the reader fully grasps the implications of these two points.

It is dogma to cling to a theory that has been proven to be completely at odds with empirical proof. Do not fall into the trap of assuming that something must be true because it has been accepted by many people of high status for a long time. Do not mistake the ability to recall a set of claims, with the ability to compute the logical connections (and indeed contradictions) between these claims.

Before trying to build the real-time data model displaying the Special Theory of Relativity, I had what I thought was a thorough understanding of Relativity. I had already solved the many-body-problem in building more than a dozen computer applications which demonstrated gravity operating happily between as many as 200 objects of uneven mass in real-time. I fully expected that I would just need to amend my existing model with a few quite simple formulae and observe a slight change in the model's function, which would in all probability be insignificant.

In addition, there was also a fellow on the [Frostcloud.com](http://Frostcloud.com) forum named 'Imagine' who first showed me that Relativity was deeply suspect. To him I am deeply grateful. Without that

analysis it is quite unlikely that this chapter would have been written. However the forum moderator 'Ice' became a bit *uncool* and destroyed almost the entire forum in a fit of rage due to the over-abundance of 'free speech' that was taking place. So alas, I have not been able to return to that *particular* catastrophe. So there exists perhaps at least one other reason for disproving relativity which has become lost.

I am not suggesting that the entire body of Einstein's Theory is wrong. After all, the atom bomb and the Hydrogen bomb obviously worked. This analysis deals with motion of mass through space and time, specifically under the force of gravity. But it seems that one or more points of unverified mathematical speculation were taken for fact, and from there onwards the false premises compounded.

The difficulty in this particular study is not seeing the falsehood in Relativity, but in trying to find which parts of the theory are still valid, and from there identifying where the errors took place. Then, the even more arduous undertaking is to attempt to reconstruct the theory into a computable model.

It has been quite a deeply moving process to challenge the most famous theorist of the last 100 years, purely from a psychological point of view. But taking on the doctrinaires is becoming a bit of a habit. And although this task is the most painstaking I have yet endeavored, it follows on from the earlier parts of this work, and so I have no choice but to stare such extremity of adversity square in the face and continue computing in a purely logical manner.

I have tools which none of the earlier contenders had: Two decades of experience writing computer software, and a decade in Psychology. The power of these two tools cannot be underestimated. I also have the historical advantage of having their great work to build upon. The revision of this famous theory was much easier than expected from a computational point of view. But to make the psychological effort of will to do so; to have the psyche to believe it possible that little me and my noisy dilapidated PC could achieve this, was by far the greater undertaking.

It is just not possible to program a real-time data model when the various formulae within that model are in contradiction to one another. This does not mean that my revision is necessarily correct. But the real-time data-model has certainly shown up the contradictions in Relativity. The data-model thus becomes a minimal benchmark for the internal logical consistency of any mathematical theory.

It would not surprise me if other theorists had uncovered the catastrophes outlined in this chapter, but their attempts to simply articulate the truth were ridiculed to death. Being able to see fault is one thing, but to solve the fault – to correct the theory – is perhaps what these theorists had been unable to do. However, much of the acceptance of the false theory within Relativity is possibly due to the role it plays in military strategy.

Historically it made perfect military sense to leave the issue confused as to how atomic weapons and atomic power work. Practical implementation and theory, very often do not coincide anyhow. But, it would have been an awful tragedy if the likes of Bin Laden had been able to construct atomic weapons. However, with current surveillance exemplified in the capture of Mohamed Al-Qahtani, (using satellite technology), I believe that the academic smoke-screen of Einstein's Relativity is no longer necessary. The only conceivable manner with which one could evade the surveillance of the American communication network these days would be to use hand written letters or carrier-pigeons. This is a highly unlikely scenario. And anyhow, the smoke-screen is not going to be as easy to lift as it has been to simply compute through the math, and then construct this chapter.

It would be misleading to suggest that Relativity is a single ontology. Even after we separate the 'Special' theory from the 'General' theory and look just at the Special part, there are two quite

separate processes. When we deal with  $E=MC^2$  it has nothing to do with the interaction between multiple bodies in space over time at a variety of velocities and accelerations. All  $E=MC^2$  tells us is that mass can be turned into energy. So the empirical measurement of  $E=MC^2$  was measured independently of the making of atomic bombs. As Feynman informs us:

p. 90 For this reason poor old Einstein was called the “father” of the atomic bomb in all the newspapers. Of course, all that meant was that he could tell us ahead of time how much energy would be released if we told him what process would occur. The energy that should be liberated when an atom of uranium undergoes fission was estimated about six months before the first direct test, and as soon as the energy was in fact liberated, someone measured it directly (and if Einstein’s formula had not worked, they would have measured it anyway), and the moment they measured it they no longer needed the formula. Of course, we should not belittle Einstein.

As we can see, the theory normally follows the practical, and it is only on rare occasions that theory leads to the practical. But let us not fall into the opposite trap of ignoring theory. Those rare occasions where the theory leads to the practical are the occasions that give that big leap of progress which makes it all worthwhile.

So let me start by demonstrating all the incomputable elements within that part of Relativity that deals with objects accelerating through space at high velocity, and leave the atom bomb to those who have a penchant for such excitement. After all, this study on Astrophysics started with trying to understand how Solar Systems form.

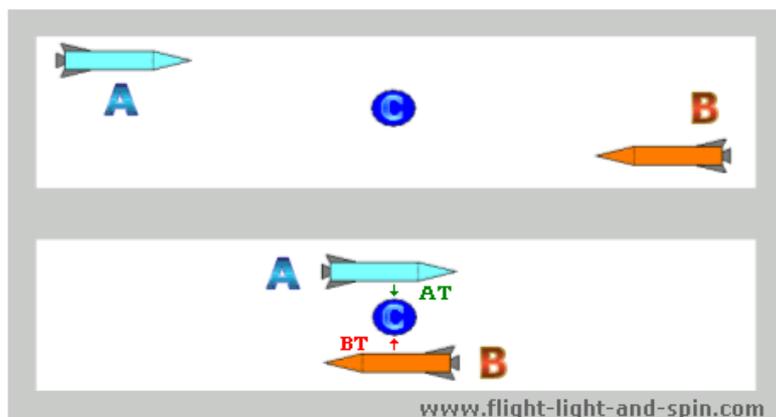
# 1

## THE DILATION OF TIME CONUNDRUM

Two unmoving spaceships: A & B are the same distance from an observation point C.

The observer at point C sends a signal in both directions which will reach A & B after the same amount of time. This signal thus starts both spaceships moving simultaneously.

Both spaceships accelerate identically and reach the same high velocity on their way to point C. This velocity is close enough to the velocity of light so that they should apparently be significantly affected by time dilation according to the principles of Special Relativity.



At the precise point that they pass by C, both spaceships send a signal which is the measurement of the time on their own clocks to reach point C. These signals are marked AT & BT in the second diagram.

Both spaceships are in a state of perfect symmetry from the perspective of C.

It is therefore clear regardless of the exact value of AT & BT, that these measurements of their respective times (including any time dilation) will be equal to one another at the point of passing C, from the observation point of C.

Thus  $AT = BT$  when perceived from the observer at C.

However the signals sent out are also both received by the other ship!

So A receives the signal BT, and B receives AT. There will be a very small delay in the time that it takes the signals to pass between the ships. Seeing as the measurement is taken before the signal is sent (as they both symmetrically pass by point C) this will not affect the actual measurement, and thus the signals sent will be identical.

Both ships each will therefore be able to see that the times of their flight are such that  $BT = AT$  when they arrive at point C.

We do not need to specify any values to see that despite a large effective velocity between A & B, that there can be absolutely no effective time dilation between A & B!

*This proves that time dilation due to relative velocity as specified in the Special Theory of Relativity can only be a logical and empirical impossibility!!*

### THE DILATION OF TIME DILEMMA

The *time dilation conundrum* was previously published online as *the time dilation dilemma*. It is essentially the same problem, but I repeat the original thought experiment here. Many people could not comprehend the dilemma, which is why it was rephrased as the conundrum.

**A** and **B** are small bodies accelerating away from each other due to the force of gravity which is the result of the much larger yellow and blue stars.



*What is the time dilation that A and B experience under the effects of Relativity?*

From the perspective of **A**, the body **B** is accelerating away. Thus **B** should experience a time dilation relative to **A**. So, time for **B** is expected to slow down relative to **A**.

And yet from the perspective of **B**, it is **A** that should experience time dilation! Clearly if both experience the time dilation, then time will be the same for both, and the result is that there is no time dilation.

This is quite a problem. Both **A** and **B** cannot be suffering from the same degree of time dilation without there being no effective time dilation between them. Of course if we take the point of reference to be **C**, it looks like we solve the problem.



But both **A** and **B** are still accelerating away from each other without any effective time dilation.

As we shall see later, the formula for time dilation is derived from the formula for space contraction and the formula for velocity reduction. So if we consider that there simply cannot be a time dilation between **A** and **B**, then how can there be a velocity reduction between them? The formulae for both time dilation and velocity reduction have the same mathematical origin. The tragic result of this is that without a velocity reduction, there can be no limit between them as regards the velocity of light!

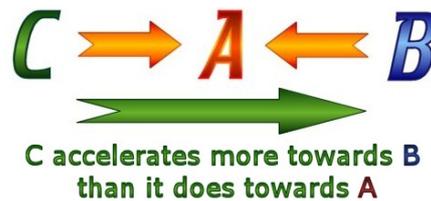
Of course it can be insisted that all the calculations regarding Relativity must be made according to the center point **C**. But this is in total violation of the principle at the core of Relativity: There is supposed to be no absolute fixed point of reference at all!

This shows that the Special Theory of Relativity is, at the least, incomplete; and at the worst, fundamentally flawed.

## 2

### THE RELATIVE POSITION CONTRADICTION

This problem further explains how the various premises that comprise Relativity are mutually exclusive to one another. Consider this straight line: Objects **C** & **B** are accelerating towards object **A** under the force of gravity.



Thus object **C** has a different acceleration in relation to **A** than it does to **B**.

Now, according to Relativity, the adjustment made to the velocities would therefore be different depending on which object it is accelerating towards. The two measurements have a different proximity to the velocity of light, so the Lorentz formulae will reduce velocity differently.

Object **C** is said to suffer from a lesser reduction in velocity in relation to **A** than it does to **B**. This is because **C** is further from the velocity of light when it moves in relation to **A**, than when it moves in relation to **B**.

So! The change in velocity of object **C** under the effects of Relativity would then be different in relation to the two other objects. The result would be that object **C** *has a different position* in relation to the other two objects!

*So how can an object be in multiple positions relative to two different objects?*

Once more, Relativity causes a blatant contradiction.

Of course it will be countered that they are not in the same time, and space 'contracts' depending on relative positioning. But in order to compute this, we still need to measure such relations in an objective frame of reference.

If two objects have ‘different times’, then those two times still stand in proportion to one another. We still must calculate such a relation objectively. The only way this can be done is to use an over-arching time frame. All other time frames would have to be in proportion to this. So the only way to compute relative time is to do so in proportion to an objective time.

Now the contraction of space has never been observed, but even if it had, any such contraction would still be measured according to an objective frame of reference. How could we possibly measure any type of contraction, unless we said it was contracting in relation to something that was not contracting? If we say that our reference frame is also contracting, then it would be impossible to calculate it. Such a contraction could never be objective. It could only be illusory.

We commonly observe that a tree on the horizon is much smaller than the same tree up close. Our relative position makes it appear smaller. If we place a ruler next to the tree on the horizon, then the ruler itself appears smaller. But nobody can possibly agree that the tree itself has two different sizes depending on our relative position.

I am *not* saying that Relativity is identical to the tree on the horizon. What I am saying is that the objective frame of reference must be a premise before we can calculate what a relative observation will appear to be.

Never mind that relative time is wholly at odds with Planck’s notion of quantum time. Any difference in ‘times’ still must be measured in relation to an objective frame of reference, in order to be measured at all. How can a quantum of time dilate without consisting of an even smaller quantum of time? (I will get back to this later).

This is perhaps not making sense to those who hand-write exams on the material. They can always just resort back to the basic principles of Relativity, regardless of how mutually exclusive to one another they are; write them down, and feel that such constitutes ‘understanding’. The teacher grades the work, and if they have memorized ‘correctly’, then they get the grades – and this is considered ‘understanding.’

But it all becomes quite clear when one tries to compute 3 objects in real-time. The real-time computer algorithm cannot compute the incomputable. The positions of the objects in space, and their position in time must stand in proportion to one another objectively. The computer algorithm always gives contradicting mathematical data, and conflicting visual data, when we try and compute 3 objects under the principles of Relativity.

Most of calculus is redundant when compared to the real-time algorithm. There is very little in calculus that cannot be calculated better, faster, and more accurately with a real-time algorithm. Any inconsistencies in premises will be shown up when trying to execute the program. The experienced programmer will realize these problems when trying to begin the construction of the algorithm with 3 objects or more. The only way we can accept Relativity is to state that the universe does not operate according to the principles of logic and mathematics.

If at this point, you are content that Relativity has fundamental errors in its calculations, you can skip through to **Part 10** which begins to rectify the problem by dealing with the difference between a wave and a particle.

If you really want to ‘cut to the chase’ – then skip to **Part 14**, which answers the crucial question: ***‘Can we reduce added momentum whilst conserving momentum?’***

If you still need more proof that Einstein’s Special Theory of Relativity is fundamentally flawed (or are just curious) then continue reading...

### 3

#### THE RELATIVE MASS CATASTROPHE

Relativity claims that all velocity is relative and that there is no difference between object **B** moving away from object **A**, or object **A** moving away from object **B**. In addition it also claims that there is no point in the Universe that has zero velocity. This is due to the Michelson-Morley experiment (more on this later).

Relativity also claims that an object's mass increases as its velocity increases according to the Lorentz transformation:

(From Feynman, P. 49)

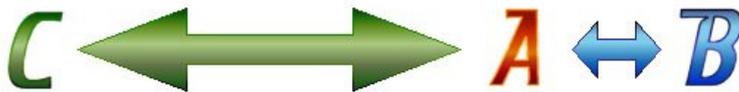
now know that this is not true, and that the mass of a body increases with velocity. In Einstein's corrected formula  $m$  has the value

$$m = \frac{m_0}{\sqrt{1 - v^2/c^2}}, \quad (3.1)$$

where the "rest mass"  $m_0$  represents the mass of a body that is not moving and  $c$  is the speed of light, which is about  $3 \times 10^5$  km · sec<sup>-1</sup>

Now it seems blatantly clear to me that these claims are logically at odds with one another in such a way as to be mutually exclusive in purely computational terms. How can we consider that velocity is relative and there is no such thing as a fixed point of reference, and then at the same time talk of an object being at rest by having 'rest mass'? *If no point is at rest then there can be no such thing as rest mass.*

But let me take this further: Consider the scenario where you are located at position **A**. Object **B** is moving away from you at some small velocity, and object **C** is moving away from you at some much greater velocity.



Now according to the notion that velocity is relative, we could equally say that **A** is moving away from **C** at some great velocity; or, **C** is moving away from **A**. **A** is also moving away from **B** by some small velocity; or, **B** is moving away from **A**. According to this theory, it makes no difference which is moving away from what, thus the arrows (above) are depicted going in either direction.

***But the increase in the mass of **A** is a large amount relative to **C** but it is a small amount relative to **B**?***

So which one is it? Surely this is a contradiction of the highest order? We cannot be adding both increases in mass? For then we would have to increase mass enormously due to most objects receding from one another at ever increasing velocities due to the expansion of the Universe.

Somewhere there is a Galaxy on the other side of the Universe moving away from you at near the velocity of light, thus you are moving away from it, and thus your mass is now almost infinite. That is just not possible. (Of course we have no way of deciding which is at rest in the first place.)

A potential answer to this dilemma could be that we need to allegedly add the sum of these velocities together before somehow applying the Lorentz transformation. But let me head this idea off at the pass. If this were true, we would then have to add the velocities of all the particles in the Universe together first, which are going to average zero. *And*, we would need to ignore the expansion of the Universe to try this.

The Lorentz transformation, at best negates itself, and at worst is just plain false as it will give every object in the Universe almost infinite mass (if we include the expansion of the Universe). Either way it will not compute.

I posted the *relative-mass catastrophe* on the [exploringyourmind.forumotion](http://exploringyourmind.forumotion.com) forum earlier this year (2014), and within a week I was reading how Hawking had refuted all his previous theories on black holes, even going so far as to say black holes do not exist. That paper was not reviewed by his peers. Do not assume that this topic of thinking is cut and dried - far from it.

It all gets messier than this. But I urge the reader to stay with the argument, for I will resolve all the catastrophes eventually, but first the knot of ideas must be examined from every perspective so that my conclusion can be seen to be correct from every angle.

Now consider this *astounding* quote from Feynman (p. 88):

ing still, but *more*. Astonishing as that may seem, in order for the conservation of momentum to work when two objects come together, the mass that they form must be greater than the rest masses of the objects, even though the objects are at rest after the collision!

So because two objects are moving towards one another, Relativity gives them an increase in mass as their velocity approaches the velocity of light. The mass is carried over in such a way that if these two objects collide and stand still, then their combined mass is more than the sum of their masses before they started moving.

How can that work? Do the atoms increase in mass, so that the atomic mass is not constant? Or do extra atoms materialize to give added mass? Considering that some atoms have undergone more velocity changes than others over the history of the entire Universe, it would be expected that there should be quite vast discrepancies in the various masses of atoms. Once more relativity is proven to be unempirical.

Recently I have been informed that the added mass is not real, but 'virtual' and only exists relative to the object's velocity. Yet the above quote from Feynman clearly states that when the objects collide, the mass is retained regardless of how the velocity has changed.

But as I have already shown, the concept of relative mass breaks down for a much simpler reason. The formula clearly states that there is a phenomenon termed: 'rest mass', but in Relativity there is no such thing as 'rest' because the objects are moving *relative* to each other. Relative mass fails empirically and also in terms of its own internal logic.

Feynman tries to reconcile this by stating that the object that does not undergo acceleration is the object at 'rest'. But this still will not work because if two rockets are moving away from each other, then no object can be said to be the 'rest object' by any stretch of the imagination – and none of the other effects of Relativity could then apply, and the two rockets could have a combined velocity greater than the velocity of light, and Relativity collapses once more.

## 4

### THE PHOTON MASS CATASTROPHE

In the Ohanian textbook I find three references to photons having zero mass and two which claim that light must have mass, because it has energy. Feynman also seems to realize that if light has energy; and energy and mass are interchangeable, that light must then have mass (Feynman, p. 102). Most theory claims that photons have no mass.

Many readers should be familiar with the horrendous term 'wavicle' (*even my spellchecker does not like it*) which has been used to describe the 'dual nature of light' which 'sometimes behaves as a particle and sometimes as a wave'. The 'dual' nature of light is a blatant contradiction.

What follows is Newton's formula for calculating the total gravity between two objects. (Previously all that was needed in this treatise was the formula for calculating the force of gravity acting on one object.)

From Ohanian:

Expressed mathematically, the magnitude of the gravitational force that two particles of masses  $M$  and  $m$  separated by a distance  $r$  exert on each other is

$$F = \frac{GMm}{r^2} \quad (1)$$

where  $G$  is a universal constant. The direction of the force on each

And this is how Relativity tries to improve matters by increasing the mass according to its velocity as the object approaches the velocity of light:

$$m = \frac{m_0}{\sqrt{1 - v^2/c^2}}$$

Now the issue of gravitational lensing causes these two formulae to flatly contradict one another. In Newton's formula, if one of the bodies has no mass, then either the 'M' or the 'm' is zero and there will be no force of gravity. So if the photon has no mass then it is not subject to gravity!

But gravitational lensing is empirical proof that photons are affected by gravity! Hence the photon must have mass, or Newton is wrong? Seeing as though the laws of Newton have been used to predict the existence of many celestial objects before they were seen, it seems that Relativity is the theory at fault...

In the second formula (above) called the Lorentz transformation if 'v' as equal to 'c' then the object is traveling at the velocity of light and mass becomes infinite. So now if the photon has

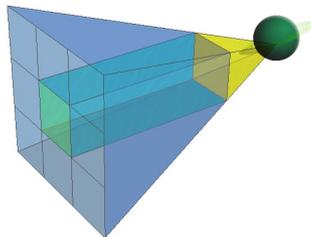
some mass then that mass is infinite? Even if the photon has no mass, we still get a division by zero error!

***If  $v = c$  then the denominator in the latter formula is zero regardless of the mass.***

And yet, the *Compton affect* (Ohanian, p. 910) shows that photons impart momentum. The formula  $p = mv$  then proves that a photon must have mass or else the photon could not impart momentum. The momentum of the photon would be zero if its mass is zero. We can use  $p = mv$  to calculate the mass of the photon, which is its momentum divided by the velocity of light.

Many theorists seem to prefer allowing Newton to *spin* in his grave rather than Einstein. That is why it is more pervasive to read about a photon having no mass, than it is to have people declare Einstein wrong. The torturous concept of the *wavicle* tries to warp our minds into accepting that these two ideas are not contrary, and the notion of 'bent space' is bundled in to bully our brains into submission.

I have already shown how Newton's law divides by 'r' to the power 2 precisely because it is confined to 3-d space in a previous chapter. Just to remind you:



***Any process spread out at three times the distance covers nine times the area.  
The inverse of the square law is precisely confined to three dimensions.***

Now if space is bent (which I do believe to be true) then the law of gravity will bend with it, and therefore nothing strictly existing within this bent space will be affected by the bend!

Let me demonstrate the above idea in simpler terms. Draw a star with an elliptical orbit around it (*or an advancing ellipse for that matter*) on a piece of paper, such that it complies with Newton's law of gravity. Now if I bend or buckle the piece of paper, then the mathematical relationship between the star and the orbit will not change from a perspective confined to that piece of paper. Or if you prefer, use an orbit game with a bendable computer screen. Bending the screen does not affect the laws within the screen.

*The diagram in Ohanian from much earlier in the chapter on Quantum gravity cheats! It chops out a piece of the paper! Bent space is not 'chopped out' space. I'd like to see the formula for 'chopped out space'! Let alone the real-time computer application!*

Yes, space is bent. We can determine this because of the expanding Universe. The only way that the most distant Galaxies can be retreating at the fastest velocities is by realizing that the Universe is expanding in all directions at the same time. The only way that the Universe can be expanding in all directions at the same time is because it is a four-dimensional sphere. And a sphere always has a curve to it regardless of how many dimensions it has.

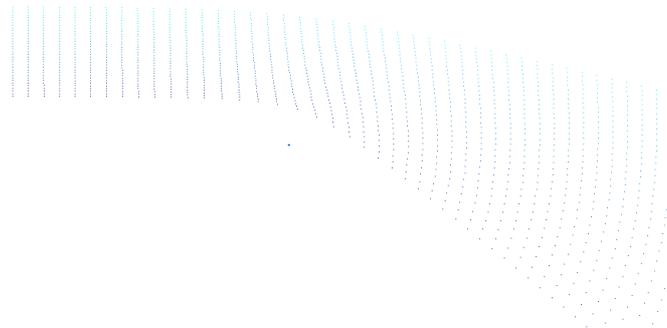
We can see this because of the popular balloon analogy. If we are positioned at one point on the surface of an expanding balloon, then the points of the expanding balloon that are the most distant from us will expand away from us at the fastest velocity. So the shape of our Universe can only be a four-dimensional expanding sphere. And the surface of any sphere is always bent.

But if we draw a circle on that balloon and push a finger into it, to cause a dent, then the line of that circle may appear distorted from our perspective, but anyone confined to the surface would have their perspective also dented, and so would not notice the dent. Any law that is strictly confined to the surface bends with the surface.

As I said in another chapter: to describe gravity as bent space makes mathematical sense. But the phrase 'gravity *is* bent space' is entirely different from 'gravity *and* bent space'. If gravity *is* bent space then bent space is already accounted for and cannot be added a second time!

If we consider gravity to *be* bent space, then the laws of Newton must still apply. *And*, if an object has no mass it will still not be affected by the bent nature of space if gravity is the cause of the bend. Of course the very notion that an object affected by the force of gravity can have no mass, I have already shown to be impossible.

So I constructed *orbit-game-10.exe* to demonstrate the theories in real-time computation. And this is what I noticed:



The photons move left to right. In the first graphic (above), some photons are naturally magnified by the force of gravity. In the second image (below), Maxwell's limit on the velocity of light has been imposed. Notice that this magnifies the lensing effect of gravity. Obviously if the light is *not* allowed the benefit of increased velocity due to the gravity-assist (slingshot or whiplash effect), then the light will bend more. Well, if you don't think that is obvious, then just build a computer program and see for yourself.



These images are obviously exaggerated somewhat with an extremely large gravitational force as well as large quanta of time. But other than that, the principle is that of gravity. So Newton and Einstein are at odds. Feynman suggests that light is bent more than we would expect it to (Feynman, p. 144). But if the photon has no mass then it would not be expected to bend at all!

## 5

### THE RELATIVE VELOCITY MYSTERY

According to Relativity, as an object approaches the velocity of light, momentum that is added in purely Galilean (or Newtonian) terms has to undergo a transformation so that it only ever approaches the velocity of light and never reaches it. So if a starship is moving at half of the velocity of light and it fires a missile which is calculated to also move at half the velocity of light, the net result is that the missile only moves at 4/5ths the velocity of light.

The following formula *must* be expressed with velocity in terms of 'C' (the velocity of light). Thus all the velocity values entered into this formula must be less than, or equal to one, expressed as a fraction of the velocity of light.

From Ohanian:

$$v_x = \frac{v'_x + V}{1 + v'_x V}$$

The new velocity is the sum of the two velocities divided by one plus their product.

The formula for the 'combination of velocities' is derived from the two fallacies of dilated time and contracted space which are to follow in the next section. So go ahead and place some values into the formula and see how well it works. This really seems like a nice formula. I would not want to hurt it.

*And yet, if our starship is stationary and fires a missile, then that missile suffers from none of the effects of Relativity.*

If one of the velocities is zero then Relativity has no effect. Put that data in the formula and see for yourself.

The problem here is that no missile just jumps to its intended velocity. It starts off slowly, and accelerates. So it is not really possible to just sum the velocities. We are in a very similar dilemma to Zeno's Paradox here. We need to calculate every tiny increase in velocity with every microscopic adjustment over every quanta of time. If we do this, then the missile will have a different calculated velocity as to when we do not do it this way.

If every split-second the missile is losing some of its added velocity according to this formula, then we have a problem, because if we do not use quantum time, then one of the velocities is zero and then we do not lose any potentially added velocity due to Relativity. (*How is it even possible to have zero velocity in relativity?*) The accelerating missile loses velocity whereas the instant missile does not. That is two different answers.

If, for example we jump four times in periods of 0.1C we get a different answer to if we jump in two periods of 0.2C.

Another example: If we jump to 0.25C and then again another 0.25C to 0.5C, then the second jump is contracted, the first is not. If we jump straight to 0.5C then there is no contraction at all.

Quantum time is the only way to solve this. We cannot jump in large amounts, and the smaller we make quantum time, the smaller that first jump is going to be (the one that has no contraction). The margin of error is in proportion to how accurate quantum time is measured at.

But if a photon comes into existence at the velocity of light then the formula adds up to one, which is quite fine as that is the velocity of light. I have called this a 'mystery' rather than 'catastrophe' as the formula works. The formula is merely inaccurate, and not 'wrong'. But then again, as we shall see, the light-barrier is not quite so sacred either! But quantum-time is an imperative.

## 6

### THE CONTRACTION OF SPACE AND TIME CATASTROPHES

Apparently, Relativity requires us to contract space, and also to slow down time when the velocity gets extremely high. The 'Lorentz Transformations' are the calculations which are derived from the formula used for the summing of velocities. Or the summing of velocities can be derived from the Lorentz transformations if you prefer (Feynman p. 79-81). The following simplified formulae are quoted from Ohanian (p. 430-431):

$$\Delta x' = \frac{1}{\sqrt{1 - V^2}} \Delta x$$

As you can easily see, the changes to space and time follow the same calculation as that of the mass earlier.

$$\Delta t' = \frac{1}{\sqrt{1 - V^2}} \Delta t$$

The x gives the contraction of space, and the t gives the slowing of time. If  $V = 0$  (zero velocity) then there is apparently no change in either space or time. As  $V$  approaches 1 (the velocity of light) the changes approach infinity as the denominator approaches zero. So at near the velocity of light, time supposedly almost stops and space becomes very tiny.

When Einstein first postulated the idea that added velocity *contracts* space in 1905 (Hawking p. 20), it was not known that the Universe was *expanding*. Hubble's empirical observation for the *expansion* of space in 1929 (Hawking p. 42) contradicts the formula for *contracting* space.

This is a clear contradiction. And it is Einstein's mathematical Philosophy that is in error. That is, his interpretation of the math is at fault. It is not the calculation that is incorrect, but the *meaning* of the calculation in *philosophical terms* that is wrong.

One of the mistakes the Relativists made is that *the two formulae are derived from the contraction of velocity*. Feynman takes us through these calculations (Feynman, p. 79-81). So, if we calculate that added velocity is less, then these two formulae (of space contraction and time dilation) have already been applied!

On a first reading, you will not want to read this entire quote. Just note the highlighted parts. The first two highlights are the more complex variations for the change in space and time, and the second last highlight is the result for the formula of contracted velocity.

The final result is that added velocity is lost:  $0.5C + 0.5C = 4/5C$

Earlier formulae are simplifications of those in the following quote. This is a most vital part of the analysis, as it shows how perfect math with incorrect philosophy of that math leads the analyst astray.

#### 4-3 Transformation of velocities

The main difference between the relativity of Einstein and the relativity of Newton is that the laws of transformation connecting the coordinates and times between relatively moving systems are different. The correct transformation law, that of Lorentz, is

$$\begin{aligned} x' &= \frac{x - ut}{\sqrt{1 - u^2/c^2}}, \\ y' &= y, \\ z' &= z, \\ t' &= \frac{t - ux/c^2}{\sqrt{1 - u^2/c^2}}. \end{aligned} \quad (4.1)$$

These equations correspond to the relatively simple case in which the relative motion of the two observers is along their common  $x$ -axes. Of course other directions of motion are possible, but the most general Lorentz transformation is rather complicated, with all four quantities mixed up together. We shall continue to use this simpler form, since it contains all the essential features of relativity.

Let us now discuss more of the consequences of this transformation. First, it is interesting to solve these equations in reverse. That is, here is a set of linear equations, four equations with four unknowns, and they can be solved in reverse, for  $x, y, z, t$  in terms of  $x', y', z', t'$ . The result is very interesting, since it tells us how a system of coordinates "at rest" looks from the point of view of one that is "moving." Of course, since the motions are relative and of uniform velocity, the man who is "moving" can say, if he wishes, that

it is really the other fellow who is moving and he himself who is at rest. And since he is moving in the opposite direction, he should get the same transformation, but with the opposite sign of velocity. That is precisely what we find by manipulation, so that is consistent. If it did not come out that way, we would have real cause to worry!

$$\begin{aligned} x &= \frac{x' + ut'}{\sqrt{1 - u^2/c^2}}, \\ y &= y', \\ z &= z', \\ t &= \frac{t' + ux'/c^2}{\sqrt{1 - u^2/c^2}}. \end{aligned} \quad (4.2)$$

Next we discuss the interesting problem of the addition of velocities in relativity. We recall that one of the original puzzles was that light travels at 186,000 mi/sec in all systems, even when they are in relative motion. This is a special case of the more general problem exemplified by the following. Suppose that an object inside a space ship is going at 100,000 mi/sec and the space ship itself is going at 100,000 mi/sec; how fast is the object inside the space ship moving from the point of view of an observer outside? We might want to say 200,000 mi/sec, which is faster than the speed of light. This is very unnerving, because it is not supposed to be going faster than the speed of light! The general problem is as follows.

Let us suppose that the object inside the ship, from the point of view of the man inside, is moving with velocity  $v$ , and that the space ship itself has a velocity  $u$  with respect to the ground. We want to know with what velocity  $v_x$  this object is moving from the point of view of the man on the ground. This is, of course, still but a special case in which the motion is in the  $x$ -direction. There will also be a transformation for velocities in the  $y$ -direction, or for any angle; these can be worked out as needed. Inside the space ship the velocity is  $v_x$ , which means that the displacement  $x$  is equal to the velocity times the time:

$$x' = v_x t'. \quad (4.3)$$

Now we have only to calculate what the position and time are from the point of view of the outside observer for an object which has the relation (4.2) between  $x'$  and  $t'$ . So we simply substitute (4.3) into (4.2), and obtain

$$x = \frac{v_x t' + ut'}{\sqrt{1 - u^2/c^2}}. \quad (4.4)$$

But here we find  $x$  expressed in terms of  $t'$ . In order to get the velocity as seen by the man on the outside, we must divide *his distance* by *his time*, not by the *other man's time*! So we must also calculate the *time* as seen from the outside, which is

$$t = \frac{t' + u(v_x t')/c^2}{\sqrt{1 - u^2/c^2}}. \quad (4.5)$$

Now we must find the ratio of  $x$  to  $t$ , which is

$$v_x = \frac{x}{t} = \frac{u + v_x}{1 + uv_x/c^2}, \quad (4.6)$$

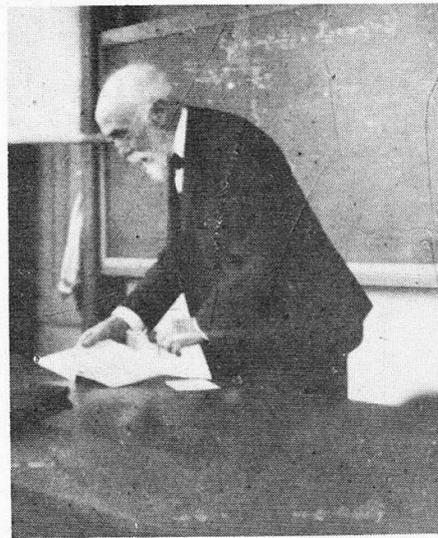
the square roots having cancelled. This is the law that we seek: the resultant velocity, the "summing" of two velocities, is not just the algebraic sum of two velocities (we know that it cannot be or we get in trouble), but is "corrected" by  $1 + uv/c^2$ .

Now let us see what happens. Suppose that you are moving inside the space ship at half the speed of light, and that the space ship itself is going at half the speed of light. Thus  $u$  is  $\frac{1}{2}c$  and  $v$  is  $\frac{1}{2}c$ , but in the denominator  $uv$  is one-fourth, so that

$$v = \frac{\frac{1}{2}c + \frac{1}{2}c}{1 + \frac{1}{4}} = \frac{4c}{5}.$$

Feynman p. 79-81

But poor old Lorentz never used these formulae in this way himself at all! Lorentz's work has been debased by the Relativists.



**Hendrik Antoon Lorentz,**  
 1853–1928, Dutch theoretical physicist, professor at Leiden. He investigated the relationship between electricity, magnetism, and mechanics. In order to explain the observed effect of magnetic fields on emitters of light (Zeeman effect) he postulated the existence of electrons, for which he was awarded the Nobel Prize in 1902. He derived the Lorentz-transformation equations by some tangled mathematical arguments, but he was not aware that these equations hinge on a new concept of space and time.

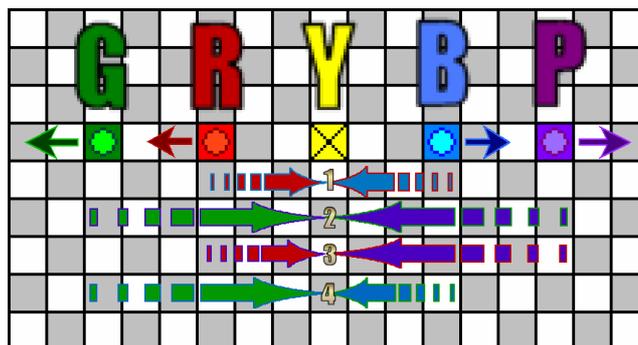
Ohanian p. 428

Tangled indeed! Hawking claims that Lorentz did postulate the contraction of space and dilation of time (Hawking p. 20). I am not concerned about who made the philosophical error. (My guess is that I trust Ohanian on this one.) But there are even more contradictions with contracting space and dilating time than this.

The problems become evident when we try and calculate more than two particles with varying velocities. This is similar to the relative-mass-catastrophe, in that we are expected to contract space and time differently in relation to different particles. Never mind the time issue, just consider the space issue for now.

*If a block of space contracts differently relative to every particle in the Universe, then the entire concept of space becomes increasingly contracted with the more particles we take into account.*

In the following diagram four objects are depicted: **G, R, B, P**, as well as an empty unmoving space labeled: 'Y'. The objects are moving away from 'Y' as the arrows of the relevant colors show.



The numbers **1,2,3,4** below the 'Y' *represent* the contractions in space that Y will experience (*not their real positions*) This is how the *four pairs* of objects moving away from Y will contract. **1** is the contraction between **R** and **B**, and **2** is the contraction between **G** and **P**, etc. (*I have not shown the contraction between G and R as we are only interested in the space Y.*) So any object that may be in position Y is going to be increasingly contracted with the more objects we add either side of it.

If we consider that **G** and **P** are Galaxies on the edge of the perception of the best radio telescopes, then their velocities are going to be quite close to the velocity of light, so contraction **2** at position **Y** is going to be most extreme!

Can you see the problem yet? (*Do you feel particularly contracted?*) Seeing as though every point at a far distance from us is moving away from us at velocities increasingly approaching the velocity of light, and all these particles have contractions, then we should have all contracted into such a narrow bit of space that we should have all but disappeared by now.

Of course contracted space makes no sense for other reasons.

I have already mentioned the main problem is that due to Hubble's red shift or Doppler affect, empirical observations show that the Universe is not contracting. The Universe is in fact expanding.

A possible way out of this dilemma is that if objects moving away from each other cause a contraction in space, then objects moving towards one another could cause an expansion in space.

However, I read nothing of this suggestion in any text. And it only slightly saves the day. If we ignore the expansion of the Universe (hypothetically) then expansions and contractions together will add up to something so close to zero it may well be zero. Of course there is no reason to ignore the expansion of the Universe, but I am just trying to cover all possibilities.

Surely if objects moving away from each other cause space to contract, then objects moving towards one another should cause it to expand again? Or are they saying that once some space has contracted, the space stays contracted forever? If this is true then the Universe should have long since contracted itself into almost nothingness.

But the sad contradiction in Relativity is that it results in the ridiculous notion that the expanding Universe should cause the Universe to contract. The Galaxies expanding away from us are moving away at the fastest velocities! And that cannot add up by any *stretch* of the most *contracted* of imaginations.

Is it computable for time to slow down? In some instances it is, but in at least one instance it is not. As an object gets closer to the velocity of light time is said to slow down more and more, so that when it reaches the velocity of light, time would be infinitely slow: it would stop.

$$\Delta t' = \frac{1}{\sqrt{1-v^2}} \Delta t$$

In this formula if  $v = 1$  then the velocity is that of light, so the change in time is divided by zero. This means that time would be infinite. The object would then come to an absolute stand still if it was moving at the velocity of light. And yet photons and electromagnetic waves are certainly not standing still.

Of course the Relativists are going to answer that it is only from one or other perspective that it is standing still and experiencing time slowed down to an infinite amount. But that makes no sense as the photon clearly departs from an atom and collides with another atom at two different times according to either perspective.

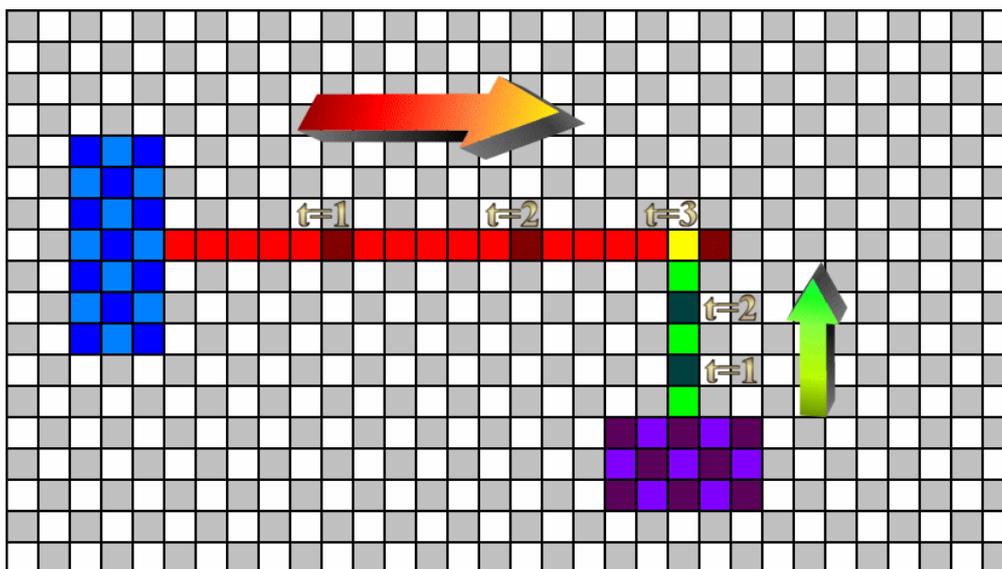
***Relative time results in an answer which is mathematically contradictory, which is incomputable, and which is counter-empirical for phenomena traveling at the velocity of light.***

# 7

## FIXED SPACE LOGIC

Consider four objects. A **Red** object moves *to the right* away from a **Blue** stationary object. A **Green** object moves away from a **Purple** stationary object *upwards*. The **Red** object is moving at a velocity of  $6/t$ , whereas the **Green** object moves at  $2/t$ . In the Newtonian (or Galilean) paradigm, the **Red** and **Green** objects do *not* collide.

At time=3 the **Green** object is in the **Yellow** square, whereas the **Red** object has moved one square to the right of that.



According to Relativity, the space between the **Red** and **Blue** is contracted more than the space between **Green** and **Purple**, simply because **Red** is moving faster than **Green**.

So when the **Green** moves into the **Yellow** block, it is moving into contracted **Red-Blue** space. But the contracted **Green-Purple** space is contracted differently to the **Red-Blue** space as the objects are traveling at different velocities and in different directions. And yet they are both expected to contract that same block with different contractions at the same time.

So we are left with two contradictory calculations to make in the same time and place, both of which cannot be true. If we try and sum both those contractions, then we have to sum up all such contractions, and the result of this has already been shown to be illogical in the previous section: If we sum all the contractions, the entire universe would collapse into nothingness.

The nature of space being contracted defies the *a priori* concept of logic itself. Relativity asks us to imagine a dream-world, where a position in space is not the same position in space that it is. Such a concept as 'this point in space' can freely defy itself as if it were an apparition of Xanadu! *The yellow block is where it is, and it is also elsewhere, at the same time as not actually being where it should be.*

This defies any attempt at objective calculation. Contracted space is illogical as it requires the premise of fixed space to begin with. So the conclusion to the calculation is at odds with the assumption that the conclusion is built on. It's like trying to pick yourself up by your own bootstraps.

Any distortions can only be measured by comparing those distortions to that which is fixed. When we alter an object's position in space (or time), we can only do so in terms of reference to undistorted space (or time).

*So individual 'contractions' can only be a change in velocity through fixed space and fixed time.*

Even if we contract space and time regardless of the complexity, we still have to measure those contractions relative to that which is not contracted. Then all we have actually done is alter the velocity! It makes no sense to alter space or time, only velocity can change.

We can try the notion of saying that each contraction in space only applies to each pair of particles. If we try and say that, then the yellow square contracts differently for each interaction. But that makes no sense because then the notion of space ceases to exist. "So", says the devil on my shoulder, "space does not exist, so what?" Well, if it does not exist then how can they say it has been contracted?!

In Visual Basic 6, we *can actually* give each particle its own event timer; so that the rate at which each of those objects moves is not only due to the number of pixels it moves (velocity). But the movement is also due to the speed at which we do each calculation. These speeds-of-calculation can differ for each object, and the speed of each event timer can be altered up or down as we want them to. So contracted time is somewhat computable. Of course each event-timer is going to be different relative to all the other event timers, so once more we have many contradictory times depending on which object it is we are calculating in relation to.

Even if we just fudge it and ignore those many contradictions and just focus on two timers it still makes no difference. Those two timers still stand in proportion to one another.

Conceptually: If we divide the speed of the timer's calculation (time) by two, it gives the same result as if we divide the number of pixels moved (velocity) by two.

'Slowing time' is just another way of slowing velocity. 'Contracting space' is the same calculation. At least as far as two objects on their own are concerned, the result is conceptually the same. More than two objects in contracted space cause the problems already outlined. Space is spread out in universal terms, whereas time can be somewhat calculated in local terms.

*What happens to the space in between the two objects if the space is contracted?*

What about a stationary object that happens to be three-quarters of the way between two objects? Does its movement change now because that space is contracting? If so then it is not a stationary object at all! But we have already defined it as stationary? So that is a contradiction in terms!

It is tempting to now suggest that the *expanding Universe* may also fall foul in the same manner, but not so. The expansion of the Universe takes place evenly over time. That can be calculated. Whereas these contradictory contractions here depicted take place differently for different pairs of objects within a single iota of time.

We can stretch a piece of paper or calculations on a computer screen without any contradiction. But we cannot stretch it in contrary directions at the same time. We cannot stretch it and contract it simultaneously depending on which objects we are calculating. That would be asking us to do opposing calculations.

We can try sum up the contrary contractions and expansions in a pre-calculated matrix, (in the way I solved the many-body-problem) but then we end up with a Universe which should be contracting in an extreme fashion. Yet the Universe is observed to be expanding! And because it

is this expansion itself that results in the largest extremities of velocity; Relativity stands in stark contradiction to the observed Universe, most especially when we try and apply it to every particle in the expanding Universe simultaneously.

Now! I have said that we can stretch space without contradiction, but earlier I showed that our calculations for gravity were unaffected by stretching space. Whether it is light or gravity or anything else, that that is being calculated, the inverse of the square phenomenon is rigidly confined to the three-dimensional space within which it exists. Any phenomenon that decreases by the inverse of the square is perfectly spread out in three-dimensional space. The diagram from earlier should make this clear.

The law of gravity is confined to three-dimensional space, but the geometry of space itself is four-dimensional. That is why we can expand the Universe in four dimensions, but not affect the three-dimensional law of gravity when doing so. When the balloon inflates, the phenomenon on its surface inflates with the balloon.

However, it is interesting to note that we seem to need two similar, but different, types of space.

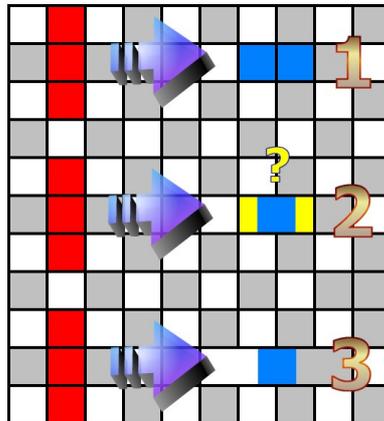
The expansion of the Universe has been measured, but if such space is expanding it can only be expanding in proportion to something that is not expanding. So our three dimensions of space are expanding in a fourth dimension, but only in relation to fixed four-dimensional space. There must be two subtly different 'types' of space to do this.

I would need two different matrixes of variables in order to compute expanding space. The expanding space is calculated proportionally to non-expanding space. Just like the surface of the balloon is not the same as the space in which it is expanding!

However, I read two ways in which it was postulated that space is said to contract. The one outlined already is a result of a direct application of the formula via Feynman. The more pervasive interpretation is that it is not space that is contracted, but instead just the object moving that somehow shrinks.

***But there is no way that the formula distinguishes between the object and the space it is in!***

I assume that this other interpretation of merely the object contracting was fudged in order to compensate for illogical conclusions similar to those outlined here. But how can the object contract, and not the space it is in? The formula for the change in distance measures space, not anything else.



A blue object is moving away from a red object (1). If only the blue object (and not space itself) contracts then what happens to the fractions of space (2) colored yellow? The only logical result

(3) would be that the surrounding space expands to fill the gap. This expansion is contrary to the formula stating that space contracts!

Of course what happens to an object moving vertically past (3) can only be incomputable. So even if we ignore the fact that it is space which is supposed to contract and fudge it so that just the object contracts; then we still end up with a contradiction in terms, because the space next to the object then expands to fill the gap.

The internal logic required to construct a computer algorithm will suffer no such ideas to persist. Never mind that nowhere in the formula can we ascertain any such difference between the space itself and the specific object at all...

## 8

### THE EINSTEIN-PODOLSKY-ROSEN PARADOX (EPR PARADOX)

Many studies have been made of these famous experiments. I do not wish to repeat what others have said on the topic. Einstein rejected the results as they seemed to indicate that wave patterns were being transmitted faster than the velocity of light. I have read the original documents some twenty years ago and was satisfied then that they demonstrated a signal being transmitted faster than the velocity of light; albeit on a scale that was not at all useful for any commercial purpose. The distance transmitted was far too small to create a faster-than-light telephone. But it is just worth mentioning that there is empirical evidence that proves Einstein's theory on Relativity is (at the least) empirically inaccurate.

But we do not need to contrive 'very expensive' esoteric experiments to see that the velocity of light can be contravened. If a photon is moving at the velocity of light, and it is spinning, then the part of the photon that is spinning is going to be moving faster than the velocity of light.

The Relativists will try and argue away the added rotational velocity by some or other contraction of space or time. But I have already shown that at the velocity of light their calculations will prevent the photon from moving at all as time should stand still. The photon should become frozen in time by a very similar *division-by-zero-error* that left poor Hercules in second place to a tortoise for several millennia!

## 9

### DECONSTRUCTION

Relativity is most easily proven wrong in this question:



The photons p1 & p2 are emitted from a light bulb in opposite directions at the velocity of light.

*What is the velocity of p1 in relation to p2 according to relativity?*

Well relativity suggests that no object can be moving away from another object at faster than the velocity of light. So if we know that p2 is moving away from the light bulb at the velocity of light, and relativity tells us that p2 is moving away from p1 at the velocity of light, then relativity results in the contradiction that p1 is not moving away from the light bulb.

*Now!!!*

*It is one thing to happily destroy a 'Special' theory which has been idol-worshipped for the better part of a century. It is quite another to find out precisely where the theorist went wrong, what parts of the theory still hold true, and to rebuild the theory into a logical structure which improves our understanding.*

I shall make what seems to be a logical theoretical attempt at this. I am not sure what to call this theory, so for now it shall be termed: **Sum Theory**. It is a return to the reliability of Newton, but summed together with some ideas salvaged from Einstein's Era.

In doing this, I had to carefully consider why it is that misconceptions were taken as true. There must have been good reasons to make the errors, and the primary method used in finding the new theory was to ask such a question as 'why did they think mass increased as added velocity decreased?'

This has been a far more arduous task than simply realizing that Relativity does not add up. So, to the reader that is precocious enough to find flaws in what I have said: ***You had better be careful! You will need to give a better answer than this if you can find such flaws.*** I shall explain **Sum Theory** by asking a series of questions and then answering them, in such a manner as to build up a clearer picture of the Universe devoid of those contradictory, counter-empirical, and unintuitive notions within Relativity. Some of these questions were offered earlier, so I am hoping the reader has an idea as to how to begin answering them. The questions run as follows:

- 10) *What is the difference between a wave and a particle?*
- 11) *Why did the relativists think mass increased with added velocity?*
- 12) *Why did they think that time slows?*
- 13) *Why did they think that space contracts?*
- 14) *Can we reduce added momentum whilst conserving momentum?*
- 15) *How can the Michelson-Morley experiment be explained?*
- 16) *Is time a dimension like space?*

You may want to spend some time pondering those questions as a unified set of questions before continuing. After answering them, I will make an attempt at answering some other nastier questions in a more theoretical manner. Consider:

- 17) *What is a magnetic field?*
- 18) *A relationship between the Heisenberg uncertainty principle and the EPR paradox?*
- 19) *Why are some objects invisible?*
- 20) *Wherefore spin?*

The number of catastrophes within Relativity is endless. Almost every time that I reevaluate this chapter, I discover another contradiction. It would be tedious to document them all. So let us begin the inquisition:

## 10

### WHAT IS THE DIFFERENCE BETWEEN A WAVE AND A PARTICLE?

We all have a good intuitive sense as to what a particle is. A particle has solidity to it. There are gaps between particles, and the forces which hold particles together, give groups of particles the appearance of being a single solid entity. We all know what is meant by 'the appearance of being solid' well enough to grasp the meaning of what 'solid' means. A sand-castle is not entirely solid, but when it behaves as a solid entity, it has all the properties of a particle. The terms 'entity' and 'object' are here synonymous with 'particle'.

But what is a wave? And of course, what is that horrid chimera: 'wavicle'? Well this is the point where I have to cry "foul", as the term 'wavicle' is a contradiction in terms. This is because a wave is a relationship between particles. A wave is also a relationship that a particle has with itself over time. Thus a wave is a mathematical construct and has no physical object status and cannot in any way be a particle. A typical wave in the ocean is just water molecules arranged in the mathematical shape we call a wave. This wave itself has existence only as a mathematical relationship between the particles of water.

We have already seen earlier when describing the spin of air molecules in the 'principles of flight' chapter, how a rotation and a wave exhibit the same mathematical structure. They are both termed: *sinusoidal*.

The mathematical essences of waves and circles are both that of the Sine curve. And the Sine curve, being a mathematical relationship between points can also describe a rotation. (This is why we use the Sine and Arcsine function in calculating rotating angles). Thus a wave has a frequency, which is the time taken for the pattern to repeat itself. Anything which oscillates or rotates has such a frequency over time, which is thus a relationship that an object has with itself.

So when we say that a photon exhibits an increase in frequency, what do we mean? An increase in frequency is always an increase in energy, and it seems clear to me that such an increase in the frequency of a photon can only be an increase in the rotation of the photon.

Or at least, if a photon consists of a number of smaller quanta, (in a 'packet') then those quanta are each rotating faster when the frequency increases. It is a misconception to think that light moves up and down like a wave in the ocean, for light moves in a straight line. So what can the frequency of the photon actually measure other than its rotation?

# 11

## WHY DID THE RELATIVISTS THINK MASS INCREASED WITH ADDED VELOCITY?

... to preserve the conservation of momentum. As Feynman tells us:

What happens if a constant force acts on a body for a long time? In Newtonian mechanics the body keeps picking up speed until it goes faster than light. But this is impossible in relativistic mechanics. In relativity, the body keeps picking up, not speed, but momentum, which can continually increase because the mass is increasing. After a while there is practically no acceleration in the sense of a change of velocity, but the momentum continues to increase. Of course, whenever a force produces very little p. 67

A certain force must result in a particular momentum.

As long as we preserve the velocity of light as an impenetrable barrier, and as long as we preserve the principle of the conservation of momentum, *we have no choice but to increase the mass*. Or so it seems. But appearances can be deceptive.

Einstein had already calculated that mass can be turned into energy, so it seemed to make sense that now energy was turning into mass. But in a nuclear reaction the elements that react change form. Whether it is the Uranium atom being split into smaller atoms, via fission; or in fusion, when hydrogen is fused into helium, the very atomic structure of the atoms change. But the reverse process does not occur here because a change in velocity does not change the atomic structure of the body that is moving.

# 12

## WHY DID THEY THINK THAT TIME SLOWS DOWN?

... because of Muons.

It would be very easy to get lost in the sub-atomic world at this point. But a brief outline is in order. There are a vast many weird entities that inhabit the sub-atomic world which we commonly think only to consist of protons neutrons, electrons and photons. Most of the other entities are unstable and only exist for a tiny portion of time, whereas the well-known entities are stable and seem to persist forever (*unless somebody throws a Hadron-Collider at them.*)

Essentially a Muon is similar to an electron but 200 times heavier, As Feynman tells us (p. 62):

muons move at various speeds, some of which are very close to the speed of light. While from their own point of view they live only about 2  $\mu$ sec, from our point of view they live considerably longer—enough longer that they may reach the earth. The factor by which the time is increased has already been given as  $1/\sqrt{1 - u^2/c^2}$ .

I have already expressed my reservations about the notion that time slows down. Simply put, any slowing of time can only be measured in terms of time that does not slow down, and a reduction in velocity gives the same mathematical measurement without time slowing down.

A slowing of time and a slowing of added velocity are essentially the same calculation done twice. The formula for one is derived from the other (Feynman, p. 80-81). A simpler example: We can describe the formula  $A = B - C$  as  $A = -C + B$ . But using one formula *or* the other is not the same as using the one *and* the other. (Because then we get  $A = 2B - 2C$ ). When I program the computer I can use either formula in a real-time computation and get the same result, but if I use both, the answer is quite different.

And I see no reason that the Muon cannot simply last longer for any number of reasons.

Let me give an analogy. A stone skimming across a river appears to last longer with added velocity. The stone's interaction with its medium (the water) preserves its *apparent* 'existence'.

Consider two stones skimming across a river, one which bounces once and disappears a yard away from me, and another that bounces repeatedly and reaches the other side. I could do a calculation which 'distorts time' in much the same manner as the Muon, showing that from an external viewpoint, time appears to have slowed for the stone that reaches the other side. They would both appear to exist for the same amount of time from their own viewpoints.

Another analogy would be to roll a coin across a table, but viewed at a distance from the side, so that once it falls over on its side, it cannot be seen. The faster I role the coin the longer it persists due to its interaction with its medium (the table). Once more I could do a calculation showing that from the perspective of the coin, the duration it spent rolling was the same for both the fast and slow coin, but for the person viewing it, the faster coin had a local dimension of time which slowed down.

In all the examples 'slowed time' for the stones, coins, or Muons, can yield the same result. But a change in velocity also yields the same result. Clearly, slowing velocity *and* time is not the same as slowing velocity *or* time.

Apparently various clocks have been perceived to slow down at large velocities. But any clock-like mechanism requires pressure to build up before it ticks over. When a clock accelerates, it does so under force. So a clock's mechanism will work differently when accelerating. I read no details which take this factor into account at all. Even the atoms in an 'atomic cock' are subject to pressure as the atoms themselves are subject to pressure.

## 13

### WHY DID THEY THINK THAT SPACE CONTRACTS?

This was just a mathematical result of what has gone before. But I know of no experiment that can prove this or even demonstrate it in strict computational terms. (The internal logic of contracted space breaks down with multiple objects, but the internal logic of contracted time is somewhat computable.)

It is one thing to be able to give two objects their own event-timer objects in the computer program; but quite another to try and contract the spaces on the screen. When the space between *two* objects is contracted, the calculation can be computed. But the moment a third object moving differently to the other two enters the space between the first two objects, the various contractions contradict one another.

So it makes no sense to confuse the *relationship* between the objects (their velocity) with the physical space between them. And, if we only contract the object then this causes the space

around that object to expand. These problems become glaringly apparent, when one considers that the contraction in space has already been accounted for in the reduction of added velocity. The formula for one is derived from the other, so they are technically the same formula.

## 14

### CAN WE REDUCE ADDED MOMENTUM WHILST CONSERVING MOMENTUM?

*This is the crux of matters!*

Of course this appears contradictory. But we do need to do this to stop the object from going faster than the velocity of light. How can we possibly simultaneously reduce momentum whilst conserving it? And Sum Theory hinges on resolving this dilemma. If we answer 'no' categorically here, then obviously I am wrong...

But first we must just note that mathematically, momentum here plays the same role as velocity. I could just as easily have asked 'Can we reduce added velocity while conserving velocity?' It is just more accurate to use momentum. And it is quite easy to answer this:

*The lost added momentum of the particle has become angular momentum!*

*That's right. 'Spin' solves the problem.*

This answer negates both notions of the contraction of time and space. (*Neither of which should ever been applied because they had already been accounted for in the reduction of added velocity anyway*). Conservation of momentum is upheld by converting linear momentum into angular momentum. Even the limit on the velocity of light has been upheld. This also does not contradict the expansion of the Universe like contracted space does. The formula for added velocity is mostly upheld, so long as we use quantum time in order to avoid the inaccuracies mentioned earlier.  $E=MC^2$  is preserved as energy and momentum are preserved. That part of Einstein's theory is untouched by this analysis and I see no obvious reason to doubt it.

Of course we can now discard *relative mass* which made no sense as it required the concept of *rest mass* which was itself in contradiction to the very concept of Relativity. Added mass was a calculation that was assumed in order to preserve the conservation of momentum. This was their major error. All that followed after this was because of this. The  $m$  in  $p=mv$  was simply increased to keep  $p$  the same while  $v$  was decreasing. If you go back to the quote of Feynman where I ask: *Why did the relativists think mass increased with added velocity?* Then you will see this precisely.

This also explains the nature of the Doppler affect. If a beam of light is shone from the front of an accelerating spaceship, then as the ship starts to move faster, the frequency of the light increases because the added momentum of the photon becomes increased photon spin. IE, the light turns bluer as the velocity increases. Blue light has a higher frequency because it spins more. The lost added energy has become rotational energy.

The key to understanding both Relativity and Sum Theory is that conservation of momentum must be upheld. I would love to waffle on and on about this, but the answer is just that simple. However there are some implications to consider:

## 15

### HOW CAN THE MICHELSON-MORLEY EXPERIMENT BE EXPLAINED?

First I need to describe this experiment before I re-explain it. In order to try and do this in the simplest possible terms, I have devised a similar experiment which for all intents and purposes

is logically and empirically the same; that is, it will offer the same result. Although my version of the experiment is simpler to understand than the original, it is not quite the same. There are plenty of websites that describe the original.

The question they were trying to answer was to find where zero velocity is. If velocity is not relative, then all velocity must be calculated according to a fixed point in space. Of course they needed to do this as they had calculated that the velocity of light must be constant. So if the laboratory they are measuring from is at a fixed point in space at midday, then it must be moving away from that point at midnight. This is because the Earth's rotation will now be in the other direction to what it was at midday. The constant nature of the velocity of light will then reflect the difference between those measurements. And fixed space would then be calculated.

If the *center* of the Earth is unluckily at the fixed point in space during this reading, then it will not be so in six months time. This is because the velocity of the Earth's orbit itself will run in the opposite direction and the difference in velocity of light should then be noticed by subtracting the difference between the two readings. Fixed space could then be ascertained.

The term 'ether' was used to describe 'fixed space' and any changes to the velocity of light were to be termed 'ether wind'. So the velocity of light should be marginally different at these different positions in space if light was moving according to a fixed point in space.

And yet, the 'ether wind' could not be detected. The velocity of light was rigidly unmoved. And so the theory of Relativity was seen to be the only way to explain these experiments. Light just had to be constant in all reference frames as that was how it was measured empirically.

Now let me re-explain this using a simple analogy.

Assume that some dubious alien scientists on a world less advanced than ours are in disagreement. Some believe that air does not exist, and others say that air is an invisible substance. These alien scientists then do a similar but simpler experiment to Michelson-Morley.

They had already measured the velocity of *sound*. They then deduce that if such a measurement of the velocity of sound was taken between two moving hot-air balloons then the velocity of sound would be different to the measurement between two fixed points; if air exists.

The velocity of sound they measured remained mostly the same between the two hot-air balloons as it does between two fixed points. Thus they conclude that air does not exist. *'The velocity of sound must be universally constant'* they proclaim excitedly!

Of course the alien scientists have neglected to realize that the air is moving with the balloons.

And the sound is moving with the air. Well those alien scientists are not particularly bright, and this is merely an analogy to demonstrate a point in purely metaphoric terms. *But if you dared propose a thesis to that alien university that points out all the other experiments they could make, they will just aggressively reject your thesis and sneer that you are a 'troublemaker'.*

If air exists, they claim; then surely there should be an 'equatorial wind'. They have measured that the equator of their planet is moving at 1000 miles per hour. But let us not get side-tracked by the analogy.

What I am saying is that light is moving through an invisible substance which itself moves with the Earth. This invisible substance moves with the rotation of the Earth, and also with its orbit. This invisible substance is the medium through which light moves, and light can only move in relation to it. Much like the atmosphere moves with the Earth and sound waves can only move in relation to the air, so this invisible substance moves with the Earth, and light can only move within it. This is entirely computable.

There is one major difference between what I am suggesting and what pre-Relativity theorists believed. Let me use the term 'Ether' (ee-thir) for their idea and the term 'Etha' (e-thah) for my idea. Ether was said to be fixed space, whereas Etha is a substance independent of fixed space. The Etha is itself a subtle substance that is moving relative to fixed space. The velocity of light is only constant measured against the Etha, but it can go faster than C when light is measured against fixed space.

Some may ask: 'How can I prove that Etha exists?' The answer being that I have done just that. This is the only answer that can explain the Michelson-Morley experiment seeing as though Relativity requires us to swallow the notion that the universe does not obey the principles of logic and mathematics. But, it would be nice to verify the existence of Etha through something independent of this treatise. After all, dual-processing does try to reach the same answer through at least two separate processes.

So Etha seems somewhat unverified. It could be that light requires a magnetic field to propagate, but I know of no way of nullifying all magnetic fields, and deep space propagates light. It may seem far more likely that a magnetic field is the medium through which light is propagated as light is part of the electromagnetic-spectrum, and magnetic fields themselves are said to obey the limit on the velocity of light. If light is considered part of the electro-magnetic spectrum, it seems reasonable to see that it cannot be moving independently of a magnetic field. Or at least light and the magnetic field are moving through some other medium – which moves with the Earth.

But I have already suggested earlier that there are two types of space in order to satisfy the analogy of the expanding balloon. The surface of the balloon is separate from the space in which it expands. In order for it to be curved in relation to that 4-d space, our 3-d Universe must be distinctly different from 4-d space to be curved away from it. Is 'true' space four-dimensional, whereas our local space is the Etha? Later on I shall observe another reason for requiring the existence of Etha.

But the validity of the Michelson-Morley experiment itself cannot be ascertained in a Positivist manner. Anyone who has observed a mirage will see that the atmosphere certainly affects light enough for the fluctuations to be visible. So it is quite probable that the very air itself is capable of carrying light with it in a similar way to which it carries sound. Laboratory vacuums are never total vacuums and whatever little substance is within a vacuum could still be propagating the light.

***Nonetheless, the only way all the empirical claims can be validated computationally is by realizing that the medium through which light is propagated moves with the Earth and therefore must exist independently of fixed space.***

Of course the knee-jerk psychological reaction to this is: *why did nobody realize this before?* The other day I read in the newspaper how two man-made satellites were expected to collide according to conventional understanding of gravity. And yet they missed each other by 10 kilometers. Being able to throw a glider does not mean that the science of that glider has been understood. Being able to put satellites into orbit does not mean that the physics of such has been all that accurate. There were countless failed attempts to put satellites into orbit before it was achieved.

## 16

### **IS TIME A DIMENSION LIKE SPACE?**

One of the major difficulties in Cosmology is that the expansion of the Universe shows us that the Universe can only be in the shape of a four-dimensional sphere. It takes some practice to comprehend a four dimensional shape (*within a three dimensional brain?*)

Of course it must have been noted that in many equations, time had most of the linear qualities of space. So the extra dimension of space required to explain the expanding Universe was just conflated with time. 'Time is the fourth dimension' became an easier concept to grasp than a separate fourth dimension of space.

Now time is unlike space in several ways. Firstly, it should be obvious that time only runs in one direction, whereas for each dimension in space we can move in two directions. Moving backwards in time also gives us obvious contradictions. As I have shown with Pandora's Machine earlier, even making predictions forwards in time can sometimes bring about contradictions.

So when we observe a fourth dimension due to the expanding Universe, it must be clearly stated that this dimension is not actually time (although space-time theorists may disagree). It is quite feasible that the expanding Universe may eventually contract. Even though it seems likely that it will not do so, there is nothing incomputable about the possibility. (*But if it does start to contract you will see the moon go blue during the lunar eclipse.*) Nonetheless if the Universe contracts, then certainly time will not run backwards. This shows that the fourth dimension of space is quite distinct from time.

As I have explained in Zeno's paradox, time cannot be divided infinitely. Time must be quantized. I cannot see any obvious reasons for space to be quantized intrinsically; although we do often quantize it for the sake of convenience computationally.

So time is perhaps only quasi-dimensional. It is half a dimension at best. But how do we comprehend four dimensions of space? Why do we normally only observe three? In an analogy from Abbot's Flatland, a fourth dimension of space must be present. In Abbot's two-dimensional world we observe that his inhabitants are paper-thin in terms of a third dimension. They must be so, or they could not conceivably exist. So we must have hints of a fourth dimension in our world by the same inference.

The expanding Universe offers us the best way of comprehending this. And seeing as though it seems we can conceive of four dimensions 'within' our three dimensions of brain, ***it can only be concluded that the mind itself must consist of more than three dimensions.*** Of course we could easily propose that a being living in seven dimensions, looking down on a six-dimensional being would require such a being to have a paper-thin seventh dimension. And so on and so forth to infinity and God...

This has deeply profound implications for the mind-body problem well known to students of Philosophy and Psychology. As Penrose aptly points out:

today. If the 'mind' is something quite external to the physical body, it is hard to see why so many of its attributes can be very closely associated with properties of a physical brain. My own viewpoint is that we must search more

Penrose, p. 350

The first stage in realizing how the mind interacts with the body is to see the brain (as we perceive it) as a three-dimensional surface of a four-dimensional object. This is why all attempts to predict and entirely control human behavior with physical means result in the mind-body problem. This is because while aspects of the physical world are apprehended by the 3-d brain, the 4-d mind has the capacity to override them.

Penrose unfortunately follows the conventional viewpoint and simply tries to search more deeply within the ordinary physical aspects of the soggy old 3-d brain. I would say that is like trying to predict what is on TV next week by opening up the TV set. We need to get away from

that approach completely. It would be better to analyze the characters in the TV series. We need to look meaningfully *within* ourselves. We need to embrace our emotions no matter how scary that may seem. We need to ask the difficult questions within our own beings. We have to be able to weep with all the sorrow of every soul within the world.

I started this book with a dream. And I have incredibly vivid dreams, the detail of which defies any notion of the content of such dreams being only local to my experiences in this lifetime. I have dreamt other people's lives packaged into absurdly neat narrative storylines. (My narratives are not *that* neat).

I can vividly recall characters from these dreams from decades back. I recall faces that are crystal clear to my memory; faces that are not recollections from this lifetime. I have relived past lives. I have visited other worlds with unique architectures and beings that are just far too amazing to come from my imagination. And I have a pretty vivid imagination. In those dreams, reality is just as real as this world is. I could just as easily say that this world is a dream emanating from any of those other worlds.

I dream of the dead, and they tell me things and behave in ways which show that their consciousness is continuing and growing beyond this life.

Make no mistake. I have ordinary dreams which are just a product of this life: ordinary fears, wishes, nightmares and fantasies. And some dreams which I can only describe as badly constructed scenarios which seem to have been imposed on me from outside to test me. Once I dreamt I was in a DVD shop, many centuries in the future, and I bought a DVD, plugged it into a machine which connected it to my brain, and then I woke up in this life, and it was this life of mine which was the content of that DVD.

The point I am making, is that it is a huge mistake to think that just because many dreams are products of this daily psychological life, that all of them are such. In the same way, some TV programs are real, some half-real, and some are entirely fiction. Consider the primitive who sees a TV for the first time. 'Is it real?' he may ask, and after some time, would probably conclude it was not. But the reality is that much of TV is real. He may even try and open up the TV to understand the programs.

There is no limit to the type of TV program that can be made, and there is no reason to suggest that just because most dreams you may have are reflections of this life, that all dreams must be such. I have gone off the topic of space and time, it seems, but not so.

You may recall that in the dream at the beginning of this book, I was intently focused on waking into my body in order to design the Entothopter. So intent was I, that I neglected an opportunity to explore this world from the perspective of the dream-world. I was for a brief moment looking into this world from what I can only describe as four-dimensional space.

I have kept that dream close to my waking mind. I have followed the Sine curve all the way beyond Einstein and Relativity and found non-relative certainty. I have had exultant experiences. Three times I have spoken to John the Baptist and twice to Jesus. I was warned that in following this path, spiteful jealousy would provoke me like an evil shadow, and no doubt it has.

But I know that this life is itself a shadow. I fear not death. That shall be a great discovery. To finally break free from the confines of this narrow three-dimensional world will be like a chicken hatching from an egg. But not all such hatching is for the good. Often when the shell breaks, it is too soon, and the result may not always be better. But often it is.

So death is not always for the better. This is why we cannot conclude that because immortality is real, that death is always good. Even the fourth-dimension of space (unlike time) has two

directions. In death, we could still move either one way or another, and the consequences of this movement may be tragic or euphoric.

The very notion of dreaming is mystical in the extreme. The best way to indulge in dreaming is to keep a dream diary. Upon awakening, write down the fragments of your dreams. This way you keep your consciousness close to the topic. Why do memories of our dreams fade so quickly each morning? Normally we remember last week's events more easily than last night's dreams. If time was the chief variable in why we remember events, then last night's dreams would be easier to remember than those of last week.

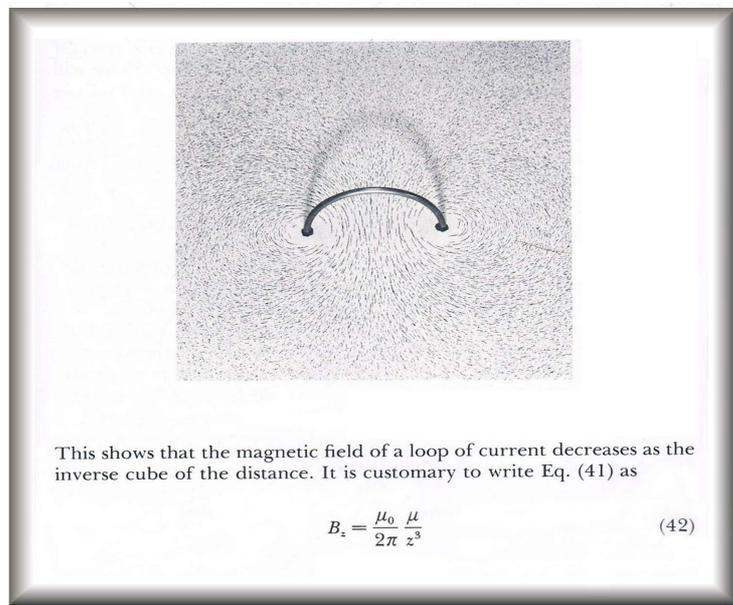
Unlike a computer, the mind recalls more complex memories more easily. For a computer the simpler information is easier to recall. We remember information by association. Songs are easier to remember than prose. Logic is easier to remember than nonsense. By keeping a dream diary, the association with that realm is stronger.

The fatalists may say that this is all in my imagination, but to that I answer: how is imagination even possible if all is fated? How can new ideas become manifest in world that is entirely determined? If all we know is that which we observe then how can we imagine color when our eyes are closed and we are not observing the world? How can we do so with free will?

## 17

### WHAT IS A MAGNETIC FIELD?

I had often wondered if a magnetic field was simply a four-dimensional object. This would be much like a 3-d person would be able to move 2-d objects with a seemingly invisible force from the perspective of the 2-d world. If it was such, then the force of magnetic fields would decrease by the inverse of the cube. I scoured the textbooks looking for confirmation by checking each and every denominator to see if any of them decreased by the inverse of the cube. Sadly formula after formula did not confirm this intuition, until finally I came across this in Ohanian, p. 679



When a current is looped into a shape resembling the tube-torus, then the current *does* decrease by the inverse of the cube. Previously I have shown how the tube-torus is a representation of a

simple 4-d geometric shape. This is quite a speculative leap, but it is the type of inductive reasoning that cannot be ignored. It begs for further analysis.

## 18

### IS THERE A RELATIONSHIP BETWEEN THE HEISENBERG UNCERTAINTY PRINCIPLE AND THE EPR PARADOX?

The EPR paradox shows that signals can be transmitted at a velocity faster than light. Does this mean that the signal is crossing through extra-dimensional space? When electrons are measured as being unpredictable as regards their momentum and position, is it because of this extra-dimensional connection? It seems this non-local connection must be in another dimension to avoid the limit on the velocity of light that anything within our 3-d Universe has to obey.

I can see no reason why Maxwell and Einstein concluded that the velocity of light could not be breached. I can see why they saw the velocity of light as a rigid construct as regards light itself, and also the magnetic field; *maybe* even gravity too. But I have clearly proven that Relativity had fundamental flaws and I have been able to correct them. And yet there seems no reason why the velocity of light is a barrier *intrinsically*. The seemingly instantaneous way in which waveforms are constructed via the EPR paradox, shows at the least, that electrons are subject to non-local forces. (The EPR paradox also counts as evidence against gravitational waves for this reason.)

This connection between electrons via the EPR paradox shows that microscopic events such as the movement of electrons themselves are dictated by macroscopic visible events such as wave forms. So the microscopic realm is at least partly constructed by the visible and conscious realm. What this shows is that the mind can intrinsically control the world, in physically objective terms. Even if this process is seen to be determinist, then it is the mind that is determining the fate of electrons, and not entirely the other way around as is so often construed by materialist philosophers.

This is empirical proof *against* the mind being an epiphenomenon of normal 3-d physics. Subatomic physics is at least partly dictated by the ordinary world in which our commonly understood free will resides. And the proof for this is observable on the microscopic realm of electrons which are controlled by events observable in our human perspective. The revolution in thought is that these events are themselves not being formed on the electron scale, but instead they are formed on the non-local paradigm of four-dimensional space. The unpredictable electron movements have now become the epiphenomenon. And this paradigm is subject to our thoughts, which themselves are sometimes certainly multi-dimensional.

## 19

### WHY ARE SOME OBJECTS INVISIBLE?

Is it because light itself is on the barrier between the third and fourth dimension? Or is it because transparent objects are thinner than normal in terms of 4-d space? In a 2-d world, it would be the equivalent of invisible objects being flatter than others in terms of their paper-thin 3-d 'height'. In this way light would move over them because in the 2-d world, light is slightly removed from normal 2-d space by being slightly higher than the world itself in extra-dimensional terms.

So light inhabits a realm that sits on top of our world by a very small 4-d distance. This could be why light does not quite obey all the laws of physics that normal particles do. This is why some events are rigidly confined by the velocity of light. This could also be why light is said to appear to not quite be normal particles. Photons are particles, but with a very subtly different position in 4-d space.

Much Earlier I described a crude invisibility machine, which more aptly I termed a 'visibility shield'. If the analysis in this section is correct and we could somehow shift an object just a fraction of a millimeter into the fourth dimension we may be able to create a truly invisible object. I doubt that a life-form could survive this. But we would need to examine the nature of substances like glass and water on the electron level to calculate how their 4-d properties arise. This gets very speculative, but I cannot resist the inductive leap.

Are ghosts then merely beings that have been only slightly shifted onto the fourth dimension? So then a corpse would be little more than a footprint on the seashore.

## 20

### WHEREFORE SPIN?

*Behind every good answer there are three or four greater questions lying in wait ready to pounce upon the analyst in a malicious philosophical ambush!*

Spin can occur for different reasons. So the word: 'spin' as a bit ambiguous. An object may be spinning, but the force which made it spin uses the same word. That object may spin because a conscious mind made it do so, like a child's toy called the 'top' or in the way a spin-bowler bowls a cricket ball. Electromagnetic spin runs an electric motor. If a meteor under gravity collided with the Earth at a good angle it could increase the Earth's rotational spin around its axis. The way in which an object or photon increases its spin as it approaches the velocity of light is another type of spin. And the very original force which ripped the singularity apart at the start of the Universe is a yet another type of spin. On the subatomic level, this list may be added to via the strong and weak atomic forces. So there are quite a few types of spin.

I also noticed an interesting anomaly when building orbit games. You may have seen that when a planet left the screen I offer some 'border math' solutions as to what to do with that planet. The most obvious is just to let it 'die' and it is excluded from any further interaction with the data-model. The other obvious solution is to wrap it around onto the other side of the screen, which is computationally efficient as it keeps as many objects interacting as possible.

But in wrapping the planets around the edges of the screen I noticed that the gravity assist was causing the entire model to increase its overall velocity. So I devised the border-math options called 'slo-mo' and 'comet' which simply divided the momentum of the planet in half each time it wrapped around the screen edges or collided with the edge. And this gave a model which more closely resembled a real Solar System as it was not constantly increasing its overall velocity. But where does that lost momentum (or velocity) go in reality?

Initially I had deduced that this was just energy which became lost to heat through the collision process. And some of it may indeed be such. But now I realize that the act of speeding up is retarded by the way in which the contraction in velocity (as it approaches the velocity of light) causes the planet to convert linear velocity (or linear momentum) into angular velocity (or angular momentum). And this is the very reason why all celestial bodies are spinning; or exhibit spin as a *structure* which keeps the orbits more circular and less elliptical!

If a minor star, significantly less massive than its partner is in an exaggerated elliptical orbit, it will experience periodic increases in velocity. Some of the momentum will then be lost because an object loses added momentum or velocity as it approaches the velocity of light. The Relativists thought that this loss in added momentum was converted to mass, but I have proven that it is converted into spin (angular momentum).

So with each orbit, as the minor star increases its velocity as it approaches the major star, it increases its axial spin. Eventually axial spin overcomes its own gravity and it goes nova. Of course a star may go nova for internal reasons (or any number of reasons like simple collisions).

Nonetheless as it explodes, its debris already has the pre-existing structure required to form a solar system – that is, it spins out moons and planetary rings because of its axial spin. This is why the orbits of moons and planetary rings are uniformly near-circular and on the ecliptic plane. The ecliptic plane is on the edge of the centrifugal force.

The Solar System thus formed due to the destruction of a star and not the coagulation of debris. If the Big Bang had produced a Universe of dust there would not be enough gravitational force between dust particles for it to coagulate in the time available. And even if it did, then this coagulation would not be in the form and shape of near-circular uniformity which we find throughout the Universe. After the nova, the spinning debris retains the near-circular structure of the spinning object which went nova. This is the same process described in the chapter ‘The Big Unwind’.

I cannot express more deeply how, when constructing computational real-time models, one is compelled to deal with every tiny detail. I would even go so far as to suggest in the future it will become a standard procedure in devising any mathematical theory. I would even suggest that the computer teaches the mind to be so clinically logical, such that those who can do this will have an overwhelming advantage over those who do not, so as to make computer programming a compulsory prerequisite to be able to even enter University. Not being able to put mathematics into a real-time program is like being illiterate. Imagine what Einstein or Newton could have accomplished with these tools? Certainly all Einstein’s errors can be forgiven, as he had no real-time computer to force him into calculating or observing every little feature accurately.

In building the orbit games, calculating theta proved to be a bit troublesome, as the formulae for doing this was not entirely within the software package, and had to be tacked on manually...

*(Calculating theta is trigonometry – simply turning an angle into an x and y variable, but in reverse, so that the x and y variables are transformed into an angle. The Arcsine function is used in opposition to the Sine function in this way.)*

But many years later it was the strangest feeling to be in a moment of crisis, pondering how it was that the Lorentz transformation could have been misunderstood. Relative mass just made no sense whatsoever. In a deeply personal and terribly introspective moment, I was having compulsory doubts about this treatise and my own objective ability (as any serious theorist should). I then had a strange intuition to just examine the formula for calculating theta. I suppose I was just being obsessive and examining every single little detail in what felt like utter desperation. And this is what I noticed about the formula used for turning a straight line into an angle:

$$\text{ASin} = \text{Atn}(\text{value} / \text{Sqr}(1 - \text{value} * \text{value}))$$

The **Atn** function (Arctangent) takes the ratio of two sides of a right triangle (*value*) and returns the corresponding angle in radians.

*From MSDN, (the Visual Basic 6 help files): ‘Asin’ is the programming code’s abbreviation for Arcsine or  $\text{Sin}^{-1}$ . ‘Sqr’ is the abbreviated code for square-root. ‘Value’, is simply any value that is being calculated.*

*Can you see how the Arcsine formula is identical to the Lorentz transformation?*

So turning a line into an angle is the equivalent of a rotation in trigonometrical terms. I could hardly believe what I was seeing: Is this computational proof that Relativity is corrected by realizing that the lost added momentum is not added mass, but instead it is added angular momentum?

I am not sure it is in retrospect. But it might be. It could be just one of those lucky coincidences that led me to see that the lost added momentum had to be converted into spin. But by seeing it that way, all the catastrophes melted away into the illusions that they certainly are. This was just the hint that I needed in order to see the answer to the riddle. A hint that may in fact be mere coincidence.

Oddly enough, my revision of Relativity exhibits a striking similarity to my revision of the principles of flight. In both situations, linear momentum is converted into angular momentum. Both of these conversions are due to the curvature of the medium. In flight, the curvature of the wing collides with the air, which causes the air molecules to spin. In Relativity, the curvature of four-dimensional space causes the accelerating phenomenon to lose linear momentum, and instead gain angular momentum. Linear momentum is simply converted into angular momentum on both accounts. The math function on both accounts used: is the Sine curve.

Earlier I suggested that spin is a fifth force beyond gravity. I called this the Cosmic Coriolus force. I have not answered the nagging question as to just *why* an object starts to spin as it approaches the velocity of light. But here is a plausible answer to that: The entire Universe is rotating in four dimensions.

And if you can envision how it is that the normal Earthly coriolus force causes hurricanes to form via spin due to the curvature of the Earth's surface, then it is the Cosmic Coriolus force that causes every known major celestial object in the entire Universe to spin at a very slightly increasing amount which is directly proportional to the loss of increasing linear velocity at it approaches the velocity of light. This is a similar principle to the normal coriolus force, but in four dimensions of space.

Let me explain using a simpler analogy. Consider a roulette wheel. Throwing the ball into the device imparts a certain amount of linear momentum. But the faster that ball is thrown, the more momentum is imparted to the ball as spin due to the ball's interaction with the medium it is moving along (friction). If that was a very large roulette wheel, so that the curve was not obviously noticeable, it would seem that some velocity was not adding up. This would happen more so, the faster we tried to make the ball go. Some might even suggest that the ball was getting heavier to compensate due to conservation of momentum in the formula  $p = mv$ . The roulette wheel is curved, after all. Of course in space this curve is four-dimensional.

The reason why I can now apply bent space to movement, but not to gravity, is because the objects are not entirely confined to three dimensions. Gravity is a force confined to three dimensions, so it is not subject to the bent nature of space. Euclidean geometry never 'breaks down'; it just appears slightly incorrect because we sometimes need to observe an extra dimension. The three angles of a triangle always add up to 180 degrees. If they do not add up to 180 degrees then the object is not a triangle. Instead it is almost a triangle, but with an extra-dimensional curve to it.

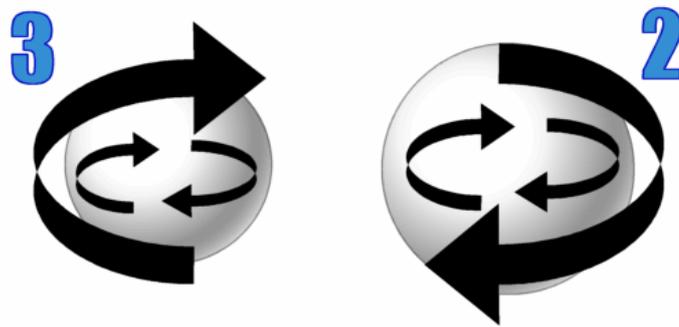
So to answer a question I had posed earlier: Yes, there is both an ongoing spin, and an original spin. Two different types of spin are required to form the Universe. But for five years I had realized that ongoing spin had to be present to keep the Universe and its huge variety of orbital structures uniform and regular. ***What a revelation to suddenly see that the very element missing in Solar System formation also solved all the inconsistencies in Relativity!*** It is like finding that last piece of the puzzle hidden under the carpet and finally being able to put it in its rightful perfect place.

So if the Universe is rotating in four dimensions, much like a planet, but with a four-dimensional shape; then it would be expected that spiral galaxies should form predominantly at the 4-d 'mid latitudes', or 'roaring forties'. So spiral galaxies would then be located along two belts. One should be in the top half of the Universe, and the other in the bottom half of this 4-d sphere. Many

years ago I did read a claim stating that galaxies appeared to be located in a ring shape. But I have not been able to find that source again; and nor did I see any actual visual evidence for it.

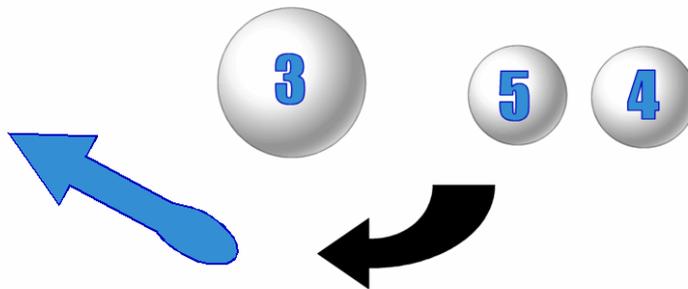
But what about the question of how many fundamental physical forces exist?

In addition to the expanding Universe, we can now add the two types of spin (starting spin and ongoing spin) that could make seven fundamental physical forces. (*Consciousness is also a force, but it is not a physical force*). However, ongoing spin and the expansion force of the Universe may also be seen as being united with gravity. Consider the singularity after the split due to spin:



Consider that object 2 has a greater orbital velocity than object 3. Object 3 must therefore contain the bulk of the mass in order for 2 to have a greater velocity in orbit around it.

By the same process described in the Big Unwind, object 2 splits into objects 4 and 5.



Object 5 being closer to object 3 at this time, then becomes subject to the slingshot effect (blue arrow).

Object 5 then accrues a great linear velocity which causes it to spin. This particular spin is of course due to the limit of the velocity of light. Its linear momentum being converted into angular momentum, instead of mass as Einstein thought.

Object 5 begins to spin most rapidly after being slingshot because of the gravity assist. Even if object 5 has not quite overcome escape velocity, it would be in the process of stretching space, and would then be the primary cause for the expanding Universe. Because everything in the Universe is ultimately connected, even space itself can be stretched by matter, quite feasibly via the intermediary subtle substance I have termed 'Etha'.

*So the expansion of space can be seen as a result, ironically, of gravity.*

This is because the gravity assist is caused by quantum time. The increased velocity of object 5 is the result of the gravity assist, so even the increasing spin within object 5 is caused by gravity.

*Is it possible to describe the spin that split the singularity as being a result of gravity?*

Perhaps, but then the singularity would have to be a 4-d object in orbit around another even greater 4-d object in 5-d space! And the spin which split this combined pair of singularities would have accrued due to the slingshot effect when it broke away from this greater 4-d object in 5-d space. This greater 4-d object, which I can perhaps call a 'Master Singularity', would of course be well beyond our normal 3-d perspective. Only with extreme calculation can we detect it.

Our entire Universe would then just be a spinning 4-d system within a 5-d sphere, amongst many other 4-d systems! But this 4-d gravity would not be the same force of gravity as we know gravity. Our gravity would perhaps be a facet of 4-d gravity; it would be a bit of a *stretch* then to suggest that we could reduce the spin of our Universe to being caused by gravity without radically redefining gravity.

Where does it end? Never! The Multiverse has no end. Quantum time shows that repeat events like orbits are not entirely cyclical. If our Universe has reached escape velocity in 4-d space away from the Master Singularity then expansion will continue for eternity. And this is far more likely than our Universe returning, and the Multiverse collapsing back into the Master Singularity. This is because the mathematics of the slingshot effect shows that such temporal effects are not entirely reversible.

Why do I say that? Because in order for the spin to be so great that it ripped our singularity apart, it must have accrued enormous 4-d velocity. So in order to accrue this great velocity it most likely has reached beyond 4-d escape velocity and our Universe is no longer in 4-d orbit around the Master Singularity.

So if we are to consider the spin at the start of our Universe being a result of gravity, it would not be the gravity of our singularity, but instead the gravity of the Master Singularity well beyond our immediate little 3-d Universe!

So yes, we can reduce it all back to four fundamental forces, but only by postulating a Multiverse of at least five dimensions of space and also consisting of at least one other Universe of much greater mass than ours. The Master Singularity would play the role of a four-dimensional 'Sun', if you like. With our Universe a mere 'planet', that most likely long since has been thrown out into 5-d space, never to return.

*Of course, the infinite regress now occurs: How did the 'Master Singularity' start to spin in order to be separated from our local singularity?*

I shall ignore that question for now.

But we either have a 5-d Universe with 4 fundamental forces; or we have a 4-d Universe with 5 fundamental forces.

However, when the singularity at the start of the Universe was ripped apart due to spin, it is important to realize that this spin is actually four-dimensional spin. It would have to be four-dimensional because that singularity not only included within it all the mass and energy of this Universe, *but the singularity also included the normal three dimensions of space as well*. These three dimensions of space only became expanded as a result of the singularity splitting up due to spin.

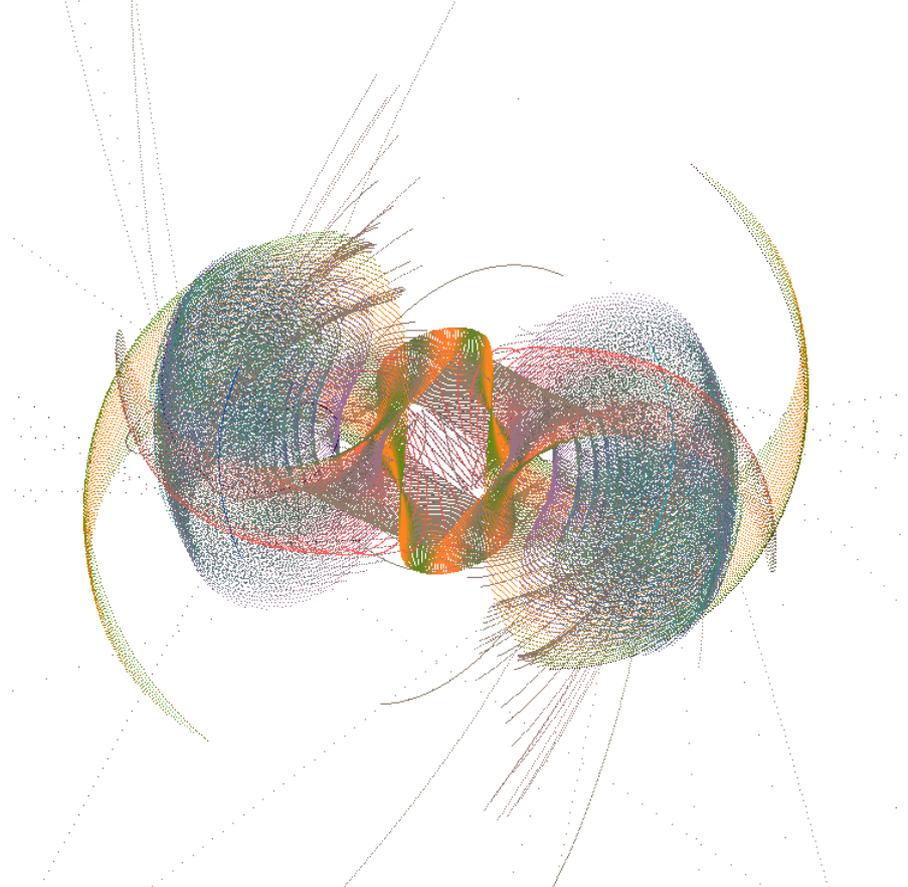
Spin is then perhaps even more fundamental than 3-d space itself. But! Time is the most fundamental construct, and it might be seen as the single Cosmic Force that unites all the other forces and objects that are subject to such forces. Time 'pre-exists' them all. But in all this complexity, time as we know it is very much objective. It never dilates; it never conflates with space in that other horrid chimera: 'space-time'. Time is always good old-fashioned upright unquestionable, undistorted Christian Time. Any other notion of time results in contradictions.

*Is Time, almost synonymous with consciousness? For our consciousness is confined within time so closely as to be almost inseparable from it?*

That question I shall also leave unanswered for now. But! There are a number of questions still unanswered that can be speculated with.

The question that troubles me the most is why do primary colors exist? Is it that photons (or the quanta within them) spin only in any one of precisely three exact directions? Are these directions the fixed three dimensions of space known as the x, y & z axes? Are translucent objects slightly shifted onto the fourth dimension? So a translucent red glass has its electrons 'fixed' on the x axis, but on the y and z axis it has been shifted out of our three dimensions of space? If we could see into the fourth dimension, would we then require four primary colors? And in doing so, would normally transparent objects then have this fourth primary color?

I'll be looking into these questions and many more in my next book entitled: **Why?**



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