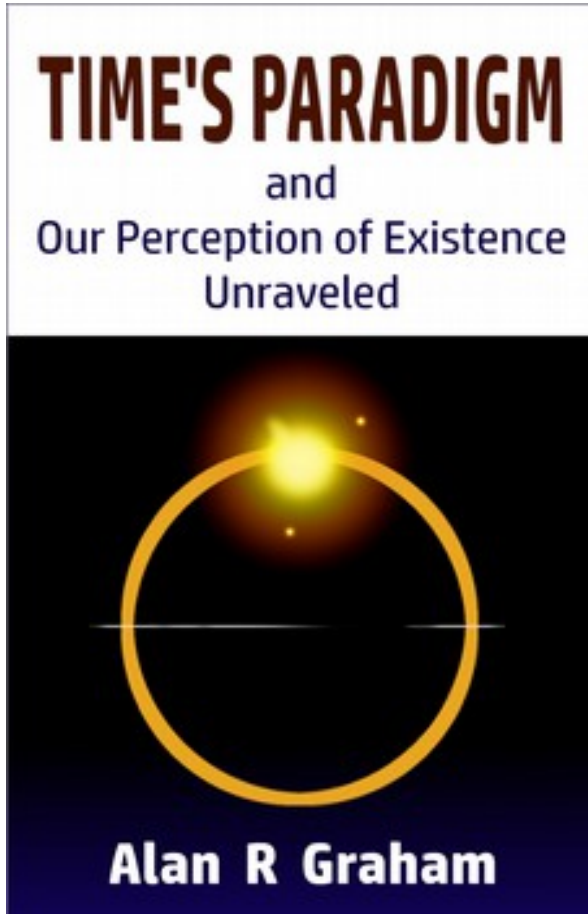


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The Theory of Cyclical Time

written for general consumption.

[Destiny](#) - [Time](#) - [Infinity](#) - [Dimensions](#) - [Velocity](#) - [Travel](#)

TIME'S PARADIGM

By ALAN R. GRAHAM

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“A man with many watches does not necessarily have more time.”

...The Author

PROLOGUE:

Uniting the Disciplines of Science

One of the most enduring questions of our time: What is it?

Time is an ethereal sensation of progress, unlike physical motion, which often obliges us to dismiss time as imagined due to our practical minds. We demand that time be like space, when it is not. Neither are moments the same as mountains, though we wish they were. Unlike space, time has no course, nay, no dimensions we may call upon to devise a direction.

Time is form. It is an expansion of circumstance holding eternity to account, pushing the past and future apart and stretching eventuality. This perceived reality, our present moment, is our making, without us nothing would be.

Time is dynamic in the moment, as if the first breath of a newborn. It is a bubble in the soup of eternity that by revelation determines the meaning of everything. Unwittingly, we call it all, time: that which has been done and will be done. But therein lies the fallacy. Time is only the present moment; it defines the

ambiguities of history and of destiny alone, by being present – nothing more.

Events in history are subjective interpretations of a time, they are past peculiarities, mere memories of what may or may not have happened. The future, equally, a truthless, projected dream. Before and after are thus a nonsense.

Time does not pass anywhere but in the present moment. With such a passage and its consequent proposal for period and space – hence causality – existence assumes form. Nowhere else. The past and the future are in a state of solid suspension, a whole unto themselves, a single, spaceless entity with potential. They (it) have all the ingredients to fluoresce but lack a need or purpose.

Time is nothing without the past and future and nothing but the present moment. A bubble that is not supposed to be, yet exists, under pressure, as it were, from a past connected to a future that does not require momentum. Time is a necessary inconvenience created by conscious lifeforms whose purpose it is to sense change where none actually need occur.

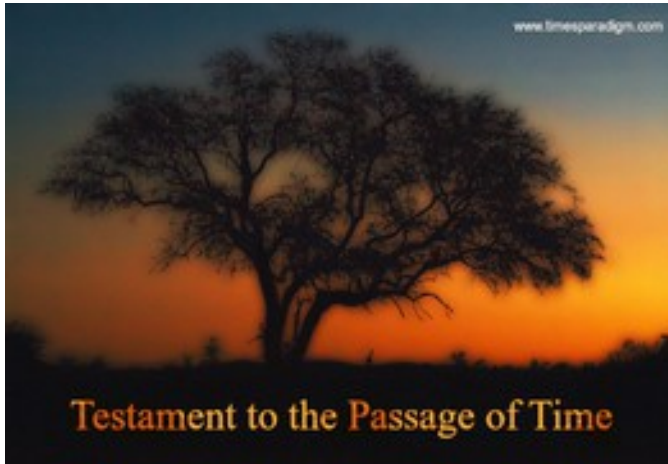
The bubble of time is an observance of reality akin to examining a slide under a microscope. It is a layer of existence requiring separation by refraction for it to be revealed. The more powerful the magnification the wider apart episodes of change appear.

Were it not for our minds, movement would not be perceived, the past would be linked to the future without incidence. We make time. Time is now! It is as much an illusion as is the distance between New York and Beijing. Neither really exists – we create them in their present form – so do they?

Time can form anywhere throughout eternity; whether it does depends upon the need for it to do so. It flows sequentially and thus positively simply because of conscious consideration, and has a rate dependent on that consideration.

We make time, it was not created for us.

A marriage proposal, then, between the “Block Universe” model and. “Presentism” to dispense with that unnecessary debate... because both theories have equal merit.



In aesthetic terms, the meaning of time can be expressed as progress, based on our subjective notion of movement through the universe in an ethereal context where consciousness is the driving force. We do not need to move physically to experience time, although obviously we all are. However, scientifically speaking, time is often stated as a consequence of space and, as such, is irrelevant due to its relative variance dependent on velocity. Surprisingly, later chapters will reveal just how closely these two references are related.

Foremost, time does not flow in the sense that it has speed; how could it? We would need 'another time' in order to measure its passing. It's all in the mind. On the whole, we see time existing in an abstract form, so the meaning of time is elusive. Yet we don't ask: Does space exist?

Surely, space is an equally intangible manifestation. Nevertheless, we are fine with space, we can visualize movement

from one place to the next and accept its purpose and relevance. But moving through time throws up a paradox. We cannot perceive either the past or the future so the void in between moments does not exist in our minds.

Moreover, we are apparently not in control of our passage through time, a very important incentive for concluding relevance. It is far easier to assert that time has no meaning other than for practical value; time has no function within reality..!

Indeed, "Time is merely a concept we made up for the purpose of measuring," many argue. They have a point, time is a necessary tool for aiding in navigation, farming, trading and the drying of paint... that appears to be all. However, the sun rises and sets, the space between those two events having a continuum of presence of which we are conscious. Just because we can't see it does not mean it doesn't exist. We can't see in the dark..? Yes, time may be tricky but it certainly has relevance to our lives.

So what is time, exactly?

Defining Time's Purpose

Fundamentally, time is about change. There is a difference between the past and the future. From one minute to the next, things are altering their position, their form and their state, be they great celestial bodies or tiny atomic particles. Without change there is no need for time. In other words, if the past and the future are identical, existence does not occur, because there is no purpose nor reason for it being, and no place for it to be.

... Like cutting a cake and finding two identical faces either side of the knife.

Space, it seems, is a prerequisite for time, because motion needs a playground in which to roam. These three phenomena are the cornerstones of existence; like our three physical dimensions,

one cannot exist without the other two. But that does not mean they should not be deserving of their own identities.

Time needs a past and a future to propagate, so every moment must be preceded by and followed by another... and another, eternally. A single moment with a past but no future, would not exist, creating a cascading domino effect where time would unwind.



Time can have neither a beginning nor an end, everything must be connected to something else.

To get something started requires purpose, potential and impetus. However, in a state of non-existence, 'before time', it is unlikely these three players could have operated. Change is energetic, and to suggest that energy magically starts or suddenly stops is a tad far fetched; it goes against the very fundamentals of our Laws of Physics.

So instead, we ended up many centuries ago with a conclusion that the universe must have been around for an infinitely long time and will go on indefinitely. This view was

refuted by Emmanuel Kant and other philosophers of the era in favour of Finitism. 20th century physicists, for their part, added that if the universe has existed forever it would logically have ended an infinite time ago.

The "Big Bang" has since been adopted and the majority of scientists now agree that both Time and Space began in that explosive instance; existence was thus born and the meaning of time became apparent. But there is another scenario that only rarely surfaces for debate: Time defined as a Cyclical Progression; a giant, revolving process that has no beginning or end. It satisfies both parties in this debate while upholding thermodynamic principles. Scientist, Sir Roger Penrose, is a leading proponent of such theories.

Einstein, himself, also contemplated for a while the concept of a cosmological cycle for time, purportedly citing that, a contracting universe would be unequivocally the same as his theories of Relativity.

Ever wondered why clocks and compasses are round? Cycles: Nature's little engines... whether powered by fluid dynamics, gravity or chemistry; contained and independent entities with perpetual drive.

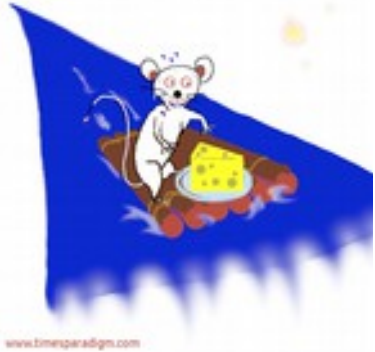
Our Perception of Existence

Is the present moment just an illusion? Well, yes, of course. That's what our brains do. They interpret the world around us using senses – eyes, ears, nose, etc – and make up a scene for us in which to act. We have evolved to function within the constraints imposed upon us, and our perception of existence is likewise constrained by such idiosyncrasies.

Here we are in "The Present", which we define as our moment of awareness, our sense of change. If conscious, living

beings such as ourselves were absent from this universe, time (eternity) would still exist, would it not? But would the present?

Subjectivity is our Achilles heel when considering, what is time! We are too involved in the illusion to come to an informed decision. Ask yourself: If our destiny is already predetermined, why do choices in life exist? What if, as some argue, there is no past or future, we in this present moment are merely a raft adrift on an ocean of emptiness..? apparently, with no oars!



Yes, we make stuff up, so trying to sieve through the lies and misconceptions in order to find a truth or two somewhere at the bottom of the bowl is reserved for the likes of those with enormous patience and optimism – gold prospectors and fishermen come to mind. Not surprising, then, that we can happily bob our way through life thinking we are flowing downstream on a current of fidelity, secure in the contradiction that we can determine our own fate.

The present moment may appear to be a clever illusion, because we are simple organisms with limitations, but that doesn't mean time does not exist. It means we have evolved without the need to understand it.

The question of whether time cycles as in a giant, revolving story whose constitution is thus an intimate ensemble; whether time is a solid block of cheese that exists all at once and this movement malarkey is just an illusion; or whether, adversely, time is an infinite, one dimensional journey that began nowhere, exists only in the present moment and disappears into forever, is at the heart of this book's debacle.

The paradigm of time is a century in the making. It is a stagnant model, time having been resigned to a dusty shelf by the invariant speed of light. Unless the disciplines of science come

together we will never fully comprehend the meaning of time, its precise definition will always allude us. Time is about more than maths and formulas, it is about cognitive awareness and our perception, be it real or illusory, that somehow we make progress.

We have unwittingly created a landscape for time, with past and future camps and a path between them upon which we allegedly travel. Clocks glare at us from microwave ovens, televisions, skyscrapers and smart phones, reminding us constantly that we are aware – of what, exactly, no one is quite sure!

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Page 12. **Destiny**, is a light, philosophical debate between the theories of 'Presentism' and 'The Block Model', where the romanticism of Free Will is questioned, as is our ability to decide our own fate if the future already exists. Schrödinger's Cat also makes a brief appearance.

Page 40. **Time**, lays the foundation for the argument that time is a cyclical, contained progression, rather than a meandering voyage into infinity. It states that consciousness creates the present moment, and asks whether 'now' is a cosmological standard for all conscious beings.

Page 69. **Infinity**, argues that defined points in time and space prohibit progress in linear models. Thus Zeno's Paradox is resolved and the speed of light held in check. Temporal perception, it concludes, is the result of uncertain horizons – our awareness of 'now' thus given freedom.

Page 89. **Dimensions**, takes the bold step of asking us to consider a tangible dimension of time, represented by a fractal collapse through our three, known spatial dimensions. Chaos Theory and our relative position in time confirming the proposal that consciousness creates the present moment.

Page 101. **Velocity**, considers the simple physics of bodies contracting in a fourth dimension of time, and how that marries with standard scientific models such as Special Relativity, followed by the assertion that Zero Velocity and The Speed of Light are attributes of the same event in Cyclical Space-Time.

Page 120. **Travel**, involves us in the more complex aspects of relativistic velocities, the conundrum of negative acceleration, a universal clock and, ultimately, astronauts in the future with the alluring prospect of slipping through layers of parallel time.

Page 142. [Nutshell](#), in wrapping up, succinctly crams everything above into just a few pages, and though comprehensive does not cover arguments in any great detail. A heavy read served up at blistering pace.

DESTINY:

In-depth debate between Fate and Free Will

Choices in life suggest that destiny does not exist, that we have absolute Free Will to plan our own outcome. In other words: whatever we choose to do now can dictate what will happen to us in the future. This implies that we simply exist in the present moment and that the past and the future flirt only with our imagination. **Our Fate:** we make it up as we go along.

The past may have been an influential factor in our present decision to, say, go put on the kettle. However, it is merely our memory that is keeping the past alive. It exists because it is now unalterable fact, but it has materially gone, and we are left dangling in the present, ready to manipulate our future.

On the other side of this debate are those who consider that destiny *does exist*. In this scenario, future events are all predetermined and nothing we choose to do actually makes any difference to our outcome. Choices are simply conditioned reflexes that feel like free will. **Our Destiny:** it's already out there.

If the future exists then the present is merely the future's past, asserting that the past must also exist and all, then, at the same time. This implies that the Universe is a vast, existential block, a solid tenseless state, and that time is simply our naive attempt at interpreting a progression that does not actually occur. It might seem odd to some that we would have developed the need to make choices in a world where everything is already laid out like a carpet before us. However, others will argue (Stephen Hawking one of them) that this proposal simply highlights human arrogance in assuming we tiny organisms are important in this universe and can actually make a difference.

From a psychologist's point of view, it is clear that the majority of us are happy in the knowledge that we have Free Will to make decisions and plans and choose how our future might evolve from day to day. But aren't we just kidding ourselves? Naturally, we believe we are making our fate up as we go along. It gives us a feeling of control, there is a satisfaction in knowing we might be achieving something useful, triggered by the reward centres in our brain. And not just selfish acts, decisions we make can also resonate within our community, making others happy, too.

Causality, an indisputable cornerstone of our understanding of life, is it not? We must believe in free will, the alternative is chaos.

But is it..? A controlled environment, where we are not at the helm, is perhaps even more comforting than a world run by a bunch of lunatics such as us, sporting human frailties like, vanity, greed and lust. So who might be in control of our destiny, if not us? An omnipotent being; a grand unified theory; or an as yet unknown supernatural force? Or perhaps it's someone closer to home...

Obviously, we can't all be in control at the same time, or we'd create all sorts of terrible conflicts, right? Hence the need over the eons for a charismatic assortment of empires, autocrats, preachers, industries and kings to steer our course. Hmm! As is the tradition, they will offer us a glorious destiny so long as we do

their bidding and abide by their rules. (NB: This formula is commonly applied in human society).

Destiny must further preside over inanimate objects, like rocks and sand dunes and slime, because they have no free will. Although one thing is for sure: they get about and have a future. So does this prove destiny's point? We can't have half the universe being governed by destiny and the other half governed by free will. It's either one or the other. We can't have, sometimes one and sometimes the other, or a little bit of one when we feel like it.

How much is a little bit of free will, anyway?

Be advised: Two great powers cannot live side by side, one will always annihilate the other. Unfortunately, intelligent life forms hailing the virtues of free will are so very insignificant in this mighty cosmos that, as the debate stands, the odds are very much in favour of destiny at this moment.

"It is easier to give up control of our lives to others and submit to destiny, than it is to hold on to our rights of freedom and choice."

The Meaning of Destiny

The need for a predetermined future harks back millennia, worming its way through the popular mythology of many ancient civilizations. It was with *them* that the meaning of destiny first took shape. Things that frighten us or that we don't understand usually get preferential treatment in our minds, and so at one time or another, many horrors – destiny included – were given god-like status.

Imagine how our prehistoric ancestors must have tried to reconcile with the pain of loss and subsequent fear of the unknown. With no science to fall back on, they would have suffered terribly on being confronted with the still body of their child whose living entity had somehow been sucked from it. It is not hard to see why gods were created and destinies mustered to sooth our broken hearts. Nor is it hard to see why some might have exploited such weaknesses.

From the mystic "Lakota" of America and their 'happy hunting ground', to Egypt's grim reaper, "Shai" and the "Orisha" spirits of West Africa, we see most deities of destiny assuming the powers of life and death, in other words, validating our concerns about what happens when we die – our fate. On the whole, these gods had bad tempers and scared the life out of those who disobeyed them.

But the further east we go, the clearer it becomes that life and death are an ensemble, where harmonious connections between all things creates a natural balance, as celebrated by the Hindu faiths. By the time we get to China and "Taoism", our gloomy anxieties have been largely swept aside.

For example: Tao describes the fabric of the universe and cautions that, should we interfere in its weaving progress we must do so with care or beware of unpleasant consequences; only small changes are prescribed. Tao teaches self awareness to the extent that by inward reflection we may find our destiny.



For the majority of us throughout the ages, destiny has been depicted as a place up ahead called paradise where we can achieve life after death; the empathetic point here being, to focus not on the fateful event itself but the afterlife which follows. Paradise – or

whatever you choose to call it – is the ultimate destiny. However there are, apparently, many possible intermediary destinies before we reach that point.

Destiny is a beast to be reckoned with. If you hadn't already guessed, any effort to change the course of our future will be met with considerable competition because there are simply billions of other things going on around us that are also influencing the same moment in time.

The meaning of destiny can be expressed as: A force that presides over the conclusion of a transition in our lives. Not necessarily the end of life but anywhere along its length. Destiny is an overriding trend that leads to only one outcome regardless of efforts to alter course. Coincidences and chance are fundamental to destiny's magnetic persuasion, the culmination of an infinite number of seemingly inconsequential events leading somehow to a memorable moment... And there in lies the crux, for it is what we believe that makes destiny what it is.

It's a sham! Every moment in life is memorable, every second passing has been etched by fate – all of it. What we mean by destiny is, that relentless, driving phenomenon known as The Passage of Time. Destiny is not really a thing by itself at all. When it comes to the concept, destiny exists mainly because we want it to: As an excuse, if we mess up; as a salute, if we succeed; or as a blessing, if we die.

Going some way to affirming this view is the immortal refrain, "O hear me then, injurious shifting Time, be guilty of my death, since of my crime," in which Shakespeare's Lucrece defends herself against adultery, making mention of Opportunity as the accomplice in place of Destiny.

Are Fate And Destiny The Same?

Destiny, and its ugly-sister, Fate, are words frequently used to express our future fortunes. They are romanticized terms, often

incorrectly applied for effect. We hear people speak of changing our destinies or that "fate was averted", neither being acceptable.

Widely defined as a predetermined and unalterable outcome, destiny refutes any notion that we have the possibility to affect or change it – that would be an oxymoron. Fate, on the other hand, is a more flexible character whose definition has been somewhat blurred by its association with Death and, as some have expressed in literary history, such as Shelley: while we must all die, the exact date and time are not necessarily a future event cast in stone.

These days, the two have, however, become accepted as interchangeable, which is unfortunate because that voids fate from being the word used to describe a future that has been manipulated. A Perfect example: "There is no fate but what we make." (1984 - Terminator).

Clearly, fate and destiny are not the same animal. While both depict an ending, they are almost opposing in principle, fate personifying doom and destiny, achievement. "It is my fate to die, though not my destiny..."

Destiny is for Romantics:

"I was born to love him." Or, "she was destined to be a rock star." Yes, destiny rings of success, notoriety and greatness. But, for the rest of us, as we plod along from day to day – trying to get a job, choosing which aisle to push the cart down, what bus to take – sadly, no such fantasy awaits.

It seems, we 'mere mortals' have to make decisions. Whereas, the odd boy down the street gets picked up by a touring scout one day and suddenly becomes a football phenomenon. His family are abrupt converts, devotees of the "I told you so!" Cassandra Complex. They now believe we are all destined for some purpose; we don't know what it is and we can't change it so we should just let it happen.

But there is another set of family members who would adamantly disagree: Those parents who coached their children from a very young age to become sport or artistic prodigies. They will argue – once their Tiger becomes a champ – that destiny can be arranged.

While a Diva's success might be attributed to destiny, there are a million other hopefuls out there like her that are equally talented, that could have succeeded, but didn't. We have to argue that they were actually destined to fail. They tried just as hard, didn't they? They just didn't have that incredible voice the Diva was luckily born with that the judges went crazy over.



Yes, in many instances, destiny favours those with rare traits. Being different is a gift and something to be proud of. Anything odd or out of the ordinary will act like a lightening rod, upsetting convention and steering progress down a new path. Imperfections are perfect. PS: Genius is an oddity, too; so is being left-handed. Now, finding your gift maybe just as difficult as promoting it, they don't always stand out. The more we experience of life the more likely we are to come across something unique about ourselves. Good luck.

It is not destiny but the journey that makes us who we are.

Clearly, enormous effort will be required to reach the top echelons of any given sport. It's no good having a trait unless you push it, and a strong will 'to go with' is paramount. Destiny expects the cooperation of a multitude of forces and the alignment of umpteen paths before the desired goal is reached.

Case in point: One evening, barely into my twenties (there were no mobile phones back then), I ran out of gas on an inner-city freeway heading for a nightclub. Sitting beside me in my Land Rover was a young South American actress who would later rise to

international fame in Hollywood. Destiny was in the works, but to get there she would first have to handle the indignity that evening of sticking out a thumb into speeding traffic to hitch a ride, risking humiliating press coverage if identified.

Instead of hiding in my vehicle and waiting for me to return with some gas, *she* was the one to stride off down the road, knowing that a young woman in distress would be more likely to get picked up. For her, problems were stepping-stones not obstacles. A headstrong starlet of impressive determination, her driving force was her career, which is probably why she was one of the few who succeed so spectacularly in the face of such odds.

Is "being in the right place at the right time" a factor in how destiny plays out? Or is our future more to do with planning?

It's worth noting: being in the right place and at the right time so you can get hit by a bus, probably had nothing to do with planning, though it was your fate... So, yes! But remember, coincidences must all line up perfectly – banana skins deployed, Johnny Cash opening car door, it's pouring with rain, etc, etc – before you can rise to fame and claim your destiny.

At this point, it will surely become apparent to most that trying to align with our destiny this way is nothing but a false hope. If we must apply self-determined work in order to attain a destined goal then it follows that destiny is not predetermined. Such efforts fall nicely within the parameters of Free Will where the future evolves by virtue of our machinations. However, in this scenario there is no such thing as destiny.

Efforts required by destiny cannot be gleaned from the pages of this book, nor any other manuscript, for that matter. They are pre-programmed... Think ants.

Yup..! Back to the beginning for a recap: Free Will is the concept where Destiny does not exist; the past has gone and the future is yet to be. Sorry, destiny cannot be arranged. But it can be foreseen. Driven by character.

So love..? Is love destined to be?

There has to be some truth to this assertion, as future sections will confirm. Our personalities attract certain types of people. In that sense, we are already fulfilling part of destiny's plan. Our quest for stability rather than intrigue might have us fall in love with the dependable guy next door. On the other hand, a woman who travels half way around the world can be an exciting prospect for someone fascinated by other cultures and the promise of adventure.

To think that two people are thrust together by destiny as opposed to coincidence, requires that one believe all of time already exists. It is a delightfully fatalistic approach whereby one can do nothing about one's future. To raise the notion that this "angel" fell out of the sky and into your lap, is adorable and quite possibly true. But for that to be, destiny must exist across the board.

Statistics show that few amorous relationships stand the test of time; perhaps yours is one of those that will. The majority of couples are not an idyllic match, which just goes to show: Destiny may not be all it's cracked up to be.

'Soul Mates' come and go just as frequently as one night stands. You would therefore be advised not to roll over and accept fate out of hand, but rather, evaluate what it is you require in a partner before going out on the dance floor. It all sounds terribly boring and predictable to prepare ahead, I know. However, in that way you will avoid future disappointment, and may just come away with the love of a life time... Destiny?

Yes. Love is destined to be for those who give it a chance. True love is trusting in the future, submitting to your partner and believing in possibilities. It is a regression to childhood and utter surrender. If you fight it you deny its existence.

Coincidences or Causality?

Our future, it seems, is just as likely to be influenced by a deliberate act on our part, as it is by mere chance, luck or other

people. So can it be said that we really make a difference by ourselves? Making the monumental decision to give up your job and move to Tibet, may seem like something you did all by yourself, but in reality the past was the influencing factor. Not just your past, everyone else's, too! It may just be, you were destined to make that decision.

Both Albert Einstein and his contemporary the renowned psychologist, Carl Jung, battled with this concept over many years. It was their understanding that our awareness of time was a fallacy and that events might be, by and large, acausal, prompting Jung to develop his now famous theory of Synchronicity. In brief, he wished to view the procession of time as not necessarily adhering to cause and effect. Coincidences and chance, he believed, were just too obviously a factor in setting up future events, there were meaningful parallels, as if destiny actually *did* exist.

Some remarkable coincidences occur in daily life. How often do you interrupt a conversation with, "Funny, I was just thinking that", or "Fancy meeting you here"? These chance episodes appear to be all subconsciously driven; we were supposed to "be there" or "think that".

And yet, often, surprising coincidences can later be proved to have been by design – created by something you were unaware of – like, for example when a third person inadvertently admits to their involvement or an ad pops up on your phone. This indicates that there are likely many, many influencing factors at work in the universe for every single event that takes place. Welcome to Chaos Theory.

Destiny must exist because $1 + 1 = 2$.

"Sorry, not in the real world."

But $2 + 2$ always = 4, right..?

"No 2 things are alike, chum!"

In Chaos Hides Perfection: Random events only occur because of environmental influence. Were it possible to exactly duplicate a cause in an 'absolute vacuum' chamber, the coin would always land on 'heads' – but it's not.

Science has long established that acceptance of any theory can only be achieved by repeating the experiment; it is the bases of scientific evaluation. Unfortunately, circumstances in life do not occur in a controlled environment. Judgement on the theory of Free Will and choices making a difference to a future time line, therefore, can never be delivered.

Nothing in time can ever be repeated, precisely. The myriad of necessary alignments around the World that make up a single decision can never happen again. Likewise, neither can the future be proved to already exist, in this manner – both will always remain disputable.

There is no mathematical iteration nor scientific evidence at present to determine the existence or otherwise of Destiny. Probability statistics put a damper on the likes of Jung and Synchronicity, as coincidences pop up often and are factored into formulas for forecasting occurrences, such as the weather and stock market trends.

The only way of getting to grips with our future and how it unfolds is by reason, debate and logic – the rules upon which this chapter is based.

Determination: If all of time is a solid, existential block devoid of progress then time is un-experienced perfection. Our conscious creation of the present moment is the chaos of random influence that ensues, leading to presumed imperfections.

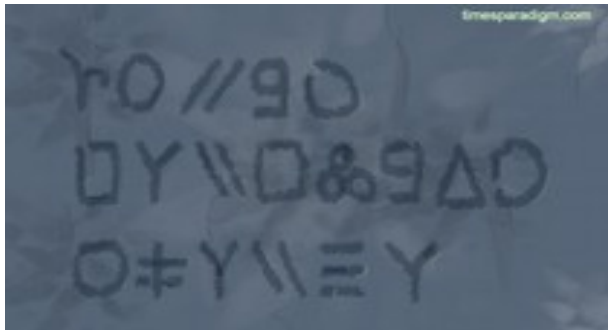
Video games take advantage of our endless desire to reach destiny by assuring us we will, in the end – with a bit of practice – because the ending has already been written. It's a classic case of "the best of both worlds:" Destiny with Free Will; an adept fantasy of life repeating itself with a chance to 'do over' again and again until you finally claim what was always rightfully yours.

Except that, life doesn't actually work that way. We only get one stab at the pie, there aren't a zillion takes. Yes, there is the chance to practice in life but not on the same chunk of time.

But sometimes life offers us a second chance – not often. And when it does, it kind of suggests that just maybe destiny does exist and so time must give us another go around because the future really is all set in stone.

A friend of mine once 'came on to' a girl in a chip shop who was totally unimpressed. Later, he slipped on the wet pavement outside and broke his arm. In hospital that afternoon the nurse who came on shift was the same girl. They hit it off.

Was it their destiny?



*** As the days change, so will the riddle ***

Code-breakers and magicians go by a set of rules, some are obvious – like frequency – others less so. A situation can be duplicated, the fundamentals are all there; that's what they rely on to decipher code. However, while the situation on any given day might be the same, the day is not.

In the case of my friend, the situation was the same: two people thrown together; let's see what happens. But the wider world was not the same and can never be duplicated. Hence the different outcomes. It was only because he noticed her in line at the chip shop that an impression was made. Had he not been

attracted to her he probably would not have noticed that the nurse had been standing beside him earlier in the day. She likewise. We pass hundreds of people a day in town, so perhaps we should make more note of those we see sitting beside us on the train or walking down the street. It's why a feather in the cap will get you noticed.

They say, we are all just seven steps away from connection (on Facebook). But in world pandemonium where there is no algorithm trying to link us together, we can spend a lifetime on the bus and never meet a fraction of the people with whom we daily share it. Or is there?

(The Meaning of Time is covered in the next chapter. It states that our existence is defined by change, so if the past and future are identical, nothing can be).

Does Destiny Exist?

Mistakes are just as likely to lead to success as accuracy, proving by probability that destiny exists. What really matters is effort.

It is true that, NOT trying to achieve something means it will probably not happen. However, this may be your destined path. You are obliged to try and survive – just as a squirrel collects nuts in autumn – and you may, or you may not. Regardless, your efforts to affect or alter the future are determined by such things as fear, custom and conditioning. That doesn't mean they necessarily work. Squirrels die young, too.

We must remember that, in modern societies, the future is often laid out before us. Jobs in town are available, shops are for rent, careers are established avenues with paths and prospects already in place. All that most have to do is fit in and follow the lead. Under the guidance of these arrangements that are already prepared for the working masses leaving school, one could almost say: Yes, destiny does exist.

Very few toss all that security and establishment aside on the off chance that their crazy idea of a future might work. They are

called entrepreneurs, and though many fail, a small percentage succeed in spectacular fashion and become superstars.

Now that's what we call Destiny!

There are no right decisions or wrong decisions with destiny, there are only decisions that lead to an outcome, the only outcome available. That was your choice and you must learn to live with the probabilities. Accidents befall us, they can be cruel or kind, so neither should you blame yourself nor take credit for yours or anyone else's destiny when you are such a small part of its manifestation.

Be humbled, accept the cards you have been dealt, and find solace within. The future happens to everybody, equally.

Really, if you had the chance, would you go back in time and change the destiny you are presently living? Knowing that there would be the possibility of you dying younger on a different time-line? At least you are now alive! You might wish to alter a terrible injustice in the past, but might it not lead to another – even worse?

Sure, we are bombarded daily by media musings on the rich and famous, but there are just as many successes in small, poor communities. We just never hear about them. It seems, of the four billion of us on Earth, there are only a set number of wonderful destinies available; the human population can only handle so many.

Get in line...

In reality, destiny is not just about success or greatness, it is equally damning, equally unsympathetic, and as we see in the media everyday it can be equally horrendous. And it is just around the corner for everyone. Tomorrow plagues us all, it has no social exclusions or ethnic boundaries. We are all presented with the same offer everyday, to make of it what we can – and we try to – however fallible we are.

Destiny From a Philosophical Perspective

“Jai guru deva, om.” John Lennon – Across The Universe, 1968.

Many of today's eastern philosophies hold time in the highest regard. Hindu and Krishna teachings consider time to be connected throughout and that there are no such things as coincidences. There was no beginning of time as there is no present moment; "Moksha" reveals that time cycles and the future is set – rebirth just as sure as sunrise – everything is meant to be. In essence, all of time unfolds all at once... Destiny exists.

Christian doctrines are more vague. Time is a measure of physical existence only, it has a beginning and an end. Eternity, it is written, is for God and the hereafter. The passage of time and how it manifests is not considered in the bible, neither is the prospect of one's predetermined destiny other than our fate and possible ascension to Heaven – which is not actually determined until you reach the Pearly Gates. Some believe God has a plan for all of us, while others interpret the scriptures to mean we do have Free Will in our affairs.

It is often said following a tragic death that "God works in mysterious ways". Thus inferring to some degree his/her/their/its accountability.

From a Western, academic perspective there are two camps. Weighing in on the cause of free will and "Choice" are the A-Theorists, and for our "Sealed Fate" the B-Theorists. Temporal Ontology is their ring, and the canvas upon which they wrestle is the enormous subject of existence, itself.

In simple terms, the A-Theorists believe in "Presentism", whereby the past does not materially exist, the future has not happened and so we live in a vibrant present state only, progressing onwards. B-Theorists consider the "Block Model" to be how time is; that all of time from the past through to the future

exists all at once, and that the flow of time is merely an illusion that conscious beings rely on to function.

Some argue that our path through life is governed by random assembly and not decision making, like a role of the dice. Indeed, it does at times seem as if there are too many variables in the mix and that what or how events occur might be purely chance. Let's call them the C-Theorists, C for casino or chaos (the next chapter considers Chaos Theory and its importance to time).

What of fortune, fluke or luck? A wise man once said: there is no such thing as luck, it is all in the planning. But whose plan? Your plan or the larger universal plan that involves our predetermined passage through time?

We could count Carl Jung among the C-Theorists. His belief in an under-lying consciousness that, like dreams, is devoid of time and can connect with future events, was how he explained chance encounters with our fate as more than mere coincidence. By suggesting that no time passes while we are unconscious offers the notion of a mind able to travel at will instantly from one period within our lives to another, thus throwing chronology out of the window.

We deem our direction through time to be towards the future. We make use of the past by name as if we have come from there, as if it was there before the present moment. Whereas, we should be pointing out that the past only exists because of the present; we create the past by being conscious of our deliberations – regardless of the theorist that we may be.

There is no direction, no course, only the presumption of terrain overlooked. Clocks and watches disagree, as does our orbit around the sun. They demand direction by numeration, thus creating, by such triviality, the prospect of time's heading and so ironically its reverse.

By specifying points and periods are we not distancing ourselves from time as opposed to getting closer to understanding it?

Presentism in Brief:

First, the bad news. If neither the past nor the future exist, only the present, how wide is the present? If it has no range or breadth surely it cannot exist... A related example, when does 11.59 become midnight? A-Theorists can easily state here that the present is just an abstract word placed on our conscious consideration of 'now', when in reality it obviously does not exist. Easy start. But that doesn't get us anywhere; it still defies logic that we could be aware of a moment in our progress through time that has no dimension.

Can we suggest that a massive stellar object passing through the cosmos in motion and time only exists in a present, undefinable and impossibly justifiable moment? How does an entire planet fit inside a moment, unless it is somehow attached to what came before and what comes after? It is all very hard to swallow.

If the past and the future do not exist, the present moment by itself is relatively speaking, nowhere, so a physicist would strenuously argue were his name Albert Einstein. Presentism at first glance seems flawed from the outset. It relies on the premise that a moving object can have no legitimate extrapolation, we can't tell where 'now' is because it's ethereal.

On the other hand, the beauty of the proposal made by A-Theorists is its simplicity. They argue not for the physics but for reason. What is the point in living if it has already been done? Surely such a redundant process would never have been dreamed up by something as dynamic and complex as nature. And for good measure: If everything existed all at once it would all be over and done with, right? How can progress be made if time is a solid lump of rock? We have to ask.

"Stop looking in from the outside," A-Theorists will cry. "Presentism is subjective."

"Destiny exists!" cry the B-Theorists. "There is nothing you can do. Everything that will happen to you is quite unavoidable."

Well, fine then, you rightly think; if it will happen to me regardless of my actions now, then why bother.

This would surely be a disaster! Not just for you and me but for the evolution of every intelligent being, one might think. If there is nothing we can do then lets stop trying to change things and just see what happens. This would not bode well for humanity. Without the desire to achieve, to challenge or to question, there would be no future for the human race.

No desire to live – no life! So, unless Evolution has a good answer Destiny is resigned to a dusty shelf, once again...



Evolution's Carrot:

We can easily appreciate that an animal's need to eat brings pleasure, even though the choice to get up and go find its next meal is really controlled by hunger and the hopeful alleviation, thereof. It gets up, it finds something to eat, it feels good, so it wants to do that again. This is instinctual, and it has worked well for eons.

However, many small animals can indeed see a few minutes into the future, and make choices with that in mind. Larger

mammals may consider an hour or day ahead; while elephants could be making decisions based on thought process involving weeks, even months in advance.

And now there's us; and given a brain to think about all this we could easily upset the cart if we accepted Destiny. We could stop making an effort; we could just sit and wait for our future, seeing as how it is already out there and coming our way.

Evolution, having unwittingly provided us with a mind to contemplate our future, gave us also the means to question it! In so doing, it created for itself a catch-twenty-two. Clearly a 'fool proof' mechanism would be required to keep us from falling off a cliff.

Did evolution come up with a devious carrot in order to perpetuate intelligent life on Earth? Just like it offers us fear (to escape danger), or ecstasy (to achieve birth), might evolution also have offered us the notion of choice (to progress)?

In a sense, we already have such a fail-safe system programmed into our brains. Preservation of life is not something we question, it is automatic. Taking one's own life is extremely difficult, if not impossible for most of us. The decision, therefore, to consider our future and act to insure benefit and survival is all part of the same mechanism.

How does such a system work? You could say, decisions are habits. While we imagine we can choose to act with complete freedom and independence, choices we make are actually repetitive by nature. We are condition over time, we have evolved over time, and now our decision making is practically predetermined.

We wander from one habit to the next, not always precisely in the same way, but somehow we wind up doing that same thing we always do, almost in the same way. We are the kind of people we are: Risk-takers; introverts; calculators; or realists. We are predictable. As is a fox, who sleeps in the same place if he can, then goes down to the river to drink in the morning, follows the same path, hunts for rodents in the farmer's corn field and finally

goes for a nap on his favourite mound in the woods. Is there a creature that reacts so spontaneously and without pre-conditioned rationale that every minute of everyday is a new experience, and his future therefore is just so unpredictable?

Such a creature might have existed, but would it have been successful and passed on its genes? So we must ask: What is really steering us onward through time?

Habitual behaviour is safe. Because it has been done before and worked, it can be done again. So, we make decisions, but these decisions are part of a much larger system that has been in progress since the beginning of time. Decisions? Hmm, perhaps better described as conditioned responses. See the on-line supplement, Making Choices, for more on this topic.

So you think you are making a personal choice to, say.., go on a diet. However, because the future already exists, there are no million and one options you can choose from, even though you think there are. Like, sign up for the gym, join a soccer team, buy a bicycle, avoid junk food, try medication, a yoga class, etc – no, sorry, there is only one: To diet.

Habitually, dieting is the kind of course you are good at; you enjoy a challenge but are not athletic; and though you are an achiever, you are introvert. This so called choice you made was already planned by character, it was in the mould, it was inevitable that you would. You were destined to diet.

What you get for your trouble is a pleasurable sense of adventure. You get a feeling of individuality; you develop an important emotional awareness. All this is paramount to your self-esteem. And you get slimmer, or you don't. That, we might say, is just part of your personality, the one you were given, not one you chose.

Alternatively, you could just sit back and say, "Come on then, make it happen." Or even, "There must be someone watching over me, they will surely take care of me." And they probably will; be they the government, room service or your clinic. So you argue that your choice of inaction dictated an outcome. Yes, but if the

future already exists, then not something you came up with by yourself.

The Argument for Destiny:

An evolving world does not need there to be intelligent life on board to question its validity. Apparently, progress can happen without us. So, why do we make a difference? Do we?

Things have to happen. We don't start and stop time. How many times have you been in a situation where a decision was required but you did not have the time to come up with one? Nevertheless, something did happen. Perhaps you turned to open the door while deep in thought without making a decision to do so.

It's that form of dissociation that Carl Jung was getting at. A slipping out of conscious awareness and into a timeless place – just as there is a knock on the door. Coincidence?

The passage of time is relentless, we cannot alter that, we have nothing to do with this all-encompassing process. How likely is it that we can make choices and somehow alter the outcome of time's flow? A river flows; if we poke a stick in the rushing water we make a slight alteration to the surrounding surface locally, a wake surrounds the stick, before it re-organises further down river, and quickly there is no sign of our disturbance. While we and other mobile bodies will create local influences as we alter our progress, the flow of time manages to repair the damage, smooth out our mess and return everything as it should be.

Things happen, and when they do happen it must be said that very little, if anything, is done because one person decided as much. We are influenced by so very much in our lives that it appears we are completely entwined in every aspect of the World around us. We cannot make the simplest choice about our future without one hundred or so things pulling and tugging at our thoughts; things that we did not even know were truly influential, minor fluctuations; things perhaps hundreds of miles or many days

away from our present location. Look no further than Chaos Theory.

What destiny and the B-Camp offers is this sound sentiment: Universal control. It suggests that the existence of everything that ever was or ever will be is somehow connected, and nothing can go wrong: the Block Theory, akin to Buddhist philosophy. You are not in control of the future, and that is possibly a good thing. Well! Do you really think that the existence of this incredible and enormous thing called our Universe is all balanced on the decision making of a bunch of imbeciles floating about on a minute rock in a far off galaxy somewhere millions of miles from anywhere? Is that not just a teensy bit arrogant?

There are no forks in the future. We just think there are; it is evolution's way of keeping us focused. Like our overwhelming and uncontrollable desire to avoid snakes, keeps us alive; a fear both programmed into our psyche and re-enforced by those around us as we grow up. Some say it is irrational to fear snakes. So what of choice?

Evolution's carrot: An overwhelming and uncontrollable desire to consider our fate.

Irrational? Clearly, such thoughts are supposed to feel like a real choice, otherwise they would fail to fulfil the objective. The elimination of choices does not conclusively suggest that our future is already out there. This is only the beginning of the story, one piece of the puzzle.

Destiny and the Alternative Future:

Having no autonomy as we progress through time is simply the most horrific and frightening thing that we could ever possibly imagine. It is also annoying to think that nothing we have done in our past has made any difference and that, quite frankly, life is

pointless. So, if Evolution's carrot is not your cup of tea, then Free Will probably is...

The A-Camp says, there is nothing out there. Destiny does not exist and the future is ours to create. Great! This means that when you make a choice to turn left rather than right, nothing but your mind determines your actions and you can accept or not any external influences you wish. Simply put: you are taking responsibility for everything that happens to you. You are completely free to choose, nothing is controlling your direction through time but you; you are driving, Father Time is sitting beside you, and there is nothing up ahead.

If the future does not already exist then you are making it up as you go along. But suppose destiny does exist and, moreover, there is allowance for alteration, what a glorious scenario! The best of both worlds. Such a theory has been doing the rounds for a few decades, it points to there being more than one future. No re-stitching of time required – that 'time continuum' thingy that time travellers panic about – whatever you decide to do will have no unpleasant impact on any uncertain future.

For those who support change but like stability this theory is bound to please: The future does indeed exist, every possible direction we might take is already out there, from whose archives we may choose which path we wish to take. An infinite number of parallel worlds all written down and waiting.

While it satisfies the sense of control normally associated with complex structures and at the same time allows us autonomy, there are a number of boggling conundrums to mull. Life is not just about you or me, there are a few billion others out there all making decisions daily, not to mention a vast army of animals with minds of their own – oh, and, lest we forget, possibly a hoard of aliens living on other planets. Every time someone/thing makes a decision we are all forced to flip worlds... although some suggest we are all already present on these other time-lines. What a mess.

While this theory is based on accepted science, logic and statistics also grate:

Saying that every possible outcome is already out there, suggests multiple avenues spawned from a single event, all these parallel worlds having a common present moment that continually advances; a “Bow Tie” scenario, explained below. Referring to the following chapter, Time, it must then be pointed out that memories are key to our present awareness, as alluded to by both Stephen Hawking and Friedrich Nietzsche. Jumping time-lines throws up a whole host of faux pas's.

Statistically, if every possible scenario is out there for us to experience, then not only will the sensible variations exist but also the insane ones. A chicken could lay a million eggs in one night, for example. However, such whacky things don't really occur, do they? It seems science fiction buffs, in their enthusiasm, have gotten a little ahead of themselves.

Some very strange things do happen, but far fewer than would seem reasonable if absolutely anything were acceptable. (NB. If the universe is infinitely old then the gap between strange things happening could be many hundreds of years). However, imagine if the laws of physics could be seriously tampered with as we sailed along on our merry way through time. It has been suggested by defenders that a barrier might be set up within this theory of parallel futures to avoid the unthinkable, to protect the laws of physics. Which means there are rules about how you determine your future... So, not much of a real choice, huh?

Then, there is the infamous saying, "If it can happen it will." Well, a Doomsday Universe – one which could destroy all the others – must have gone boom at some stage... and yet, here we all are.

So whose to blame for this mess? Quantum Physicists created the multi-world interpretation or 'MWI', for making sense of some of their most bizarre conundrums, saying that there are indeed an infinite number of paths we can take in the future. Schrödinger's Cat was a thought experiment specifically created to confront such irregularities as: particles that have all their possible

states in readiness at all times but only show *one* when it is observed.

Schrödinger, metaphorically, puts a cat in a box with a sealed jar of poisonous gas and a device that will break the jar if it detects a particle changing state. As far as quantum mechanics is concerned, at any time in the near future the cat is both alive and dead, until we open the box to observe. Thus, the MWI adequately explains this cat paradox, by saying, "Each possibility has its own place in the future, simultaneously," namely, a superposition of states.

We have choices with many possible outcomes, in the view of quantum physicists and the sub-atomic world. But even *they* assume that the laws of physics must be upheld, they just haven't quite figured out what they all are, yet... leaving us all the more entangled, especially in the macro world of our perceived reality!

A subatomic particle, okay – but a Jumbo-jet? We are being told that every eventuality must, indeed, exist "in readiness", which is hardly a groundbreaking theory. Well, of course they do, in our heads. Each one of these Many World lines supposed can only have one past from which they developed. The cat went in the box! Many futures from just one past, the cat duplicated in every world thereafter. The present, we are lead to believe, is a place where infinite outcomes are conceived. To put it another way: Free Will. You jump from one time-line to another, whose destiny is assured, only to flip to yet another a few seconds later on deciding something else.

To differentiate, MWI proposes many parallel worlds or realistic existences, not whole new universes. These worlds lie just beneath the surface of our observed reality. It is debatable whether they are actually true, tangible entities or whether they fall apart under scrutiny like a bunch of failed experiments. That hasn't stopped the entertainment world from rushing to capitalize with a host of sci-fi stories.

The MWI experience appears not to purport a stack of parallel happenings but one present time-line adopting multiple

futures. Are there many *past* time lines coincidentally converging on one present moment? To all diversify and multiply into the future from this one 'bow tie' point? That works for 'Dreamscapes' but not Metaphysics; Carl Jung would most likely also have been a proponent.

We might otherwise suppose that this whole thing we call reality began with just one time line, the past, and has been growing ever since. Multi-worlds expanding out like spaghetti models of storm forecasts, becoming more numerous and complex with every moment passed. (Ironically, this is reverse entropy on a grand scale). It might remind one of a wringer used for drying clothes, whereby infinite possibilities from the future are all pulled into the rollers and extruded out into a single past.

Then there are our personalities to consider, which evolve over time. If multiple time-lines with different pasts existed between which we could pass, we would be in dissociation every second of our lives. Memories are the DNA of awareness – what an incongruous circumstance. Nevertheless, I'm sure many quantum physicists are enjoying the ride.

Chapter 6. Travel, posits that parallel worlds are everywhere by proxy in a model where time already exists. As it were, layers of our past and future running parallel to the present. But these layers are the natural course of time through one universe, not multiple universes with alternate scenarios.

Nothing by itself Exists:

While Presentism appears easier for humans to accept, it does have issues. A world where time exists in the present only and on a single time-line, where there is emptiness up ahead, is a worry: A journey into nothing goes nowhere.

Imagine: We decide to take a road trip to Lake Mirmewawa, Idaho; but if Lake Mirmewawa does not exist then we are not going anywhere. Would we choose to take a road trip to a non-existent location?

To be, we need something to relate to, one thing on its own cannot exist. Time, like spatial existence, could follow a similar principle.

Can we invent locations merely by suggesting them? One could decide to invent time travel tomorrow, but without the wherewithal to do such a thing it is unlikely to happen. The past produces the future, not the present.

There has to be something into which we are rushing. One thing floating around on its own cannot be deemed to exist. There can be no movement, no direction, no purpose without something to relate our travel to; there must be something beyond now. Ask yourself this: do you believe, if you pushed your arm through a magical portal to a parallel universe on the other side that for some reason did not exist that day, your hand would actually be there on the other side of the portal?

If there is something up ahead then Destiny has a place in time, it may well exist.

So, on toward death! Not, however, the end of time. As has famously been quoted in various forms over the years, this statement for the B Camp springs to mind:

“We cannot choose when or how we will die – but we will.”

... And for the A Camp, an equally poignant quote from the Far East:

“We are responsible for everything that happens to us except our birth.”

We can believe in the existence of life after death. We can believe in the passage of our soul to a higher place. We can even believe in ghosts. Yet, strangely, very few would dare believe there is something out there, our destiny, beyond the present. There's a whole universe out there. It just looks to us like those tiny stars twinkling up in space are part of our world – they belong here and are not so very far away – and oddly this is less frightening.

It seems that in order to want to stay alive we must believe that there is nothing out there in the future. It could be a classic case of subterfuge on the part of evolution, if you choose to believe it. Otherwise, you have no choice but to believe it. Believe or die!

This proposal states that for time to exist it must exist in its entirety. For progress to be made the past must be connected to the future; choices become irrelevant; the present moment, our creation. The next chapter reveals all.

TIME:

Relativity from a Psychological Perspective

Does time flow? No one knows for sure, nor for that matter, have we any idea where time might be going, if it does; whether it progresses or if, conversely, time is a stationary phenomenon and it is us doing the flowing through time. Something appears to flow, we perceive a sense of motion in time from one moment to the next and, yes, we can even measure the concept with time pieces. But isn't that just our minds making the whole thing up?

Our consideration of space is not much better: We can only relate our physical whereabouts and trajectory to *other* meandering bodies in the universe that are, like ourselves, equally confused. It's the best we can do though gets us no nearer understanding where we are actually going.

As with space, our place in time is unfathomable if we cannot relate to a beginning or an end and all we have to perceive the flow of time are events flashing by. Pin-pointing a beginning of time is akin to denoting a stationary point in the universe...

which is scientifically unacceptable. Pin-pointing the end of time would be like finding the edge of the universe. Huh!

Ironically, Physics asserts that there *was* a beginning of time, "The Big Bang", where existence and our universe first emerged. Presumably, therefore, they are inferring that time has since been progressing positively towards a distant, infinite horizon, possibly even an end.

That time flows in a linear fashion from beginning to end, like a ruler, is rather old fashioned. It is much more likely that time, as with space, has no boundaries – in other words: time is cyclical, thus solid, with no ends, and doesn't flow at all.

No great leap of faith required here. Space-time is curved, explains Relativity: Light has been measured to bend... gravitational waves distort and time to slow down.

Indeed, from a psychological perspective, time dilation makes sense. Time does not flow unless we separate the past from the future. And in that space our minds conceive between – the present moment – light propagates, flowers bloom and life is given reason. Consciousness makes time; it wasn't created for us... Nothing more simple than that.

Few scientists will offer a conclusive "meaning of time"; even fewer scientists. How time flows, what it is and where it is going, are all up for debate. Indeed, many will argue time is just an illusion, and yet it appears in some of our most grandiose astro-physics equations, so surely it exists...

Is Time's Flow Just Our Imagination?

We "conscious creatures" create the world around us to suit our needs and imagine this moment we live in. Yes, it is real to us, but what reality *actually* is may be far from the truth as we know it. Our brains interpret the world around us by means of senses – eyes, ears, nose, etc – and make up a scene for us in which to act. We perceive "Now" by means of biological stimulus and

associative conditioning in an otherwise static environment, thus it is we that are flowing through time.

Everything is up for interpretation by our minds: Colour pigments are mixed by proximity to make varying shades that don't really exist; molecules are all stuck together to form clumps of recognizable shape depending on perspective. Red and white turns pink, trees become mountains, and the moon is a dime in our mind's eye. It's all a confabulation – Isn't everything?

Consider the signpost in the image below, "The Future". It was made as a rectangle and then 'photoshopped' to produce perspective. Simply making one end narrower than the other fools our brain into thinking the sign belongs. We look through a telescope and see our cycling galaxy in all its glory. Just look at a slide under a microscope to discover a whole, new universe.



A magician waves his hand about and the audience sees four fingers when really there were only three visible; the Mickey Mouse illusion. It is a common fact that humans will create reality if things don't add up or a key element is missing. We apparently need to make sense of madness... it's a comfort thing. Klaus Conrad conceived the term Apophenia to describe the necessary

human trait of seeing meaning in things that really aren't valid, well... like, Mother Teresa's face on a muffin. Yes, as many psychologists will point out, by and large we actually invent the world around us.

But time is not the illusion. There is a past behind us and a future still to come. Eternity is all real; the magic is 'now'. All of time already exists in a static Block Universe model established by cyclical time. There's no illusion to that imperceptible model... the illusion is only the present moment and how we make time flow.

Time flows on a conscious level, of that we can be certain, we evolved to make use of it. Here we are in "The Present", which is our moment of awareness, our sense of time. If conscious living beings such as ourselves were absent from this universe, time would still exist, would it not? But would the present? This question is an extension of French philosopher René Descartes' 'thinking': "Would anything be, without the mind?"

Without our deliberation of this present cursor to warrant purpose, time would have no meaning. History might exist, as might our destiny, but there would be no indication of how time flows.

Here's a simple analogy: All of time and existence is like a DVD; on its own, a flat, rather boring, nondescript piece of plastic. But when the laser hits it the TV explodes into magnificent flowing colour and action... In other words, existence is nothing without us. We flow through time; we make it happen.

What is the Definition of Time?

There are quite a few. The first is a lovely, literary liberty describing a swath of history, an epoch, "There was a time," or eternity, "All of time..." used occasionally within these pages.

Secondly, we say, "Time to put on the kettle," here being used as another word for 'moment', referring to 'The Time' as measured by a clock.

Thirdly (as per dictionaries), time is invariably described as, a sequential and irreversible measure of period between events. This definition is on shaky ground, it relies on the premiss that the past and future actually exist, which is hotly disputed.

Eternity, which encapsulates the past and the future, should not really be classed as time. The present moment is the only true manifestation of time and that sense of flow we perceive.

Fundamentally, **time is about change.**

There is a difference between the past and the future. From one minute to the next, things are altering their position, their form and their state, be they great celestial bodies or tiny atomic particles. If no change occurs, there is no need for time. In other words, if the past and the future are identical, existence does not occur, because there is no point nor reason for it being, and no place for it to be.

Space, it seems, is a prerequisite for time, because motion needs a playground in which to roam. These three phenomena are the cornerstones of existence; like our three dimensions, one cannot exist without the other two.

It's all or nothing with time. We need time to contemplate everything.

Better said: We need "Now" to contemplate existence, thus dividing the canvass into a past and a future, creating a flow of time. This canvass is all of time seeming to exist at once, The Block Universe, as one branch of ontology hypothesizes and this proposal endorsed in the previous chapter: all of eternity already in place.

Time flows from our three dimensional perspective; but objectively, looking at existence from the outside of 'now', the past and future are a single, static entity. The present moment defines our three dimensions, being the fourth; it's what happens upon creating space, energy begins to flow.

How We Perceive Time's Flow

Blink rapidly and you will get a rough understanding of how our brains process life. Time passing is like a film strip in our minds, with still frames being recorded at high speed. It is well understood that the human eye can capture between 30 and 50 frames per second and that our brains then meld those still frames into a single, smooth sequence of movement. Thus, with our eyes open we are constantly registering change at that rate and perceive the flow of time. It's called the 'flicker fusion rate'.

Our minds use other senses, too, and process them by the same means. Awareness on any level has a flow rate dictated by our brains. We learn to appreciate it from birth and it becomes ingrained in our consciousness soon after.

Scientists have recently worked out that not all creatures see at the same speed. Pigeons, for example, may register change at double our rate per second, slowing down life for these fast flying birds, making it easier for them to spot a food source, land on a branch and avoid predators. House flies register an incredible 250 frames in a second, making time crawl by and your chances of swatting them with a newspaper nigh on impossible.

Nevertheless, all us creatures are missing a substantial chunk of what is available reality within one second – even flies. If there were a creature that could get close to seeing every part of a second, with a flicker fusion rate in the millions, from their perspective time would freeze up.

Our minds create the present moment to separate the past from the future, and then slow down time to a manageable pace – otherwise it would all be over at once.

Such a creature above would experience time on pause, its entire life focused in one fraction of a moment. Time would cease to flow, coincidentally (perhaps) akin to the experience of an astronaut in a spacecraft approaching the speed of light, and hardly beneficial to the likes of you or me.

Moreover, a flicker fusion rate of millions would give the same result as that of a conscious creature at the other end of this scale, with a rate of one, where a single moment is all that would be experienced. As if both ends of the scale were actually one and the same – a cyclical model.

Scientists have tested the flicker fusion rates of a number of conscious creatures, from super fast flies to rather slow turtles. And, as is so often the case with science, both ends of this scale will no doubt one day surprise us. Geological time is measured in millions of years and often described to us for our encapsulation as if a thousand years were mere seconds in length. What if they were? It is entirely possible that a conscious entity might experience the flow of time super-slow, where a single frame of awareness occurs just once, say, every 250 years – or a Pluto year.

The suggestion that inert objects like liquids and crystals could possibly be attuned to time, or be in the least bit conscious, will strike most of us as silly. And it is, from our perspective. However, we should be cautious of considering that, what we see and believe is the absolute truth (just ask a fly). While it may be the realm of fantasy to suggest that a conscious entity could be aware of mountains rising, continents adrift and ice-ages coming and going, our planet "Gaia" may well be more alive than we give her credit for.

Minkowski, the eminent physicist and brain-child of many of the elements of Special Relativity, considered the flow of time to be a passage through layers, as if a film strip stacked like a deck of cards. A physical manifestation of time rather than exposures being formed by the limiting aspect of our simple minds. Later, in Chapter 6. Travel, Minkowski's layers of time will be given a whole new meaning with the revelation of parallel universes.

What we are doing by being aware of time's flow at 30-ish frames per second is slowing down the periods between moments to a rate efficient for our purposes. This is not an illusion, it's how time works: a representation of a fraction of time's vast breadth. In

order to see all of time, the processing power of our brains would have to be immense... infinite.

Alternatively, we can step back and look at time objectively, see it all for what it is, from the past into the future. But this would not be conjuring up a present moment in which we would find ourselves duly confined.

The Arrow of Time.

One could argue, the mere fact that there is a difference between a past and a future, forces there to be a transition, and it is NOT our conscious consideration that influences the flow of time. Reaching equilibrium is a natural and well studied trend in nature, from osmosis to temperature and pressure neutralization, so a difference between now and then in time may just be a balancing act. Another word for which is, Entropy.

Entropy or time's arrow, is one view of temporal progression. Things break but they do not un-break. There is only one direction and that is towards chaos. Quantum mechanics might disagree, as it likes to argue that sub-atomic particles may wish to do things in reverse; but on a macro scale we don't seem to be heading for birth. So, entropy is the redistribution of energy in time. It is described by the second law of Thermodynamics as the passing of energy from useful levels to ever less useful levels, in decline.

Whether this decline has a consistent and steady rate is yet to be determined. Entropy is said to increase with this redistribution process, from a state of perfection and little chance of change, to a state of more possibilities due to more freedom. This suggests progress, however it is a linear model, where energy flows from a beginning (perfection) towards an end (chaos).

... although there is something to be said for the statement, "In Chaos Hides Perfection."

Most modern conjecture on time revolves around Einstein's theories of Relativity, where space-time is the leading component. It insinuates time's irrelevance to some degree, but, by the same

token, places time and space firmly together in formalizing existence. And that existence all began with "The Big Bang".

Recently, however, there has been quite a stir in Science circles, and time has become the topic of much debate. Ideas range from: A Conformal Cosmological Cycle by Sir Roger Penrose, proposing that our universe must have existed before the Big Bang; to a more recent suggestion that two identical universes erupted from the Big Bang, one heading forwards, the other flowing backwards in time, thus providing equilibrium.

Indeed, Stephen Hawking questioned the concept of when our Universe began and has spoken of the quirky possibility that it might only have come into existence a few years ago, and that all our memories of before such a time are merely implanted – though it is likely he was simply making a point.

The Big Bang is understandably thought of as the beginning of time. So, where there is a beginning there is, by consequence, an end. Ending is relative to something that continues. Stopping means the prospect of starting – forwards or backwards? All these issues need reconciling, if we are to believe in the flow of time.

The arrow of time struggles in its pursuit. If time can stop here, then what is to say it cannot stop there, or there, or there..? Or stop for a moment and then proceed? Time could come and go as it pleased. However, it appears to be a continuous, uninterrupted passage, with no complicated rules to address all these queries aforementioned.

Enter the theory of cycles. If Cyclical Time can adequately round all these square pegs, where does that leave the Big Bang?

NB: From a philosophical standpoint, time cannot flow backwards in this universe. To use such a word implies an opposite direction to the norm, i.e. "forwards". Time may have a course – if such a notion can practically apply – but precisely retracing steps taken is impossible as this would run contrary to causality. Positive momentum occurs, there are no negatives in natural progression. One change in temporal circumstance does not create forward motion, except that, for our simple minds used

to contemplating spatial displacement, we mistakenly define change as 'direction'.

In considering an expanding universe which may eventually collapse in upon itself, contraction would not be an identically opposite phenomenon. Deflating balloons do not collapse in reverse. Time flowing backwards is thus a misnomer.



A Cosmological Cycle of Time

While time's progress is not a true flow, because we make it happen, time has form or structure when considering its purpose. There are a number of strong arguments why time must progress cyclically rather than as a linear model, all hidden within the confines of physical laws and mathematical formulations.

To get something started requires purpose, potential and impetus. However, in a state of non-existence, before time, it is unlikely these three players could have operated. Change is energetic, and to suggest that energy magically starts or suddenly stops is far fetched; it goes against the very fundamentals of our Laws of Physics.

Time is change, change is energy, ergo: Time does not start and stop.

If we accept that time has continuous flow, either it wanders off into 'forever' and infinity, or it appears to go on forever by revolution, a cyclical progression. Both scenarios offer the notion of continuity, but a cycle offers contained stability – no loose ends.

The greatest human invention was, arguably, the wheel; it revolutionised mobility and functionality by later being transformed into gears and motors, pulleys, roundabouts and race tracks – and that's just the tip of the iceberg in cosmic terms. Consider gyroscopics and magnetic fields, solar systems, nitrogen cycles and atomic energy.

Likewise, time has the same potential, of being a circuit, in that it feeds itself rather than having an undefined reason for linear progression. Time flows into itself, like rain that feeds a river that flows to the ocean, which in turn produces clouds to rain again. Thus we can answer one of the most fundamental questions regarding the meaning of time, its purpose and potential: In cyclical models, **time has reason**.

The comic analogy: *A swimming pool is a river with a beginning and an end.*

Time must surely cycle, as do all progressive systems, the consequence of which is that all matter in our universe will eventually return to their state of origin, and the cycle continues.

No loss of energy in the universe, no catastrophic beginning or apocalyptic end, because there are no ends in a cyclical model. All matter through time already exists, as if a giant, revolving wheel whose parts are all connected. Like a necklace of pearls, uniform and able only to flow in one direction. Such systems drive themselves; they are autonomous, contained and independent, lacking infinities and finalities.

The opposite is potentially chaotic: a singular present moment on a linear trajectory lacks directive and would be susceptible to influence. There would be no purpose or urge in

'now', time's flow, inconsistent; individuals would not be bound together in procession, their headings arbitrary.

A second resolution surfaces for consideration: In cyclical models, **time is consistent**.

But the outstanding reason why time cannot be a linear progression and must have cyclical flow is all about infinities: Individuality crashes progress. Connectivity is key; one thing in space or time cannot stand out on its own. If something can be identified as existing independent of others then the entire system will suddenly grind to a halt.

Fluid progress is only possible under indefinite conditions (The Uncertainty Principle). A cyclical model for time's flow provides such a scenario, where there are no relative ends and so no points along the way can be isolated or identified as individual entities. If all considered points are unrealistic, then flow is possible... Otherwise, 11.59 would never become midnight – you could, by analogy, balance an egg upright.

A simple, cyclical measuring device, like a clock or compass, has no ends and, therefore, all points around it are uncertain. If we don't know exactly where we are on it, we can pass through it from one moment or angle to the next. They accomplish this by offering infinite progression by proxy. Cyclical processes thus ensure continuity and immeasurable flow; whereas, linear models with finite ends impede progress.

Even just one end would do the trick. The Big Bang, if considered the beginning of time and space, would be a serious impediment to progress.

But what a marvel when we look at a cyclical version of time (see chapter 5. Velocity). The Big Bang not a beginning but a continuation, like a supernova event on a grander scale, what came before being our present future destined for rebirth... our past.

More on the devilish duties of our illustrious twins, The Infinities, in the following chapter.

The Paradoxes of Linear Models in Space/Time

A linear model depicting progress of any kind, having defined ends, means that any point along its length can be precisely extrapolated from them – leading to the impossibility of motion therein.

Starting and stopping are attributes of an identified point that, if exists, evokes Zeno's paradox of motion... Except for one very clever magic trick.

If it is conceived – as it has been by physics – that the two ends of such a linear model are not relative to anything in between, then we can have ends with motion between and... all is well. In this rather dubious model, flow throughout is perceived to exist while the two ends are understandably unattainable. Et voila!

In physics, velocities are described on a linear scale, like a speedometer, from zero to the speed of light. At the beginning of the last century, in order to explain certain cosmological conundrums, light speed was established as being invariant, the other end was deemed irrelevant. Light was then seen to travel at a constant speed regardless of any observer's inertial frame of reference, and the conundrum was resolved – the luminiferous ether could be put to bed.

In this view, velocity is measured, as it were, on a flat, plastic ruler laying on a table that apparently does not exist.

We can describe time's flow in the same way by cutting the circumference of a clock at midnight and stretching it out like a flat ruler on a table. We would then, in order to progress from one minute to the next, have to conclude that neither end of the day was relative. Movement throughout the day would seem to flow smoothly, but as we approached the evening things would get decidedly tense as midnight would seem forever to regress and tomorrow would never arrive. However, for creatures such as mayflies that only live for a few hours... no problem.

On the flip side... Imagine what would happen if we took velocity's linear ruler and bent it around so that zero and the speed

of light were one and the same place... like an acceleration clock? That's what Chapter 6. Travel is all about. Relativistic speeds and time dilation in a new light.

While it is perfectly understandable that mathematicians need points to establish fact and express our understanding of spatial awareness in any reasonable fashion, such references should only extend so far. Points have no width, no substance, they are for all intents and purposes, invented non-entities.

Mathematicians realised early on that points on a linear scale of velocity would render their models useless, so they invented calculus, another illusory horror sometimes referred to as time divided by time – yup, if you haven't yet wrapped your head around time in the singular, calculus is probably not for you.

The assumption we have that acceleration is a linear progression is analogous with our ancient belief that the World was flat. It is clearly not. It curves around on itself as does time and, also, space. A linear model with invariant ends is merely a pseudo-cyclical phenomenon that works well up until the moment when somebody calls its bluff.

Simply put: Once in motion, time must go on, round and round, like the current in a copper wire that flows from a battery only if it can return. Break the wire – the current stops flowing – the light goes out. Cycles permit progress; they contain continuity and breed stability.

Clocks are repetitive, they cycle through the days. One day does not end abruptly for another to begin. A compass cycles through 360 degrees, and keeps right on going. Our planet is a sphere, upon which we wander, with no apparent end in sight. Moon orbits, solar systems and giant galaxies, all cycles, as are the myriad of infinitesimally small atomic structures of which we are made.

The binding glory of a Block Universe Model is in the configuration of a cyclical phenomenon.

Memories, Time Lines and Alternate Lives.

A cosmological cycle of time might conjure in the minds of some the supernatural idea of reincarnation, of us living our lives over and over again, the world repeating itself every so often. Unlikely. For afterlives and reincarnation you'd do better acquainting yourself with mysticism and the Buddhist faiths.

The more likely case is that a reincarnation of matter in the Universe over time (billions of years?) will occur. Growth and nature might be somewhat similar, showing repetitive construction; but never will it repeat itself precisely nor, indeed, produce the likes of you or me ever again.

Alternatively, we can re-consider Stephen Hawking's comment above, and question whether a few billion years is all that realistic. A cyclical progression for time, where the end meets the beginning and renders both void, might be just a few years long. The end could be minutes away, while the beginning might have been yesterday. In terms of designated moments in time nominated by humans, however, these points in cyclical time do not apply, and neither does the present – it could be anywhere.

Whilst we are conscious and aware of any given moment in time we also carry memories. It would make no difference to our consideration of the present moment if the end of today was connected seamlessly to the beginning of today rather than tomorrow, a one day loop, as imagined by the philosopher Friedrich Nietzsche. Our brains would not complain that we missed out on living tomorrow because we would wake up as always with all memories from yesterday intact... and we would live today over and over again with the same enthusiasm, unaware of the reality.

The irony is, wherever we are is "Now". Time exists in its entirety and we are conscious throughout the brief period we are alive... we cannot have two 'nows' just as we cannot have two measures of time. Being aware in the present moment feels right with the memories we have; it's a one-off experience.

So, much as we might like to, we cannot consciously skip over to another moment on our time-line because we would not have the correct ensemble of memories. Have you ever woken up in a hotel room and wondered where on earth you were... what day it was... and what you were supposed to be doing?

Having gone to bed in the dimness of an evening without contemplating your surroundings, you wake up lacking memories of what the hotel room looks like in broad daylight – and your mind is lost. That's all it takes to slip out of place, in time.

I remember my mother having dementia and slipping decades at a time through her long life, quite lucidly. One afternoon I would be her deceased husband (my father) and the next day I was her brother, the uncle I had been named after who had passed away years before I was born. The lack of association between environments made her passage to other times that much easier, a familiar face and voice being the most dominant features that played into the scene she was experiencing at the time.

Of course, it helped that the tea set before us on her antique side table was the same one she had had for over 50 years, even though the house we were in was different. Then, of course, she did not actually slip back in time physically, only mentally. She did not occupy a moment she had occupied before – I don't think – but something very similar, without a doubt.

Memories, the blueprint for our existence.

You get up and go make yourself a cup of coffee. You come back and sit down with it. Now you wonder if you are still in the kitchen – though not your current consciousness – just as you might also be washing your mug in the sink sometime in the future even before you have drunk the coffee you are staring at.

Memories dictate. The mind may accept where it finds itself with some confusion but with very little aversion. It has to. It is designed to be aware, to submit to reason without challenge, whatever the conditions. We cannot say with any conviction that we are 'unconscious'.

It was Descartes' thinking that a body could not exist without the mind. Likewise, neither can the mind without its body. We cannot extract our consciousness from 'now' so as to become aware in another moment, the body must follow. To become unconscious in the act of dissociation before regaining awareness in the kitchen, would sever that bond, then still find us satisfied – with those memories we would have – that we are in the present moment.

We are conscious throughout time, now and in the kitchen, because there is no real distance between moments; it all happens at once. Except that our 'now' seems to feel like there is a before and after, a separation of events – a flow of time. Of course, the statement: "It all happens at once," is a falsehood; there is no other time by which we might measure the passing of *our* time. The correct term should be: "It is!"

Then there is physical distance. While the kitchen remains but a few meters from your current position in the sitting room, the kettle actually boiled a million kilometers away. The familiarity with local settings imposed by our attachment to a speeding bullet – this planet – beguiles us into thinking that the ghosts of our past are just as close by.

To slip away and return to that past event in the kitchen is simply out of the realm of possibility, for those of us within time. Outside this universe there may exist other times with other conscious entities who would thus have the privilege of choosing a present moment in our time in which to settle.

Here's an analogy: Imagine observing two planets in an otherwise empty universe orbiting one another, their same sides always facing. Inhabitants would consider their worlds to be stationary, having no stars around to relate to. But we, from outside this universe and with our alien attributes, see a binary system in motion.

No matter where we might be on our time-line, there is a procession, an order of events, because everything is connected. We call change time's flow, or arrow, but there is really no going anywhere – it is all already out there. Our consciousness opens up

and blossoms like a flower within a solid, immobile landscape, creating the notion of space between things where none exists. The past and the future are devoid of space.

This universe functions as a closed system where time and distance can be conceived by advanced lifeforms as change, even though there is no change occurring. Like slicing a cake and finding two faces of the same reality. Moreover, this tear in the fabric of existence creates restrictions and paradoxes for binding forces where none would normally be, such as a top speed for light or gravity.

Why does light not reach an infinite speed? What reason is there for limiting its velocity? It is sandwiched between now and then, trapped in a bubble of time, and must return to zero; as if on a curved trajectory from the past to the future, accelerating out before slowing in.

That extraordinary bubble, the present moment we conjure, is an inconsistent truth, the order of things bent to accommodate impracticality.

Within this bubble time flows, but it comes with constraints imposed on freedom sided by the static potential of a past and a future. Eternity is held to account, obliged to offer us substance with which to measure our own existence. If the future did not exist, the speed of light would be infinite. If the past did not exist, there would be nothing for us to experience.

Observance creates reality, relativistic physics accept this to be the case. But quantum physicists are grappling with the idea that the observer and the observed are entangled in a relative quandary. On the very edges of our bubble of 'now' there must ensue a battle for connectivity, where the past stretches out with a multitude of fingers, reaching for the future. The Multi-World Interpretation (MWI). One could liken the scene to molten mozzarella cheese being pulled from a pizza, our bubble the piece we are extracting.

A Universal Present Moment

So, when is now? We are aware in the present, and yet everything we experience in this so called 'now moment' is actually from the past. It takes time for sound to reach our ears, for light to reach our eyes; even for our brains to receive and process the feeling of the chair we just sat down in. So what exactly are we experiencing in whose present? Is there such a thing?

A few decades ago we would watch BBC coverage of an event in the Middle East, and the journalist on the scene was often having difficulty with the lag time between questions and answers. So were we. It would take a few infuriating seconds before she was able to comprehend what the Anchor was asking, and for us another nail-biting few seconds before we began to get her answer.

Imagine just how frustrating it must be for scientists controlling a rover on the surface of Mars!

Distances separate simultaneity. Information received classifies the present moment for each of us, regardless of its origin. Many sensory deprivation experiments have found that our sense of now becomes dramatically distorted, even with just one or two inputs denied. Kidnap victims in solitary confinement suffer terribly as a consequence.

A lack of senses would render us completely unaware of time's flow. If we could not smell, hear, move, feel or see, we would have no sense of now. We would be as if in a coma. We would be a living entity with no conscious consideration, not unlike the vast majority of creatures inhabiting this planet. We might still have our memories, some thoughts to occupy our mind. But our inner voice, the only cognitive operating process with the ability to flow through time and with which we cling to sanity, would eventually be in doubt.

Sleep and the sub-conscious is also a state in limbo. A dreaming mind has no use for time; though you might wake up and consider the dream you were in, it is difficult to be sure you or

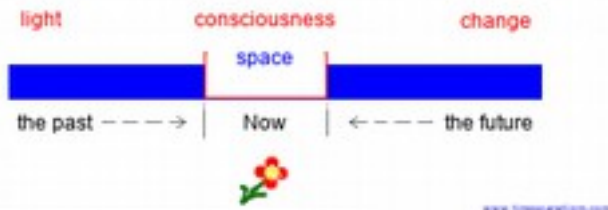
anyone else in that dream were actually moving, that time was actually flowing.

To highlight, test subjects on awaking during scientific experiments have sworn they were in a dream sequence lasting up to half an hour, whereas the monitors could see that the dreams they were having were just a few seconds long.

Close your eyes. You can probably project a purple light out in the distant darkness ahead of you – many people can – which may grow as you concentrate. Now visualize a car on a road and demand it run forwards like a video. It won't... at least not smoothly, it will progress in blocks which you may find end up altogether as one single, stretched out frame.

Time, it seems, does not flow in our closeted minds. We can recall memories of movement, the feeling of flow, and we can project that with our imagination on to a picture in our mind. But it won't move.

Real-time input is the only way to see time flow. It is created by our minds in an effort to make sense of an endless cascade of data. We become aware. Foremost, conscious creatures recognize their existence. Awareness is about stopping to think, rationalising a set of parameters and then separating the past from the future from each other by sticking the present in between.



... 'Now' emerges because we need a moment for contemplation to pick at our thoughts, whereas if we don't think about anything and just let it happen, 'now' does not exist.

The Past is the Future.

We feel imprisoned by this present moment we have made for ourselves as we trundle blindly along towards the future. Looking out between the bars of our carriage window it seems we are seeing only the past wandering by. But that is not the reality. We are seeing messengers of light arriving from the past, not the past itself. If we could see the past then we would also be able to see the future.

Light is the arrow of time. "This way," our master tells us, "there is nothing to see in the now," as arrows are falling all around our feet. We like to imagine our future coming towards us, but it does not; that is the past catching up. As time goes by we see more and more past events, the longer we live the more of them we see. Not just things that recently occurred but things that happened years ago that have yet to reach us. The past appears vibrant, fluid and ever evolving – quite unlike the future.

The past comes at us from all directions. We look forwards but not into the future, as if from our bubble floating in the middle of a whirlpool, the future within us seeping out, the past without, swirling in.

And while we experience events from different moments as though they occurred simultaneously, all, in fact, are the future or the past unto themselves. Three travellers look up at a star streaming across the night sky that seems to beckon them on, while the cries of a new-born are heard from a stall in the little village up ahead. We receive it all as one glorious Nativity and yet it was an eternity in the making.

In every Today, we are witness to past moments from many millions of years ago, thanks to the telescope. In fact, we can see the history of the entire universe unfold before our eyes, almost back to the Big Bang itself.

Peering out into the Cosmos, we watch as if a video or film recording of a bygone 'now', whether a huge supernova event or

the tiny variance of light from a distant star announcing the existence of an exo-planet. Light has guarded that moment on stream, conserved it while it travels, for whomever might come across it at some time somewhere else in the Universe.

It is not hugely different to imagine that we could film an event here on Earth and beam it out into space, on a curved trajectory that would have it return to Earth many centuries from now. Except that light cannot be influenced to bend to such a degree; time's arrow will not be seduced from its purpose. By design, we are unable to re-experience our own past. Not to worry, we could just stick it on a flash drive and carry it with us into the next century.

Consciousness can never be anywhere else but 'Now'... but 'Now' can be anywhere it pleases.

Being aware is an individual experience... is it collective? We all feel as if we are in the same present moment, together. Are we? We don't seem to be experiencing 'now' out of sync'. Or, perhaps we are. The BBC journalist broadcasting from the other side of the world presumably experienced her 'now' at the same time as our 'now'. But how can we be sure if we are not by her side to verify as much?

Is there a Universal Clock that keeps us all in line? Like the cutting of a cake, we might say, running through everyone's time line, making us all aware simultaneously.

There is no reason to assume otherwise, is the hasty conclusion. Some process does seem to act in this manner, as individuals do not appear to be wandering in and out of the present moment or lagging behind while they catch their breath.

Neither do inanimate objects come and go, so this universal clock applies to everything, not just conscious beings who cannot *but* accept this strange phenomenon because of the eyes that we have. Yes, all glued together in time by the mere fact that we are all stuck on a planet where everything is relatively comparable.

Time Dilation and Astronauts.

In the 1970s work with atomic clocks proved the predictions made years earlier by Special Relativity: that all our time pieces – clocks, watches, etc. – tick along at different speeds, dependent on our velocities. However, as we are all on planet Earth travelling together at roughly the same speed this is a non issue, we are in unanimous, temporal sync' and don't notice any discrepancies.

An analogy of clock variances might be this: A vehicle's tachometer doesn't quite measure distance or speed as accurately as one might hope if the tyres are worn. Clocks give us the impression they are reading the speed at which the present moment is moving toward the future, but this is a fallacy. It's the opposite.

When an astronaut sets off in a rocket at great speed from this planet, she becomes detached and her on-board clock will slow down the faster she goes. This does not affect her ability to function; for her everything appears to be just fine. To some extent, we know this following a number of lunar expeditions, and because people travel by jet airlines all the time; indeed, some atomic clock experiments were conducted on-board passenger planes.

The scientific consensus for interstellar flight at relativistic (near light speed) velocities concludes that, while our clocks at home continue as normal and a few years pass, in that time the clocks on board the astronaut's spacecraft have only registered a few months going by. When she returns to Earth we will all have aged considerably more than she. From her younger perspective, she has somehow returned in our future.

But, would she have if 'now' is an individual, conscious creation?

At relativistic speeds realities are unknown, only the physics. We don't know how astronauts might respond at such speeds, whether they would be lucid, whether they might be conscious, at all. And consciousness is key to our experience of now. 'Now' is the realm of psychology. In this respect, physics can tell us what our clocks are reading, what circuit-boards are doing, how a robot

may be performing, but not what our human minds might be experiencing.

It is considered that our metabolism slows down as we accelerate. Just as the mechanisms in our clocks will function slower. It's a bit of a stretch, however, to suggest that astronauts near light speed will somehow survive this metabolic rate reduction, especially with all the medical fervor these days surrounding our relatively simple task of sending humans on their first flight to Mars. No doubt, as compelling as the physical inconvenience of relativistic space travel will be the psychological impact to astronauts of such a venture.

What of our flicker fusion rate? A slower metabolism suggests diminished cognitive skills and mental acuity. And yet, these high speeds suggests the opposite, that of a mind with potential to stretch out the seconds and see more of time, experiencing a greater share than those on Earth. Not, then, necessarily a physical phenomenon induced by mathematical formulas but a psychological effect derived from conscious consideration.

Nevertheless, in these thought experiments it is always assumed that both we and those speedy space travellers would all be aware in the same moment regardless of time's flow rate, though means of communication to substantiate this claim would be nil. Such an assertion implies that there can be only one moment in time throughout the universe by which all conscious lifeforms abide: A constant universal clock dictating the value of 'now'.

A similar scenario was wonderfully illustrated in the H. G. Wells fictional classic, *The Time Machine*. The craft was a pod situated in the time traveller's house. He was then somehow able to slow down the on-board clocks, while he could look out from the machine and watch the world around him fast-forwarding through time. The beauty of this concept is that he and his surroundings were in visual contact with one another throughout, whereas, we on the planet can never visually determine that a

speeding astronaut traversing our galaxy and a few light years away, is in fact, living in slow motion from our point of view.

Apparently, it doesn't matter how fast or slow you are deemed to be passing through time, we are all locked to the same present moment.

The problem we have here is a differing of opinions. On the one hand we have the block universe model of time where a present and floating, fourth dimension is revealed by the consciousness of living creatures; on the other, a three dimensional version of time held together elastically by a mathematical constant.

Actually, it is just mathematics having difficulty with the language of reality. They are reading from the same book.

If we are to believe The Big Bang started it all then such an event might be that 'uniting force' we seek, a universal clock ever flowing through the cosmos. After all, everything would have been conceived in proximity, born of the same egg. But that requires we believe in a beginning and an end. It requires we believe that 'now' is created not by consciousness but by design.

Or does it? The Big Bang and its consequent evolution is that bubble mentioned earlier, our present moment. What came before is the past, what comes after, the future – both devoid of space – a solid tenseless block.

The breadth of time is vast, and the present moment, flexible. We see only a tiny, narrow fraction of it at 30 frames per second, while a fly sees a far narrower strip. Just one frame witnessed in a billion or so years sees it all in the broadest detail possible.



It means that, indeed, the Big Bang is the beginning and end. But not of time... of Now.

As soon as someone's feet leave the surface of our planet Earth, hypotheticals begin to wobble. Shoulder to shoulder, two people see in the night sky an exploding supernova at the same time, confirming close synchronicity, but someone on another planet on the far side of the sun might see it some 10 minutes earlier or later. We measure stellar distances by triangulation and with a constant speed for light deduce that the event creates 'now' in sync' for everyone no matter where they may be.

But there is a problem... or two.

We are stuck to the sun, a far greater influence on the solar system than our little planet, Earth. Secondly, on leaving our solar system, then what? Astronauts would be governed by the massive black hole of our Milky Way, but in the deep space between galaxies, what governor would they relate to?

Their velocities would be relative to who or what, exactly? Not us... From an astronaut's perspective the Earth might be receding and they at rest! So at what speed might they be going? Or to put it another way: positive acceleration can be negative acceleration. What we see from Earth may only suit our local and limited take on reality.

There is no doubt that observations by astronomers on Earth today fit with current formulas, and those formulas will stand up on other platforms far from this solar system, in isolation. But expecting two galaxies separated by fifty thousand light years to sync' up is pushing it, unless we accept a Universal Clock.

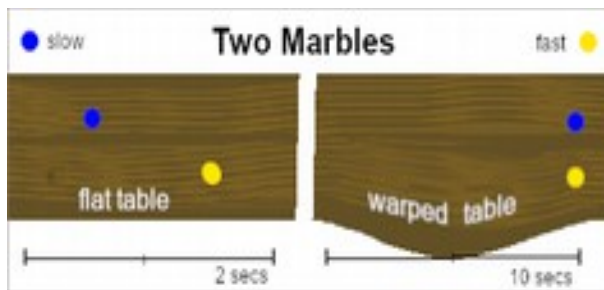
PS. Recent research has uncovered the unnerving prospect that the speed of light is decreasing. Are we about to be in for a surprise?

How Consciousness Creates Time.

Back to the speedy space traveller: Would she have returned as if in our future without aging as much? Her now and our now seem locked together in progress, even though our measuring devices say otherwise. The question being raised is: Why should she be bound to the 'now' of those with faster ticking clocks?

If we truly were synchronized in time then how could we experience a moment at different speeds and still keep up with each other? Everyone's 'now' must be individual. Think of it like this:

When two marbles are rolled across a table at different speeds, one ends up ahead of the other. It is common sense that the slow one does not keep up with the fast one and is tangent to a prior moment in the life of the faster moving marble. For both marbles to run in parallel but at different speeds requires that the table be warped. And so assumes that the universe – space – can be manipulated by those things within it. This is how Relativity works, it bends and distorts distances and time as demanded by the constant: light speed.



Remarkably and from an alternate perspective, these marbles give us clear insight into how our consciousness creates the present moment.

Here's the scenario – upholding the hypothesis that 'Time is Solid', everything is connected.

Suppose we have two planets separated by a few million kilometers and can travel between them in about one hour. A more powerful spacecraft might do the journey in half that time, but relativistic effects (Lorentz Contraction) shorten the perception of distance for the astronaut on board while slowing down her apparent rate through time.

General observations indicate that she made the trip in half an hour, although she has had the distance reduced by half (an exaggeration) in order to accommodate her dilated time, giving her the impression she still made the journey at the observed speed. If a craft twice as fast is later designed and makes that journey, astronauts' perceived lengths are reduced by half again and the distance is traversed in a quarter hour. Now you can see where this is going.

As an astronaut creeps ever closer to light speed, the distance between the planets will be shortened to eventual zero, while the rate of time experienced becomes infinitely long. We, on the other hand, see a craft travel at the speed of light.

Her perception at lightspeed is of two planets attached – no distance that requires no time to traverse. Time has become solid again, sealed up, everything connected, with the stunning conclusion that it is consciousness in an environment below the speed of light which creates space/time, and thus the realisation of 'now'.

We Make this Moment we Perceive. It bends between the past and future but does not break.

That scenario above follows the rules of Special Relativity. It accepts that there be a constant governing our flexible universe. However, if 'now' were not a unilateral occurrence for everyone because space did not bend to our will, it is reasonable to suggest that the astronaut's 'now' is just as relevant as ours. With her time slowed down she is running behind us.

And it is. We could consider her rate through time to be normal, while relative to her, we on Earth experienced time sped up. Two sides of the same coin.

Because, we both use the same time with which we make our calculations. Marble speeds on a table are measured with time, the distance being the table – not time. The progress of time if dictated by individuals would allow for there to be an infinite number, dissociated. Somewhat like the (MWI) Many Worlds Interpretation discussed in the last chapter.

To truly consider time and any moment or event therein, we must disengage from it. Observing the universe from afar, being devoid of procession with no beginning or end of time, we see that there is no present moment we have imposed. We see all of time, not just the bit we choose.

What we experience is a progression through time in a moment we call 'now', apparently all together, however this is just because we are firmly stuck to our planet. In reality we are conscious throughout time and, as you will discover in the last chapter, Travel: if the universe is in contraction, astronauts at relativistic speeds may well dislocate from the present moment and unwittingly travel back into the past – invoking superluminal velocities.

On a planet with no lifeforms capable of reason there would be no 'now'. There would certainly be potential: geological; gravitational; atmospheric and so on, but no experience of such things – until the universe is made aware. Like Schrödinger's cat or “a tree that falls in the forest,” nothing happens unless observed.

We make time; that's how time flows. It was not created for us.

INFINITY:

If we knew our limitations we would be unable to proceed

Incomprehensible contrivances that stretch the imagination to extremes of large and small: Infinities. Yes, to some degree they are unreal, being of no breadth because they are unable to reach a conclusion. But by the same token, such vagueness offers us freedom from borders, boundaries, ceilings, endings and much more. With infinities there are no limits... or so the illusion begs us to believe.

To put it bluntly, we create infinities. They are born out of the consequence of having to take measurements in order to make sense of our lives. As the last chapter explained, points impede progress; nothing can move towards, through or away from such identified markers. Numerical points we impose on space, like, minutes, kilometres or degrees would do the same damage. Only, they don't really exist; so neither do infinities.

Infinities know this. It's why they appear in the first place, then glee to reconcile with a point in time or space that shouldn't really be there.

Because everything is connected there should be no distinction or boundary between things, so that fluid progress can keep right on going. However, if you demand that a point be established – such as on a piece of paper – then an infinite progression is created to bog everything down, heading for the end of emptiness where it meets the edge of your point.

A brief list of points we might consider could look like this: The beginning or end of time; the edge of space; the present moment; a stationary point in the universe; your back door; a car on the highway. Yup, infinity will approach them all, fractioning up the space left and recurring until the cows come home. Or it will multiply away from them, seemingly forever.

Existence is a strange beast. All of time and space exists all at once, but we can't see it all. We need to place yardsticks in the ground in order to visualize the space between things – with our minds. The present moment suddenly appears, like the release of tension when a drop of detergent hits the surface of oily water. Indeed, perception's struggles are largely due to infinities and their habit of identifying erroneous points.

Infinities are intricately involved in how existence plays out. If we knew our limitations we would be unable to proceed.

Actual infinities only occur in linear time and space, in cyclical or spherical models where there are no ends and no points extrapolated within, infinities are nowhere to be seen. The reason? Because we put something out there in empty space and time for infinity to fixate on. It's called, nothing! Nada, naught, zip. Whereas, inside a solid, cyclical universe, time and space can circuit in perpetuity.

On physical charts and print-outs of infinite increments, we must continually add another zero to gazillions, like it was Lego, to satisfy our childish craving for fulfilment. But in our minds we don't really care what's out there beyond east or west, or the past and the future, because we think in terms of cyclical existence and know they lead to the same place. We are satisfied that today becomes tomorrow, that if we head west we will eventually reach

Timbuktu, and so have no qualms about a silly number like one gazillion... it could be one.

Quantum physics with its Uncertainty Principle and Relativity with its inertial Frames of Reference, both depict a universe where the extrapolation of real points in time and space are not allowed, as we are all in motion. But such concepts are not just the realm of mathematical equations, they affect our senses, too, in how we perceive the passage of time (a topic Einstein and Carl Jung discussed at length together at the beginning of the 20th Century).

The present moment is conjured by our minds to separate the past from the future, creating a flow of time. Conscious creatures like humans slow down that flow to a manageable pace, otherwise it would all be over at once. Magically, we sense a passing of time in this manner, freedom in a solid block universe where in reality flow does not occur... How?

The Kalahari Effect:

As we wander across the Kalahari salt pans, we see only the horizon in front of us. We look around and back and we are presented with the same vision. In our 360 degree panorama nothing exists, not a tree, not even a blade of grass. We stand in the middle of this flat and bleached landscape and decide, rationally, that we are a certain size; in fact, we make an assumption that we are somewhere in the middle of time and space: Some things are bigger than us and some are smaller; some things are in front of us and some behind; some things have happened and some things are going to happen.

Realistically, we cannot relate our position or size to anything out there in the Kalahari because there is no beginning nor end in sight, so we can only use infinity to affirm that we are somewhere in the middle... of everything. Our position is undefined and incalculable, leading us to complete freedom.

(Read on-line from the author's journal: Crossing the Kalahari, a personal discovery – 1973).

We cannot accept that we might be closer to small than big, or vice-versa. Over recent centuries the Universe has been explained to us as being huge, and not just a few miles up there emblazoned with little pin holes; so too, we have been obliged to understand that infinitesimally small objects are spinning around inside atoms. Logically, we reach out in all directions from our central position, it's what we do, and unsurprisingly find ourselves in the middle of things, and we are comfortable with that notion.

What would be the difference between us, say, living on a planet, or living on the nucleus of an atom? None. Except that, we humans are forced to exist in an environment composed of molecules of breathable gasses, and that influenced the size to which we have evolved. But if conscious life forms did exist on the nuclei of atoms, they might likely have the same dilemma: “Are we really in the middle?”

So where exactly in the grand scheme of things are we..? Infinity on both ends comforts us, it means we are surrounded and far from the fear associated with finalities, like, the end of time, the edge of the world, doomsday meteorites, etc.

But is this not just an illusion? The Kalahari Effect is all around us. We stand in the middle of our perceived whereabouts and know our place; even if we walk a few miles this way or that, we are still in the middle because reality's horizon has moved with us and seems to stretch out before us in all directions into infinity. Nothing has changed.

It is this ambiguity of “knowing but not” that allows us to pass effortlessly through our perceived existence, moving us consciously in both time and space, through a Block Universe where all of time already exists. Only if we really don't know where we truly are or anything about our relative nature, are we capable of movement. We take a step forwards and feel progress, even though in reality we have gone nowhere.

The Kalahari Effect:

because we cannot relate
our exact whereabouts
to an infinite horizon,

we are presented with
the Illusion of Progress

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If we knew how far away from our horizons we were, a fixed determination would set in. Ironically, we are aware because we don't know where we are.

In the last chapter it was explained how awareness of time's flow is achieved by our brain registering sequential moments through a solid, immobile panorama of time. Here, The Kalahari Effect gives us the wherewithal to experience that apparent flow of time where none actually occurs. In essence: virtual reality.

Being unable to determine the extent or finality of existence in any direction gives our consciousness the unfettered ability to experience movement therein. It denies us the possibility of identifying our spacial or temporal location relative to it, if we have nowhere to measure from or to. We may know where we are locally, and be able to pin point our position, say, between one tree and another, experiencing relative motion, but that is all. We can pass these trees and move on beyond them to a river, but we are no nearer the edge of existence having moved, nor are we further away.

Existence, earlier described, is wrapped up in cyclical time, where there are no ends or edges. It gives us the impression of an infinite journey by containing the worms.

Relative movement between frames of reference is a key theme in Special Relativity; if there is no stationary reference point in the universe, then we can never knowingly be at rest, we are all in constant motion. Likewise, a finite edge of existence, a wall beyond which nothing exists, would provide a relative point of reference to determine a finite, stationary point within. It appears the universe does not provide fixed points of any sort, otherwise we would all grind to a halt – another good reason to suggest space-time is a non linear platform.

Different Types of Infinities

The standard model for any active progression that does not go on forever, is a cycle. It then appears to go on forever, it satisfies the conundrum, while justifying the laws it exhibits. Water flows down river, it reaches the ocean where it evaporates and clouds then return the water in the form of rain to the mountains.

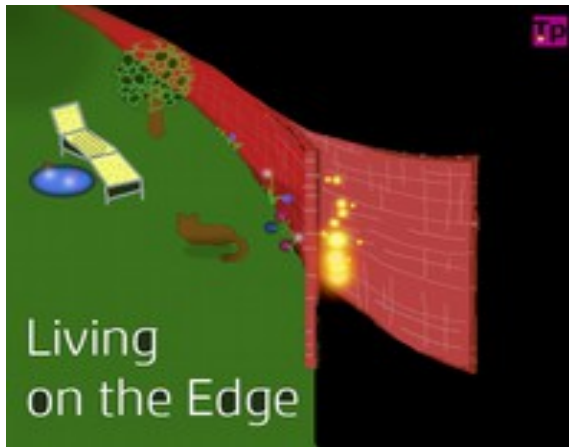
Our planet Earth is not flat, but it used to be considered as such, and even today appears to be from the surface. If we can accept that the Earth is round and so has no end to its surface dimension, then it is no great leap of faith to assume that existence, itself – the Universe, if that is the extent of it – has also a cyclical nature, thus presenting the illusion of infinite progression.

(PS. A world in linear progression, full of forevers and infinities would render a Flat Earth inevitable!)

There are two types of "Forever" described in this discourse: One that has neither a promise nor a conclusion, such as infinities on an endless road; the other being a spinning wheel that contains itself indefinitely and is largely unaffected by anything outside. The former is the bane of my contentions, more often than not. The latter is a beautiful, majestic and harmoniously balanced system. No contest.

Let's suppose that we are approaching a brick wall. When we get to it, we are not in the middle of it, but on one side. The wall has thickness, and if we make a hole in it we can reach the other side. We could scale it and stand on top of the wall, and again we can see the other side, we can reach beyond it.

However, there is figuratively speaking a fine, middle line in the wall, being the actual separation between one side and the other. If this wall were the end – say, the edge of the universe and there was nothing beyond it – our side of the wall might exist, but the other side of the wall would not. What we have is an odd circumstance: a wall with only thickness on one side. Absurd!



We can whittle this paradox down to atomic particles if we wish. We can say that the end of a worm's nose is the end of the worm and the beginning of earth in front of it. But we would be wrong to suggest there was a finite point at which one began and one ended. The interaction between atomic particles of one and the other are indeterminate, complex and uncertain at any given moment; there is no finite line between them. The worm is the earth and the earth is the worm. If it were not so, then there would be some finite separation between them and the worm would not be going anywhere.

Everything is connected.

Space can be analysed in this way without too much fuss. But what about the expansive platform we call time? Is it also constrained by the same principle? After all, space-time is one and the same thing. If there are no walls and infinity stretches out in all dimensions in either time or space we are free, we are not shackled, we can progress. This is the illusion provided by infinity, and it is devilishly so!

Big or small, long or short? The subtleties of perception through time and space are numerous, common-place and, more often than not, illusory:

When we are young we perceive time to crawl along from one year to the next; our teenage life seems to drag on forever. But when we get into our 50s, suddenly five years goes by in a flash. Five years, when we are ten years old, is fifty per cent of our entire existence; but only ten per cent of our life experience at age 50. It's just a matter of time.

There is no end to small; the smallest small cannot be defined. Is the smallest small a tiny quantum particle whizzing in and out of existence in the blink of an eye? Could there not be things much smaller than that, that live for less time? Why not? Infinity says there must be, otherwise, like the aforementioned wall, those tiny quantum particles would not exist.

Is the biggest big the edge of our universe? How come there is nothing beyond? Surely there is no edge of The Universe and it is infinitely large.

Fractal images show repeated structures scaling up and down, with no mathematical evidence to suggest that there is an end to big or small. And we, somewhere in the middle of this vast illusion, can therefore be forgiven for categorising our state, at will.

The Kalahari Effect.

The Uncertainty Principle.

Physics is full of infinities. In the 1960s, Wheeler and DeWitt finally came up with an equation which did away with the baffling infinities that kept on popping up when trying to unify Relativity with Quantum mechanics – Infinity was tamed, a bit. Unfortunately this ugly beast has been perpetuated in myth for so long we cannot seem to rid ourselves of it.

Infinities breed like rabbits; where do they come from? Infinities lead to and away from physical points. Without points there would be no infinities. We are, we believe, in an identified location in both time and space and for this reason it is we that are unwittingly creating infinities – that aren't actually there.

On the one hand, infinite extension of existence without boundaries does allow us to manoeuvre somewhere in the middle of our perceived whereabouts because our position cannot be determined relative to any edges. But then there is the curse of infinities that *do lead* to so called 'determined' points in our midst crashing our prospects of progress. We can name these two brothers:

Infinite increments, as numbers head away from us;

Infinite decrements, where numbers head towards us.

The problem with the first one is that of stretching out the unknown into a ludicrous prospect of forever, and the problem with the second is trying to stuff never ending bits into a finite space. The first, mathematicians recognised as useful and tamed by formulaic manipulation, the second they found disastrous but as yet have failed miserably to tame.

These two infinities are demonic twins; so if we live in a world with one the other will surely be lurking nearby.

We cannot pin-point where we are, as quantum physics has explained perfectly: "Either the position of an object or its velocity can be determined, but not both at the same time." The Uncertainty Principle. So, if we are moving, our position at any

given moment cannot be ascertained. And, as all things in the Universe are always moving, no position can be known.

If a point is defined in space 'infinite decrements' will get to work and terminate existence – it's that horrendous. A single, defined point is as influential and deadly as a defined edge of existence. It's Game Over.



We can experience motion but we don't know the truth of it, because there is no fixed point that does not move that we can point at and say: "That is not moving, so I know what I'm doing!" Moreover, as just explained, if there were such a stationary point in the Universe, then up would pop infinity and we would all screech to a halt.

As expressed in the last chapter, fluid progress is only possible under never ending conditions. Cyclical models of progression provide such a scenario, where no points along the way are isolated and so identifiable as individual entities. This resolves Zeno's Paradox of motion (see below). If all considered points are unrealistic, then flow is possible. Otherwise, 11.59 would never become midnight.

A simple, cyclical measuring device, like a clock or compass, has no ends and, therefore, all points around it are uncertain. If we don't know exactly where we are on it, we can pass through it from one moment or angle to the next (The Uncertainty Principle). They accomplish this by offering infinite progression in a controlled environment. Cyclical processes thus ensure continuity and immeasurable flow; whereas, linear models with finite ends impede progress.

Even just one end would do the trick. The Big Bang, if considered the beginning of time and space, would be a serious impediment to progress. Quantum Correctional Theories for General Relativity also point to the 'singularity' before a Big Bang, and are asking if there really was a beginning of existence – in other words, time.

Linear Models Of Space-Time

A linear model having defined ends means that any point along its length can be precisely extrapolated – leading to the impossibility of motion therein.

... Unless it is conceived, as it has been by mathematicians, that the two ends of such a linear model are not relative to anything in between. In this rather dubious model, progress throughout is perceived to exist while the two ends are understandably unattainable. Et voila!

In physics, velocities – and thus acceleration – are described on a linear scale, like a speedometer, from zero to the speed of light. At the beginning of the last century, in order to explain certain ether conundrums, light speed was established as being invariant, the other end was deemed irrelevant. Light was then seen to travel at a constant speed regardless of any observer's inertial frame of reference, and the conundrum was resolved – the luminiferous ether could be put to bed.

What do we have? Velocity measured on a flat, plastic ruler from zero to the speed of light... laying on a table that apparently does not exist. And what if there were a formula that took into consideration the fact that a ruler could be bent? I guess we'll find out one day when NASA finally gets around to building a spaceship capable of relativistic speeds.

We could in fact describe time's passage in the same way by cutting the circumference of a clock at midnight and stretching it out like a flat ruler on a table. We would then, in order to progress from one minute to the next, have to conclude that neither end of the day was relative. Movement throughout the day would seem to flow smoothly, but as we approached the evening things would get decidedly tense as midnight would seem forever to regress and tomorrow would never arrive.

Linear models of progression with defined ends cannot support passage between designations along the way because the mere fact that a point has been established provides infinity with potential. Cyclical models can. Because infinities are only created by our consciousness, not by reality.

While it is perfectly understandable that mathematicians need points to establish fact and express our understanding of spatial awareness in any reasonable fashion, such reference should only extend so far. Points have no width, no substance, they are for all intent and purposes, invented non-entities. Mathematicians realised early on that points on a linear scale of velocity would render their models useless, so they invented calculus – avoiding another pothole rather than filling it in.

The assumption we have that acceleration is a linear progression is analogous with our ancient belief that the World was flat. It is clearly not. It curves around on its self as does time and, also, space.

A linear model with invariant ends is merely a pseudo-cyclical phenomenon that works well up until the moment when somebody calls its bluff.

The Curiosities of Light.

Light! A top speed, at which no mass can travel and beyond which is out of bounds. Light travels at the same speed, regardless of any observers' motion or the platform from which the light was beamed, says Special Relativity. Unlike us mortals, all floating about without a clue. By keeping every point or reference frame moving, none can be identified as true points. Thus, progress is deemed possible and we are aware of it.

However, this is only because variable speeds of motion are measured on a linear scale, and invariant light speed is regarded as being at the end. If time and distance are cyclical, then acceleration must also be. In which case, there would be no ends of relative significance on a cyclical speedometer, lightspeed and nospeed being the same. Added to which, no identifiable points within the cycle to impede progress.

Photons of light are not without paradoxes; for one thing, we are told they do not accelerate.

They depart their launch platforms at full speed, 300,000 km per second (c). If we just measure the distance a pulse of light takes to pass between two mid points on its journey – which is the classical experiment – then, we don't know how much time it took to accelerate from its point of departure (which oddly is of no great concern to physics). Never mind, that's the way light behaves and it works.

We must therefore assume: Because we cannot add vectors of speed (such as a moving platform) to the speed of a photon of light – otherwise it could be travelling faster than (c) – a photon's point of departure, such as the bulb in a flash-light, must be static.

Zero velocity has just become invariant, also.

Indeed, any body in the universe that reflects or produces light must be observed in this manner – an invariant platform that appears to be at rest.

It may be acceptable to a tiny quantum particle, in as much as suggesting that it is quite likely to be at rest and moving at the

same time (that cat again, and a superposition of states). But this is a macro scenario we are discussing, concerning tangible items like flash-lights, and filaments in a bulb. If we accept that we cannot have ends or beginnings, starts and stops, finalities and edges, otherwise things cease to move, both ends of a speeding photon of light are the same.



Consider: light has no need for time; clocks stop at such speeds. So, if we accept that there are two ends to motion, zero velocity and the speed of light, neither being affiliated with time or space, we can thus propose that these two designations are equals – and a cycle is created.

Our current formulas cannot take such transitions into account because we are not looking beyond the speed of light or, for that matter, zero velocity. In the wider sense, our cycle of motion can not have points verifying zero or light speed, anywhere in the cycle they are both equally valid, and a constant energy value of zero is, therefore, established throughout.

The energy, required to create a photon of light, was in motion before impact. The photon then came into contact with an object in its path and energy was again given off. The fact that we only consider the passage of a beam of light, rather than what was

going on before and after, is paramount to this paper's postulate. [Universal Contraction](#).

Conscious consideration of progress is due to the illusion of an infinite horizon, being as how there are no finite points in time or space. Here's what happens when you put a finite point in your way.

Solving Zeno's Paradox of Motion

They say, “you can never reach the door, because you have to go half way first, then half of what's left, then half of that, and so on..., ad infinitum.” That was the conundrum Achilles would have been faced with when trying to catch up with the tortoise, philosopher Zeno amusingly proposed.

... And the infinity of decrements rears its ugly head.

First of all, the tortoise is moving, so there is no fixed point toward which infinity can approach. If that weren't the case Achilles could not catch the tortoise because he would not be able even to depart from his own rest point, as all identified points have an infinity paradox leading toward and away from them.

Back to the door. Infinity in this case is between you and it. Under the constraints of perception, you consider yourself at a point in time and space... This is a fallacy, as explained by the worm in the last chapter. Moreover, you make the assumption that there are an infinite number of halves of halves between you and reaching the door, none of which actually exist as true identities.

Some mathematicians refute this.

To resolve Zeno's paradox of motion they have formulated a convergent trick with infinities, stating that an infinite number of reductions towards a whole number, actually adds up to that whole number. So, a half plus a quarter plus an eighth and so on, adds up to one – and so you reach the door.

Hmm... [sounds of hammer forcing square pegs into round holes]. On the other hand, what if you could call those halves of halves and bits something else?

Consider a table on the other side of the door. A point half way to your door immediately has more than one possible identity because it can instead be called one third of the way to the table. Well, does it really exist? I see an apple, but actually it could be an orange.

It may remind you somewhat of the argument quantum theorists had with that cat! While they say particles may have all their states on offer in time, we might also say that points have all their identities on offer in space.

Now you can proceed to the table, presumably passing through the door on your way out.

Quantum physics repeatedly offers solutions to the bizarre nature of time and progress, while routine physics is constrained and limiting due to stubborn practicalities.

Achilles catches up with and passes the tortoise because there is existence beyond the tortoise... Just as infinity runs up to the tortoise, discovers it to be a non-entity and runs right on by, heading for the horizon.



Crucially, an end is finite, and if the door were the end of everything then motion would cease. Space only exists between things, so neither would space continue.

If the table were not there beyond the door then the door – like that wall – would only be half a door. Having a table on the other side of the door provides distance with a dilemma – it must go on. You can now reach the door because all those halfway points have been re-classified. Equally, if a point you wish to reach does not actually exist then it does not impede your progress.

By considering the elimination of definable points the key to progress, a cyclical function for time, as described in part 2. Time, is the process by which that door is unlocked. No longer are we limited by ends, as in a linear model of progression. A cyclical progression, by nature, has no points with certain identities, and infinity is fooled.

Infinity is not just an unfathomable distance, it is also the scourge of individuality. Infinity gives us the pretence of motion, while denying it. Continuity and the lack of individual points allows for motion. Infinities are created by mathematicians in their desire to utilize points to describe our life; points that do not in fact, exist; points which demand something as ridiculous as infinity exist, because those points are, themselves, unreal.

If points did exist then theoreticians would have every right to say you could never reach the door. Reason dictates otherwise.

Mathematicians are not unaware of the horror they have created in infinities. The likes of Leibniz, Newton and others realised many centuries ago that movement was impractical if individual points existed. So they created another horror to vanquish the demon: Calculus! In part, this monster is defined as: the summation of infinitesimal differences.

In order to make sense of a body progressing through a distance it would clearly be impossible to accurately determine things like acceleration by dividing the distance up into tiny points

and saying that from one point to the next it was going at 'this' velocity, and to the next point it was going at 'another' velocity. There would be no continuous flow. So, to eliminate this bumpy road, mathematicians devised an alternative strategy; they conceived: time divided by itself – or seconds per second – to dispense with all those points.

It worked. Infinities were avoided and progress became possible. Time's Paradigm arrives at the same conclusion by the use of deduction rather than mathematics.

Setting Limits on Existence.

In chapter one, Destiny, a lake in Idaho was used to illustrate the concept that there has to be something beyond "Now". In order for Achilles to progress, here we are considering that he must deny a point existence by aiming beyond it. This is relevant to many avenues of research.

An example that has been alluding scientists for a while: Reaching the temperature considered for the universe to be absolute zero (-273.15C), or zero Kelvin. Physicists have got to within thousandths of a degree, but they just can't quite reach what could equally be described as Zero Energy or, for that matter, Zero Velocity.

However, in light of the discussions above on the limits of linear progression perhaps it is understandable; there must be something beyond absolute zero in order to reach it. Unfortunately, a wall was erected, beyond which nothing was set to register, and in so doing the goal was deprived them.

If we approached that invisible wall we were discussing earlier denoting the edge of our Universe, with the physical laws we assume today, it seems likely we would not reach it. No amount of energy would suffice to allow us to even come close, just as Special Relativity says of bodies approaching the speed of light. Reality would cease to make sense, norms would buckle as

we tried to force our way towards it. Laws and principles would fail in all aspects.

Somewhat like approaching a black hole, one might imagine. So could there be such a barrier that demands absolute finality and refuses to allow us through? Or have we simply made these barriers ourselves in an attempt to understand with laws of physics that actually restrict us?

To reach a goal we must aim beyond it... such goals include Zero Kelvin, Light Speed and the Big Bang!

... And holes in the greens of golf courses.



The theory that the Big Bang was the beginning of our Universe is the best we can do at present, but it is unrealistic. Nothing begins or ends. Of course, it is such a gigantic unknown that it will take many decades and many thousands of minds to finally come to terms with. In so doing, many exotic particles will give up their secrets and the universe may begin to appear that much smaller to us.

It will be immensely satisfying to discover what occurred in that instant... and then find clues as to what happened before.

But that can only be achieved by looking beyond the horizon. Because nothing by itself exists. The Divas of Destiny we discussed earlier did not shoot for the stars: They aimed well beyond them.

There will in the future be no halves of halves, segments of value between moments or velocities of bodies in space.

DIMENSIONS:

Fractal Extension of our Spatial Three

Our three physical dimensions cannot exist by themselves, the passing of time is required in order to contemplate the extent of their proposition. It is an extension just as physical, just as real and just as relevant. Time: the fourth dimension – hiding in plain sight.

If time is space, then its passage will undoubtedly manifest itself within our known three dimensions. Yet we do not see it..? Perception often misleads; we can stand still and swear we are not moving, yet the planet beneath our feet is hurtling through space at over 4 million kilometres per hour. Likewise, even though we may swear we are firmly located in three dimensional space we are actually hurtling blindly through time in a fourth.

Earlier chapters found time, space and motion to be inexorably linked, one unable to exist without the other two. The same goes for our three physical dimensions, they cannot exist separately. In reality these dimensions simply define space, and therefore, it must follow that they be associated with time.

Eternity, loosely described as time, can be said to comprise the simultaneous occurrence of the past and the future (the Block Universe model), a solid tenseless state in which everything happens at once, or doesn't; a panorama without progress; no motion, no space. We become aware of a flow of time (see the chapter, Time) by consciously creating the present moment and slowing down that flow to a manageable pace, otherwise it would all be over in an instant.

Thus we can appreciate existence, little by little. So where is all this time, if it is materially relevant?

In order to see the full extent of time and not just the present moment we would need to step outside the confines of reality. Even so, there isn't much to see. Time is not going anywhere, it has no speed; there is no 'other time' with which to measure its progress. That the past and future might "all happen at once" is merely a figure of speech, when it is just as likely to be interpreted as "paused and on hold".

Time's conceptual passage is cyclical, there are no loose ends. Though such a supreme construct can be imagined in many artistic forms – as a golden sphere, a doughnut or an exploding firework – time in full cannot actually exist from our limited perspective. The only bit that makes any sense is the bit that flows, the present moment.

The rest of time is immeasurable, invisible, ready but not real. It has purpose and potential, wist and worth, and may present itself with careful consideration. Time hides in plain sight by assimilation with material existence, and it's just a matter of picking at the bones of the beast to find out where it hides.... One plane at a time.

Four Dimensional Thought Experiments

Dimensions: physical affirmations of our incidence in the universe; arbitrary concepts trying to make sense of shape and form in a seemingly chaotic world. Just how many there are is up

for grabs, String Theory leading the pack with a projection that there could be as many as eleven. With respect, lets take our time and deal with the four we are somewhat familiar with.

In a solid state past to future model, add a period of time to a seemingly immobile object and our three dimensional rendition of its shape would become distorted. We assume, in the direction of physical motion. A sphere, such as a rolling ball, becomes a sausage; a cube becomes a boxcar. But isn't that a little peculiar? Time influencing only one of our physical dimensions! Shouldn't we remain true to our physical complexity?

And then there is the omission that even an apparently stationary object is in motion, on an atomic scale. It is at the mercy of time even though it remains, from our perspective, a simple three dimensional shape from one moment to the next.

Displacement on a table does not demonstrate time. Time and our passage from one moment to the next flows on another plane. However, we don't feel like we are somehow always attached to our past or future selves. The present feels dimensionally disengaged, totally by itself. But perception, as mentioned above, is riddled with illusions and not always to be trusted.

The well-known thought experiment, first developed by Edwin Abbott in his satirical novel Flatland, describes a flat worm on a sheet of paper living a perceived two dimensional existence.



It can see and move left and right, forwards and backwards, but it cannot see your face peering down at it from above. Even if it had the brain to consider, it would not believe there was a third (up and down) dimension.

On approaching a tree it would only see the base, like a circle, no branches or leaves would be visible to it.

We live in a three dimensional existence. And just like the flat worm, we are unable to perceive another dimension beyond the three we inhabit. It is likely there is one hiding in plain sight, as there is for the flat worm, but it is impossible for us to visualize or, for that matter, to comprehend its make-up.

We can consider a 3d existence without time to be a “singular state”: A state with potential, in readiness, but not actually capable of anything. All things within it are connected because no distance exists between things. For there to be space or distance then there is the potential for motion – in other words, time.

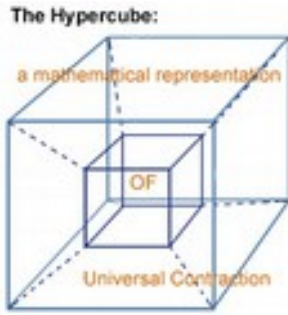
Here we stand in wide-angle and look around at our physical existence. We look at our hands and feet and see shapes, we gaze at vibrant landscapes and city skylines and see the picture coloured in. Mathematicians, however, devised a way of dissecting our visible experience for practical purposes. Geometry was born, a transparent and rather cold version of reality, nevertheless, exceedingly useful.

Considering The Hypercube:

The shadow cast by a line produces the illusion of a square in two dimensions (as on a piece of paper). A square casts a shadow producing the illusion of a cube in three dimensions. That, you might think, is that. Not so! Geometrists went further:

The shadow of a cube produces the illusion of a hypercube, a so called 'fourth dimension'. This hypercube is often drawn as a cube within a cube, each connected to the other by straight lines

from their corners. A big cube outside a smaller cube, or a small cube inside a big one.



The hypercube projects the impression of progress from one size to another. Just as a line drawn in one dimension flows through a second to form a square, here we have a cube in three dimensions flowing through a fourth. An equal and simultaneous change in all three spatial dimensions, thus creates a plausible avenue for the flow of time. A static object can be plotted in time.

If all matter in the universe is changing proportionally with time in this manner, then we still perceive the object to be static and unaltered, even though it is slipping invisibly through a fourth dimension. The pea on the plate on the table in the kitchen in a house, all shrinking at the same consistent rate.

Such a transformation could materially be described as a fractal progression, a solid composite of all matter in the universe from the past to the future. A fluid, repetitive structure scaling up or down, shrinking within itself or expanding out while remaining true to an iteration. Many extraordinary fractal illustrations, widely distributed over the years, give the impression of a system in transit, going somewhere. They are a logical next step beyond the Hypercube.

Dimensional Awareness.

If we can only see life in two dimensions, like looking at a picture with no concept of depth, then two trees side by side are perceived to be just meters apart from the view point of one observer, whereas another observer, some distance to one side and forward of the first observer, might see that these two trees are actually tens of meters apart. A discrepancy arises between the observers over distance and the space between things.

Likewise, if we can only see life in three dimensions, as we believe we do, with no understanding of the implications of a fourth, then while a stationary observer might see his garage being 10 meters long, physics asserts that a passing observer travelling at near light speed might see the garage to be merely 5 meters in length. And a similar discrepancy arises.

We laugh at the first discrepancy, but this new one is no laughing matter – why not? Shouldn't this second discrepancy have just as simple a solution?

It can be explained to the first two observers that there is actually a third dimension, a new direction that can be travelled, that is unwavering and equal to the other two dimensions, and with some mathematics called geometry all is revealed. But the second two observers are not given an extra dimension that can be explored, they are limited to their three. They are only told that 'time' is part of space, that it is flexible, that distances are, too, and simultaneous viewpoints do not occur. Now they must tackle equations that defy logic due to the presumed invariance of light speed.

The architect of this extraordinary set of circumstances was, of course, Albert Einstein. Clearly, Special Relativity is not in question; it is brilliant and it works. But is it necessarily engaging with reality?

What if we gave those two, confused observers a solid and comprehensive fourth dimension to play with? Rather than bending our cherished three dimensions to conform with mathematical dictum, what if we could begin again, and provide them with a framework that answers all their questions without driving them, and everyone else, nuts? Is there such a dimension? Time's Paradigm supports the hypothesis that there is, a real, physical dimension born of the other three, through which we pass and perceive progress: Time, the fourth dimension, hiding in plain sight.

Time dilation, highlighted in the above analogy, is the realm of Special Relativity. The General Theory of Relativity also

alludes to the warping of space by gravity through a fourth dimension. It is described mathematically though appears undetectable. Recently, however, a variety of astro-physics experiments including the bending of light from distant stars, has proven without a doubt that Einstein's evaluations were correct and that invisible dimensions seem to exist.

While such phenomena could be described as illusions, aka mirages, where light is bent by heat energy, when it comes to time and distances being bent, what should we call it? The fourth dimension of time hides in plain sight and is not an illusion, it is a real transition of physical form that we are unable to see while influenced by time.

We experience a passage of time but we can't see why that is, other than relative displacement. It requires we take an objective view.

Dimensions are physical affirmations of our incidence in the universe.

As a body moves about it is constantly changing its occupation of dimensional planes, from our perspective. Time passes in order for us to appreciate these changes, the body, to verify this, also experiencing a shift through space. The immediate assumption is that space is the fourth dimension. However, motion is relative to other bodies, dimensions are relative only unto themselves.

A single body in space does not move about, it changes state internally, relative to its constituent parts, through its three physical dimensions compassionately. For the whole body to move, its displacement would be through one plane alone.

What is needed to confirm a fourth dimension is displacement through all three. The simultaneous reduction or expansion of a body as illustrated by the hypercube would do the job. A fractal iteration could describe such a phenomenon.

Chaos Theory and Fractals in Time

Everything around us seems to be on the move: trees, clouds, mountain ranges, continents; none of them predictable in how. Things influence development, and the more causality the greater the impossibility of predicting an outcome.

Time is change; perceived or otherwise. As someone once said: "If it can happen it will". Yet, something as uncontrollable in appearance as a tree or as bizarrely beautiful as a fractal image does have some method to its madness. There are rules in Chaos – or equations when developing fractal graphics – so there is purpose in progression; and that purpose has a name: Evolution. Not just the evolution of life, but the evolution of all inanimate, crystalline, cultural and indeed, cosmic phenomena.

It doesn't have to be an intelligent purpose, it is inherent in all things that move. It just has to work. The incredible fractal similarity between certain Indo-Pacific soft corals of the *Dendronphthya* genus and the inflorescence of a mango tree, suggests reason, not coincidence (in the language of psychologist Carl Jung).

There is a need for the passing of time in order for there to be time. And in the case of this universe it appears that the overriding principal is 'repetition'.

There is very little difference between one moment and the next, they are almost identical, as if time were merely repeating itself, with tiny variances as we proceed. Compression formats in digital copy processes like .jpg and .mpeg adopt this mind-set. We move about, seemingly with much haste, unlike the landscape, so we think we are making progress, we think we are changing a lot, but is that really the case?

From a street level point of view, yes, we are rushing here and there in cars, on bikes; clouds and aeroplanes are passing overhead, etc.. But from a cosmic point of view our planet is a ball in orbit. None of those tiny movements are of any significance;

every mobile creature is part of the Earth, simply creating minor fluctuations, vibrations; as we might perceive vibrations when observing an electron cloud about its nucleus.

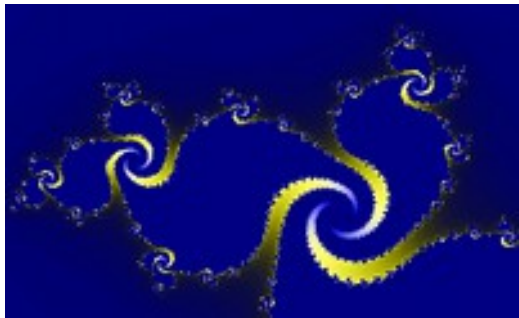
We are but dust on this planet, we are not as individual as we might think we are. We are earth, we are of this Earth, attached by gravity and particle attraction. Our planet is one, a collective; it has progress while we are simply dragged along for the ride. We are all attached to this planet through one level to the next – one great revolving system.

As we zoom in on our planet from space we can observe the surface beginning to show form, like zooming down through a static 2d fractal graphic. Undulations and vibrations are evident, but not of individual consequence. And, as with a fractal, we can continue to zoom in, going beyond the surface of the planet, to the surfaces of the structures thereon.

By adding the dimension of time to this above illustration of our planet, we simply add the repetitive nature of progress, from the past to the future.

We have evolved by conditioning as cognitive science reveals, we respond to situations through repetition. Every choice we feel we have made is made by past experience, as was discussed in chapter 1. Destiny, of this work. We duplicate, we facsimilate, everyday that passes is seemingly so much like the one before.

In the words of the father of Fractal Mathematics himself, Benoit Mandelbrot, "Self-constrained chance".



Chaos Theory was a development of Mandelbrot's work, and is now common place in everything from weather patterns to the stock market. Things that flow, replicate. Time flows, it replicates. Fractal graphics have created some extraordinary progressions in two dimensions. One might expect, therefore, that in the near future we will be seeing equations creating three, if not four, dimensional progressions – the very essence of time, itself.

The significance of The Golden Ratio (Fibonacci's sequence) in Chaos Theory is particularly interesting when we consider it's relevance to time in the next chapter. If the rate at which we scale is governed by such a mathematical factor and can also operate within thought experiments and formulas involving Special Relativity, then this seeming coincidence is worth investigating.

Time's Paradigm proposes that all of existence in the universe, from the past through to the future, is likely akin to one giant, four dimensional fractal expression. Conscious beings may experience a sense of flow through this structure, giving rise to the notion of time, however it all exists at once.

Events occur and re-occur, cycles return, “meaningful coincidences” abound, actions repeated time and again by all things. And all of this happens to every last body in the universe however big or small, because they are connected to their earlier or later selves by an elevator of scale.

Applying A Fourth Dimension

We all expand and contract depending on the amount of energy we have. Hot things get bigger, atoms swell; cold things get smaller by reverse, a lowering of atomic levels. A body travelling at high speed has more energy, so will be more massive. Clearly, water that has been heated will expand as it turns to steam,

hence the whistling kettle. Atomic particles get agitated by added energy and create more space for themselves.

While mass and volume shouldn't be confused, there is plenty of evidence that we do not remain uniformly the same size all the time.

Contraction of objects in motion was first considered by scientists at the turn of the last century as a way to explain the peculiar properties of light. It became incorporated into the theory of Special Relativity and will become significant to this proposition later on. So, going into the kitchen a few minutes ago to make a cup of coffee is now not only something that happened a few million kilometres away, but also an event in which you might have been a different size.

The past becomes less and less accessible the more we tinker with imagination. A three dimensional "singular state" requires the flow of time for there to be existence, but it is a limited experience where only the present moment makes sense. Eternity is behind and ahead of us - time, by name only - different, invisible and, though inevitable, so very far away that it is as if detached.

And yet, everything is connected, so how might we visualize such a thing?

With neither time nor light to inspire us, it is hard to draw conclusions, but to emphasize that this dimension is dark and listless and not meant for conscious consideration. It is poised in predetermined expectation. Like the idea for a painting that hasn't yet been painted, it hides in the artists mind, waiting to be resolved on a medium called time.

Eternity has no space. Indeed, there is no want for space until we conceive it. The past and the future are a solid state, tightly packed, seemingly chaotic, pouring in upon themselves like a frozen waterfall at night in an infinite cycle of repossession, replicating as does a cascading fractal - where the future becomes history and everything is a child of the past.

Time creates space. If something can be created it must be of energy... it is energy. Nothing cannot be created. And though we feel disengaged in this present moment of real time, individual and free to roam unimpeded through space, we are in fact intrinsically attached to everything and eternity.



Nothing cannot be created... was never created; will never be created.

Space is not!

... another reason why it is so hard for us to visualize eternity. Not only is there no space within, there is none without. There is nowhere for us to perch and reflect upon its whole magnificence.

Eternity is not time. It is potential.

The fourth dimension of time manifests itself solely within the present moment as a sense of flow. The greater the difference between one moment and the next, the greater the rate perceived.

Hiding in plain sight.

VELOCITY:

Expanding or Contracting?

Is the universe expanding or contracting?

After a century of considering Relativity and its wonderfully baffling realignment of physics, it is surprising that we don't immediately see the relative irony of an expanding universe. Could it not be that we observers are in contraction?

It would hardly be a bitter pill to swallow. After all, Albert Einstein himself commented that a contracting universe would be unequivocally the same as his theories of Relativity... although overly complicated, he purportedly mused.

Perhaps it is time we considered those puzzling complexities he avoided now that Relativity is a household name and we have all but mastered its mechanics. Time to move ahead, into a new century with greater challenges and thus greater rewards.

From our three dimensional perspective it would seem that the universe is expanding, systems receding, background radiation telling. And at colossal speed... accelerating, even. So how exactly can we verify that this expansion is indeed what it appears

and is not the result of our measuring devices and physical platforms all materially contracting?

We can't! We can jostle and argue, but we can't be sure with our limited perspective. The universe is just as likely to be expanding as its contents is to be contracting.

Are they not the same thing? In motion we say that acceleration away from one star system could be seen as deceleration towards another. Everything is relative, including expansion and contraction.

Is it that we don't like the precarious notion that our solid foundation – our 'centrist' philosophy – could be in jeopardy, could be collapsing? Heaven forbid. No, the universe must be expanding, we couldn't possibly be contracting... what a miserable concept.

Yes, if the universe is actually contracting, it sounds a lot more drastic than an expanding universe.

General consensus will naturally lead towards an expanding universe because existence first began with a "Big Bang", which has been aptly illustrated by an explosion rather than an implosion. But we are still looking at this question with our 3d glasses on.

Who says there was only one Big Bang?

We've only been looking through telescopes for a few hundred years, a pin-hole in the affairs of the 14 billion year old night sky we call our universe. There could have been a big bang last July and we wouldn't know it... There could be mini ones, blue ones, doughnut shaped ones or reverse ones.

Like black holes, get ready to be surprised.

Answering, "Is the universe expanding or contracting?" is going to be as wonderfully baffling as when we first set eyes on Special Relativity back in college. Be prepared for lots of thought experiments and mind bending logic.

The Building Blocks of Modern Time.

Space-Time is a cyclical expression, the Block Universe Model being its foundation, as the previous chapters have shown. The past and the future exist, and all at once, a giant, fractal iteration. The present moment we conjure with our minds, creates conscious awareness of time's flow in an otherwise static model.

This existential model is an extension of our three physical dimensions. In essence, all matter in the universe either in expansion or contraction, proportionally, through a fourth dimension – giving us an objective view of the passage of time, had we the wherewithal to see it.

Over the last century the consensus among scientists has been that our universe is expanding. Edwin Hubble's Red Shift of light from distant galaxies cemented this view. However it is not without its conundrums, such nightmares as Dark Matter and a need for zero energy displacement arising out of its deficiencies. The battle for universal equilibrium rages on.

Universal expansion questions the energy constant, harks that space between things is being stretched, gravity weakening, so it goes. We might also assume that continued expansion evokes the prospect of infinite resolution and, for some matter in the future, perhaps even a loss of identity. What of the notion that expansion will eventually cease, leading to collapse? A possible scenario that would offer containment and continuity, although zero inertia at the cusps – possibly even of time – would be an extraordinary event.

We might consider that our existence exploded into being like a giant firework, thus creating such an expansion. This explosion would have been at the speed of light (c), where time apparently stands still. So for the radiating particles of emr out there in the universe today, in essence, it never really happened. They are cavorting across the cosmos in a coma. But for those which collided and slowed down in the wake of that explosion, it did happen because light does actually take a certain length of time to traverse a distance – it has velocity.

The Big Bang: The birth of a cosmos that came into being from some immense ejection or emergence of matter. An elegant theory. From where came this energy is beyond the scope of the theory. To look into such a problem might derail the entire concept, as alluded to earlier in Chapter 3. where cycles and their elimination of barriers like beginnings and ends was discussed.

Something from nothing is hard to justify. For now that problem page in the theory has been left blank, although in a cosmological cycle of time a big bang may simply be the moment when a collapse of matter, big or small, reaches infinite compression and explodes outward anew, continuing the whole process.

If space-time is a fully contained and independent, cyclical manifestation, then an expanding universe does not fit the bill. A block universe where all of time already exists does not have loose ends and faltering finalities.

Our existence – our Universe – is a contained entity. It has always existed in its entirety, is the assertion of this paper, Time's Paradigm. The need to suggest a beginning, so we can get to grips with this extraordinary world we live in, is helpful in facing present challenges but should not be classed as absolute; it will no doubt become a spring-board for future theories.

Matter In Contraction vs. A Universe Expanding

The Universe itself is neither expanding nor contracting, it has finite and stable energy; it is in perpetual steady state. It is matter and the contents of the Universe which could be said to be evolving and changing entropically. Time binds matter together, it does not fling it apart.

Since the inception of Relativity, many scientists have had a problem with an expanding or contracting universe, including Albert Einstein who was hoping for something more constant.

If space were empty and infinite then, yes... we could go on expanding forever after emergence. But infinite space has already been dismissed. Instead, the posit is that all things are connected, even space is involved – but only the space in our universe, there is nothing outside. Progress dictates as much.

For there to be a continuous cycle of time, we are either in expansion or collapse. Expansion seems unlikely, so let's consider that the universe is contracting, not its physical volume, which is constant, but independent collapses of matter as velocities decrease from the speed of light.

This contraction is akin to entropy. Not a reduction of energy but a change in purpose. A re-arrangement of priorities in atomic functionality; a return to some smaller, less complex existence where everything first emerged. That “singular state”.



Contraction denotes a physical difference between one moment and the next. As we get smaller, therefore, it is natural to suggest we are witness to progress in time. The smaller we are the faster our clock ticks. It is indeed the case that smaller things progress or function at increased rates; the shorter a pendulum, the faster it swings to and fro. Most insects, such as ants for example,

have very high metabolisms, they move with immense speed and their life span can be numbered in days, relative to our larger size.

And as we delve deeper into inner space, we find particles of matter with relativistic speeds and life spans of less than a second.

Cyclical Space-Time.

If matter in the universe is contracting, where did it start out? A contained, cyclical dynamic must present fluid progress with no beginning or end. How can that be? If bodies in the universe are contracting they will eventually be heading for extinction..?

Potential matter emerges at the speed of light, a uni-dimensional state in pre-existence without time. From there it begins its decline in both velocity and mass. Upon reaching zero velocity all dimensions are exhausted while the rate of time's passage will have increased infinitely.

This does not imply that we suddenly find ourselves with less atoms in our body.

In simple terms, the universe as presented here would be a tight squeeze, particles constantly emerging at light speed, forming and shaping matter, pressurizing the closed gravitational system. Weak atomic forces would begin to strengthen, in essence, both macro and subatomic orbits would be reducing, spiralling inwards under such pressure.

We could describe this process as saying: smaller atomic levels with less space between them. Not forgetting that size is relative, an atom is distinguished by the 'text book' circular (cloud) path of its associated electrons. Under the influence of contraction we could describe this path as a spiral, descending ever inwards; therefore, no difference in size between moments will be measured; an undetectable and unbroken passage through this dimension of time – a continuous flow.

NB: contraction is through time; as a whole the past remains large relative to a shrinking future. Most scientists today are in

agreement that the universe is expanding. So it would appear. It takes time for light to get to our telescopes, so we are really looking into the past as we peer into the cosmos. Light leaving a distant, “contracting galaxy” will have its frequencies lengthened, or red shifted (the Doppler effect), just as if it were receding from us.

Cosmologists have recently unearthed the possibility that our universe is actually accelerating in its expansion, and they have a need to explain this by resurrecting a Cosmological Constant, which they now refer to as Dark or Phantom energy. They need something to express this extra, invisible energy.

Universal Contraction (UC), the core postulate of this discourse, can be found at the foot of this chapter. It has an alternative explanation: Contraction of matter through time is exponential.

As with all measurements, the equipment we use must take into consideration all parameters, or the conclusion will be flawed. This has been a recurring theme, beginning a millennium or so ago, with the revelation that we were not living on a flat world but that it was round, sort of 'three dimensional'. Today, we know that there is a shorter way to get from London to New York in a plane; it does not seem like a direct line if we look at a two dimensional map, but the curvature of the Earth does the magic, and we arrive – on a geodesic.

This universal contraction would not be so easily measured, neither in a lab nor in our living rooms. Unfortunately for us, all things would be contracting simultaneously (in our immediate vicinity). Our measuring devices would all be shrinking, and the distance between everything, too, and all relatively speaking at the same time. So nothing would appear to be in collapse.

Everything shrinking? Surely too ludicrous an idea to have any bases in scientific fact!

Well, it's not as outrageous as you might think. At the turn of the 20th Century, working on similar problems as Einstein, two scientists (Fitzgerald and Lorentz) independently came up with a

theory of contraction in explaining objects travelling through space. They tried to suggest that the failed Michaelson-Morley Aether experiments could be attributed to a discrepancy in the actual size of the measuring devices used as they changed through time. Einstein, a few years later, came up with his own, magnificent theory, and Lorentz contraction was incorporated.

Special Relativity and Universal Contraction

Contraction is not off limits and may be quite relevant. UC, with its incorporation of a Cyclical Time Progression, is intrinsically a re-evaluation of SR and equally conveys that there is a change in our mass dependent on our speed through the Universe. Formulas equally apply.

Einstein, himself, also contemplated for a while the concept of a cosmological cycle for time, but ran up against the second law of Thermodynamics and dismissed it as inappropriate.

SR says in simple terms that energy equals mass; so the faster we go (more energy) the more massive we become (relativistically) and the slower time flies (time dilation). To accelerate we need to pump more energy, rocket fuel, whatever, into our spaceship, so its mass will increase; until eventually we will need so much energy as we approach the speed of light that its mass would become infinite. Alternatively you could explain it this way: that an object gets harder and harder to push against its inertial mass, the faster it goes.

SR asks us to accept that while the speed of light remains constant for all inertial frames of reference, e.g. all observers, the rest of the things we hold to be constants, like distances, motion and time, do in fact fluctuate for no discernable reason. This poses a problem for those wishing to conceptualise motion and speed and how our world works. By considering that there is a tangible reason for changes in mass and rates of time, rather than just being told it has to be so in order for the speed of light to remain

constant, we can grasp the reality of such an extraordinary set of circumstances. That is what Universal Contraction gives us.

And here is where Alice enters the discussion...

UC proposes this: The faster we go the slower we contract; so it appears to someone watching us go by that we are gaining mass in relation to them because they are shrinking in time faster than us; it also means our on board clock is ticking slower than theirs, because contraction is our clock speed. In essence it is saying the same thing as SR, using the same formulas, except from the opposite side of the mirror.

As an example, we have a vehicle of physical dimension being squeezed by the Universe. We add energy to make the vehicle accelerate in a particular direction. Now it has more energy with which to counter contraction; the vehicle shrinks slower. To outside observers on, say, Earth and travelling slower, this vehicle for visual purposes would appear to be increasing in size. As has been previously documented, everything we see, sense or measure are events from the past (as the BBC reporter verified in chapter 2. Time).

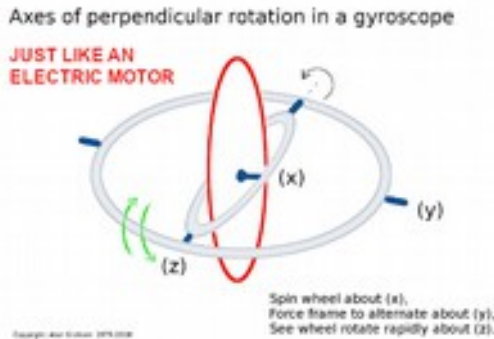
No one is actually getting bigger or gaining in mass, it simply appears so. Observations from the speeding vehicle would conclude that its surroundings were shrinking, in line with Special Relativity, by an amount equivalent to the Lorentz factor.

UC does not disagree with SR, it merely gives us an ability to visualize those inconsistencies of time, mass and distance. UC says they are real, and not just required variances so that (c) remains constant.

We can look at it like this: Energy is shared between the three spatial dimensions including the fourth dimension of time, and transferred across them as necessary. As forward motion in one direction is increased (acceleration), a reduction in the rate of time (or contraction) is experienced. On the flip side: Clocks speed up if we decelerate, our metabolism increases, because particle functionality gains energy from reduced forward motion;

less interference from physical motion in the macro World means atomic particles have greater mobility.

An analogy of energy transfer would be this: A gyroscope spinning on its axis in one plane, when influenced to rotate through a second plane, responds by rotating through a third. Some energy was transferred from one to the others, the gyroscope being a contained ensemble.



This internal energy transformation is not entropic. The second law of Thermodynamics does not apply. The motion of atomic particles clearly includes forward motion, their spiralling paths being altered, elongated or twisted; they will be completely restricted at light speed and become uni-dimensional, whereas at slower speeds particles will spin in all dimensions and interact more freely.

When a body's forward motion practically ceases, particle functionality becomes supreme, and atomic perfection is reached. Zero Kelvin might be a good example of such a proposition taking place.

What of these extremes between a gigantic past and a minute future? UC asserts that at some time in the past, matter in the Universe probably emerged, possibly though not necessarily all at once, clocks frozen, at the speed of light. That said, we are therefore heading towards a future where material objects will

eventually all become very, very tiny and practically immobile, but for them, time would be passing unimaginably fast – all over at once – in other words, contraction at the speed of light.

Hence a re-emergence, a re-birth of matter in the cycle of time. No energy lost, just a change in purpose...

Big Bangs – with an "S".

One of the ways in which scientists like to explain entropy and its arrow of decline is that at its inception energy is in a perfect state, and from there can thus only drop down into levels of greater imperfection. UC agrees, but prompts that both ends are a state of equal and opposite perfection from differing perspectives, adding that opposites attract and that if time is a cycle then 'light speed' and 'no speed' are attributes of the same event.

Matter is extinguished at an infinite rate of time and re-emerges at light speed.

Existence exits and enters the Universe in the same instance. There is no beginning or end of time. Matter might be coming into existence all the time; yesterday, perhaps, five thousand light years away – which means we will never be witness to such a phenomenon in our lifetime.

The Big Bang we are examining today, estimated as having occurred 14 billion years ago, may be just one of many that continue to blossom as time goes on, round and round. Not the beginning of the entire universe but the continued development of a small fraction of it. Who is to say other eruptions of matter are not happening all the time?

Time, space and velocity, one great cosmological cycle! As we decrease in velocity, our rate of flow in time increases. And, as cyclical progression only occurs in one direction, the conclusion is: we are forever decelerating, from the speed of light (c) to zero velocity (z); our clocks forever ticking faster. A cycle, no less, with no ends, no beginning, nowhere to come from and nowhere to go to. Because, where we are heading, is where we came from.

We have been decelerating since inception, from emergence and the speed of light. As we and the atoms that make up our physical presence collapse we maintain our energy, its purpose transferring from inertial to particulate energy. So, when we reach zero velocity, we are as energetic as we were when we first emerged at the speed of light. Once again it is stated that (c) and (z) are identical, they are attributes of the same event or location – two sides of the same coin.

This paper takes such an alternative perspective, especially in the light of a whole century of new scientific engagement on this very subject. Indeed, later discussion within suggests that UC not only makes things simpler, it unifies many known peripheral theories and creates an altogether more understandable, less bizarre and no nonsense kind of place in which we live.

Calculating the Rate of Contraction.

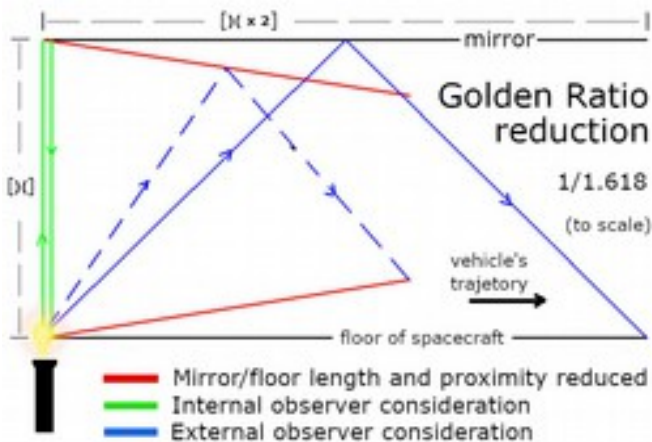
While time cannot be said to have a speed, requiring the absurdity of another measure of time to do so, time dilation in SR reveals a surprising avenue for contemplation.

At what rate are we therefore contracting today, at this very moment, on our busy way through the universe perched precariously here on Earth? The Kalahari Effect gives us an immediate answer, as it did before and always does: Neither too fast, nor too slow, just somewhere in the middle. Hmm! There could, however, be a mathematical answer to this question: Contraction by a factor of the Golden Ratio.

Here is an extract from Time's Paradigm's on-line supplement (entitled, *Einstein's Light Clock Revisited*):

In Special Relativity (SR) it is understood that a light clock will demonstrate time dilation on a rocket at relativistic speed as shown by the standard illustration below, where the green line is the inside observer's perspective of a travelling photon and the blue line an outside observer's view of the same photon from an alternate frame of reference. Due to the apparent distance the

photon travels on the blue line, a correction in time is applied to uphold (c).



Alternatively, by reducing (i.e. dividing) the lengths of the mirror/floor and the distance between them as they proceed in time by 1.618... (the golden ratio), to form an isosceles trapezium, shown in red, both the green and the shortened, dotted blue line now measure the same. This suggests that no time dilation is required if the Universe is in collapse (UC) by said factor.

Time dilation is a correctional requirement by SR to counter UC.

There is no other reducing factor that pairs the velocities of both paths. Universal Contraction must follow the Fibonacci sequence. This offers a verifiable means to make adjustments to relative quandaries and observe accordingly... (Extract ends.)

Time Dilation in SR is required to offset the occurrence of UC in four dimensions, simply because we are unaware of contraction through time. There is only one rate of reduction possible in which both the occupant and the outside observer concur. Such a coincidence is hard to ignore.

Clocks do indeed vary with relation to a local, three dimensional model of existence, they have to, but in the wider universe clocks may not be so relative to one another. The consequences of this revelation are discussed further in the following chapter.

UC also offers up a surprising alternative to that need for Dark Energy mentioned earlier: the very nature of contraction from light speed to no speed is that we must be shrinking exponentially faster with every moment. It would be perceived as an accelerating phenomenon. So observing the Universe from our shrinking platform would give rise to measurements of an accelerating expansion of the cosmos.

It is fair to suggest that we must need another dimension of time above the one we are discussing, in order for us to express the 'speed' of contraction. Speed is determined by distance and time, so if contraction is our time dimension and it has direction, then it can only be measured to have speed if another time is applied (akin to Calculus).

However, contraction is not a speed in any particular direction, so cannot have a velocity. To measure velocity one needs to factor in vectors in all dimensions of space. But contraction is simply the displacement of three dimensions, in a fourth. It is being described in this paper as having speed for clarity when actually it does not go anywhere in a cosmic sense. Indeed, as a four dimensional fractal, existence would make no progress – perception is the only progress. Motion is the interpretation of apparent consecutive events by conscious life forms such as us, in a three dimensional universe.

Tomorrow we are a bit smaller and our clocks are ticking a bit faster than yesterday.

Let's turn everything on its head for just a second. It is entirely possible that we may be contracting at the speed of light.

Imagine this: we are sitting in a room lit by a light bulb hanging from the ceiling. One three hundred thousandths of a second earlier that light bulb was the size of the room and, we too

were much bigger and further away. Now, in the present, we have shrunk rapidly and come face to face with the aftermath of that light bulb's aura. Did photons travel to us or we to the light bulb?

This scenario is expressed later, where a solid state Block Universe model of cyclical time demands that there be no space between things... everything is connected and photons of light travel independent of time.

Back to reality:

And on reflection, it has been presented here that, velocity is the counter-balance of our material collapse. In the next section, Part 6. Travel, we investigate the two ultimate ends of velocity and conclude that they are one and the same, the beginning and the end of time are connected and, therefore, redundant – making superluminal velocities and Temporal Dislocation a distinct possibility.

Below is the proposal, Universal Contraction.

The General Principles of **Universal Contraction**

BACKGROUND:

There are some who have suggested that we may not have evolved from a 'Big Bang', that Hubble's Red Shift can be expressed by other means, that mass is increasing or that we just don't know enough to be certain the Universe is expanding.

We know Albert Einstein, himself, had difficulty with an expanding universe. So, too, have later influential scientists, such as Dirac, voiced their concerns. However, the steady state theory was short lived.

Is the Universe shrinking, or is it expanding? Most cosmologists are pretty much resigned to the fact that our Universe is expanding. That was their education and their right of passage. They may be right. However, there is growing concern that they may not be.

The evidence for contraction is compelling. From matter in collapse giving the impression of an expanding universe, to those that argue a Big Bang is fundamentally inconsistent with our laws of physics. The underlying reasons for these hypothesis is surely not to discredit earlier theories, but simply to expand our knowledge and reach.

In searching for answers to the complex and all encompassing issue of time, the author of this paper Time's Paradigm considered it necessary to develop a working postulate to aid in unravelling the many conundrums encountered. Here below is that proposal, "Universal Contraction".

Introduction:

It is well understood that bodies with relativistic speeds will experience a shortening of distances and a reduction in the rate of their clock readings relative to others, observing only that the speed of light (c) holds true and constant. However, this does cause some confusion for those wishing to conceptualise how 'knowns' can warp by such extremes.

Human perception is baffled by such abnormalities. We find it hard to accept that a distance can be measured to be different by different observers, that the space between objects can shrink at will while time appears to be quite flexible. This is particularly the case because we do not reside, as far as we are aware, in an inertial frame of reference travelling at any great velocity. Regardless, distances and times should remain true, unquestionable constants, but they do not.

The awkwardness of appreciating these space/time inconsistencies within the framework of Special Relativity (SR) may be resolved by this simple hypothesis, Universal Contraction (UC):

“Bodies in the Universe are in constant and uniform
collapse by an amount inversely related to their
velocities”

That bodies of mass are reducing or contracting relative to their velocities, rather than the standard view that says, mass increases with velocity, does not constitute a conflict with SR (see

chapter 5. Velocity). Observers with slower speeds contract at a greater rate. They measure those with greater speeds as increasing in mass due to slower contraction, indicative of SR. It can be argued that SR does not say we increase in mass, i.e. get bigger, because that really makes no sense; so, to avoid such an apparent incongruity, the increase in mass was given a special name: Relativistic Mass. UC states that there is no actual increase in mass at high speed, we merely slow contraction.

Distances, time and lengths can now be seen to change physically and differently dependent on an observers relative speed. At speeds approaching (c), a body will practically cease contraction and observable surroundings in faster contraction will thus be measured from the reference frame of the body to have distances and lengths reduced by an amount as expressed by the Lorentz factor. However, bodies at relativistic speed would not actually be able to perceive slower frames of reference in contraction (see chapter 6.Travel).

This hypothesis further states:

1. Bodies in the Universe are subject to overall contraction. The greater a body's velocity, the more it resists collapse.
2. At (c), all energy is uni-directional, and particulate functionality at the atomic level is deprived and ceases, as does collapse.
3. Contraction of matter in the Universe is a measure of functionality, the faster a body contracts the faster its clock ticks. At (z), particulate energy is absolute, with no interference from inertial progression through space to hinder total collapse.
4. Distances between bodies are proportionally reduced by the contraction of matter. Space exists only between matter and, therefore, is not infinite. It is contained in all directions due the cyclical nature of the Universe.
5. The Universe is neither expanding nor contracting. Its contents is collapsing towards the future, while it appears to be

expanding. In this model the past and the future exist together (the Block Universe), as a solid fractal progression.

6. All matter emerges into existence in the Universe at (c), their 'Universal Origin'.

7. The spatial dimensions of matter merge to redundancy at (z), a 'Singular State'.

8. (c) and (z) are both attributes of the same event. At (z) a singular state will re-emerge as uni-dimensional matter at (c). The overall energy of the 'steady state' Universe remains constant, and time is shown to function as a cycle.

9. The universal contraction of matter is a cycle which flows in one direction only.

... there was no beginning of time, ergo existence. There was no one Big Bang.

Time is now given a place of significance. Motion is no longer a guiding principle. Bodies, which previously were only thought to have freedom of movement in three dimensions, can now be understood to flow in contraction through all three simultaneously, thus progressing in a fourth (see chapter 4. Dimensions). This paper strongly advocates a static universe block theory, where physical motion is the illusion and progress is only in time.

By accepting a cyclical function for time, we do away with a beginning and an end (see chapter 2. Time), we contain energy, we dispense with innumerable constants and infinities, and we can study all aspects of our existence under one umbrella. The notion that the entire contents of our Universe is in contraction may, in itself, be confounding to some. The favoured view is that our Universe is expanding. That is indeed the case, but while it appears to be expanding in three dimensional observation, it is also contracting through a so far unobserved fourth, time.

TRAVEL

Time Transference Possibilities

The prognosis for time travel: If the invariance of light speed is a requirement only of linear models for progression and does not apply to cyclical time, then during space-flight present moments may become detached. In other words, time dilation may not apply and astronauts might indeed experience time transference into the past – breaking the light barrier.

"It's really all about how we perceive time, and not about the physics – which is sound!"

So does this mean, time travel is possible? Yes, dependent upon individual experience. From a three dimensional perspective (previous chapter) slipping out of sequence with time's flow would be impossible, and our mathematical formulas would agree. But looking at space-time from our four dimensional perch, all of a sudden we discover that a constant universal clock binding us all together in time is just a local phenomenon.

Time becomes unlocked, revealing a universe of parallel existences, travelling to them a distinct possibility.

Excerpt from below: ... *within a solid state Block Universe, objects that inhabit our stretch of the cosmos, here, today, that are actually of the past – of some far away galaxy that was here – are still here, all around us (parallel moments of the same universe), but they simply do not excite our senses in such a way as is detectable from our present perspective.*

It's akin to the Multi-World Interpretation (MWI) discussed in previous chapters, where underlying layers of existence are realised without our being able to appreciate them. Quantum physics says they are there as in alternate futures "in readiness", whereas the layers described in this chapter are the one, true continuum of our past or future relating to the present moment. Likewise invisible, until we slip through the cracks.

Travelling into the future is what we do every day but, as you will appreciate, there are two types of time travel: One is dislocation, the other is, desynchronization.

Dislocation is, removing oneself completely from the present moment and re-instating your presence at an alternate time or date; desynchronization is the apparent slipping forwards or backwards away from the present moment by increasing or decreasing ones rate of flow through time.

There is a difference between physical time travel, our limited perception of it, and time travel by subconscious alienation either willingly or accidentally – such as will happen in the early years of human space-flight approaching relativistic speeds. Time is a creation of the mind, that's where we will find our destiny.

Relativity, for all its benefits, is confining. It's like putting on a pair of pony blinkers and forcing yourself to look at only what's happening in the front windshield, rather than having the option to see out the side windows. Relativity alludes to time travel by restraining it, as if Einstein were playing Devil's advocate.

He was a great believer in the Block Universe Model of time: that all of time, the past and the future, have already been formed together and that everything happens at once. He was also not particularly happy with some aspects of his theories as they related to the wider cosmos. It is my guess that he secretly wanted there to be a possibility of time travel, but he was constrained by the physics of the day.

Time is the register of physical collapse. Universal Contraction of matter (UC) due to cyclical time progression, is the fundamental purpose behind time's passage. If a body increases in velocity its rate of contraction reduces making it appear to observers that it has increased in mass. Equally, by travelling slower through the cosmos bodies contract more quickly, this would amount to them being propelled more swiftly through time.

UC is not a great leap into the unknown, we are simply looking at Special Relativity (SR) from a different perspective; no grand, new formulas required. What it does is help us visualize the inconsistencies of supposed constants such as space and time, which are manipulated and warped by the necessity for a constant light speed (c). Now we can see why time slows, we can see how mass appears to increase, lengths contract, and so on...

Under these conditions it opens up the prospect of time travel being entirely possible. In cyclical models for space-time, the speed of light becomes illusive and time becomes invariant. Astronauts may not return looking much younger than us (as classical thought experiments propose), they may just return in our past – breaking the light barrier.

Universal Contraction Summarised.

Contraction of matter is uniform. It arises from the redistribution of energy between physical dimensions in a contained and steady state universe. Time's Paradigm describes this as a 'cosmological cycle of time', a deceleration and constant contraction from the speed of light (c) to zero velocity (z).

The established standard model for acceleration is linear, where (c) and (z) are limits at each end of this 'so called' speedometer. However, due to infinite regressions, progress is not possible between such established points or moments. Special Relativity, in its favour, had to conclude that (c) was invariant on a linear speedometer, thus avoiding relative establishment and allowing acceleration in time and space.

Alternatively, UC offers a cyclical speedometer, where (c) and (z) do not exist; these two ends are conjoined in a circuit, like a clock or wheel whose illusory spokes are simply named for our convenience. These redundant velocities, (c) and (z), are then attributes of every possible position in space. At all times we move towards and away from both. In essence, time and velocity share the same cycle!

The inception of matter and its emergence into the universe is at light speed, where contraction does not occur and time awaits. For a body of mass this moment would be fleeting, contraction would begin instantaneously. At the other end of the scale, we can assume such a thing as zero velocity. If we stopped moving through space, became stationary, as it were, then contraction to non-existence would be immediate; time would fly by as we careered towards a new dawn.

With the marriage of light speed and no speed comes the possibility of time travel...

But, to stop moving!

All bodies in physical existence are made up of atomic particles, all of which are gyrating about in considerable commotion. Then there is the macro world we perceive: We are in constant motion; our planet is revolving at great speed... our solar system even faster... Indeed, our galaxy is spinning around at thousands of kilometres an hour, and also hurtling at millions across the universe towards the Virgo cluster...

Stop moving?

In Search of Zero Velocity.

To some, this should be abandoned as a futile quest. Besides; as we know, motion is relative and nothing is therefore at rest in the universe. However, confronting this issue reveals some surprising results. "Never up, never in," as they say on the golf course.

Just how close are we to zero velocity? It is normally stated by physicists that we on Earth are a very long way from relativistic speeds (with a cheeky grin, mind you). The fact is, no matter how close we are, it will always appear as if we have an insurmountable hill to climb.

Likewise, a stellar system moving through the universe at near light speed from our point of view, also has the amazing ability to make its inhabitants believe that they are nowhere close to the speed of light, due to time dilation and Lorentz contraction. We are all somewhere in the middle, as explained by The Kalahari Effect in Chapter 3. Infinity. So finding time travel in this neck of the bottle looks bleak.



We tend to think that a theoretical rocket in relativistic thought experiments setting off from Earth, leaves at (z) and accelerates all the way up toward (c). That is how we see it from

our Earth perspective, however, from other inertial frames of reference this may not be what is observed; others may see that our Earth is already travelling at great speed in the opposite direction to the rocket, so the rocket is hardly accelerating, it is decelerating.

This means that true velocity relative to the universe is incalculable with today's understanding and formulas, because there is a lot out there that we still have not observed. We just don't know how fast we are really going and can only calculate relative to other bodies who are equally confused. In total, the whole concept of motion is a nonsense.

However, we are not done with Zero Velocity just yet.

At present, real vehicles launched from Earth are only investigating our Solar System and, relative to the Sun which is considered at rest, we make our calculations. And it works! We have not yet, developed a craft capable of relativistic speeds, so know nothing of the potential. Any thought experiment concerning distant stellar systems cannot simply assume that such random and local concepts for motion apply elsewhere and at such supreme velocities – the universe is a big place.

Is no speed a pipe-dream? Let's turn our attention to the top speed.

Understanding the illusion of Light Speed

The cosmological cycle of time described earlier says we are in constant deceleration flowing through time from (c) to (z), contracting as a result. Therefore, we can only arrest this deceleration, not reverse it. We began our journey through the universe at light speed, but we have since left (c) behind. Arresting our deceleration, and as a consequence our contraction, gives the impression that we have returned to (c). That would have been the case had we stopped deceleration the moment it began,

but since then, this fictitious horizon has been drifting further and further below (c), unbeknownst to us.

We can slow contraction, possibly even reach the point of stopping further decline, but we cannot hope to reverse the process and force expansion. That would amount to the application of infinite energy, as alluded to by Special Relativity were matter to reach the speed of light. Our notion of light speed is that it is always just out of reach, invariant: whereas, in fact, we misconceive its true speed and wrongly fixate on a horizon that is slowing down.

Setting out into the cosmos, we might think we will eventually reach relativistic speeds, but the reality will be that we have merely reduced our rate of deceleration. We might see our rocket approaching distant solar systems at speeds approaching (c), but this is merely a relative misunderstanding.

The speed of light will always elude us. It is always going to be faster than us even though we may consider we have caught up with it, because it is receding. Likewise, (z) will always be seen to be just out of reach.



Take the linear model for velocity and wrap it around like a band, so that (c) and (z) join and become the same spot, like

[Destiny](#) - [Time](#) - [Infinity](#) - [Dimensions](#) - [Velocity](#) - [Travel](#)

midnight on a clock. Each so called 'point' around it will be a velocity, which we could crudely imagine as perpendicular to the cyclical deceleration of the circumference. In the same way we can look at time and say that, any point around its circumference is our perceived clock speed perpendicular to the flow.

In fact, as both these cyclical models are one and the same, velocity on one side, opposes clock speed on the other; as one increases the other decreases. Assuming clock speed to be a synonymous function for atomic/molecular energy, we then have equilibrium.

Every nominated point on this giant wheel we are describing above remains at the same distance from every other point, regardless of local variations in speed. Relative motion does not apply to this fourth dimensional flow of contraction/deceleration, it only applies in the three dimensions of space we perceive. This inter-connected and unalterable wheel is our universe, the sum of all material existence. It is constant, contained and perpetual – not really a wheel, of course, that's just a figure of speech.

Without a doubt, Albert Einstein was right in considering cyclical time in a contracting universe a giant headache.

Light travels invariantly as it has no mass and is not constrained by the cycle traversed by matter. A comatose photon therefore reaches its target at the same time it launched. It travels, as it were, in straight lines between points, and does not flow around the circumference.

An issue raised earlier in part 3. Infinity was the consensus that any light is emitted at a static point in the universe. Photons are not influenced by the speed of the platform from which they are beamed, and they set off without accelerating – already travelling at light speed. This idea further solidifies the notion that zero and light speed are one and the same.

How does light get emitted at the atomic level? A particle collides with an electron which then loses energy as it drops down a level, and that energy is expelled in the form of a photon. We can illustrate this by suggest that the static point from which a

photon is emitted is the point at which a colliding electron has been stopped in its tracks – instant deceleration.

The misconception, therefore, that our launch pad, the Earth, is at rest, is not as silly as it seems. Any and all points on the cyclical wheel of Time can be both stationary and the speed of light, and anything in between. So, any velocity can be anything you want, and decelerating to (z) is actually acceleration to (c).

Deceleration, a Paradox.

Oddly, deceleration in one frame of reference can always be seen as acceleration, in another, even when returning to our original point of departure (the frame of reference where the journey initiated).

In any accelerating path there will be many points considered by other observers to be at rest with respect to their inertial frame of reference. So, an astronaut in a rocket, believing she is accelerating, may actually be seen by these outside observers to be decelerating towards one of their rest points. However, when our astronaut passes through one of these so called 'static points', she feels nothing. She does not experience any slowing down, then speeding up as she passes through, because that point does not exert any influence upon her, it does not really exist for her.

Achilles feels the same way on passing the tortoise – no problem. Infinities towards and away from an identifiable point would deny progress. However, in the above examples, awful infinities have been abolished. (see part 3. Infinity)

Deceleration is the same as acceleration.

In fact, the word 'deceleration' is frowned upon by those who demand we call it 'negative acceleration', instead. When you fire rockets to decelerate you feel the g-forces. You are adding energy to the system. You go from feeling nothing as you float along at a fictitious, incalculable speed to suddenly experiencing the change. This suggests we are all always accelerating; always adding energy; always gaining mass – if we follow the basic assumption

of SR. Every time you press the brake pedal you are actually pressing a gas pedal.

Apparently, every direction we wish to travel is towards (c). That defies logic, but who said the universe is logical? It suggests that we and every body in the universe is continually going faster, getting more massive. More and more energy! If so, at some stage the universe will not be able to contain itself.

So, is acceleration also an illusion?

UC is the equilibrium for this peculiar circumstance. Bodies are, in fact, all contracting in time, actually decelerating while their clock rates increase, we just haven't added this new information into our thought experiments, yet.

A linear scale of acceleration is what we use to describe our velocities in today's world. However, a cyclical model for time describes velocities as destinations.

Zero Velocity is in the direction of our origin. Not the beginning of any journey we take here and there on a daily bases, but only one, the most fundamental journey of all, where it all began: Time and our origin hidden somewhere in the universe. We burst out into this universe at (c), at that point we began our journey toward (z), and on reaching (z) we return to our origin, (c). Not by pointing towards it but, rather, by pointing in the opposite direction.

This still leaves us with the nagging question we began with:

“Where is zero velocity?”

Can we as physical entities ever hope to reach (z) in our relative, off-circuit meanderings, or do we just have to wait for this great cosmological cycle of time to carry us there?

The Hypothetical Experiment:

If we were to fire a particle in the opposite direction to its current trajectory through the universe and at its precise current

speed, the particle – in theory – would cease general mobility. Cosmic Background Radiation would factor in discerning the speed and direction of this negative acceleration.

UC says, the particle would, as it came to rest, begin to shrink dramatically. Without dimensional activity it would be carried to collapse in an instant. It would register a massive increase in its rate of time. At (z) we can therefore assume that it would simply not exist.

All dimensions exhausted, our particle would have returned to the moment before real existence: That 'singular dimensionless state', as described previously. Now in contact with all things being without the constraints of distance, i.e. space, our particle might even have the potential to then burst out into the universe, at any place or time!

A White Hole... A rebirth of our particle into existence – and at the speed of light. Transference in Time and Space.

Could the Big Bang be a phenomenon that is continually occurring? The Big Bang looks like a one-off; a cataclysmic, single explosion, from our linear perspective. Alternatively, from the point of view of cyclical time progression, it always exists – a journey back to origin that is forever repeated.

The Large Hadron Collider (LHC) facility in Europe is unfortunately, from this experiment's perspective, in a fixed location and does not have directional capabilities.

The CERN community has concluded that deceleration is the key to discovering exotic quantum matter believed to have existed at the very moment of the birth of our universe – The Big Bang. By accelerating protons to near light speed and creating head on collisions, the protons are decelerated to stop, instantly. A splash of tiny sub-atomic particles is observed, shooting off in all directions. Had the protons reached zero velocity by less catastrophic means, we would observe the same particles in a concentrated implosion. What scientists are witnessing is the activity associated with an end of physical existence which,

coincidentally, is a re-birth thereafter – or is it the other way round?

Positive acceleration, or negative acceleration, it's all the same thing if you ask any body of matter. Those protons could be said to have accelerated instantly, on impact.

At the Atomic Level.

Time is a circuit. Time does not stop anywhere; mechanisms may fail, functionality at the particle level may become stretched at great speed, and clocks will run slow; but time is continuous.

On the flip-side: You reach the speed of zero, you contract with incredible force; then, as you enter a state of dimensional non-existence, that energetic momentum of contraction must continue to exist and, so, theoretically you are thrust back out into existence at (c). A catastrophic implosion reciprocated by an equal and opposite explosion of matter. And the laws of Thermodynamics are upheld.

In theory, by eliminating motion we might achieve a so called 'worm hole'. Not from a black hole – the singularity considered at present which assumes an infinite density of compressed matter with an extraordinary gravitational field – quite the opposite: a massive collapse of matter while approaching zero density caused by immense universal pressure which registers as an extraordinary gravitational field.

We need to consider what might happen to atoms when an object reaches the point of becoming near stationary in the universe. With almost no inertial energy left, atoms will be immensely potent and be in near perfect symmetry, they might have unrealistic tendencies, might gain a super-existence not observable in everyday circumstances.

Such a bizarre phenomenon might, to a degree, have already been witnessed. Those experiments earlier mentioned, about reaching the temperature of absolute zero, have produced some extraordinary revelations about the effects on atoms that are hardly

moving. They appear to lose all sense of reality and logic; they seem to lose their identities – a very peculiar thing – behaving stupefied and sluggish.

The researchers used light and magnetic fields to reduce the temperature of the soup (Bose Condensate) in to which these atoms were introduced. In effect, they chilled them, extracted their energy; thus slowing them down, until they were practically standing still. But the laboratory where these experiments were being conducted was, of course, moving. It was situated on this planet...

Physicists from various fields are in agreement that a Zero-point Energy must prevail and some energy remains, even if atomic particles reach the temperature of absolute zero – their equations demand it! Of course, at present, there are no formulas concerned with existence beyond absolute zero, and no consideration that outside of relative motion there might be induced deceleration by a cosmological cycle of time.

(The Big Bang may have been a mistake... or an experiment gone wrong. Perhaps there has been more than one Big Bang... perhaps they are happening all the time)

Proportionality

Looking Into The Past

It is quite unrealistic to propose a visual illustration of our cyclical, four dimensional universe. Some type of beautifully symmetrical hyper-doughnut has been put forward, as has a giant firework, but something quite irregular might also hold true. After all, we don't have 4d glasses.

More than likely, were it visible as a whole through time, our universe might be dense and incomprehensible, chaotic being an appropriate adjective. All of time, not just the present moment, a massive fractal bowl of spaghetti. Add things popping in and out

of existence all over the place in the universe, with random disregard: And a kind of Quantum Foam affair..?

Unfortunately, we, with our simple 3d perspective, cannot fully visualise such an incredible manifestation at work.

It is no wonder then, when we ask why we cannot see or experience a moment in the past, like us getting up to go and make a cup of coffee, it is because this past existence of ourselves is both a moment millions of miles away and a state of much greater form.

Everything in the past was vast by comparison with now, because we are in constant contraction as we proceed through time. However, we are all together in this; at any moment in time everything around us appears to be proportionally the same as it was before, so nothing appears to change.

A Glimpse of The Past.

It's a fantasy to think we might actually visualize our past from this present perspective, but it's worth a shot. The speed at which we might be contracting is just as likely to be fast as slow. It is incalculable, may be imperceptible in our lifetime. Or it could look something like this.

Imagine we somehow manage to time travel into the past, go back a few minutes, but somehow stay magically the same size as we are now, what would we see? Would our past self be a giant, perhaps as tall as the Empire State Building..? Moving as if in incredible slow motion through a kitchen the size of Manhattan Island.

Remember a chapter ago, you were reading about a light bulb hanging from the ceiling? Go back to that moment and say it was an hour or so ago. Relative to our frame of reference in the present, now, it might have taken a couple of seconds for photons from that bulb to reach your eyes, because the distance they needed to travel was a few million kilometres, by current perspective.

Atoms in a giant, past body from yesterday might be the size of the London Eye and, if visible from our present frame of reference, have electrons lazily rotating about a nucleus like those hanging pods. A peculiar but compelling scenario! Would we really see this giant of ourselves as a human at all? Being able to see all those individual atoms making up human form, to be able even to see between them, right through them; are we sure we could actually see this giant at all?

We can only see what is ours to see. It is easy to fool the eye and thus cognitive perception, even in our present macro state. The smaller or closer you get in relation to an object you are looking at, the less its overall form makes earlier sense; like looking at solid matter under a microscope.

Thus, UC suggests we cannot appreciate events either before or after now, because they are not of a relevant size, giving new meaning to those Minkowski layers. No universal clock by which we must all abide, no 'now' synchronized by the invariance of light-speed. We can only receive information that resonates in space at a given moment equal to our state of awareness: Proportionality.

What is being proposed is that there are two elements of the past. One, is the past we see in this present bubble we have conceived with our minds... distant stars, for example, that were proportional to us back then. The second, a true past, outside our bubble and so outside our layer of perception... a parallel, invisible existence in our universe.

We can never be witness to true past events, however far away they are. Even with the most powerful telescopes the Big Bang is out of bounds. Galaxies and other cosmic phenomena that we do see today are not from a past of greater proportion to our own, they coincide with now... our Now. The fourth dimension of time is multi-layered, one block universe divided up into an infinite stack of parallel time zones, through the past and on into the future.

Within our Solar System this is of no great concern, as our Sun is the 'mother ship' to whose supreme velocity we are all tied. But this does pose a problem beyond: If a spaceship rushes off from here at great speed into outer space, it will soon become detached from our neighbourhood, and at some stage it will have a velocity and size very distinct from ours. It will, no doubt, disappear, loose form from our perspective.

At what stage? Where is the cut off point at which we can no longer perceive the craft as it has slipped out of our reception and proportionality? Would it be a slow dissemblance of reality? Could it be abrupt and obvious? Or might it be a cascade of irregularities?

Limits always seem to produce nonsense, but until such time as we send a craft out at relativistic speeds, or become aware of an alien craft of such great velocity entering our space, we can only speculate. The study of sub atomic particles will probably not resolve such a conundrum, although quantum physics is already grappling with such bizarre anomalies.

Electromagnetic radiation frequencies are shifted noticeably emanating from bodies receding at high speeds as mentioned above, to a point, one must assume near light-speed, where they would flat-line and become undetectable to our instruments. That might be the point at which a departing spacecraft slips back and fades away... into the past, so to speak.

It is not the scope of this study to propose as much beyond the hypothetical, only to highlight possibilities in terms of particle physics. As discussed earlier, space is contracting around us, emr is the resonance of space and not an entity unto itself, as are photons of light we see today which left galaxies millions of years ago when they were the same proportional size as our present moment. Oddly, those galaxies would not appear to be old, they would be the same relative age as our neighbourhood – which leaves 'now' sort of "blowing in the wind".

And lastly, as has recently been proposed by an international consortium of scientists, light is slowing down. If matter and

associated space is in contraction, then the speed of light cannot be constant, it must reduce in velocity over time. The fact that we are actually experiencing an increase in our rate of passage through time might have some bearing on this startling discovery.

We are contracting through time from the past to the future within a solid state Block Universe. And objects that inhabit our stretch of the universe, here, today, that are actually of the past – of some far away galaxy that *was* here – are still here, all around us, but they simply do not excite our senses in such a way as is detectable from our present perspective (parallel moments of the same universe). They would be travelling at immeasurable speeds, be of immeasurable size and we would, in theory, pass right through their ancient aura without noticing a thing.



Recent detection of "Hot Spots" within the propagating background radiation in which we are bathed, may be a sign of the past... or things to come. (Perhaps, even, mini big bangs). We must assume that gravity has the potential to pass between layers of time, a giant, past black hole thus pinching localised areas and affecting future events.

We are that close to other times without even knowing it. Intergalactic space travel by virtue of Proportionality is just a matter of time.

Breaking The Light Barrier

Returning to that earlier, classic thought experiment, concerning an astronaut on her four year voyage at relativistic speed to Alpha Centauri. Would she encounter that stellar system where she was expecting it to be, or would she break the light barrier and end up lost in time?

The latter is indeed what would happen, were it not for the conclusion that she is NOT bound to the 'now' of faster ticking clocks like ours on Earth. Her present moment will take precedent over her life, because there is no universal clock demanding she return in eight years when she has only experienced two.

Due to Universal Contraction, Alpha Centauri and our planet Earth will be getting smaller as they orbit the Milky Way, gravity holding matter together as the entire galaxy contracts in size through time. Not surprisingly, the rest of the universe appears to be expanding.

However, in the past, bodies had contracted less, time ran slower, they were larger, so space between things shorter. Locally, not noticeable, although our moon's orbit is increasing and the speed of light is apparently slowing down.

Here is the scenario: Alpha Centauri, travelling a great deal slower than our speedy astronaut, will contract at a much greater rate than her during those four years and end up being much smaller than she would have expected – more than likely invisible, perhaps just the size of a basketball. Having a hunch, she reprograms her spaceship's flightpath to intercept Alpha C. at an earlier moment in its travels by calculating the clock time lag she is experiencing, and so reaching the mark where both are of proportional size for the moment, and visible to each other. That moment being just nine months into her voyage.

Alpha C. will not appear disproportionately large from her perspective, but the distance she needs to travel will have shrunk.

Equally, on her return journey to Earth, she needs to do the same calculations, otherwise she will arrive at the pre-programmed location to find Earth nowhere to be seen – she will be lost forever, searching at the wrong time and in the wrong place, in a far away corner of our universe, marooned in the past.

What we all find amazing is that she managed to travel eight light years and get home in less than two. We didn't see it happen, so was it an illusion? Whose illusion? Or did she time travel?

Realistically, the astronaut aligned her ship directly with Alpha C. and the star remained at her nose from then on, seeing the universe at a standstill with respect to contraction.

Then her return... she plays the same fiddle.

They welcome the astronaut home after just eighteen months, having to accept she travelled many times faster than the speed of light, intersecting the path of a distant star long before she was predicted to do so, and then returning just as fast. She has the photos to prove it. Needless to say, Mission Control has a big problem: radio communication broke up several weeks after her departure and her perceived trajectory could not possibly have coincided with the vicinity of Alpha Centauri.

Time Travel... It's really all about conscious consideration, rather than physics.

While an astronaut is in relativistic acceleration, other bodies in the universe will appear to slow down, contrary to the common consensus. Her contraction is declining, and so she becomes aware of Alpha C. in ever earlier moments through desynchronization, the star's momentum appearing to decelerate, until at near light speed all movement in the universe comes to a practical halt.

But, as described above in the section, The Illusion of Light Speed, she does not reach the speed of light, her ship has merely arrested contraction. The actual speed of light, as it was at conception, is still along way off and reserved for the forbidden

past. Moreover, time has NOT come to a stop, only its incremental rate of passage having paused – clocks still tick; it is in limbo, now the universe resuming animation as our astronaut's ship can no longer accelerate.

At this stage, any increase in the velocity of her spaceship would cause a flow of time to incrementally tick slower as the craft began to expand.

To break through this light barrier is to leave 'now', dissociate with our relative bubble of reality and enter the forbidden past. The energy required to do so would be astronomical – to slow down our rate of contraction is one thing, but to force its expansion is quite another. Special Relativity demands as much.

From the time matter first emerged at lightspeed out of its dimensionless state and formed our universe, space has been giving the impression of expansion while we have been slowing down, our rate of contraction increasing as a result. However, should the light barrier be surpassed, the reverse will take place. As our ship approached true lightspeed, space would begin to shrink, perceived existence would contract towards us and matter would become condensed, the surrounding universe congealing into a tiny fraction of its former glory, a brightly glowing ball abruptly turning dark and dimensionless.

Light would go nowhere, having nowhere to go... Thus we become the universe, the past the present and the future one entity.

Time comes to a halt. It does not – as many might hope – flow backwards. Time cannot. The individual perception will be that of a universe running backwards towards birth: The Big Bang.

Time Travel: The Reality

Not only is the Big Bang out of bounds but so too is our own past. Time travel is just this, a journey through the universe to other locations (albeit, of a different time), not an introspective vacation. Time runs positively, what we experience can only be

our future, and any dislocation in time will always be a novel encounter.

There are past moments in time all around us, great cosmic systems that travelled ahead of us on their voyage from inception, galaxies that we see today as far away stars, that were once in our present vicinity. Not our own... our solar system belongs in the present moment from our perspective. A very smart astrophysicist might one day be able to calculate the intersection of our current position with Jupiter or Saturn's past, making way for a journey that might involve two trips. But, doubtless, on returning to Earth from either in that past time, the astronauts will arrive no further behind their departure.

Nevertheless, it's a start. The Milky Way is big, its contents having been covering this precise spot we inhabit today in the cosmos for many years, as star system after star system passes through. It may be that just a few decades ago Alpha Centauri was where our sun is now. Thus, all it might take for astronauts to emerge in that past moment is a velocity so close to the presumed speed of light that only a month or two passes on board their spacecraft.

Not only would they be traversing space at break-neck speeds but Alpha C. would in a sense be coming towards them. A mathematical formula to theorise such occurrences is beyond my capabilities; notwithstanding background radiation and the the Big Bang being 'ground zero', the exact velocity of bodies in the wider universe is completely unknown. Nor do we know the rate of collapse of bodies through time other than 'tentatives' gleaned from Special Relativity and the peculiar coincidence of Fibonacci's Golden Ratio.

Likewise, the 'Zero Velocity Experiment' which might open up a doorway for future space-flight to earlier or later epochs. In this scenario, the benefit afforded is that re-emergence can be anywhere in the universe. Just how that destination will be configured is, as yet, a delightful mystery.

“If Achilles can catch up with that blasted tortoise then we, too, should be able to break the light barrier.”

There are no limits to existence, to energy, to matter... only transitions. Everything is connected. On reaching arrested contraction and that imagined barrier of lightspeed, we will slip quietly beyond. Infinities do not exist in cyclical space-time to impede progress. It will not be with rockets and future propulsion technology, however, it will be by manipulating the very environment we inhabit.

Existence is an experience, not a fact. It is not what we think, not obliged, it is amenable to change and transformation. Quantum Physics has opened our eyes to the possibilities – get ready for some fun.



A simplistic analogy of travelling through time:

We are all free rolling down the hill of time. But, say, a bus driver has forgotten a passenger and wishes to reverse back up hill: So he eases on the brakes, slips shift into reverse and then lets out the clutch slowly and it and the wheels begin to dig in; his bus slows until its descent is practically halted; but at that moment the wheels spin and he is held at rest; neither descending nor ascending; the weight of his bus and its design will not allow him to reverse back up. Meanwhile, we all carry on rolling, and others from behind pass him by on our way downhill, and perceive that he has returned to the top of the hill ... even though he hasn't.

The hill is a curved dome.

[Destiny](#) - [Time](#) - [Infinity](#) - [Dimensions](#) - [Velocity](#) - [Travel](#)

Time's Paradigm in a NUTSHELL

Eternity: Everything that ever was and will be, a solid state devoid of time and space – destiny thus assured.

Time: The present fluid moment only, created by consciousness, where chaos and causality rein.

Cycles: Models where infinities do not exist, where there are no beginnings or ends to attribute a period in which by linear definition flow is a falsehood.

Contraction: The evocation of change; a simultaneous and equal reduction of each of our three physical dimensional planes, through a fourth – Time.

Proportionality: Layers of time existing in parallel to our own; past and future events which may occupy the same space but which between them are unobservable.

Lightspeed: A velocity equal to zero, both being attributes of the same event in cyclical models of space-time.

Transference: The perception of slipping between layers of time dependent on individual velocities that alter our rate of contraction.

In Other Words...

To suggest something started from nothing is peculiar, at the very least. However, that is the quiet assumption voiced by most in the scientific community: The beginning of our universe, existence, all began with a massive explosion – The Big Bang. Yet, nowhere else in physics is this allowed to occur. Things don't just appear, energy doesn't just happen; there is causality... quantum ambiguity.

Alternatively:

Time cycles, as do all processional systems, the consequence of which being that all matter in our universe will eventually return to a state of origin, and the cycle continues. No loss of energy in the cosmos, no cataclysmic beginning nor apocalyptic end, because there are no limits in a cyclical, 'block universe' model.

Solely from our limited conscious perspective, then, not a passage of time but a declaration of state. Every episodic change through eternity is already an occurrence, as if a giant wheel whose parts are all connected, sequentially, seeming to revolve should the need for time become relevant. There is only subjective fulfillment, eternity being a dimensionless ball of potential – add a catalyst called consciousness and effervescence occurs.

Such systems sustain themselves; they are autonomous and immune to outside influence, having reason and purpose; lacking infinities and finalities that would affect containment.

Conformal Cyclical Cosmology was introduced by the renown physicist Sir Roger Penrose, and similarly asserts that time must cycle. However, his proposal suggests an oscillation of one Big Bang event encompassing the entire universe, whereas Time's Paradigm posits from a philosophical standpoint that matter may be constantly popping in and out of existence, as a consequence of probability, events large and small, throughout the universe.

It is only within *this layer of time* we call "Now" that a single big bang event was conceived to have occurred, a very long way away, whose aftermath we are in this very moment privy to examining. It is equally justifiable to consider that a similar event might have taken place just 5,000 light years away, last week, and that we have yet to register its impact. Or that immeasurably insignificant events from our macro perspective are taking place all around us on a daily bases.

Recent quantum correctional theories for General Relativity point to the 'singularity' before a Big Bang, and are also asking if there really was a beginning of existence – in other words, time.

We are privileged only to witness a tiny segment of eternity's vast breadth, a slim layer of time that stretches out across the universe imposed by the speed of light. We think we are seeing into the past, but only the slice of pizza we have been allotted. There is so much more of time that is active now, that is outside the beam of our headlights and simply out of bounds.

Indeed, the tiny portion of the cosmos we inhabit today was likely host to another solar system a few years ago, possibly our neighbour Jupiter, yesterday. Yet we do not see either in our limited view, they have travelled on around the Milky Way. However, if time is a solid state of potential, then that solar system we perceive to be a few light years away, today, has a past here and now.

The past is subjective. In that light, we make judgements, humanity trapped within a single layer of time without the means to experience any others. And thus, those judgements will be flawed. It is mono-sighted of us to make assertions under such constraints; we have no idea what is happening in other parallel layers of time.

Our misgivings all boil down to the speed of light, that shackle we have unwittingly imposed upon ourselves in order to quantify existence. We need to open our eyes to the obvious; our paradigm of time lies adjacent to others.

Consciousness Creates Time

Our minds create the present moment to separate the past from the future, and then slow down time to a manageable pace – otherwise it would all be over at once.

This is achieved through 'flicker fusion rates' experienced by all conscious creatures, forming a bubble of awareness, an illusion of motile reality incorporating time and space. The past and future are not really time, at all. Moreover, there is no space within them... nothing promotes existence outside of 'now' if there is nobody to contemplate it!

Within this bubble time flows, but it comes with constraints enforced on freedom sided by the static potential of a past and a future. Like slicing into a pie and having mirror images of existence on either side of the knife. If the future was not already waiting around the corner, the speed of light would be infinite, having nowhere to go.

Time does not pass in a block universe model because the future is the past and vice-versa; an irony, a cyclical pendulum like a necklace of pearls. We create time in the present moment only; it exists, an inconsistent truth, the order of things bent to accommodate impracticality. Furthermore, there is no reason to assume 'now' could not be anywhere within eternity and, by tenseless consequence, that it may have potential to exist in more than one segment or layer.

Cyclical time gives rise to all eventualities, simultaneously.

Linear vs. Cyclical Models of Progress.

Fluid progression is only possible in the present, where no sequential points are isolated and thus identifiable as individual entities. This resolves processional paradoxes. As all considered

points in a cyclical model are unrealistic then flow is possible. Otherwise, 11.59 would never become midnight.

A simple, cyclical measuring device, like a clock or compass, has no ends and as such all points around it are uncertain. Because there are no defined points for relevance, our exact whereabouts on it cannot be ascertained, so we can freely pass from one moment or angle to the next (The Uncertainty Principle). Cyclical processes thus ensure continuity and immeasurable flow; whereas, linear models impede progress.

Linear models have defined ends because, in the view of their designers, nothing exists beyond them. Having defined ends means that any point between them can be precisely extrapolated – leading to the infinite impossibility of progression. (**Unless** it is conceived that the two ends are not relative to anything in between. In these dubious models, progress throughout is perceived to exist while the two ends are understandably unattainable.)

In physics, velocities are described on a linear scale, like a speedometer, from zero to the speed of light. At the beginning of the last century, in order to explain certain cosmological conundrums, light speed was established as being invariant, the other end was deemed irrelevant. Light was then seen to travel at a constant speed regardless of any observer's inertial frame of reference, and the conundrum was resolved – the luminiferous ether could be put to bed.

We created non-relative ends out of necessity, when we do not need to set such limits, if we consider progress of any kind to be cyclical. Time, space, trajectory and acceleration, must all be cyclical phenomena, as are all things processional. Bodies in the universe could not move were it not so!

While it is perfectly understandable that mathematicians need points to establish fact and express our understanding of existence in any reasonable fashion, their reference should only extend so far.

The assumption we have that acceleration is a linear progression is analogous with our ancient belief that the world was

flat. It is clearly not. Neither is time nor space. A linear model with invariant ends is merely a pseudo-cyclical phenomenon.

If time and our understanding of existence is a cycle, and we only see a minute portion of that grand design, how does it manifest from without our limited, three dimensional perspective?

Universal Contraction: A Cyclical Model

Briefly, all matter emerges into existence at the speed of light (c), followed by a constant, proportional deceleration and dimensional contraction toward zero velocity (z). As velocity is a cyclical process, (z) and (c) are intrinsically the same, just as the end of one day, midnight, can be described as being the beginning of the next.

It is argued that zero velocity cannot exist independently, stationary objects in the universe must therefore – ironically – be travelling at light speed.

From a uni-dimensional, non-functional and massive state at the speed of light, matter progresses toward a physically collapsed state of immensely rapid functionality (change) at zero velocity. But neither end exists independently. Upon reaching zero, that extraordinary energy potential re-emerges as matter at light speed. Thus, our journey continues through time and space without cessation in constant deceleration. No energy lost, just a change in purpose.

Energy is shared between dimensional planes. Clocks speed up as we decelerate, our metabolism increasing, because particle functionality gains energy from reduced forward motion; less interference from physical motion in the macro world means atomic particles have greater mobility. When a body's forward motion practically ceases, particle functionality becomes supreme, and atomic perfection is reached (akin to Zero Kelvin).

We are in energetic, cyclical evolution, not entropic decline.

"Universal Contraction" (UC), is at the heart of this publication's proposals. The two page thesis can be found at the foot of Chapter 5. Velocity. It states that the speed of light and zero velocity do not need to be invariant ends on a linear scale because they are in fact attributes of the same event – in other words, the space/time model is cyclical.

About Universal Deceleration:

We can only attempt to arrest it, not reverse it; cyclical processes only flow in one direction. We can accelerate off in this direction or that, and influence deceleration, perhaps even reduce it to near pause by reaching what we believe to be relativistic speeds, however that is just us approaching (z) from the point of view of others. Reversing time and motion, beyond arrested deceleration, back up to true light speed – where existence first began – would make sense on a linear scale where negative momentum can be implied, but is quite unrealistic on a cyclical platform.

Moreover, to stop our positive deceleration would constitute the identification of a defined point, which would render progress impossible and create the assumption that we were travelling at the speed of light. Vis a vis the CERN declarations on colliding particles, see part 6. Travel.

We and all physical objects are as if marbles rolling down a hill from light speed to no speed, that, if forced to stop anywhere, will wrongly assume we have been accelerated back up to the top of the hill again – because the hill is curved providing a false horizon. No body of matter can ever accelerate to universal light speed, it is in the forbidden past... the one outside our layer of time... the past we cannot see.

A cyclical model for acceleration and time, such as this, allows for relative variations in velocity anywhere around it, however the only true progress being made is that around its circumference.

We can accelerate and travel distances relative to one another, but as far as the universe and light is concerned we aren't moving at all, we are ripples on the surface of a larger current within a bubble we call the present moment. We observe light as constant because we are all stationary, from the point of view of the universe. Time is of no consequence to either. So, locally, we can proclaim understanding of an invariant light speed, but in the wider universe this notion is redundant.

There really is no such thing as motion. As we pass from one moment to the next we perceive that we have moved physically..?

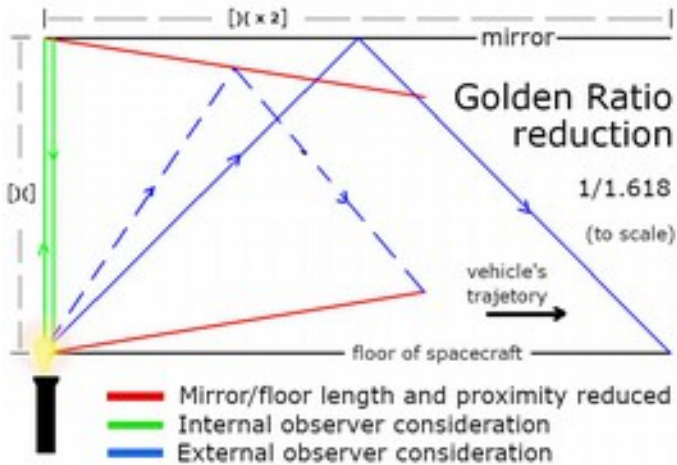
All matter in the universe is in collapse through time (UC) inversely dependent upon their velocities. It is how we perceive the difference between one moment and the next; not by a change in position, but by a change in size. This is not at odds with Special Relativity (SR), quite the reverse, there is consensus between the theories.

UC says that the rate at which we contract depends upon the amount of inertial energy we each possess to counter collapse. The faster we go, the slower we contract, or the more relativistic mass we appear to take on, as SR puts it. Being conscious of time and our whereabouts is due to sensory receptors, so as we contract, we are aware only of bodies whose material representation is proportional to ours, at any given moment.

Proportionality: Layers of time. We cannot see the past or the future from our perspective.

Contraction: The simultaneous and equal reduction of each of our three physical dimensional planes, through a fourth – figuratively illustrated by The Hypercube.

Can we illustrate the rate of this contraction? Indeed, we can. The text book 'light clock' used to verify time dilation in spacecraft at relativistic speeds can be applied. If we make a progressive reduction to all material objects (mirrors) and the space between them by a factor of Fibonacci's Ratio, the photon is observed to travel the same distance in a geometric plane.



There is only one rate of reduction in which both the occupant and the outside observer concur without the need for Lorentz Factors. Such a coincidence is hard to ignore. Time Dilation is a necessary application to off-set UC. Einstein was well aware that a contracting universe bore similarities with his theories of relativity, rejecting the notion as overly complicated.

Breaking the Light Barrier

The standard view for an astronaut on a four light-year, interstellar round-trip voyage at relativistic speed during which she will experience a slowing of time is, of course, that the astronaut returns to Earth in eight years having hardly aged but a few months. However, under the conditions imposed by UC, the astronaut will return to where the Earth is after eight years, unable to see her home planet nor interact with it, because as Proportionality dictates, it has shrunk over the years considerably more than she and will, proportionally, be outside her range of perception.

Alternatively, the astronaut could, having had her collapse slowed due to great speed, and with this knowledge, take control of her outbound and return trajectory to intersect Earth at the proportional moment for her size; which is just a few months after departing. In effect, slipping through layers of time.

If our perception of time slows down at high speed, why should we be bound to adhere to the faster clock speed of slower moving frames of reference, and return to their perceived present moment eight years ahead of ours? That suggests a constant universal clock forcing everyone to be aware of the same 'now' moment imposed by the limit of (c). And yet, 'simultaneity' is a corner stone of Special Relativity, demonstrating that no two observed moments are the same, giving rise to a contradiction if we must all be aware in only one moment and that being at the same moment as others.

Remember, there is no time in the past or the future. "Now" can be anywhere perceived.

If acceleration is cyclical, the infinity paradox of (c) is eliminated, distances become invariant due to the proportional nature of awareness in contraction and we can progress at our own pace through time. Our present moment of awareness is simply dictated by the energy required to resist collapse.

So, in the UC model above, those on Earth who welcomed the astronaut home after just a few months, would have to accept she travelled many times faster than the speed of light, intersecting the path of a distant star long before she was predicted to do so, and then returning just as fast. They would not have been able to observe this phenomenon, but she has photos of Alpha Centauri to prove it.

There is a universal clock in our neighbourhood. From the perspective of local frames of reference, the astronaut could not have travelled faster than light and, therefore, never reached Alpha Centauri. However, the reality will be different.

The Illusions of Life

Our perception of progress in time is due to Universal Contraction. All matter is in collapse and, though we are unaware, as we reduce in size we perceive only those things that remain proportional.

Illusions are everywhere. They are the affirmation that existence is real. If everything were ordered, equal and understood there would be little need to question... anything. That the world continues to surprise and delight us with peculiarities, keeps us guessing – asking questions – is the notice we are alive.



The Kalahari Effect provides the ultimate illusion. We are in the middle of everywhere with respect to an infinite horizon, between fast and slow, between big and small, and between the past and the future. We move this way and that and yet remain in the middle – of everything – from our perspective. As if we have not moved at all.

We are aware because we don't know where we are.

If everything perceived were absolute and unquestionable, it would be unlikely that progress could be made. It is doubtful that anything we see is fact, and more reasonable to assume that all things we see are interpretations. From observations by one, a line is straight, by another, it is curved. Both are right.

A fourth dimension through which we find ourselves all physically contracting is peculiar but not unrealistic. It is the perspective, or depth perception, necessary to see into three dimensional progression. Not unlike the third dimension our brains demand when looking at a painting on a wall.

And so, journeying through this giant Cycle of Time, our senses react, our brains dictate and we perceive 'now' in a moment adjacent to all the others. It's ironic, really; only because we create the flow of time in our moment does it take light some time to arrive from the past... from other layers of time.

And let's not forget the future. Every direction into which we wish to journey is perceived to be acceleration, even putting on the brakes is acceleration. But this is a mistaken belief we will only discover on exiting our solar system (the mother ship) at relativistic velocities. Zero velocity will become a reality of interstellar navigation.

In so doing we will discover that astronauts will dissociate with our present moment and slip between the layers, exceeding that fictitious speed of light which is merely a false horizon. The fourth dimension of time is multi-layered, our universe divided up into an infinite stack of parallel time zones, the past and the future all around us and ready to be accessed.

Solid eternity demands that all things be connected. It is this which tells us that space, seemingly a void of nothingness, is just that – nonexistent; yes, space is an essential part of connectivity. Not really an unprecedented conclusion; after all, String Theory is big on connections. Moreover, most people would find it hard to accept we are all just ships passing in the night.

An acorn is a ball of energy that bursts forth and up into the world, climbing slowly skyward, branching out here and there, in

seeming chaotic and random fashion; when, in fact, it is an extraordinarily beautiful melody, full of resonance. Many hundreds of years later there stands a mighty oak tree – it worked, because **in chaos hides perfection**. All the acorns on that tree are connected, to each other and to the very first acorn that started it all.

Our Universe: one giant fractal. The past and the future of everything, interconnected, existing all at once in chaotic assembly. A beautiful, four dimensional design, self-replicating, scaling, timeless in its integrity. At some stage the challenge will be to create such a beast that cascades within itself; that has no beginning, will have no end; whose outer shell will connect seamlessly with its interior, so creating an efficace cyclical progression.

An "Esher" of Eternity. The monumental iterative equations needed to express this structure will be the DNA of existence, itself.

... And time's paradigm will have come to an end.

...END

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A synopsis of work in progress.

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