

Time's Paradigm

A Philosophy of Science approach to our perception of time and existence.

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The Theory of Cyclical Progression

written for general consumption.

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PROLOGUE:

What is time? For if there were none, such a question could not be asked. Where is it taking us, or are we leading the way? How does it work? - or, does it? Why are we aware of something that does not appear to exist? And yet, in the same breath we ask: does it go on forever?

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 or reason for it being, and no place for it to be.

Time implies existence. This leads us to ask whether it had a beginning or whether it will ever end. 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 operate. Change is energetic, and to suggest that energy magically starts or suddenly stops is far fetched; unless we are lead to believe that energy emerged from an alternate existence, before time. In which case, did it really start?

Existence is determined by progress; we must move in order to be. Thus time flows, always positively, and is relentless in its quest, neither starting nor stopping, anywhere.

The present is our awareness, our sense of change. If living beings such as ourselves were absent from this universe, time would still exist but the present would not; which opens the door to the prospect that the present can be at all moments anywhere in time. We do not, it seems, hold domain of the present moment loosely termed 'now'.

To consider time from our human perspective is bound to be flawed. One can only truly conceptualise the passage of time from outside existence (see Part 4. Dimensions).

To put this into perspective, imagine observing two planets, one in orbit around the other, in an otherwise empty universe where there are no relative celestial bodies, or stars, as backdrop. The inhabitants of both planets argue that the other is orbiting them and that they are stationary. If we from our frame of reference, fixate on one of these planets, and consider it stationary with respect to us, then we see the other planet orbiting it. But, equally, if we fixate on the other, the opposite is true. Furthermore, if neither planet had spin with respect to the other, as they orbited, and always showed the same face to the other, then this mobile, binary system would, in essence, be stationary.

In this above scenario, we impose a belief in our relative attributes on the events before us, when actually we should not be influencing a manifestation that does not include us.

Likewise, if we observe time from outside existence, from a place where time does not actually progress, we are presented with a new reality. Floating far from the universe and peering in at all of time from the past to the future, no such moment - or so called 'Present' - exists, because we cannot fixate on any particular period or event. The vast landscape of time confronting us would be as if a string of pearls, with each moment being a single bead. As one moment pushed up against another, the entire string would move simultaneously. Everywhere would be the present. Consciousness would be throughout, time able only to flow in one direction. So, we are left pondering whether time does exist in its entirety.

The question, of whether time cycles as in a giant revolving phenomenon where the end meets the beginning and everything exists all at once or whether, adversely, it is an infinite, flat, one dimensional journey that began nowhere, only exists in the present and disappears into forever, is at the heart of this paper's research.

Physics leads the way in trying to unravel the mysteries of our existence. But a reliance on mathematical formulas alone for a sense of reality and truth is misguided. Equations do not express reality, they express functions. They do not paint a picture of how life is. Instead, we ask them to fulfill an objective, while interpreting the world around us and then giving them the parts with which to play.

Time stops at the speed of light, some proclaim. No, clocks stop, is the more likely scenario.

Time is not just about mathematical formulas and blackboard artifacts, it is about cognitive awareness and our perception, be it real or illusory, that somehow we make progress. We have 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 refrigerators, televisions, towers and mobile phones, reminding us constantly that we are aware - of what, exactly, no one is quite sure!

Here follows another illustrative analogy:

If we can only see life in two dimensions, like looking at a painting or a photograph, with no understanding of depth, then two trees side by side appear to be just meters apart from one observer's point of view, 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 a fourth dimension that can be explored, they are limited to three. They are only told that 'time' is part of space, that it is flexible, that distances are, too, and simultaneous events 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 known three dimensions to conform with perceived reality, what if we could begin again, and provide them with a framework that answers all their questions without driving them, and everyone else, mad? Is there such a dimension? This paper, Time's Paradigm, suggests there is: a real, physical dimension born of the other three, through which we pass and perceive the flow of time.

Science, like Evolution, is the process by which successes continually accumulate one on top of the other, frequently leading to new discoveries and greater understanding. As such, it is vibrant and progressive. However, occasionally, it can lead to dead ends, or a narrowing of objectives. The present 'Paradigm of Time', dating back over a century, is clogged with misconceptions and misdirection. It is this paper's aim to push questions for answers and hopefully, in so doing and with the help of the community, re-evaluate our perception of time, today.

The core scientific principle of this paper can be reviewed in the following chapter and is called "Universal Contraction". Time is, however, a complex matter, whose individual parts this paper discusses in full detail below.

TABLE OF CONTENTS:

In a Nutshell, crams everything below into just a few pages, but does not cover arguments in any great detail.

Part 1. Destiny, is a light, philosophical debate between the theories of 'Presentism' and 'The Block Model', questioning our ability to decide our own fate, if the future exist.

Part 2. Time, lays the foundation for the argument that time is a cyclical, contained progression, rather than a meandering voyage into infinity, and questions whether the present moment actually exists.

Part 3. Infinity, argues that defined points in time and space prohibit progress in linear models. Thus Zeno's Paradox is resolved. Temporal perception and our awareness of the present moment are the result of uncertainty.

Part 4. Dimensions, takes the bold step of asking us to consider a tangible dimension of time, representing a progression intimately connected with our known three.

Part 5. Velocity, considers the simple physics of bodies contracting in a fourth dimension of time, and how that relates to standard scientific models such as Relativity.

Part 6. Travel, involves us in the more complex aspect of relativistic velocities, the conundrum of Zero Velocity and, ultimately, the prospect of superluminal travel.

In a NUTSHELL:

To suggest that something started from nothing is peculiar, at the very least. However, that is what science believes to be the likely explanation for 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, they don't just happen; there is causality.

The more likely explanation is...

Time cycles, as do all progressive systems, the consequence of which being 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 and, so, only able to flow in one direction. Such systems drive themselves; they are autonomous, contained and independent, lacking infinities and finalities.

Conformal Cyclical Cosmology was introduced by Sir Roger Penrose, and similarly asserts that time must cycle. However, his proposal suggests that there are sequential Big Bang events, whereas this paper argues that matter may be constantly emerging, throughout the Universe. 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.

Fluid progress is only possible in cyclical models, where no points along the way are isolated and so identifiable as individual entities. This resolves Zeno's Paradox of motion, details of which can be found in part 3. Infinity. 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). Cyclical processes thus ensure continuity and immeasurable flow; whereas, linear models impede progress.

Linear models have defined ends because, in their view, nothing exists beyond them, and thus any point between them can be precisely extrapolated - leading to the infinite impossibility of progression. Unless.., it was conceived that the two ends were not relative to anything in between..

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 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.

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. It is round, as is time and, also, space. A linear model with invariant ends is merely a pseudo-cyclical phenomenon.

The cycle of time, space and, for that matter, acceleration, is introduced as follows: All bodies in the Universe emerge into existence at light speed, from where they begin a constant deceleration toward zero velocity and dimensional non-existence. Not all matter emerges at once, no big eruption, matter is continuously evolving. Inertial energy is at odds with the pressure that space exerts on any body, and gravity wins, so decline is inevitable, though energy is not lost (explained later). As velocity is a cyclical process, both these ends, zero and the speed of light, are intrinsically the same - just as the end of one day, midnight, can be described as being the beginning of another.

In fact, there is no such thing as zero velocity or the speed of light as individual phenomena. It will be shown that, stationary objects in the Universe must be travelling at light speed, and that a big bang could not have been the beginning of the Universe.

We are in cyclical decline as described above, we can only attempt to arrest deceleration, not reverse it; cyclical processes only flow in one direction (see part 2. Time). We can accelerate off in this direction or that, and influence deceleration, perhaps even reduce it to near frozen by reaching what we believe to be relativistic speeds, however that is just us approaching zero velocity from the point of view of the Universe. Reversing time and motion, beyond arrested deceleration, back up to true light speed - where we all 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 had reached the speed of light. Vis a vis the CERN declarations on colliding particles, please see part 6. Travel.

We and all physical objects are as if marbles rolling down a hill, that, if forced to stop anywhere, will wrongly assume we have been accelerated back up to the top of the hill again. No body of matter can ever accelerate to universal light speed - it is in our past. (Although, later, it is postulated that, if we consider travel a journey in time rather than space, superluminal velocities may be achieved! See below.)

We 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 observe light as constant because we are

all stationary, from the point of view of the Universe. Time is of no consequence to either, it concerns only matter. So, locally, we can proclaim understanding of an invariant light speed, but in the wider Universe this notion is redundant.

Look at it like this: Suppose we cut the circumference of a clock at midnight and stretched it out on the table like a ruler to form a linear time piece. If we said that neither end was relative we could then progress from one moment to the next throughout the day. But as we approached midnight we would never be able to reach it no matter how hard we tried, because it would continually recede.

Now, take our linear model for acceleration and wrap it around in a circle, like a clock. Each so called 'point' around it will be a velocity, which we could crudely imagine as perpendicular to the deceleration of the circumference we described above. In the same way we can look at cyclical time and say that, any point around it 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 synonym for the energy associated with atomic/molecular functionality, we then have equilibrium.

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 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 velocity, in deed energy itself, must all be cyclical phenomena, as are all things that proceed. Bodies in the Universe could not move were it not so!

Matter in Contraction:

Zero Kelvin; the speed of light; the edge of the Universe; three dimensions; the big bang, and the beginning of time; these are all limits set for our convenience and understanding, but they cannot exist. If physics requires that they be integrated within our equations we will never be able to reach them; and, as a result of trying, these formulas will break down.

However, if we consider these limits obsolete by virtue of cyclical flow, we will surpass them and the shackles we had imposed upon our progress will no longer constrain us.

Time did not begin with a Big Bang, nor might there have been only one such event, matter may be coming into existence continuously. Matter progresses through time from a uni-dimensional, non-functional and massive state at the speed of light toward a dimensionless state of immensely rapid functionality at zero velocity, in one direction only. But neither end truly exists individually. Upon reaching zero, matter becomes redundant and its energy re-emerges at light speed, just as smoothly as night turns to day.

Thus, our journey continues through time and space without cessation, in constant deceleration. No energy lost, just a change in purpose.

Energy is transferable. 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.

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 paths being altered, elongated or twisted; they will be completely restricted at light speed, whereas at slower speeds particles will spin and interact more freely. When a body's forward motion ceases altogether, particle functionality becomes supreme, and atomic perfection is reached.

Temporal Perception and Space Travel:

The past and the future exist together in their entirety, therefore there really is no such thing as motion. We do not physically move; existence is a solid, tenseless block. We only progress through time. 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). This is how we perceive the difference between one moment and the next; not by a change in position, but by a change in size. 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 mass we appear to take on as Special Relativity puts it. Being conscious of time and our whereabouts is due to sensory receptors. So, as we shrink, we are aware only of bodies whose material representation is proportional to ours, at any given moment. Figuratively: we cannot see the past or the future.

This contraction is a cycle, from immeasurably big to immeasurably small; in other words, a collapse from the speed of light (c) to zero velocity or stationary (z). It is manifested as the simultaneous and equal reduction of each of our three dimensional planes, through a fourth - adequately illustrated by the Hypercube.

Can we calculate this contraction? We may. The text book 'light clock' illustration used to verify time dilation in rockets at relativistic speeds can be used. If we make a progressive reduction to all material objects (mirrors) and the space between them by a factor of the Divine Proportion, (Fibonacci's Golden Ratio), dividing them by 1.61803399..., the photon is observed to travel the same distance by both parties.

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. (See part 5. Velocity).

An astronaut, on an eight year, round-trip voyage at relativistic speed, would likely return to Earth in just a matter of months. The standard view for the above scenario is, of course, that the astronaut returns to Earth in eight years having hardly aged but a few months. Both models are equally bizarre; one relies on the relevance of (t), the other, (c). Both are plausible, yet only one has a satisfactory outcome for space exploration: the first.

In the second model, the astronaut on a pre-programmed flight path will, in deed, return to where the Earth is after eight years, but will not be able to see it or interact with it, because it has shrunk over the years considerably more than she, and will, proportionally, be outside her range of perception. While, in the first model, the astronaut will, having had her collapse slowed due to great speed, and with this knowledge, take control of her return trajectory to intersect Earth at the proportional moment for her size; which is just a few months after departing.

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? That suggests a 'constant universal clock' forcing everyone to be aware of the same 'now' moment and thus upholding 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.

If velocity is cyclical we can dispense with such notions. 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 first model, 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, because light and associated emr waves would not have been able to keep up with her.

However, when the influence of UC is applied, with a reduction factor precisely that of The Golden Ratio, we see that the astronaut does not need to travel all the way to our supposed rendezvous eight years away, as we on Earth demand, only photons of light must abide by such rules. She is not contracting as we are. She can travel exactly the same distance as we imagine she would, in her time, and be back in no time.

If there was a universal clock, then from the perspective of other frames of reference, the astronaut would not travel faster than light. However, the reality is different.

We can only perceive things that travel well under the speed of light, so, in essence, the subjective interpretation could be that (c) is a limit. However, that does not stop our astronaut from travelling, relative to her passage through time, at much greater speeds.

We can measure electrons, protons and muons travelling at near the speed of light, but we are only measuring their energy levels at impact to determine velocity, not their true speed. If our space traveller was smashed into a wall, she would also read energy levels at near the speed of light, even though she was actually travelling at superluminal velocity! It's simply a matter of Time.

* * *

We start here with an overview of the core scientific proposal within called, **Universal Contraction**. Each chapter then argues its own niche aspect of the whole, in sequence, to reach a complete picture.

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 don't.

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

Universal Contraction

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 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 Universe remains constant, and time is shown to function as a cycle.
9. The universal contraction of matter is a cycle which flow in one direction only.

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. 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, 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.

[Click for part 1. Destiny](#)

The fate of **DESTINY**:

“Everything is a matter of time.”

Choices in life suggest that destiny does not exist; that we have absolute Free Will to plan our own fate. In other words: whatever we choose to do now can dictate what will happen to us in the future. This implies, 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 has kept 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. Our Destiny: a landscape already created.

If the future exists then the present is merely the future's past; suggesting 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 that the proposal simply highlights human arrogance in assuming we are important in this Universe and can actually make a difference.

It is clear that the majority of us are happy in the knowledge that we can make decisions and plans and choose how our future might evolve from day to day. It gives us a feeling of control. 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 governed by human frailties, greed and lust. So, who might be in control, if not us? An omnipotent being, a grand unified theory, or an as yet unknown supernatural force?

Destiny, and its alter-ego, Fate, are words frequently used to express the future. They are romantic terms, often incorrectly applied for effect. We hear people speak of changing our destinies or that fate was averted, neither of which are acceptable.

Widely defined as a predetermined and unalterable outcome, any notion that we have the possibility to affect or change Destiny is an oxymoron. Fate, on the other hand, is a more flexible character, whose definition is somewhat blurred by the connotation of inevitable Death and, as some have expressed in literary history, is not necessarily a future outcome cast in stone, until you die. These days, the two have, however, become accepted as interchangeable, which is unfortunate because there is now no longer a word to describe the possibility that the future can be made.

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 date, choosing which frock to wear, a concert to go to – sadly, no such fantasy awaits us.

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 star. His family are suddenly converts, 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 likely hopefuls that were equally talented - that could have succeeded, but didn't. We have to argue that they were actually destined to fail. 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? Remember: 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.

Free Will is equally ambiguous. Our future, it seems, is just as likely to be influenced by a deliberate act on our part, as it is by mere chance, fluke 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.

Science has long established that (proof) disproof of 'cause and effect' can only be accepted by repeating the experiment; it is the bases of scientific evaluation. Unfortunately, circumstances in life do not occur in a controlled environment. The proof of Free Will and choices, therefore, making a difference to a future time line can never be ascertained. Nothing in time can ever be repeated, precisely. The myriad of influencing factors around the World that make up a single decision, can never happen again. Likewise, neither can a destiny carved in stone, where the future already exists, be proved - it will always remain disputable.

There is no mathematical equation or scientific evidence at present to determine the existence or otherwise of Destiny. The only way to understanding our future and how it unfolds is by reason, debate and logic - the rule upon which this chapter is based.

It is true that, not trying to achieve something means a desired goal in your future you might have promoted, 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. For more on this topic see the on-line supplement, Making Choices.

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, 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.

The future happens to everybody, equally. 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.

Having briefly discussed the romanticism of destiny, let's turn our attention to perception and our awareness of time. The question is: can we as individuals, by our present actions, make a difference to our future?

From an academic stand-point:

There are two camps. Weighing in on the cause of Choice are the A-Theorists, and for Destiny 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. The B-Theorists consider the 'Block Model' to be how time

is; that all of time from the past through to the future exist 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 (later chapters consider Chaos Theory and its importance to time). What of fortune 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 progression through time?

From the outset we must accept that time is just a word. Time has been segmented up in a superficial manner to distinguish between what came before and what comes after 'now'. It has been divided up still further by chronological equipment, measuring devices such as clocks, to help in our everyday analysis of events. It is progress through time, however, that this paper wishes to explore; the question is not so much: what is time, but how does time flow. How it is possible to move from one moment to the next; our perception of such a process, and the magic of believing in a reality that at times makes so little sense.

Presentism in Brief:

If neither the past nor the future exist, only the present, then how wide is the present? If it has no thickness surely it cannot exist. When does 11.59 become midnight? We can easily state here that the present is just an abstract word we place on our conscious consideration of now, when in reality it obviously does not exist. Easy start. But it still defies logic that we could be aware of a moment in our progress through time that does not, in fact, exist.

Can we suggest that a massive stellar object or a tiny marble 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? That is a question for A-Theorists.

If they were to draw a line from A to B on a piece of paper, the ink being material existence and the nib of the pen depicting the present moment, they would be suggesting that the ink was invisible, that point B was not ahead of the nib for the purposes of direction, and yet somehow the pen makes progress. If A and B do not exist, the pen is relatively speaking, stationary. So, Presentism seems to defy some of today's known scientific principles.

On the other hand, the beauty of the proposal made by A-Theorists is its simplicity, it is not without merit. An object such as our planet that existed only in the present would, as we all know, appear to us as the shape of a sphere. But if we say that all of time exists, and not just now, then our planet is actually a very long sausage. Yet, we see a sphere, so we are being asked to believe that there is a boundary around our present moment beyond

which we cannot see any more of the sausage. That scenario is satisfactory to B-Theorists, but for the rest of us it is awkward, to say the least.

How we perceive time, and how we appear to move consciously through this moment we call 'now', is covered in the later chapter, part 3. Infinity, and is called the Kalahari Effect.

Destiny! 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 the tracks.

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 in nature. We are conditioned 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 the Universe. Decisions? Perhaps better described as conditioned responses. See, the online 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) - there is only one: To diet. Habitually, it is the kind of thing you strive for, you enjoy a challenge and you like yourself – so no surprise, there. This so called choice you made was already planned, it was in the mould, it was inevitable that you would.

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:

The present is our awareness, our sense of change. If living beings such as ourselves were absent from this universe, time would still exist but the present would not; which opens the door to the prospect that the present can be at all moments anywhere in time. We do not, it seems, hold domain of the present moment loosely termed 'now'.

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 around without thinking, yet no conscious process was involved.

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.

In the next chapter, part 2. Time, this flow is discussed in more depth.

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 where 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. 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 to keep us focused. Likewise, 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.

Making the 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; 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. If it does exist, but there is allowance for alteration, then that means there is more than one. If you had not turned left, you might have reached The Mall sooner, thus changing the entire outcome of your future, and slowly - but significantly - the World around you as the years progress. That's some mess you create for the future of everyone, every time you decide to do something. It makes more sense to imagine that the future does not exist until we get there, so no re-stitching of time is necessary, it is only created once.

An alternative theory for those who support change is that the future does indeed exist, and that every possible direction we might take is already out there, but we can choose which path we wish to take: An infinite number of parallel universes, all written down and waiting. A perfect solution, some might say; the best of both worlds.

While it satisfies the sense of control normally associated with complex structures and at the same time allows us autonomy, there is a statistical problem with this theory. If every possible scenario is out there for us to experience, then not only the sensible variations but also the insane ones will exist. A chicken could lay a million eggs in one night, for example. However, such whacky things don't really occur. Or do they?

Some very strange things do happen, but far fewer than would seem reasonable if absolutely anything were acceptable. Imagine if the laws of physics could be seriously tampered with as we sailed along on our merry way through time. One could suggest 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 choose... So, not much of a real choice, then?

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

Quantum Physicists created this multi-verse scenario. The MWI or 'Many Worlds Interpretation', in making sense of some of their most bizarre conundrums, says 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 we want to observe it.

Schrödinger puts a cat in a box with a sealed jar of poison 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. Making us all the more entangled, especially in the macro world of our perceived reality! And so there is the question of whether MWI holds up in the macro world? See, The Cat Paradox, on line for arguments suggesting it indeed might.

Later chapters reveal that individuality arrests progress; many states or identities allow for progress. Quantum Variability gives flow in time and space reason, though not course. A superposition of states, if stretched figuratively across time would imply that we were conscious throughout our time line and that the present moment did not, in fact, exist.

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? You could say: OK, let's just get in the car and head out, and see where we get to. Yes, but where ever it was we ended up was already there, you just didn't have a name for it. Time, like spatial existence, could follow a similar principle.

Do we invent such 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 creates the future, not the present.

There has to be something, into which we are rushing. Nothing does not exist. There can be no movement, no direction, without something to relate our travel to and 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 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 article 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 also. But this is only the beginning. In the next chapter, we tackle where this progress is coming from and where it is going to, and then we put it all together.

[Click for part 2. Time](#)

TIME and TIME again:

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

What is time? The last chapter delved into the age old debate between destiny and free will, and whether choices in life can really alter our future. Philosophy has long argued this subject; Quantum Theory also offers the Many Worlds Interpretation; then those who say that time is merely another name for motion, that time only seems to exist because we move.

This paper, Time's Paradigm, puts it another way: 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 or reason for it being, and no place for it to be. Time implies existence.

Another view of temporal progression is entropy, or Time's Arrow. Things break but they do not un-break. There is only one direction in time 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.

On the other hand, 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 towards an end; not a satisfactory model as far as this paper is concerned. It can also be argued that the Universe is not following the rule of entropy; clouds of gasses are induced by gravitational forces to 'clump up' and eventually form celestial objects such as stars, being a process quite the opposite of Time's Arrow.

While Entropy proceeds with time, it is not time. Without entropy, existence might still progress.

Then there is space/time, the bases of Relativity, a theory that most have adopted due to its enormous success at solving so many powerful, physical quandaries over the last century. It insinuates time's irrelevance to some degree. However, it does demand that time vary dependent on velocity - again a connection between time and motion. Beyond

this handful of ideas, not much else is out there. Quite surprising; that time and its obvious significance to us has gone largely un-debated in the World, over the last hundred years.

Recently, however, there has been quite a stir in Science circles, and time has become the topic of much debate. If time does exist, or has some physical attributes - as this paper wishes to convey - we should be asking such questions as: Where is time going? Is the passage of time an infinite journey that goes on forever? Was there a beginning, is there an end?

Sir Roger Penrose, and other prominent scientific figures have, in not so distant decades, been at this very subject. Ideas range from: A Conformal Cosmological Cycle, 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 in time, the other backwards, thus providing equilibrium. Indeed, Stephen Hawking questions 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, no doubt, an end. Ending is relative to something that continues. Stopping means the prospect of starting. All these issues need satisfying, if we are to believe in the flow of time. If time can stop here, then what is to say it can't 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. So, we must ask: Was there a beginning of time, is there an end?

A Cosmological Cycle of Time:

What are the possibilities? If we accept that time is continuous, either it wanders off into forever and infinity, or it appears to go on forever by revolution, or cyclical progression. Both scenarios satisfy the notion of forever, but a cycle offers contained stability. It is odd that a revolving (or returning) time line is not a realistic consideration for some. We do, after all, spend our lives returning to the same spot, or doing the same thing at the same time, day after day.

As with all things that journey, the beginning and the end are almost invariably one and the same thing. Likewise, time has the same potential, of being a circuit, a loop. Time is about motion, only things that move require time, to do so. Motion is composed of energy. Energy doesn't magically come and go; it is perpetual. It may change form, entropically evolve, but it does not start and stop.

That time doesn't stretch off into forever does away with that incalculable and murky world of infinities associated with linear models. It suggests that there is no end as such, because, by cycling it does away with both a beginning and an end. No identifiable breaks, and yet, it still goes on forever from our perspective.

Simple..., containable..., fathomable...

A cosmological cycle of time might conjure in the minds of some, the notion of us living our lives over and over again, the World repeating itself every few billion years or so. Unlikely. Such thoughts are born of our duty to imagine we are the centre of the Universe, that we are somehow important and make a difference. The Universe - this material existence we experience - is enormous and we are completely irrelevant to its structure. The more likely case is that as existence in the Universe re-generates, growth and nature will be somewhat similar, showing repetitive construction; but never will it repeat itself precisely nor, indeed, produce the likes of you or I ever again. The point being made here is not about consistency but continuity.

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 might be just a few years long. The end could be minutes away, while the beginning might be yesterday. Bill Murray's character in Groundhog Day would welcome such thoughts, the possibility being: we don't know how big a loop we live in but it doesn't really matter.

Simply speaking: 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. These two facts become abundantly clear in the next chapter.

Clocks are repetitive, they cycle through the days. One day does not end 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. Solar systems, giant galaxies and so on, all cycles, as are the myriad of infinitesimally small atomic structures, of which we are made. Why stop there?

Time going round and round, like a big wheel, means there is no beginning or end, and no infinite dimension - it is finite within itself - though appears infinite. This offers purpose and relevance, but though it solves a few puzzling questions, it creates some of its own. If it has a defined course, does it need to exist everywhere along its length at once, i.e. does the future already exist?

Conscious Consideration:

A circuit is a self contained unit; that is its simplicity. It can exist without interference. And the whole functionality of a circuit is that it is connected, all the way around; it exists in its entirety. However, it is not time that is whizzing around this circuit, it is us. We are everywhere, giving us the opportunity of being aware from one moment to the next.

So, you get up and go make yourself a cup of coffee. You come back and sit down with it. Now you must consider that you are still in the kitchen, though not your current consciousness, just as you are washing your mug in the sink sometime in the future even before you have drunk the coffee you are staring at. Bizarre!

Is it likely we are conscious at all times throughout the circuit? Or, are we just conscious now, and our material bodies in the past and the future are simply empty vessels? First, we must accept that conscious creatures like ourselves are a drop in the ocean. The vast majority of matter in the Universe is not conscious at all. So, we really are just an odd collection of molecules and living cells that happen to have stumbled into a puzzle. With that in mind, those empty shells we imagined of ourselves at another time, if existing, are existing along side all the rocks and the trees and the grass in our yard, and they fit right in. If there was someone conscious at that time, like an alien visitor, would they not see the planet beneath their feet, mountains in the distance, motion in the wind through the trees, waves on the shore, fish jumping and birds soaring - so, why not people walking about?

The alternative case extolled by choice and the Free Will Camp is both beautiful and wondrous. It implies that there is nothing out there beyond now. The present, like a speeding bullet, encountering nothing in its path; neither relative nor relevant to anything it may approach; totally unpredictable, and that is pleasing. But how does something that encounters nothing, exist? It has been scientifically established that being in a place where there is nothing renders oneself irrelevant, that is, in space; so we could argue the same for, 'in time'. One thing cannot exist on its own, it has to be connected to and therefore be relative to something else. The present cannot be by itself.

If we demand that things exist all along the time line, both now and in the past and in the future, then why can't we see the 'you' that was doing something just a minute ago in the kitchen? After all, the kitchen is still there!

Safely seated on this planet we can be forgiven for forgetting that we are moving vehemently through space. Our planet is hurtling at many hundreds of miles per second through the universe. So, the thing you did in the kitchen a few moments ago actually happened a million miles away from where you are now. The light that bounced off you in the kitchen at that time, it has now gone out into the universe, and can only be seen by things a very long way away, because it is travelling faster than we are. It has gone before us.

However, that does not explain why we are not aware in two 'nows', simultaneously. If we exist and are conscious throughout our timeline, what makes this present moment the alpha, driving seat? What forces us to be aware now, rather than 5 minutes ago? Could we not be thinking the same thing, 5 minutes ago? For a start, our brain capacity can hardly cope with one present moment, so adding a bunch more would over-load our resources. But equally, if we were in communication with former consciousness, we would not experience the passage of time.

Due to such paradoxical conundrums, many consider time an illusion. It is a mistake, however, to interpret the flow of time as being a continuous passage. In reality, it all happens at once; we are a connected strand of consciousness; what is apparently happening now is because we were doing something before and will be doing something later. If you push one pearl on the end of a string of pearls, they all move.

Physical movement is the illusion. We do not move about in space, we perceive progress through time and, with each moment, we find ourselves in a slightly different location - we have apparently moved.

This presents an enormous challenge for perception. We have always thought we move our physical selves from A to B as time passes, and now we are being asked to consider that, actually, our selves are already there, at point B, that no physical movement is required, we must only move in time to get there. What that does is create an uncomfortable lack of control because, while we think we can adjust our physical flow through space, we are unaware of how to adjust time's flow to our advantage and so create the future.

We are conscious anywhere and everywhere on our time line. How we are capable of perceiving time, and how we are able to consciously move with this moment we call 'now', is as a result of The Kalahari Effect, and is covered in more detail in the following chapter.

So, when is now?

We say we exist 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 if we were deaf and blind it would take time 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 CNN 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 the answer.

Information we receive classifies the present moment in our minds, regardless of its origin. Sensory deprivation 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 a living entity with no conscious consideration, not unlike the vast majority of creatures inhabiting this planet. Consciousness creates the present moment; it is a useful tool for life-forms that utilise movement. Many sensory deprivation experiments have found that our sense of now becomes dramatically distorted, even with just one or two inputs denied.

Sleep is a form of sensory deprivation. 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. The sub-conscious is without time. (See the on line supplement, Conditioning versus Making Choices, for a more in-depth look into this topic.)

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. But oddly, not our own history.

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 a planet in orbit! 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. Or, we could just stick it on a flash card and carry it with us into the next century.

Consciousness creates now for an individual, but not necessarily for the collective. It explains how we experience a moment, by continuous input, so being conscious throughout our entire time line. But it does not explain how we all feel as if we are in the present moment together. Why do we not all experience 'now' out of sync'? Or, perhaps we do...

The journalist continued to experience her now, long after she transmitted and presumably at the same time as our now, even though we are not by her side to verify as much. Is there a universal clock that keeps us all in line? Like a laser beam, we might imagine it, running through everyone's time line, making us all aware simultaneously, even though we receive sensations from different origins. There is no reason to assume otherwise. Some process does seem to act so, as we do not appear to be growing older at different speeds. This Universal Clock would progress at the same rate for everyone, and yet physics asserts that our own clocks and watches do not.

Variable Clocks:

In the 1960s 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, depending on our velocity.

If a space traveller sets off at a great speed from this planet, 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 because people travel by jet airlines all the time; indeed, some atomic clock experiments were conducted on-board passenger planes.

The common consensus is this: while our clocks at home continue as normal and a few years pass, in that time, the speedy space traveller's clock has only registered a few months going by (an exaggeration in order to appreciate the difference). When she returns to Earth we will all be much older than she. From her younger perspective, she has somehow returned in our future. But, would she have?

It is expressed by the majority of academics, that our metabolism slows down as we accelerate. Just as the mechanisms in our clocks will function slower. Regardless, both we and those speedy space travellers would all be aware in the same moment (had we the means to communicate), concluding that there is a present moment by which we all abide.

An analogy of clock variances might be this: a vehicle's tachometer doesn't quite measure distance as accurately as one might hope if the tyres are worn - but the distance is still the distance. Clocks give us the impression they are reading the speed at which the present moment is moving toward the future, but this is considered a fallacy. If the battery in your watch is nearly dead, the arms move slower; we say your watch is losing time - but now, we maintain, is still now.

So, back to the speedy space traveller: Would she have returned in our future? Her now and our now seem locked together in progress, even though our measuring devices are not. The question never asked is: Why should she be bound to the 'now' of those with faster ticking clocks? If someone walks slower, do they live longer?

If 'now' is not a unilateral occurrence for everyone, it could be argued that her 'now' is just as relevant. But, as far as we are concerned, she must arrive home having completed her mission in the time we say, and the distance we calculate, in our present moment. What makes us right? She might just as easily return to Earth when her present moment dictates, and we have to abide by it. Projecting our own views on where 'now' is and how time flows for others is subjective, relative and quite un-informative. It is, simply, bending reality to conform with our self-influenced observations and self-induced calculations.

To truly consider time and any moment or event therein, we must disengage from it. Observing the universe from afar and being devoid of time, we see that there is no present moment we have imposed. We see all of time, not just the bit we choose. Think of it like this: If we watch a movie on two screens, one being at the proper speed and the other in slow motion, for some reason, when the movie on the first screen ends, the slow motion version has also proceeded through the same length of time. However, if you roll two marbles across a table, one travelling faster than the other, they do not keep pace with one another; the slower one falls behind.

Why does the slow motion movie keep up with the standard speed of the other? Because we determine the present moment. If we do not, then the slow motion movie will disappear soon after starting. It is still running, it still exists, but it is lagging behind.

When we exchange the slow motion movie for the speedy space traveller, she no longer keeps up with the 'now' of those on planet Earth. However, because we are aware all throughout our timelines, she is in sync' with Earth in her own time, and we in earlier states of awareness will concur.

The slow marble can be seen to lag behind because matter and distance exist, in our minds, before and after the point at which the marble is situated. If time follows the same principle, and the past and the future exist either side of the present, then, when our metabolism slows due to increased velocity, we will also lag behind the present moment we had originally been experiencing with others.

It all boils down to one, plain fact: The present does not exist. In Cyclical Time it cannot. We think it does because we are all stuck together on this planet, travelling at the same speed through the cosmos. We presume that it therefore must elsewhere, and at the same time.

A similar scenario to the speedy traveller was beautifully illustrated in the H. G. Wells fictional classic, *The Time Machine*. The machine was a pod situated in the time traveller's living room. 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, 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.

The way this clock variance is often looked at is as if we have two rulers laid out on a table, side by side. The slower clock of the astronaut being twice as long as ours on Earth, for example. When she passes through 30 minutes, we have reached one hour. That is not a problem, from our perspective, on Earth. But for her, after a journey of many months, there is a big problem: she will say she must have travelled at twice the speed we say she was going, in that time. Meanwhile, we are all shocked to see that she is so much younger than us.

She is a scientist well aware of relativistic physics and she knows that, while travelling, Lorentz Factors would have bent time and space so she would not have noticed any additional speed - while no such thing occurs to us. However, back on Earth she can look in the mirror and then examine her charts and say, without a doubt, she has travelled to a distant star and returned in less than a year - not ten years as prescribed by us.

A Universal Clock governing all has to assert that there is only one conscious, present moment for everyone, and that neither the past nor the future exist, simultaneously. What if they do, and we are all conscious in every moment along our time lines? When your clock slows down you actually see others a little bit behind their faster progressing 'now' and yet they are still conscious, as if you are lagging behind in their past; not the illusion, afore mentioned, that you would progress at the same rate they were, into their future.

Doing away with a Universal Clock governing 'now' implies that fundamentally we move in time, not space; so when we rush off into the cosmos at speed, we are shifting on our time line and no peculiar illusions surface regarding time travellers or variable speeds, as common consensus expresses above; there is only the apparent conclusion that superluminal velocities might be possible. Of course, this latter suggestion is at odds with Special Relativity, which is addressed in later chapters.

Different inertial frames of reference provide observers with differing views on when events occur. According to Special Relativity, no two events happen simultaneously. It is clear that relativistic physics makes things appear different to different observers: lengths, clocks, gravity, speeds, events and so on. However, awareness of 'now' has its roots somewhere else. As explained earlier, the present moment is a creation of conscious beings, it does not exist outside of awareness. On a planet with no lifeforms capable of reason, there would be no 'now'. There would certainly be motion: geological; gravitational; atmospheric and so on - but no experience of such things.

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 (and cats), not just physics. In this respect, physics can tell us what our clocks are doing, what our measuring devices are doing, what a robot is doing, but not what our human minds might be experiencing.

Physics says the impossibility of simultaneity is absolute, but then by contrast demands that our consideration of 'now' be the same for everyone. Physics has been having difficulties lately with concepts approaching the edge of knowledge and reason. Physics places limits on existence (such as light speed, zero Kelvin, the Universe and the Big Bang), and then says that if we approach those limits things start to get a bit strange. Perhaps known physical laws are having difficulty with limits, rather than reality.

In cyclical time and space there are no limits, there are no ends. And, for that reason there is no 'now'! Later chapters reveal more on this subject.

Returning to Cycles:

Of death we can say this: When we eventually lose our state of mental awareness, our molecules continue to exist. They join the myriad cycles of atomic arrangement that will eventually make up other entities, like gasses, liquids, rocks, plants and, perhaps, at some time in the future, parts of another creature that may become aware of time.

Cycles are everywhere. They are the affirmation of progress.

For example: There are many loops in the passage of time, from the very smallest to the biggest and most complex of them all: this universe. Every morning we set off for work, or drive the kids to school, or walk down to the mall. What do you know? Every day we return home, we recharge our batteries and the next day we're off again. Some times we

pick our noses - usually the same way - we tie our shoe laces or check our mail, and often at almost the same time. One day is pretty much the same as the next, even if it may seem quite different.

What we experience is a progression through time that is in itself, one giant cycle; no end or beginning, nothing to screw it up. We are creatures of habit, we do not decide our fate, we are already connected to our future, so we can't screw it up, either. We sense the passing of 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 can meander within it dependent on our velocities.

Part 3. Infinity, discusses the peculiar conditions for progress and temporal perception, and part 4. Dimensions, defines time as being a structure intimately related to our three spatial dimension.

[Click for part 3. Infinity](#)

Awful INFINITY:

“Art is only comprehensible from another dimension.”

Infinity, they say: The unimaginably big and the unimaginably small; things too enormous to comprehend.

Quantum physics with its Uncertainty Principle and Relativity with its inertial Frames of Reference, both point towards a universe that does not allow motion if we know exactly where we are. This hugely significant fact is the key stone to resolving Zeno's Paradox of motion, and will be explored in this chapter. It brings the disciplines of psychology and physics together, to explain how we perceive the passage of time.

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 or end in sight, so we can only use infinity to affirm that we are somewhere in the middle, of everything. Somewhat similarly, we once believed that we and the Earth were the centre of the Universe.

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. Thus, we still remain in the middle of things and we are comfortable.

But where exactly in the grand scheme of things are we..? Infinity on both ends comforts us, it means we are in the middle. But is this not just an illusion? The Kalahari Effect is all around us. We stand in the middle of our perceived whereabouts; even if we walk a few miles this way or that, we are still in the middle because reality's horizon seems to stretch out before us in all directions into infinity. Nothing has changed.

In this light, 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?"

It is this ambiguity of 'not knowing' 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 are or anything about our relative nature, are we capable of movement. We take a step forwards and in reality nothing has changed, but we feel it has.

Being unable to determine the extent or finality of existence in any direction gives our consciousness the ability to experience movement within it. 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, 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.

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 point within. It appears the Universe does not provide fixed points of any sort, otherwise we would all grind to a halt.

The Edge of the Universe:

The standard model for any active medium or body 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 giving the illusion of infinite progression.

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. That fine, middle line in the wall is actually the 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 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 atoms 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.

This paper subscribes to the notion that time is an alternate dimension of our physical state also constrained by the same principle: there are no finite points or moments, otherwise we would be denied motion. If infinity stretches out in all dimensions we are free, we are not shackled, we can progress. This is an illusion, and it is devilishly so!

The subtleties of perception through time are numerous, here is a similar illusory example: 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.

The illusion of size was mentioned before: 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? Why not? Infinity says there must be. Is the biggest big the edge of our Universe? How come there is nothing beyond? Or, perhaps there is no edge of the Universe! Fractal images show repeated structures scaling up and down, with no mathematical evidence to suggest that there is an end to big or small.

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.

If we could do away with individual moments and points, accept that they are not allowed to exist, the present being one of them - where exactly would we be?

We cannot pin-point where we are, as quantum physicists have 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 is not certain.

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

Fluid progress is only possible in cyclical models, 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). Cyclical processes thus ensure continuity and immeasurable flow; whereas, linear models impede progress.

Linear models have defined ends because, in their view, nothing exists beyond them, and thus any point between them can be precisely extrapolated - leading to the infinite impossibility of progression. Unless.., it was conceived that the two ends were not relative to anything in between..

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 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.

The same thing would happen if we cut the circumference of a clock at midnight, and stretched it out like a ruler on a table. We would then, in order to progress from one minute to the next, have to conclude that both ends of the day were not relative. Like the wall - above mentioned - we would struggle to reach our goal and never be able to pass into tomorrow. However, for creatures such as mayflies that only live a few hours... who cares?

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. It is round, as is time and, also, space. A linear model with invariant ends is merely a pseudo-cyclical phenomenon.

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 motion is measured on a linear scale, and light speed is regarded as being at the end. If time and distance are cyclical, then velocity must also be. In which case, there would be no ends of relative significance on a cyclical speedometer. Added to which, no identifiable points within the cycle to impede progress.

Some oddities are still to be understood about light: for one, that light does not accelerate. It departs its launch platform 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 before reaching the first point (which oddly is of no great concern to physics). If we try to simultaneously fire a pulse of light and start a clock ticking at the same time we will never succeed to a reasonable degree of accuracy.

What if we said this: 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 must be static.

From whose inertial reference frame can we assert this claim? The observer on another platform watching this photon depart, or the reference frame of the person turning on the flash-light? They both see the photon depart at (c) but it did not accelerate away from its point of departure, according to both observations. So, its point of departure cannot be relative, just as the speed of the photon is not relative.

Such a concept is surely unacceptable in terms of reason and logic! We'll see...

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 irrational.

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, and infinity demands reconciliation, we can thus propose that these two points are one and the same thing - and a cycle is created. Now time does not stop at the speed of light, it continues, it is simply that 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 impacted 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. Light is merely a change of state.

So now, and from previous chapters we can assess that: our present awareness is as a result of sensory receptors; and our conscious consideration of progress is due to the

illusion of an infinite horizon, there being no Zeno's Paradox due to there being no finite points in time or space.

Solving Zeno's Paradox:

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;” which would make sense if distance were a divisible entity. If a line from A to B were somehow segmented, then this argument could stand and we would never get anywhere. Segments imply individuality, which equally suggests we could take some bits away or have nothing at all in places, as none are connected.

An intriguing analogy of unsegmented flow is the manufacture of flexible, ribbed hose, which in most instances appear to have individual, ringed segments along their length. However, on closer examination it can be seen that the rib is one entire and continuous spiral. Were it not so, then uninterrupted extrusion of the hose would be a great deal more difficult.

Like distance, time is also indivisible. There are no moments, nor are there any points along the way. That's what makes movement in time and space a reality. Infinity has a purpose: it offers an illusion of flow; but it must remain as such, elusive. Achilles cannot reach the tortoise because he cannot even depart from his start point, as all identified points have an infinity paradox leading towards and away from them.

Back to the door. And infinity in this case is between you and it. Behold, a paradox! Under the constraints of perception, you consider yourself at a point in time and space... This is a fallacy, as explained by the worm. 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. The new theory of time presented here in these pages tells a different story: what if you could call those halves something else?

Consider a table on the other side of the door. Then consider a point half way to your door, and we immediately discover that this point actually has more than one possible identity. So, 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.

Quantum physics repeatedly offers solutions to the bizarre nature of time and progress, while Relativity is constrained and limiting. Achilles catches up with and passes the tortoise because there is existence beyond the tortoise.

The door does not exist, not in itself; it is not a definable point, how could it be? It has width, just as had that wall. It is an area, not a point. 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 we could not reach the door, because suddenly your halfway point would be definable. 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 process as described in pt 2. Time, locks the door. No longer are we limited by ends, as in a linear model of progression, where every point between them can be precisely extrapolated and so, in order to facilitate motion, the ends must be dubbed non-relative. 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 enigma of individuality. Infinity does not give us the means to move, it denies it. Continuity and the lack of individual points allows motion. Infinity is 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 was possible. This paper arrives at the same conclusion by the use of deduction rather than mathematics.

Setting Limits on Existence:

Here's an example that has been puzzling scientists for a while: Why can't we reach 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, considering these new circumstances it is hardly surprising; there must be something beyond absolute zero in order to reach it. Unfortunately, they made a wall, they said there was nothing colder, and in so doing deprived themselves of their goal.

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 make it. No amount of energy would suffice to allow us to reach it, just as Special Relativity says of bodies approaching the speed of light. Existence would begin to make no sense, as we tried to force our way towards it. Scientific laws and principles would break down, logic would cease, and physics as we know it would fail in all aspects. Somewhat like approaching a Black Hole, we could say, but a completely opposite experience. So, could there be such a thing that begins or ends, absolutely? Or could it mean that our known laws of physics are insufficient at this stage to see beyond these walls we have created for ourselves?

The theory that the Big Bang was the beginning of our Universe has, likewise, this same fundamental flaw. There has to have been something before it, it was not the beginning; perhaps just a transition. But if we do not search beyond it, we will never reach it. The technology we have at present to detect such things is limited, unfortunately we seek only what we can understand at present. Had we the technology, the formulas, the mindset to investigate a concept beyond these so called 'ends', we would certainly surpass them. If we don't, we will never surpass them. (See, part 6. Travel, for compelling arguments suggesting there is existence beyond both Zero Kelvin and the Big Bang.)

There is no end to anything. Because everything is connected to the next thing, nothing, by itself, exists. Thus, Zeno's Paradox is side-lined, eliminated, satisfying both the ancients and the contemporaries.

More crucially, neither can the moment we perceive and are aware of, the time we call the present. Were this present moment to have a real, numerical, tangible identity then we would not be able to move - Either in time or in space. Once again, we have to conclude: the present does not exist.

Now you may begin to understand how the past and the future can be explained as really existing at the same time as the present, even though we only think we are aware in the 'now'. Everything exists, not just one thing.

This would not sit well with those of the Minkowski or Bergson faiths, who consider that time, like objects, are quantized and divided into ever smaller things. Both described the

passage of time as passing through layers, one moment after the next, almost as if the time line were made up of individual frames on a high speed camera.

Recent studies of various different terrestrial creatures, such as insects and birds, indicate that their perception of time is far faster than ours. A movie runs at 24 frames per second and we watch it on TV as if it were real, life-like motion; to a fly or a pigeon this would be like looking at a family photo album, frame by frame and probably just as boring. Their perception of motion is so fast that they can receive and process imagery at over 200 bits of information per second.

And then there are the stunning images of flocks of starlings, or schools of fishes in motion, all apparently synchronised to within thousandths of a second. Beyond that, even modern standard cameras can take photographs at speeds of two or more thousandth of a second, but, as yet, a blank frame or one that has only half the information, has not been presented for scientific study.

However, later on we discuss the concept that while there may not be spatial layers we pass through, there could well be multiple wave functions that rationalize perception on our journey through time. Minkowski might have visualized something more than a century ago with which we are only now catching up.

Light and infinity, two curious components of our perceived existence, both seemingly made up to accommodate our necessary relative meanderings. This article will be discussing such concepts in more depth in the following chapters. First, in part 4., we consider the physical nature of time's flow and why it progresses in one direction only.

[Click for part 4. Dimensions](#)

and other **DIMENSIONS:**

“The opposite of somewhere... is everywhere.”

This paper strongly advocated a tenseless, Block Universe Model, as discussed in previous chapters. We have established that individual, separate points in time and space cannot exist in order for there to be progress, and that all material existence is therefore connected in time and space. Nevertheless, humans have a need to express existence, and use the limiting factor of three dimensions to do so, disregarding time unless motion is applied.

Dimensions: arbitrary concepts trying to make sense of physical shape and form in a seemingly, static World. However, add a period of time to a mobile object and our three dimensional diagram becomes distorted - but in which direction? We assume, in the direction of physical motion; a sphere, such as a rolling ball, becoming a sausage; or a square becoming a rectangle. We forget that even an apparent immobile object is in motion, on an atomic scale. It, too, is at the mercy of time, even though it remains, from our perspective, as the same three dimensional shape it was a few minutes ago.

Displacement is not time. Time and our passage from one moment to the next is something else. We certainly don't feel like we are somehow always attached to our past or future selves. The present feels individually disengaged, totally by itself. But perception 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 lives 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.

We live in a perceived 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, as there is for the flat worm, but it is impossible for us to visualize or, for that matter, to comprehend it.

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 - and so, time.

We look at our physical existence as just being. We look at our hands and feet and see them. We don't see lines or angles, we just see form. Mathematicians, however, devised a way of explaining our visible existence by segmenting it. They considered a circle drawn on a piece of paper and then another cutting it at right angles. Then they were able to accurately formulate rules that applied to our physical status, like dimensions.

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's shadow produces the illusion of a cube in three dimensions. That, you might think, is that. Not so! Mathematics went further: The shadow of a cube produces the illusion of a strange thing called a hypercube in a 'so called' fourth dimensions.

What does this hypercube look like? In most depictions, it looks like 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. It appears the fourth dimension is being presented to us as a progression 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.

This prompts the extraordinary suggestion that we are either expanding or contracting through another dimension. An equal and simultaneous change in all three spatial dimensions, thus creates a plausible progression for time. Now, a static object can be plotted in time. However, if all matter in the Universe is changing proportionally through time in the same manner, then we still perceive the object to be static.

We can now relate to the worm's dilemma, as we are also unaware of a vast area of invisible reality, existing seemingly, right before our eyes.

Such a dimension of time could be described as a fractal progression, a solid structure composed of all matter in the Universe, flowing from the past to the future. A fractal, like our material existence, is a repetitive structure scaling up or down, shrinking with in itself or expanding out while remaining consistent to a theme. Such illustrations suggest progress, fluidity, purpose and relevance. Fractals, then: a logical next step beyond the Hypercube.

Considering Chaos Theory:

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 things that influence the greater the impossibility of predicting an outcome.

Progression is because of a perceived notion of change. 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 - as we discussed earlier - 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 similarities between certain Indo-Pacific soft corals of the *Dendronphthya* genus and the inflorescence or flower of a mango tree, suggests reason. 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'.

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

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. 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 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 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, 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 paper. We duplicate, we facsimilate, everyday that passes is seemingly so like the one before.

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 significance of The Golden Ratio, or 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, 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.

The Nth Dimension:

The question, then, is are we expanding through this dimension of time or are we contracting?

To begin with, 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. Something 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. 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 paper 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 million miles away (as we explained previously) but also you might have been a completely different size.

Just like the flat worm that requires a third (up and down) dimension to exist, a three dimensional "singular state" requires time for there to be existence. But, we can't actually see time, which means that existence itself is a limited experience. Unless there was an opportunity to look down at ourselves, as we did at the flat worm.

To express this in any kind of visual sense, we need to suspend existence in something we happen to be looking down from: we will call it, The Nth Dimension. Let us just consider a large black expanse of nothing - like eternal night. As, nothing does not exist, this Nth Dimension is a mere paradox, existing only to satisfy our imagination.

Peering in, we might see as if a huge, ball of light. However, we would not actually be able to see it; light would not escape into our void as photons are an integral part of existence, alone. This ball is everything, from the past and on into the future. A vast cyclical arrangement; but as we are not influencing a present moment, we see no flow in time. We just see the whole incredible progression as one, including the space between things. The vast landscape of time confronting us would be as if a string of pearls, with each moment being a single bead. As one moment pushes up against another, the entire string moves simultaneously. Everywhere would be the present. Consciousness would be throughout.

Inside our existence - our universe - there is space, but not empty space, it is energetic; outside our universe there is nothing, not even space. For space to exist there needs to be an area between objects to be called space, and that space interacts with those objects.

In the singular (three dimensional) state there is no space. Everything is touching. Time creates space. If something can be created it must be of energy - it is energy. Nothing cannot be created.

All things that exist are connected, even space. The discussion earlier, part 3. Infinity, showed that if nothing existed beyond a certain point, movement would not be possible. Space is not!

Further to this argument, no single dimension exists, on its own. There can be no time without physical dimensions, nor can there be one or two of them without time. Put simply: there are no dimensions. Existence is one, big, solid thing. Directions are arbitrary lines which we conceive and name for the sake of understanding.

“You have to be in a dimension above the one you walk, in order to fully appreciate all you have.” The problem is, we cannot knowingly observe or scrutinise this dimension which seemingly floats above us; that we cannot touch.

However, now we have the prospect of a directional flow in time, that we can visualise, a passage by which we all abide. In the next chapter, part 5. Velocity, we will consider contraction of matter through time and the Universe as being more likely than expansion, and we will examine what governs this flow of time.

[Click for part 5. Velocity](#)

VELOCITY is TIME:

“The end of time is just the beginning.”

In the last few chapters we explored the concept of cyclical flow and the dimension of time as being a fractal progression. This gave us a perceived notion of movement through time, a passage of which we can be consciously aware. Even though we can't see the past or the future, they must exist.

Whereas, before, there seemed no difference between a person now and that same person five minutes ago, now there is a difference; we are scaling as we journey through the cosmos. Our proportions change over time.

Earlier, we visualised our existence in the fictitious Nth Dimension, and determined that our cyclical progression through time must either be a universal collapse of all matter, or alternatively an expansion.

It must be reiterated here that this paper, Time's Paradigm, is not a physics discourse; there are no formulas to mull. Time is a subject involving many different disciplines, as have been covered in previous chapters. It is the purpose of this paper to discuss concepts of time and space and merge these disciplines. Physics is only one area of interest, it is not the authoritative voice of time, though what it has to say about time is provocative and must be integrated. The processes of reasoning, deduction and experimentation are equally compelling, and together will, in due course, help better our understanding of time.

Here, we tackle some physics, from a philosophical point of view.

Expansion requires that energy be constantly added, or that space is constantly getting bigger, one might suggest. We might also assume that continued expansion evokes the notion of infinite resolution and, for some objects in the future, perhaps even a loss of identity. What about if we expand for a bit and then collapse? That gives us the bizarre prospect of living our lives one way and then heading back in reverse. Or, vice-versa! But that would not be the circuit we had been looking for in previous chapters: the cyclical passage of time deemed necessary for there to be flow. That would be like a time line that expanded and then contracted, indicating a slowing down at the ends, a stop, and then a reverse.

We might consider that our existence exploded into being like a giant firework. This explosion would have been at the speed of light (c), where time apparently stands still. So, in essence, it either happened instantly, or never really happened at all, it just was. Hardly a satisfactory conclusion, but let's wait and see.

The Big Bang has elements of this above notion. A cosmos that came into being from some immense ejection or emergence of matter at (c). Perhaps so. But we still need to understand from where, in order to follow the conjecture that this fourth dimension is cyclical. It must also be noted that at the moment of the Big Bang, we are assuming that there is nothing, until there is something. Alternatively, as we will consider later, if matter is emerging continuously in time, and not all at the same time, then we alleviate this problem.

Our existence - our Universe - is a contained entity. It has always existed. The need to suggest a beginning, so we can get to grips with this extraordinary sphere, is necessary, and helpful in visualising, but once we have 'got it', we can dispense with this notion altogether. In this regard, it is likely that existence of matter has always been pouring into the Universe, there was no one Big Bang, it is a continuous affair.

Time's Paradigm does not present this as a postulate, rather it offers it for consideration.

Our Universe is the presentation of all time, the past and the future, not just an illusory present moment. The Universe itself is neither expanding nor contracting in this scenario, it has finite energy; it is perpetual. It is the contents of the Universe which could be said to be evolving.

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, we have already dismissed space. Instead we have explained 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 contraction.

Is Matter Contracting?

Contraction, as conceptualised here, 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", perhaps.

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, 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.

The Universe as presented here would be a tight squeeze. Matter constantly emerging at light speed, pressurizing the closed system, acting on all things; just as the pressure on objects submerged in water. It would act equally from all sides on objects and they would be forced to contract. Gravity is such a universal force; in essence, both macro and subatomic orbits would be reducing, spiralling inwards under such pressure.

This universal contraction would not be so easily measured by us sitting at the coffee table. Unfortunately for us, all things would be contracting simultaneously (for the sake of simplicity, we are just considering our planet, for now). 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.

Nor should it be implied that we suddenly find ourselves with less atoms in our body. 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 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.

Note: contraction is in time, the past remains large, the Universe still appears to an outsider to be the same giant ball of energy, but those aware inside are actually shrinking towards their future.

Scientists today are in agreement that the universe is expanding. So it might appear, in three dimensions of physical existence, for sure. But, what about in four dimensions, where the fourth is a contracting progression into the future?

It takes time for light to get to our telescopes, so we are really looking into the past as we peer into the cosmos, when the past universe was much bigger. Light leaving a distant, contracting galaxy will have its frequency lengthened, or red shifted (the Doppler effect), just as if it were receding from us.

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.

Cosmologists have recently been coming to grips with 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 paper, Time's Paradigm, has an alternative explanation, as we will soon find out.

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 independently (Fitzgerald and Lorentz) 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, elegant theory, and Lorentz contraction was incorporated.

Special Relativity (SR) Revisited:

Contraction, therefore, is not off limits and may be quite relevant. UC 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.

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 perceptual 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.

And this 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; it also means our on board clock is ticking slower in their view, 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, when actually it is the observer and his surroundings that are shrinking at the reference rate back on Earth, which is more quickly than our speeding space vehicle.

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 physical dimensions and the dimension of time, and transferred between them as necessary. As forward motion in one direction is increased (acceleration), a reduction in the rate of time (or contraction) is experienced. 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.

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 paths being altered, elongated or twisted; they will be completely restricted at light speed, whereas at slower speeds particles will spin and interact more freely. When a body's forward motion practically ceases, particle functionality becomes supreme, and atomic perfection is reached.

An analogy would be this: a spinning gyroscope, when influenced to rotate on its axis, responds by rotating through another. Energy was transferred from one to the other, the gyroscope did it, by itself.

What of these extremes? UC is suggesting that at some time way, way in the past, we must have been very, very massive and so probably entered our existence and our journey through time, clocks frozen, at the speed of light. That said, we are therefore heading towards a future where we will eventually become very, very tiny and practically immobile, but our time would be passing unimaginably fast - all over at once ..; in other words, we will be contracting at the speed of light.

No energy lost, just a change in purpose.

Time 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 to zero velocity; 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 collapse we maintain our energy, its purpose transferring from inertial energy 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.

Einstein himself also contemplated for a while the concept of a cosmological cycle for time, but ran up against the second law of Thermodynamics. He once stated that while a contracting Universe would be unequivocally the same as his theories of Relativity, his conclusion was that such a concept would be far too complicated, and dismissed it as inappropriate.

This paper takes an alternative perspective, especially in the light of a whole century of new scientific engagement on this very subject. Indeed, later dialogue 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.

The Speed of Time.

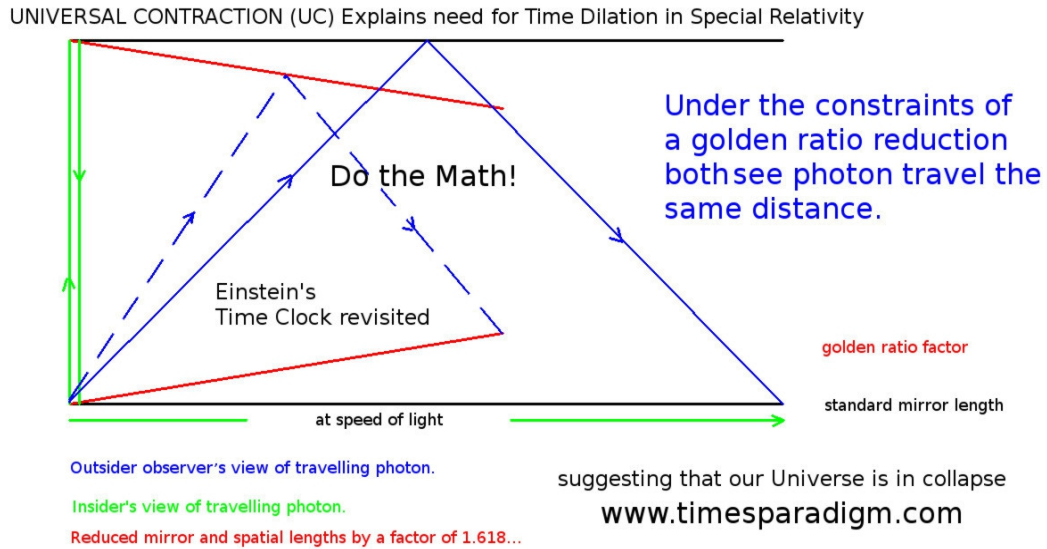
So, here's a question we just have to ask: At what speed are we therefore contracting today, at this very moment, on our busy way through the Universe perched precariously here on Earth? The Kalahari Effect gives us an immediate answer, as it did before and always does: Neither too fast, nor too slow, just somewhere in the middle. Ah, how nice! (See, part 3. Infinity, for an explanation of the Kalahari Effect).

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 length of the mirrors and the distance between them as they proceed 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.)

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 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.

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.

Just for fun, 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?

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.

[Click for part 6. Travel](#)

Towards **TIME TRAVEL**:

“You can only know something if you know everything.”

In the last chapters, we have been considering the implications of the hypothesis here called Universal Contraction (UC). It states that all matter is in collapse, being the fundamental reason for a perceived flow of time. If we increase our velocity, our mass reduces (we contract) more slowly than observers on our Earth standard frame of reference, making it appear that we have increased in mass while our clocks slow down. Equally, by travelling slower through the cosmos, we contract more quickly than normal, this would amount to us 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...

To recap: Contraction of matter is uniform, it arises from pressure exerted by space in a contained and static Universe, and it is contraction of our three physical dimensions simultaneously, thus implying a fourth, time. This can be referred to as the 'cosmological cycle of time', a deceleration and constant contraction from the speed of light to zero velocity.

The established standard model for velocity is linear, where the speed of light (c) and zero velocity (z) are limits at each end of this 'so called' speedometer. However, these end velocities can be defined by their finality, and thus, the velocity of any body between them can be precisely extrapolated. This gives rise to a problem, as explained in part 3. Infinity: progress is not possible between 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 addition, (c) is both the beginning of time and the end of velocity, while (z) is both the end of time and the beginning of velocity - in essence, time and velocity are the same cycle!

At light speed contraction does not occur and clocks stand still. That is not to say that time stops flowing, it is simply that our clock cannot function. At the other end of this 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 instantaneous; time would fly by as we careered towards the future.

But, to stop moving! All bodies in physical existence are made up of atomic particles, all of which are gyrating about in considerable motion. 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 whizzing around at thousands of miles an hour, and also hurtling at tens of thousands of miles an hour across the universe towards the Virgo cluster.

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 (z)? It is normally stated by physicists that we on Earth are a very long way from relativistic speeds (with a cheeky grin). 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 (c) from our point of view, also has the amazing ability to make its inhabitants believe that they are nowhere near the speed of light, due to time dilation and Lorentz contraction.

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 which the rocket was launched, so the rocket is hardly accelerating at all.

This means that true velocity relative to the Universe is incalculable with today's understanding and formulas. We just don't know how fast we are really going and can only calculate relative to other bodies who also don't know how faster they are going. In total, the whole concept of motion is a nonsense.

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 Light Speed AN ILLUSION?

The cosmological cycle of time described earlier says we are in constant deceleration flowing through time from (c) to (z), in one direction only. 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 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.

To stop our forward deceleration would constitute the identification of a defined point, which could then only be described as the speed of light. Moreover, the energy required to halt the contraction of matter would be infinite, amounting to a force equal and opposite to the gravitational influence of the entire Universe. Thus, our notion of light speed is that it is always just out of reach, 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 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. Light travels invariantly as it has no mass and is not constrained by the cycle of time. It 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, though this cosmological cycle for time says that we are all decelerating, it can be suggested in line with SR that there is no such thing as deceleration: 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 this paper it is called the Beta-celeration Paradox, and is described in more detail on line.

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.

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 in mass – if we follow the basic assumption of SR.

Apparently, every direction you 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. We are, in fact, all contracting in time, actually decelerating, we just haven't added this new information into our thought experiments, yet.

A linear scale of velocity is what we use to describe are movements in today's world. However, in a cyclical model, we might just as likely depart a platform at (c) heading for

(z), as we could depart the same platform at (z) heading for (c). Acceleration or deceleration, take your pick.

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 beginning, 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 the cosmological cycle of time to carry us there?

The 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 to move. UC says, it would, as it decelerated, begin to shrink dramatically. The closer to zero velocity it became, the faster it would shrink. It would register a massive increase in the rate of clock time, or particle functionality. 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 state', as described previously. Now in contact with all things and without the constraints of distance, time or movement, our particle might even have the potential to then burst out in the Universe, at a place and time where our particle had originally emerged!

... A rebirth of our particle into existence - and at the speed of light.

Could the Big Bang be a place and a time that continually spews forth emerging existence? 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. In real time, looking at the whole universe through time, we see the flow of all matter returning to this giant portal only to be ejected once again - a journey that is forever repeated.

The CERN Collider 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 sluggish at great speed, like clocks that run slow; but time is continuous.

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, therefore, be thrust out somewhere else. 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 its atoms when our 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 sluggishly. 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.

Looking back AT TIME.

What might our cyclical, four dimensional Universe look like? From a visual perspective the centre might be a tiny speck of near stationary objects rushing towards non-existence, while the outer shell is brimming at the speed of light. Some type of hyper-doughnut could describe the connection between its centre and its shell, as has been proposed before, to some extent, by others.

The opposite might also hold water: that the centre of our Universe is a hot pot of objects near light speed, and the outer extremities of less dense material is where velocity and gravitational influences are reduced to such an extent that contraction is almost instant. This latter example is no doubt more aesthetically pleasing to those proponents of Big Bangs.

Quite possibly, a need for uniformity such as a doughnut shape is unnecessary, Chaos being more appropriate. Things could be popping in and out of existence all over the place in the Universe, with random disregard: A kind of Quantum foam affair ..?

Unfortunately, we, with our simple 3d perception, cannot fully visualise these incredible mechanisms 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 we were much more massive.

Distances between things were larger; everything was huge in 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.

If we could go back a few minutes in time, but somehow stay magically the same size as we are now, what would we see? Our past self would be a giant, perhaps the size of the Empire State Building..., moving as if in incredible slow motion through a kitchen the size of Manhattan Island.

Look up, take a deep breath.., and marvel! Because you will never actually be able to experience this in reality; not even, I suspect, if one were to truly travel back in time.

What of light? 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 miles, in your 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! Such motion of atomic particles and photons through the Universe, then, would now be quite impossible for us to perceive. 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; are we sure we could actually see this giant at all?

By accepting that a past giant's clock was ticking much more slowly than ours at this present time, then the speed of light remains constant for all moments. But 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: a sheet of red and white stripes seen from a distance appears to be pink. 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 a bed sheet with 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, no laser beams to keep us all in line. We can only receive information that resonates in space at a given moment proportional to our state of awareness.

Within our Solar System this is 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 very distinct from ours. So, it should begin to disappear, loose contact. At what stage? We must ask, 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 that ends in nonsense?

This paper prefers nonsense. Limits always seem to produce nonsense, as does Zero Kelvin. 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 cannot know. The study of sub atomic particles will probably not answer this question, although quantum physics is already grappling with such bizarre anomalies.

Let's look at photons of light again for a moment. They must also appear to be in contraction as they propagate. Otherwise, light waves from a distant galaxy would be so huge by the time they got here in relation to our dwindling size, we would surely not observe such photons as light, at all. As discussed earlier, space is contracting around us, electromagnetic radiation is the resonance of space and not an entity unto itself, so an apparent but unobservable reduction in size must follow.

Moreover, we could take the view, as has recently been proposed by an international consortium of scientists, that 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 with time; however, to observe and measure from our contracting frame of reference will be erroneous – we must stand back from the Universe and observe in isolation.

We are, contracting through time from the past to the future. 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. 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.

Our eyes have evolved to respond to what is useful, and being aware of this present moment is just that; they are made of atoms that can respond to photon excitement, now. If we had somehow evolved to see things in the future, then we would be oblivious to our present existence - the gene pool of which appears to have failed.

Time Travel, FASTER-THAN-LIGHT:

In light of the above proposal, 'Proportionality', we can now return to the earlier debate in chapter 2. Time, concerning an astronaut on a four year voyage at relativistic speed to Alpha Centauri, and assert that she would not encounter this stellar system where she thought it would be.

Alpha Centauri and our planet Earth are in motion, they will be converging as they travel, getting closer to one another as they themselves contract in size. Rather than two cosmic bodies running parallel to one another, their drawn trajectory will appear as if a funnel, in geometry a trapezium. Here is the scenario:

Alpha Centauri would have slipped ever onwards in contraction and be much smaller now relative to the astronaut's moment in time. Had she reprogrammed her spaceship to intercept Alpha Centauri at an earlier moment by calculating the clock time lag she was experiencing, then she would have reached the mark where both would be of proportional size for the moment, and so, visible to each other.

Equally, on returning to Earth, she would need to do the same calculations, otherwise she would arrive at the pre-programmed location, to find Earth nowhere to be seen. On the other hand, having re-calculated her trajectory she would then return to Earth in four months, appearing no older to anyone. What we would all find amazing is that she managed to travel eight light years and get home in less than half a year. We didn't see it happen, so was it an illusion? Whose illusion?

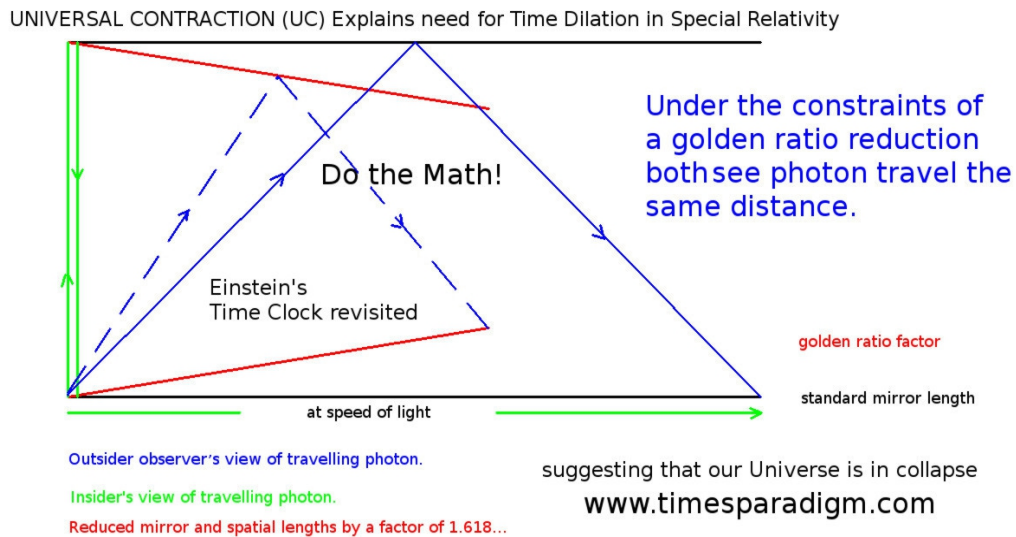
She can only observe Earth as it was when it was bigger and proportional to her, so she will return just a few months after departure - or she will be lost forever, searching at the wrong time and in the wrong place, in a far away corner of our Universe, at the point of that funnel mentioned earlier.

So, 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, because light and associated emr waves would not have been able to keep up with her.

A photon of light has no mass and is not influenced by time. It is subject to the contraction of space between bodies. It is a product of space, it is present only in space and reduces with it. As explained earlier, space does not exist beyond material existence. However, material objects have mass and contract dependent upon their velocities with certain autonomy. When considering the path of Alpha Centauri over time relative to our planet Earth, we see that Universal Contraction will bring them ever closer together. Thus, while a photon of light takes many years on its true course down the funnel to Alpha Centauri and back to Earth from our perspective, the astronaut travels exactly the same distance, but does it in just a few months.

This phenomenon is illustrated below, using the Time Clock diagram from part 5. Velocity, showing a reduction in space and distance by a factor of the Golden ratio. Alpha Centauri and our planet Earth are converging (red line), as space and matter contract over time. Seen from a point of view external to our imposed perception by Universal Contraction, both the astronaut (green line) and the photon of light (dotted blue line) travel the same distance: she in 4 months, the photon of light in 8 years.



If there was a universal clock, then from the perspective of other frames of reference, the astronaut could not travel faster than light. However, the reality will be seen to be different.

We can only perceive things that travel well under the speed of light, so, in essence, the subjective interpretation could be that (c) is a limit. However, that does not stop our astronaut from travelling, relative to her passage through time, at much greater speeds. We can measure electrons, protons and muons travelling at near the speed of light, but we are only measuring their energy levels at impact to determine velocity, not their true

speed. If our space traveller was smashed into a wall, she would also read energy levels at near the speed of light, even though she was actually travelling way beyond it! It's simply a matter of Time.

It means also, that those travelling at relativistic speeds will see that slower moving objects appear to be decelerating. At such speeds contraction is slower than for others, they are gaining slightly in size relative to slower moving bodies contracting more quickly, so their perception must lag behind in order to see things of proportional size. If they were able to accelerate to the speed of light, they would see everything in the Universe grind to a halt. However, nothing actually would.

Moreover: If a conscious body travels at light speed and observes, as prescribed by the Lorentz Factor, that distances have all reduced to nothing, then theoretically one need only point the spaceship at a distant galaxy and instantly it would be there. Warp Speed! That a clock or any other mechanical device won't function at such speeds is understandable but irrelevant. The body would instantly disappear, as observed from Earth, because it would increase in size beyond our perception. This suggests once again that (c) is the same as (z), that both exist devoid of distances and space and motion. Our 'point of origin' and our 'singular state' are the same thing.

The conscious body explained above, would not be instantly transferred to a distant galaxy, but from her immobile perspective, she would be. She could then return to almost the same place and moment of departure, and interact with those who just saw her leave. Her practically instantaneous journey out and back was only possible because she and her colleagues understood that it is time that needs harnessing, not motion.

Our understanding of reality as seen here on Earth, is an uncertain perspective; we see the illusion of motion and perceived awareness and so we seem to progress, while light speed and no speed are unrealistic limits. Yet, we need only bend our linear concept of velocity so that the two ends (c) and (z) meet, producing a circuit, and in so doing they will create a system that is perpetual; deceleration and acceleration will be the same, and everywhere along its length will be both zero velocity and the speed of light. And the balance of energy in the system is exactly zero.

A simplified analogy of our Travel through Time:

We are all free rolling down the hill of time. But, say, a bus driver wishes to slow his roll by trying to reverse back up hill: so he 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.

[Click for part 7. Wrapper](#)

WRAPPER upper:

“A tortoise could run faster than a hare...; they just prefer to walk.”

This paper has put forward a proposal that accepts the Block Universe Model, but adds that the present is a matter of perception due to progress through time and does not in fact exist, however we are conscious of existing. A cyclical time progression prohibits the existence of any finite points along the way. The past and the future must exist together and in their entirety for there to be flow. The cycle of time has no end nor beginning; everything is connected inexorably; passage is infinite but contained, in one direction only.

Our perception of progress in time is due to Universal Contraction. All matter is in collapse, and as we reduce in size we are aware only of those things that remain proportional.

Illusions are everywhere. They are the affirmation that existence is real. If everything perceived were absolute and unquestionable, it would be unlikely that progress could be made, at all. It is doubtful that anything we see is fact and more reasonable to assume that all things we see are an illusion. From the perspective of one, a line is straight, from another, it is curved. Which is right? Neither, and both.

The speed of light is just an illusion, as is all motion just an illusion. Both are valid, both depend upon reason. Picking one against the other does not create reality, it clouds it. For some it creates a smaller, more confined world where problems can be resolved. For others, vision is impaired. The passage of time is also an illusion, and for everybody, different.

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 the wall.

And so we slowly shrink. Our senses dictate awareness and we perceive 'now'. We are aware only of those things proportionally equivalent to us now. We perceive what we have evolved to perceive.

We flow from the speed of light to the speed of zero, one and the same place; we shrink from gigantic to tiny as we fight with motion against the energy of space; though we are unaware, time accelerates as we journey. And we find that a Universal Clock does not bind us all to one present moment, that we can be aware anywhere on our time line; as a

result, restrictions and limits imposed on our passage through the Universe no longer constrain us. We can travel as fast as we like.

But, perhaps more important still, solid time means that all things are connected. It is this which tells us that space - a void of nothingness - does not exist; that space is an essential part of connectivity. Not really an unprecedented conclusion; after all, String Theory is big on connections. Moreover, many people would find it difficult to agree that we are all just ships passing in the night - even those from the A Camp.

Connection means the riddance of infinity, and the absence of moments or points in time. Now, photons of light and associated electromagnetic radiation can be understood as the binding together of existence, a weave of elastic threads that create a tapestry between points of stationary value; and we, the mobile bodies in the universe of macro status, are given freedom to wander within its confines.

In other words: there is no Grand Unified Theory! The macro world of relativistic happenings are bed bugs in a giant, quantum mattress.

An acorn is a ball of energy, which bursts out and up into the world. It slowly climbs skyward, then begins to send out branches here and there, in seeming chaotic and random fashion; when, in fact, it is an extraordinary and beautiful concept, full of meaning and reason. Many hundreds of years later there stands a mighty oak tree - it worked; wow, it works, though nobody quite knows how or why. What is clear is that all the acorns on that tree are all 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, without scale, timeless in its integrity. At some stage the challenge will be: to create a three dimensional fractal that cascades within itself; that, as it has a beginning, will have an end or perhaps many ends, that do not flow forever towards infinitely small; and whose ends will connect seamlessly with the beginning or beginnings, so creating an efficace cyclical progression.

The monumental iterative equations needed to express this structure will be the DNA of existence, itself.

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