In Which Time Stands Still

By

Bill Hibberd

In Which Time Stands Still

ISBN-13: 978-1494981624
ISBN-10: 1494981629

Cover Art

Design: Sharon A Woolsey-Hibberd 2014.
Image: pjmorley/Shutterstock

This is a work of fiction. Names, characters, places and incidents are either the product of the author's imagination or are used fictitiously. Resemblance to actual persons, living or dead, events or locales, are entirely coincidental.

Contents

In Which Time Stood Still

About the Author

The Author "Bill Hibberd's note

I wrote the short story "In which time stands still" because, having written the article "3D Time Environment" I felt that I had touched on a complex subject but that I had done little to explore, and even less to explain, the logic or rationale behind the idea.

What I am trying to convey is an argument that embraces all the mysteries of today's science whilst, at the same time, supporting the great thinkers that have helped us to understand our space, our planet, our religions and our science through our history.

I have come to the conclusion that our universe probably did start with a 'big bang' although I am not convinced that a big bang is necessarily a big explosion with fire and brimstone.

I have also come to think that having erupted into its post 'big bang' state, the universe is compelled to return to its pre 'big bang' state.

For us 'time' is a linear experience. Why?

Why is it an unarguable constant that, for us, time can only be experienced, not explored? Why does it only allow one-way travel? Why do we always refer to the passage of time as if it were time that moves rather than us that is moving through time?

I have come to think that time is a static environment, of itself inert and static. I believe that our experience of time is a product of our 'relative' movement through the space from which our universe erupted and, with that in mind, I believe that time exerts a drag on our universe, constantly clawing at the content of the universe at both a macro and a micro level as it reduces our relative motion back to a 'zero' state thereby returning it to the pre 'big bang' state.

I believe that from within the universe this effect appears as gravity on a macro scale and as the 'weak' and 'strong' forces on a micro scale.

I have, therefore, concluded that Gravity is the physical manifestation of the effect of time on our universe.

Having drawn the connection between a pre 'big bang' state within which time is static and by definition inert, and the physical manifestation of the effect of time dragging on our universe as gravity, I have been able to embrace the physics of 'black holes' where great mass is acknowledged as having great gravitational 'pull'.

It is my belief that when enough matter is concentrated so that the drag of time is sufficient to 'slow it to a stop' within the pre 'big bang' state then that matter leaves our universe.

Interestingly, once I had reached these conclusions I found that the model created had the disquieting effect of offering rational solutions to some of our most pressing questions.

The more I thought, the more the model resolved itself.

Lacking the mathematical ability to prove or disprove my logic, I was compelled to write it down so that others may be tempted to explore my thoughts.

Please read this with an open mind and enjoy the ideas at whatever level leaves you feeling safe and intact.

If you have the inclination and the ability to explore, prove or disprove what is proposed here, please do so with all that you have at your disposal?

I personally would be delighted to see the result of explorations of this idea.

Bill Hibberd 2006

"Oh for heaven's sake David what are you on?" Helen's remonstration was absolutely typical of her reaction to David's arguments.

David was forever making bold and outlandish statements. Most of the things he came out with could not be argued proved or disproved and today's statement was no exception.

David was the sort of person who would breeze through life working hard but without obvious effort. Blessed with a canny insight and an uncanny ability to find the easiest way to do a task, David always reached his objectives but to the casual observer it was never clear as to the method he had used.

Helen was an altogether different person.

For Helen, detail was everything. Helen required evidence, proof, detail and co-ordination. Helen's perceptions of reality were based on a lifetime's exposure to standards, ideals, and empirical evidence.

Helen was the image of colour co-ordinated sensible dress sense where David, with slightly out of shape jacket, bulging pockets, trousers that were more suited to a time when his waist was three inches bigger and curly collared shirt seemed to have dressed almost as an afterthought. For David, clothes were just something to keep a person warm and to carry things in. For Helen, clothes 'maketh' the man or in her case, woman.

That these two people should be such good friends was one of the biggest mysteries of the institution where they both earned their living.

"How can you possible say that there has to be at least one more dimension than we know about? That is so typical of the way you think. Go on then prove it!"

"I don't have to prove it. It's obvious, just think about it Helen. People claim to have seen ghosts, spacecraft, aliens, we experience unexplainable phenomena things happen that just cannot be explained and yet they can all be explained by the fact that there just has to be another dimension."

"Rubbish! You can't just say that all these things can be explained just by introducing another dimension. If there were we'd already know of it. We'd have reports and sightings. We'd already be exploring it and learning of its properties. Good grief, David, there'd be papers on it!"

David helped himself to two portions of sticky toffee pudding, which he put on his tray next to his soup and bread roll. Balancing the tray on his hip and holding it with one hand he used his other hand to rummage in his jacket looking for change. The tray shook precariously but in typical David style, remained securely lodged in place. Not a drop was spilled.

Helen's tray contained a bottle of water, a clear plastic cup, a chilled salad a small pre packed biscuit and her purse.

Helen moved around the awkwardly shuffling David reaching the till first.

“I’ll show you what I mean over lunch.” “Okay David, thank-you (to the cashier), you show me over lunch.” And with that Helen moved to a table near to the exit.

When David caught up with Helen he had made some additions to his tray. He had three straws, two menus and a number of paper towels.

Helen passed him a spoon for his soup.

After a few moments and most of the soup, David continued where he left off. “Okay Helen. You say that if there were another dimension we’d already know about it. True?”

“Of course we would. How could we not know about it?”

“If I can prove to you that it is almost impossible to observe another dimension but at the same time demonstrate that an almost undetectable dimension exists, will you believe me when I say that there has to be another dimension? Well? Will you?”

Helen knows that whatever her answer, they are about to embark on one of their famous debates. Debates that force her to re-evaluate her ideas and test her understandings and her perceptions to the limit. Debates that have, over the years, helped to make her the person she is today.

She mumbles into her salad knowing that David will swing into action regardless of her reply. It’s why she loves him so much.

As a teenager, Helen was very much a loner, never finding it easy to make friends or mix with classmates. Helen was the quiet mouse in the corner of the class. If she knew the answer she would hope that somebody else would offer an answer before the teacher started to call out names to prompt a response.

Helen was one of the ‘packed lunch’ girls and her lunch was essentially the same as the one she was eating with David today.

She would find a table alone and systematically work her way through her healthy choice menu while reading one of the classics. Helen didn’t bother with magazines finding them frivolous and she didn’t do her homework at lunch times because if it was meant to be done at lunchtimes it would be called lunchtime work and also because to do homework in school would draw unwelcome attention.

It was during one of these lunch times that she first noticed David. He was with another boy and they were having a heated argument about sport. Not the usual boys type of argument about who made what play or who scored which goal in a specific game in an obscure year. No, they were arguing about the speed at which the ball passed the batsman-comparing cricket with baseball.

Helen had never been interested in sport before but this question touched a nerve somewhere. Her interest piqued, Helen listened as the argument ranged back and forth between the two boys until a bell sounded the call, ‘return to classes’.

It was the first lunchtime ever, in which Helen didn’t read her book.

Moving onto the first of his desserts, David started to move his fork around, waving it in the air in front of them both. Sometimes the fork was over the plate of food. Often it wasn't. It was as if he was rehearsing what he was going to say. Helen knew him well enough to know that David was, in-fact, so keen to embark on his subject that his hand gestures were incapable of waiting for his mouth to empty and today's sticky toffee pudding was especially tasty and, clearly, exceptionally sticky.

Helen knew she was smiling and she did her best to make hers an expression of anticipation. To laugh now would possibly result in them both laughing out loud and sitting opposite David when he laughed out loud was potentially hazardous. To do so while he still had sticky toffee pudding un-swallowed was much too great a risk to even contemplate.

"Look around." The instruction came before David had even finished his mouthful. "Look around." he said again – swallowing. His fork exemplified what he was instructing Helen to do. Fortunately, today's sticky toffee pudding was extra sticky and what was stuck to his fork remained firmly in place.

Helen obliged. "There!" David exploded "See? You looked around but you failed to look up or down. Look around again." Thinking that perhaps the ceiling had been painted or the floor tiles changed, Helen did indeed look around. She looked into the corners of the dining area. She looked up at the roof tiles and down at the floor tiles she studied the walls and tables. She even managed to look, fleetingly, at some of the other diners. Not an easy task given that, by now, most of the other diners were looking at her.

She noted nothing worth the attention, and said so. "The point is," David said, "that you can look all around. You can look up, down, left, right, behind and in front. You can look in any of the directions you choose." Completely un-impressed with David's excitement, thus far, Helen merely replied with a hesitant "yes?" which sounded much more like "so what!" than she intended.

"Okay, now I'm going to hold this straw in front of your eye and you have to look through it. What can you see?" Helen could see hair sticking out of David's right ear but she was pretty sure that was not the answer he was looking for. "Just the side of your head," she said. "What else?" Helen started to worry that perhaps he DID mean for her to examine the hair sticking out of his ear. "Nothing." she said. "Exactly, all you can see is straight ahead of you and if you were at this end of the straw you would only be able to look back along the same length, forward and backward. No right, no left, no up, no down. Even if I point the straw somewhere else, be it the floor or the ceiling even one of the walls, the same rule would apply. You would only be able to see along the straw. If you were inside the straw you would only be able to see along the straw and nothing through the sides of the straw."

Helen thought David seemed inordinately pleased with himself given that he had done nothing extraordinary, yet. This looked as though it was going to be one of David's more progressive subjects after all there were two more straws, two menus and a pile of paper towels on his tray yet.

David reached for his second dessert.

The second dessert had cooled significantly and the stickiness had increased considerably. "Nnnng." he said. Frustrated at his inability to articulate even the word 'now', David's fork went into overdrive. Helen slid her chair back a little from the table

and gave a warning look to a passing diner who changed direction and passed them by a good table length away instead of squeezing through the gap adjacent to theirs.

David attempted an early swallow and Helen was sure she could see the dessert's entire journey from David's mouth to his stomach. "Now," he said. "Without moving you head, or eyes, up or down look around the room again and tell me what you can't see."

Despite the improbable nature of the question, Helen complied. Remembering her earlier acquaintance with the room, Helen was able to report that she could see nothing of the floor or ceiling inside a relatively short distance. David was already reaching for the two menus, which he arranged, again in front of Helens face. One was held flat just below her eye line the other just above and parallel to the first. Helen dutifully reported that both the floor and the ceiling had now been removed from her sight.

"So," David fed back, "with the two menus obstructing your vision above and below you can only see along the flat surface. Your vision is in a sort of sandwich, which means you can look sideways, and along the plane of the menus but not at an angle through the menus. If I tilt the menus so that they remain parallel but are pointed so that your visual plane is up, or down, or left or right of where we started, you see different things but the same rule still applies; you can only see along the plane of the menus or from side to side within the plane of the menus. Yes?"

As Helen answered, David was already moving on from the menus and reaching for his can of coke. Wondering what was happing next Helen could only marvel as David summarised the fact that through the straw you could only see forward and back; between the menus only along, or side to side and yet, when David had told Helen to look around the room she had the option to see in any direction she chose. As David concluded his summary, the coke can returned to the table and in one smooth flourish David had popped the ring pull. Helen almost escaped the exploding liquid as the thoroughly shaken can expressed its contents all over the table, the floor, David and Helen. "I knew I'd need these," said David reaching for the paper towels.

It was somebody's phone making an insistent repetitive racket that had been substituted for a ring tone that caused them both to look at their watches.

David swept his brown saturated paper towels into a soggy ball, which landed, on his tray. Standing he brushed crumbs from his bread roll from his lap and departed.

Helen resealed her now empty salad container with plastic fork inside. Placed what was left of her bottled water in her bag placed the contents of her tray onto David's tray. Stacked the trays and slid both the trays into the self-service used tray slot near the exit.

Smiling after him, Helen followed in the direction David had taken knowing that today's subject was going to be one of David's 'multi lunchtime' specials.

That evening, while Helen went to the gym, David went home via the local all night supermarket picking up a sandwich and a couple of beers en route. His evenings were a haphazard collection of launderette, moving things around in his home which he referred to as 'tidying', day dreaming, reading and internet surfing while, simultaneously, watching TV and listening to his radio or playing CD's.

Always busy, never bored, David could sleep where he landed or work on into any number of nights appearing the next day exactly as normal – slightly crumpled – as though dressing were an afterthought and, mentally, sharp as a knife.

He enjoyed his lifestyle and given the apparent jumble of his home was actually extremely well organised.

Tonight though, David was rather more pre-occupied than normal. His lunchtime exploration of dimensions with Helen, though superficial, had started to grow in his mind so that he was now considering aspects of the subject well beyond what he had started with Helen.

David normally entered into debate because he could. He would normally get a subject kicked off and then just prod and goad people into exploring an idea with no more effort on his part than by strategically placing counter points as they offered the building blocks for the argument. Today, though, something was different. Today he felt as though something bigger was to be expected.

As the germ of his idea began to maturate in David's mind, he started to measure the implications of what he was thinking against some of the most puzzling of science's questions.

Thinking that it would be great fun to tease today's dimensions subject into a full-blown saga, David reached for a pencil and hunted for a sheet of paper.

He began a list of discussion topics that he fully intended to wrap into the subject.

With a bit of luck others would join in.

This is the list as produced by David.

- Is time travel achievable?
- What is time?
- What is dark matter?
- Where is all the matter that is mathematically supposed to exist given the current thinking on the creation of the universe?
- What is gravity?
- Can the 'weak' and 'strong' forces be properly identified and even harnessed?
- What really happens within a black hole?

- Is the current theory on black holes and their event horizons accurate?

- What of light speed? Is it really as fast as it is possible to travel?

- If everything that we know of the universe can really be put down to ‘the big bang’, what went bang?

- What if the story of the universe being created in seven days is a metaphor that can be placed into a greater context?

- If there is a god, where is God hiding when we send space ships into what was once considered to be heaven, God’s domain?

- Are there aliens? And, Do those aliens visit planets – Earth included?

David looked at his list and sat back to contemplate what he had produced. Shaking his head he almost threw the paper away, reflecting that he was getting more and more like Helen with every passing day. But he couldn’t bring himself to throw this away.

His idea was beginning to embrace all of the items on his list and the notion that one theme could be adapted to embrace all the areas he had written down was very compelling, very compelling indeed.

When Helen arrived at the restaurant, the next day, David was already sitting at a table.

He had the strangest looking tray of food Helen had seen him assemble yet.

There was a green jelly, into which David had stuck three straws. There was a bowl of soup, a bread roll, a can of coke and several napkins – which reminded Helen of yesterday. Helen made a note to get herself at least a couple of napkins. There was a large bowl of mashed potato and three empty plates. Unusually, for David, there was also a large ripe looking orange.

Helen was surprised that there was only one dessert on the tray but decided that it was more a product of space (no room on the tray) than a new prudence on David's part.

Helen selected a chicken salad, a clear plastic cup, a bottle of water, an apple, enough cutlery for herself and David and two napkins before paying and joining David at his table.

She sat, arranged her tray and reached for her bottle.

Even before Helen had twisted the top on her water bottle David was pointing at the straw nearest to her urging her to look down it and asking her "what can you see down the straw Helen?"

"Hello Helen, how are you today?" said Helen a little edgily.

"Hi. Look, what can you see down the straw?"

Helen poured herself half a glass of water before taking a sip. Slowly she leaned forward as David became increasingly excited. He couldn't have displayed more anticipatory excitement if he'd been ten years old and had rigged the jelly to explode showering Helen with green gunge.

Helen looked, considered and said "green jelly." "Are you sure?" "Yes, David all I can see is green jelly."

"How do you know its green jelly, though?" "David, the straw is stuck into a pile of green jelly that is on the plate. Naturally I can see green jelly." "No, what I mean is that YOU only know its jelly because you can see the straw stuck in the jelly. But if you were inside that straw and just happened to find that your straw universe had changed at one end – turned green – you wouldn't know, from inside the straw, that it was a green jelly. Remember, all you can tell from within the straw universe is what is immediately in front or immediately behind. You have no concept of up, down, left or right so you can't see a jelly."

Helen considered yesterday's discussion and, remembering the can of coke, checked that she had some paper towels. "Okay", she said, "so what you're saying is that I reached the conclusion that I was seeing jelly only because I was looking from outside of the straw, yes?" "Exactly." enthused David.

David reached over and manipulated the other two straws. One he carefully lined up so that it passed the first straw at a point close to the first straws jelly soaked open end. The other he placed near to but not touching the first straw.

"Ok", he said, "look down the first straw again." "Which one?" "The one you looked down just now. What can you see?"

Helen looked and saw the other straw. "I can see the other str…." "Gotcha again," said David "don't tell me what you think you can see. Tell me exactly what your eye sees." "We-ell, all I can see then, is that there is something white in the jelly." "Exactly. So do you agree that from within a one-dimensional universe – the straw universe – it is not possible to see what the bigger picture is? It is only possible to interpret what is 'visible' from within your very limited universe."

Helen nodded.

"And what about the third straw?" said David. "What third straw?" said Helen. David smiled and reached for the soup spoon on Helen's tray.

For several moments David excavated soup from his bowl. Finally he mopped up the last remnants of liquid with his bread roll.

"If I'm not mistaken then, the same logic can be applied to the two dimensions between the menus view you showed to me yesterday." "Too right it can," said David. "Imagine that a straw had speared through the two menus. On its way through, all that would have been discernable from between the menus would have been that something had appeared – stayed a while and left. The idea that it was something long passing through would be untenable because that would depend on being able to detect what was happening above the top menu and below the bottom one."

"But," said Helen "if the straw was passing through, its entire length visible between the menus, then it would be possible to explore it properly, true?" "True."

"I get it now," said Helen. "And all of this interaction between the straw universes and the menu universes would be visible – IS visible – from the bigger three dimensional environment." "Exactly like you and me watching the whole thing at this table," finished David.

David dived into his dessert next using his soup spoon. Not as sticky as yesterday, he showed considerable restraint, waiting until the whole course was finished before starting again, although it must be said that the soup spoon danced to a non-existent tune even as he was chewing.

"If you think about it," he mused, "from within each of the universes it would be possible to think that you had a good grasp of everything that is going on. It is probably the same if you scale everything down to a single ball shaped universe." Reaching for the orange David held it between them, turning it with his hands alternately cradling it in his fingers and allowing it to rest within the palms of his hands. He rolled it from hand to hand and as he did so asked Helen "If this were a complete universe contained within this orange, what do you think they would think was going on out here?"

"Based on what you've demonstrated so far they would have no perception of out here and so would not know that anything was happening to the orange at all." Agreed Helen as they both nodded together. "And yet," said David, inside the orange they have an up, a down, a forward, a backward, a left and a right."

David smacked the orange down into the big bowl of mashed potatoes, most of which stayed in the dish, and took a straw from the jelly. "In fact," he said "if this straw were to

be pushed into this orange there would be no way of knowing how why or from where the straw had appeared. If it were pushed in and then pulled out again it could no more be explained than say," after a long pause he continued, "a ghost."
It was it this moment that a chair was noisily shoved backwards, its rear two legs kicking at the tiled floor of the restaurant and creating a harsh staccato that made people cringe and turn. "Why are you playing with your food? Get it down your neck you great buffoon!"

Ordinarily David would not have noticed even this direct a challenge when on full stream but with a surge he twisted and rose in his seat. In one smooth – somewhat surprising movement - he went from hunched forward in concentrated discussion to grizzly bear. Brian, the source of the verbal attack, was able to avoid being toppled but suffered a jab into the gut and a poke in the ribs as his plastic bottle bounced from his tray and rolled across a nearby table.

Helen hugged the contents of her tray protectively as David let loose a roar of delight and moved in for the hug. "Where the hell did you spring from?"

6

Brian had been absent for almost three months.

At the start of summer he had picked up a rucksack ad announced that he was "off for a bit."

The 'bit' was something of an understatement. It turns out that Brian had taken a cheap flight to Barcelona where he had looked into the Picasso museum, the maritime museum, The Rambles, several eateries and a good few nightclubs before heading east.

Heading east had taken him across the south of France and into northern Italy. From Italy he had taken a boat to Rhodes and then onto Cyprus where he decided that he would indulge in a trip to Egypt and the pyramids of Geyser.

Once again a museum had hooked him and for three days, Brian had virtually lived with the artefacts gathered from the pharaoh's tombs gathered in the vast rooms of the British museum in Cairo.

Returning to Cyprus, he had played the waiting game until a holiday flight was able to squeeze him into a cancelled seat and bring him back to Britain.

The very notion that anybody could travel so far without having a schedule, a planned itinerary or a list of things to do filled Helen with a confusing mixture of admiration and anxiety. The fact that Brian could do it without even sending word home drove her to distraction. But then, why would he let her know. Only Helen knew how she felt about Brian and she wasn't telling.

On previous occasions when Brian had 'gone walk-about' Helen only learned anything of his exploits if Brian sent email to David and even then only if David thought to mention the fact that Brian had sent an email.

Helen was gasping to know more of Brian's adventures. She agonised for Brian to invite her to sit with him while he elaborated on the detail of the various places he had visited. She was desperate to live some of the spontaneity of his adventures even though the thought of travel, especially the haphazard travel as undertaken by Brian, filled her with a dread that was both illogical and irrational. And she was surprised to find that she both wanted to know and didn't want to know whether he had always been travelling alone.

Instead, David brought him up to speed with his explanations and arguments surrounding his theories on dimensional relationships. In particular the suggestion that from any dimension it was almost impossible to relate to the next dimension 'up' the list. Whilst from any dimension all dimensions 'down' the list were totally available.

Brian grasped the logic immediately and joined with David to help Helen to understand – quite unnecessarily – the finer points.

Helen wondered whether she would ever hear of Brian's adventures.

Helen knew she shouldn't ask but she did anyway. "Just why are we having this debate, David?"
"Don't you remember yesterday," he said, "when I said that I would prove to you that there was at least one more dimension than the three we generally accept?" I've just demonstrated that there is obviously a dimension from which things can appear and then remove themselves to. And I've just proved that in a closed dimension – like the orange – there can be an apparent freedom to move in any direction with no awareness at all of anything outside of the orange."

"Yes," said Helen, "but if you're going to tell me that the orange is representative of our universe then your argument is flawed completely because our space is infinite and the orange most definitely is not infinite."

Helen sat back confident that not only had she made a good point but also on this, most rare of occasions, she had managed to blow a hole right through David's theory.

Her self-satisfaction lasted almost 10 seconds.

This was going to be a challenge.

David was either going to have to concede his argument or else prove that space inside an orange is infinite.

Brian moved ever so slightly towards Helen as he subconsciously distanced himself from the losing side. He had no idea that Helen's pulse, already making her giddy as a result of her unexpected success in the debate, quickened so that she thought the dining room must have been echoing to the kathump of her heart beating.

"Fibre-optics." David said the word contemplatively, quietly. The effect was to draw Helen and Brian in closer to him.

"Fibre-optics," he said again. "Remember the straw, Helen? Where we looked along the straw and could only perceive what was in line with but not parallel to or near to the straw? Well fibre-optics carry pulses of data at the speed of light along miles of transparent tubing. They are used to securely transmit digitised video, audio and raw data where line of sight or outside interference could cause a signal to be corrupted. Fibre-optics provides a continuous reflective completely one-dimensional environment within which we send traffic one way.

"Now, if we lived a one dimensional existence within such a tube, we could easily be fooled into thinking, because there IS no outside and because the inside is reflective and we can only encounter it if we happen to bump into it, we could be fooled into thinking that the tube is in fact without bounds.

"We would only 'bump' into a side if the tube were to bend and we, in our travel, didn't bend with it because we don't know what sideways or up and down are.

"Within that environment our space would appear to be infinite. It follows, therefore, that if we existed within the orange the same laws of perception would apply and that space within that sphere would appear infinite too. Perhaps if we substituted our orange for a bubble, complete with reflective interior surfaces and fluidic surface area it would more accurately resemble the inside of the fibre-optic tube."

Brian was speechless.

Helen, after a momentary pause, "You wouldn't ever bump into the side of the tube because that would apply an alien influence that was inconsistent with the world inside that universe. Similarly, no matter what attempt was made to reach the edge of the bubble, local effects would keep the inside from reaching the outside and that would effectively maintain the illusion of infinity."

They all looked at the orange.

"So what you're saying is that we live in a giant bubble within which all of our laws of physics operate but that we are deluding ourselves by thinking that our bubble is infinite and that there is nothing else – nothing outside of our bubble."

David sat back, folded his arms and nodded. "Yes Brian that is exactly my point. And, Helen, it is from outside the bubble that the next dimension visits in much the same way as our observations of the plates and the straws yesterday and of the orange."

Late, the three of them stood to return to their work places.

Helen gave Brian a look of appreciation when he gathered the trays together before retiring them to the spent tray stand.

That night, Helen did her weekly shop. Brian stayed in a bed and breakfast while he looked for a bedsit and David called at the local late-night store where he picked up some supper before returning to the relative disarray of his apartment.

Later, Helen spent the evening alternately reading and wondering where Brian was. David was too engrossed in the thoughts of how uncannily the universe within 'his' bubble resembled the real universe to think much about either Helen or Brian.

Had David considered, even for a moment, that Brian might be in a bed and breakfast establishment he would have offered him a bed and a place to stay? But then David wouldn't have been David if he thought about things like that.

Instead David was thinking about bubbles.

Bubbles blown from a child's bubble bottle are produced 'en-mass' when a hoop of soapy liquid is first formed as a diaphragm, which is blown gently.

Bubble after bubble is formed each moving away from the source.

Some rise, some burst, some sink slowly and some fall to the ground.

Some children's entertainers and illusionists can blow bubbles within bubbles and some even produce bubbles with small amounts of light material inside them.

Bubbles occasionally merge or join together. None of them last very long.

David determined that he would obtain a bottle of 'bubbles' for his next lunch time session.

He rummaged around for his list.

When Helen and David next had lunch there was no Brian at the table.

“He’s looking at bedsits,” explained David.

Helen’s thoughts ran to the empty second bedroom in her own apartment. Empty that is except for single bed covered over with stuffed toy animals collected over many years.

She thought of her own ample bed and quickly dismissed her room from her thoughts with a shake of her head.

David searched around his tray for a spoon. Finding none he searched Helen’s tray where he a found exactly what he was looking for.

Helen, meanwhile, was looking at David’s tray which was remarkably unremarkable, except that is, for the canister labelled ‘Bubble-Fun’ and ‘ages three and over’ and ‘protect eyes’ and ‘do not drink’ and ‘only to be used under adult supervision’.

Helen wondered, as she nibbled at her salad dish, whether children of the ages illustrated on the bubble canister would ever be as thrilled in reality as those depicted in rapturous delight as bubbles floated around their heads and upraised hands. She also wondered whether there should be similar warnings with regard to people like David having access to anything so liable to hazard as ‘bubble-fun’.

David, for his part, shovelled soup with the rhythmic regularity of an oil pump before soaking up the remnants with his bread roll.

He was showing considerable restraint, or he was waiting for Brian to join them.

Without missing a beat, David returned to his spoon and swapped soup bowl for the first of his pudding dishes.

Helen sighed. Today, lunch was quiet. She wasn’t sure whether it was because David was behaving normally – which very definitely wasn’t normal for David, or because Brian’s arrival had been such a euphoric moment last time they were at the table.

She took the top off her water bottle and poured half a plastic tumbler before replacing the top.

As she raised her glass to drink, a bubble burst on her nose. Others came at her in a rush. Most of them burst with a fine spatter of soapy liquid drops many of which went into her glass. Others blew past her or peppered her jacket.

Her face looked nothing like that of the children on the canister.

“BANG!” said David and he blew another barrage of bubbles at Helen.

“BANG!” he said again as he repeated the process.

Helen, half covering her bottle top with her left hand removed the top and took her drink direct from the bottle.

Returning the top to the bottle she asked, “Why are you blowing bubbles at me David, and why do you keep saying bang?”

“Don’t you get it? He asked.

“Get what?”

“The other day, when we decided that our universe was like a bubble, visible as a bubble from outside but infinitely big and without limit from the inside.”

“Ri-ight,” said Helen “Go on.”

“Well,” said David, “scientists believe that our universe started with a big BANG!” with which he blew another torrent of bubbles at Helen. “I’m creating universes. Don’t you see?”

“Our definition of the big bang is our way saying that our universe came into being from something or somewhere outside of our understanding. One minute we were in a pool of filmy soapy liquid the next we are being pushed into this smaller reality where we exist in our bubble of a universe travelling through a much bigger place.

“From out in the much bigger place it maybe possible to look at many bubbles some of which may be universes like – and very unlike – our own. Only I think the bubble analogy is over simplifying things a bit.”

Helen pushed her irritation to one side. She hated drinking direct from the bottle. People handled them at the neck and there was no way of knowing that they were suitably clean for her to drink from. “So what you’re saying is that by blowing bubbles you are, in some way, recreating the birth of the universe and that there may have been many such births. That must mean that parallel universes exist, right?”

“Right,” said David. “Also”, he said, “Universes may have been created before ours and may still be being created now.”

Helen smiled a little at the simplicity of the idea. Typically, David had expounded a theory of which there was no hope of dispute or of proof. However, it was elegant in its simplicity and it did serve to answer, albeit superficially, the question – if the universe was created with a big bang, what went bang? But David had already moved on.

He was randomly prodding the few remaining bubbles, most of which burst instantly as he touched them.

“Just imagine that from outside of each of these universes I can approach, peer inside, and retreat with no constraints of distance or time to interfere with my explorations.

“My appearance would be largely unrecognisable and even if noticed would be completely un-identifiable.

“I would be able to come and go exactly as I pleased. I could compare progress, seed ideas. I might even cause changes to take place within the universes I visited without the occupants of the universe ever being able to grasp even the notion that I might exist.

“I could create and destroy.

“Stories could be told of great events and mysteries. Mysteries caused by my actions.

“It would be as if I was everywhere at once and at the same time nowhere at all.

“How could the occupants of any of the universes ever comprehend the notion of an existence outside their universe when, from inside the universe it appears infinite – without end and bound by the laws of physics as apply within these ‘bubbles’?”

Helen shivered as she checked her watch, the hairs on her neck tingling unexpectedly.

Helen hadn't really explored her reaction to this, latest, of David hypotheses, when she gently made a mocking bow before him as she stood to return her tray to the used tray stand.

She felt unsettled but couldn't put her finger on why.

That evening, Helen went to the library.

She found herself looking at books from the religious section.

- In the book 'Buddha His Life and Teachings' she read of Samsara and she read that each day is like a flower standing tall but which fades, as the day grows old. She read of the universe as it comes together and breaks apart.
- She looked at the Bible where in she read, in Genesis, of the making of the earth and the creation of mankind. She also had a brief look at the book of Revelations.
- In the Egyptian book of the Dead she read of the God of Eternity and of the Other world.
- In the Koran she read of a God who lived in The Kingdom, described as another world.
- In the Laws of Mabu she read of This Universe which existed in the shape of darkness, unperceived, destitute of distinctive marks, unattainable by reasoning, unknowable, wholly immersed, as it were, in deep sleep.

Wherever she read, the story was the same; That God lives all around. That he comes and goes to suit his needs – these visits often recorded as 'in times of need' by mankind – and that his behaviours could, indeed, be consistent with there being another place such as the dimension about which David had so casually hypothesized.

Helen had felt decidedly uncomfortable when David had put his theory forward at lunchtime and having spent a short time in the library, Helen had worked out why.

As a schoolgirl Helen had been hugely influenced by religion.

From the days of Sunday school she had continued with church attendance through her teens and had found the community of the church to be a support to her and that she too had been a contributor to the community through her beliefs.

However, lately, she had been less inclined to go to church and, like so many busy people, had stopped making her weekly visit to see old friends or to take communion.

The sophistication of modern society had seduced her away from the church by making even her weekends busy and by offering logic and reasoning such that the church seemed to offer less and less.

Less because science seemed so easily to squeeze any place that a God might chose to reside and less because the false gods of profit and fulfilment were being thrust on her as they are on all who are bombarded with what passes for 24 hour news and entertainment.

What had happened yesterday, with David, and during the evening at the library, was that Helen had enjoyed a blossoming of hope that perhaps she had been wrong to dismiss her God. That perhaps a place had been created from within which a God COULD observe, intervene and create.

Helen decided that next Sunday she probably would go to church.

13

Brian had found himself a flat.

He'd looked at four and ruled two out for reasons of space and quality.

The two he had short-listed were both good but before he could take his preferred choice it was let to somebody else. Brian had shrugged his shoulders and immediately paid his bond and first months rent on the remaining furnished flat.

Overlooking a car park at the rear but with a tree in full view, the flat had one bedroom, a lounge with a kitchenette and a shower room with loo. No bath.

To the front the main road was busy from 7:30 in the morning quieting after 7 at night. Brian felt that this would be no problem given that he too would be busy for those same hours.

Within 2 hours he had collected his possessions from the storage warehouse and was drinking ginger beer to the weird sounds that he considered musical. Today musical was a 'tinky tinky plinky' sound typical of the music played in Greece and Cyprus.

From his bag, Brian produced some of the trophies of his recent journey.

Not much of a collector of souvenirs, Brian had several books – paperback visitor guides to the places where he'd stayed – a piece of genuine papyrus neatly marked with the glyphs that represented the name Helen, a plastic pyramid within which it was claimed a razor blade would stay sharp forever and a cook book proclaiming the health benefits of eating Catalan style.

He looked around his new home before placing the papyrus carefully inside the front cover of the cookbook, which he placed on the one shelf above the desk.

Brian had met Helen only a little over a year ago.

Ordinarily, Brian would not have noticed Helen. But it was because she had a relationship with David that was clearly – unusual – in that they enjoyed lunch together, would meet for special occasions and might even have the occasional dinner together that she had come to his attention.

That and the fact that she and David would explore some amazing subjects in those moments when other people discuss nothing more than the weather and the rising cost of bus fares.

Unwittingly, David had provided a platform from which Helen could be seen where Helen, left to her own devices, would have been quietly tucked behind the pages of a book every lunch time.

Brian had been attracted to her wit and incisive responses to some of his friend's most outrageous suggestions and arguments. He was also intimidated by her fastidious attention to detail and her need to meticulously plan everything she did.

David was thinking.

For David logic and reason had long ago driven out thoughts of religion or any other non-empirically evidential argument.

His proclivity for suggesting the absurd was testimony to this position. By constantly throwing up ridiculous and outlandishly logical arguments he tested the limits of his thinking.

However, unusually, he had argued himself into creating a place that could easily be a heaven. A place where a God could exist and from which – without limits of time or tide – a God could be all things to all men wherever and whenever it wished.

That this should be a cliché was not as disturbing to David as was the thought that it was HIS argument that had done this, his and Helen's. That he of all people should have come up with this particular rationale was what disturbed David the most.

David sought solace in more comfortable thoughts. He turned his attention to matters of time, of black holes and event horizons. He reached for his list.

Working on the premise that a big bang was simply the device by which scientists explain that all matter came from something or somewhere that cannot be explained, David turned his thoughts back to his bubble making session.

His argument had been that each bubble represented the creation of a universe.

Helen had built on that argument when looking at the multitude of bubbles that had been produced. It was Helen that had concluded that these bubbles were parallel universes and that discussion had led to the conclusion that bubbles – or universes – probably exist that came before our universe and after our universe.

It was the before and after that were troubling David.

If there is a place – another dimension – within which ours and other universes co-exist, and if that place is one from which a godlike being can visit as, and when, they wish. Then time must operate differently there than is experienced within our universe.

Either that, or a Godlike being is very long lived but capable of doing things so quickly that we can occasionally perceive them. Or there have been a succession of Godlike beings paying us visits as our time has passed.

Even David felt this was a poor argument when compared with what he knew of religious teachings.

No, the only plausible solution was to suggest that time was irrelevant outside of a universe. This would mean that the 'bubble' hypothesis was modifiable because if there is no time outside of our universe then there can be no before or after outside of the universe.

David reached for a chocolate bar.

As he opened the wrapper he decided to get himself a drink so, before putting his chocolate bar down, he re wrapped it.

On the way to his fridge he was still considering this time conundrum when the memory of what he had just done to his bar of chocolate came back to him.

"Tell me what you understand about time," he said as he soaked up the remains of his soup with his bread roll.

Brian and Helen looked at each other then back at David. "What do you mean exactly?" Brian was first to voice their jointly shared question.

"I don't want to influence you by elaborating" said David. "Go on just tell me what you understand about time."

"We-ell" Helen this time "We-ell, time marches on doesn't it. It can't be stopped, or speeded up. Sometimes it seems to drag and others it whizzes by but that's just how it feels not what's happening really."

"Yes, and you can't relive a moment at best you can only repeat a moment. You can predict an event but you can't pre-visit it." Brian was really getting into this. He carried on. "And if the same thing was happening in one of your parallel universes we would never know about it would we?"

"Okay," said David, "what you have said is that time is linear and that time passes us by. It cannot be reversed, side stepped or rushed. What if I said that time isn't passing us by? What if I said that it is us that is hurtling through time?"

"That's a bit hair splitting David" "Not really Brian. When you describe time as passing us by you give it energy or suggest that it has a force or energy of its own a bit like the wind or tides. But if we travel though time then time becomes inert, static and it's existence is a by product of our motion. More like a headwind when standing at the bow of a ship at sea."

"But what difference does it make?" asked Helen. "What we said in answer to your question is accurate."

"Only to a point" David said again. "You see I was thinking about what we said yesterday and I must admit to feeling a bit strange last night. I couldn't quite put my finger on it but basically I thought that what we had described was a place that might be…" David paused.

"Go on." said Helen remembering her own visit to the library.

"Well, I thought it could make room for a place like Heaven because, to be honest what with our telescopes and probes and rockets we've pretty well denied the churches any place for a god to exist and suddenly, now, there IS a place."

"I know what you mean," said Helen. And Helen told them both what she had read whilst at the library the night before.

Together they reflected on what they had discovered.

After several long moments Brian remembered that they had gotten into the subject of a heaven when David had asked about their understanding of time.

"So what was it you were asking us David, about time?"

“I was wanting to explore the idea that time is inert and static and that our experience of time is nothing more than the by-product of our universe travelling in the bigger space,” said David. “Its important, because for a being that exists outside our universe to be able to look at us in the same way as we can look at the plates of a two dimensional universe, the straw universe of one dimension or the sphere of the bubble universe it has to be possible for that being to move freely up, down, forwards, backwards or side to side in the bigger universe and for that to be true ‘time’ had to be static.

“Strangely, the solution came to me when I was unwrapping a chocolate bar last night. I decided I also wanted a drink so I re wrapped the chocolate bar which – I realised – was akin to me backtracking time. Although in our reality I continued my journey through time as always.”

They all sat silently.

“What you seem to be saying is that these bubbles move through the bigger space and that time is a by product of that movement. That time only exists because the bubble is moving.”

Brian turned towards Helen as she finished. He added, “So what happens if a universe isn’t moving through the bigger space?” “Then there IS no such thing as time in that universe,” concluded David.

David went on, “The time effect within a universe must be directly proportional to the speed of the universe within the bigger space but even that is mind blowing because speed is a product of distance and time here.

“That must mean that movement in the bigger universe is instantaneous which means that a being – there – would be, could be, every where at once.”

At which point Helen joined with, “and that would be very God like. Just as it is written in the various religious books I was reading last night.” “And,” interjected Brian, “no more mind blowing for us than the concept of three dimensions or two dimensions must surely be to a being that lives in a fibre-optic cable.”

They finished their meal in silence. It was as if they had stunned themselves with their own thinking.

“You know, if a universe wasn’t moving through the bigger space, if it were sort of – at rest – there. Would it still be a universe do you think or would it have to return to the same state as the bigger space that it was once travelling through?” This was Helen, deep in thought.

“I suppose,” Brian replied “that it would lose its dynamic if it wasn’t moving in which case it would cease to be a separate entity so… my guess is it would return to its normal state of/” “/and that would be its pre big-bang state”. Cut in David. “Of Course. The universe starts with the bubble form that we call the big bang. That kicks the universe into relative motion in bigger space and while ever it has motion, a by-product of that motion is time within the universe but eventually the universe loses its relative movement at which point it reverts to its pre big bang state.

“Now you’ve got me thinking. Does the whole universe have to lose its relative motion through bigger space uniformly? I think not. And I think we are about to discover the true nature of black holes and event horizons. See you guys tomorrow.” And with that David was on his feet and out of the door.
Brian turned to Helen. “What do you suppose has gotten into him all of a sudden,” he said.

Helen just smiled, gathered hers and David’s tray together and left Brian eating the remainder of his lunch which he had, until then, completely forgotten.

Brian was first to arrive for lunch – after David – the next day and was horrified to see that David had placed a new pair of shoes on the table next to his dinner tray. He opened his mouth to say something but was beaten to it by Helen who gasped and shouted at David to get his shoes of the table. "Don't you know it is bad luck to place new shoes on the table?" she shrieked.

David looked a little confused as he looked around. Clearly somebody had boobed by putting their shoes on a table but why was everybody looking at him?

"I think she's talking to you." Said Brian and, after a moment, David realised that the excitement had been caused by his own shoebox. "Oh that's not new shoes," he said, "I just have a few bits and pieces I want to show to you both in a moment, that's all."

Helen glared as she sat down. For Helen to have drawn the attention that her shriek had just caused was not just out of character, she found the whole business of being in the glare of attention too embarrassing. She chose, therefore, to glare very hard at David.

Had David looked up from his soup he might have noticed.

Realising, as David started into his second dessert, that her glaring efforts were entirely being wasted on him, Helen turned towards Brian. "Did you find somewhere nice to stay Brian?"

David looked up surprised, "Have you moved or something?" he asked.

"I let my rooms go when I went off to Barcelona. Seemed little point in paying rent when I wasn't going to be here, did there?" Turning to Helen he said, "Yes thanks, a small place on the main drag 'bout half a mile from here."

"What's it like?"

"Fine thanks," said Brian. "It's handy for all the things that matter. Furniture's adequate and the rents okay. What more can a man ask?"

Helen wasn't at all sure what more a man could ask and she wasn't at all convinced that fine was description enough to help her get an idea of how, or where, Brian was staying. She was just thinking that through and might even have asked more if David hadn't, at that precise moment, knocked her cup of water over.

As the water glass went over, David made a grab for it, missed, but in missing gave the glass an extra push in Helen's direction.

The added push was enough to send refrigerated water down Helen's neck and front. The ice-cold water rushed into places that normally only warm shower water rushed and the effect made Helen gasp as she pushed her chair back hurriedly.

Behind her a startled "OY!!" coincided with her chair colliding with a chair behind her and involuntarily Helen replied "Sorry." and "David!!!"

Brian reached for one of Helen's paper towels and was within a fraction of a second of dabbing her shirt front dry when he suddenly realised where he was and what he was about to do. Colouring to a delightful pink he swerved his hand to catch water as it spread toward the edge of the table.

Helen caught Brian's change of mind and his change of colour and felt a rush of warmth for him which turned to a quiet chuckle before extending into a really delicious giggling fit which Brian found totally infectious.

David, and the indignant gentleman from the neighbouring table were left to glare at each other while Brian and Helen giggled and laughed like naughty children.

"When you're ready," said David, "I'll show you what's in the box" to which Brian and Helen went into guffaws of laughter.

What David had in his box was a sheet of some stretchy netted material with holes, a couple of marbles, a large elastic rubber band and a pencil and he was really quite keen to move on from this frivolous moment that Brian and Helen seemed to be sharing so that he could discuss his ideas about gravity and black holes.

Like a magician preparing for his greatest trick ever, David removed the lid of his shoebox and one by one he removed the items from the box, placing them side-by-side between himself and Helen.

In the merriment of the moment Helen did not notice how her shirt was sticking to her until Brian's laughter abruptly stopped as his gaze paused well below Helen's chin, before he could tear his eyes away and onto David's presentation.

Suddenly Helen felt the clinging of her shirt and she stopped laughing as she pulled her cardigan around her. Annoyingly she felt her own flesh heat-up as she too turned a delightful pink to match the colour Brian had displayed only moments before.

She too focused on David's presentation.

"Right," said David, "yesterday we parted after deciding that time was a static and inert state and that time was experienced within a universe and varied with the relative speed of that universe through what we have been calling 'bigger space'.

"We also agreed that if a universe were to slow to a stop within bigger space then it would cease to have time as we know it and that in all probability the universe would simply restore itself to the same state as that of bigger space.

"This 'bigger space' is the next dimension that I have been saying we cannot perceive from within our own dimension.

"Now, if a universe can lose bits of itself to bigger space, how do you think that would appear from within the universe?"

Helen and Brian gazed at David. Neither of them had fully recovered from their giggling fit and neither of them had fully recovered from their respective embarrassments. They continued to say nothing.

David sighed, he wasn't sure what was happening with these two but he was determined to make his point. Reaching for the stretchy netting, David placed it over the open top of his shoebox. He secured the net by placing the elastic band around the sides of the shoebox so that it trapped the edges of the net leaving the clear surface of the net smooth over the open box top.

Next he placed the biggest of the marbles onto the net so that it stretched slightly at the point where the marble rested.

Realising that neither Brian, nor Helen, were likely to say anything for the moment, David went on. "I think that from within the universe, if any part were to 'slow' it would appear to drag and make a sort of gravitational well within the universe.

"I think it would start to attract other bits from near it towards itself and I think that as it became more and more substantial it would make a deeper and deeper gravitational well in the universe." David set the second, smaller, marble and pushing it caused it to travel

round the first marble is a rapidly decaying orbit before it settled touching the first. The stretchy net sank further into the box."

Brian recovered first. "That looks like those models that depict gravity and black holes." he said.

David took the second of his marbles from the net and once again set it in motion so that it spiralled around the first marble before coming to rest touching it.

"Imagine how that would look if there were hundreds of thousands of smaller marbles all spiralling into the centre." he said.

"It would be like stars spiralling into the middle of a galaxy – like the milky-way." said Helen.

"And what if the mass in the middle gathered so many stars…" as David said this he used the flat end of his pencil to push down on the big marble "that it was able to leave the universe altogether?" and with that the marble dropped through the net into the shoebox.

"What would that be like from within the universe?" asked David.

Brian looked into the box. "It would be exactly like the black hole effect that's currently being reported by scientists. Current belief is that at the centre of every galaxy in the universe, there is a black hole which is acting as the engine driving the Galaxy to spiral in on itself"

"And Steven Hawkings came up with a theory of 'Event Horizons' as being the point at which an object – including light – when approaching a black hole could not escape the pull of the black hole," continued David.

"So if this box was very big, the dip caused by the large marble would localised so that most of the stretchy net would be flat. That would mean that a marble placed on the net where it is flat would not, automatically, travel towards the bigger marble nearby but if it did drift too close then it would start to roll toward the bigger marble."

Helen joined in. "and the point where the newly attracted marble could not change its commitment to the big marble would be the event horizon?"

"Yes." chorused the men.

What David had used to demonstrate the effect of gravity, that lunchtime was nothing new in science circles? Indeed, similar models – usually computer generated – were often shown to describe the effects of gravity and it was widely accepted that the greater the mass the greater the gravity. It is also well understood that mass and size are not related. Thus a gaseous planet such as Jupiter can have less mass than a very dense solid object in space.

It is also well understood that momentum is a product of mass and velocity and that velocity is measured by comparing distance with time taken to travel that distance.

David was having some concerns over the way his model was working.

If our universe was contained merely because it had erupted out of 'bigger' space, his fourth dimension, and if this fourth dimension was really the time dimension, then what David was doing was creating a link between time and gravity.

That such a relationship existed was not a problem. The problem was that David couldn't recall ever having read of such a relationship and that bothered him.

The rationale for this latest idea had evolved out his discussions with Helen and later with Brian.

He had satisfactorily demonstrated that from within any dimensional environment, perception of an environment with an added dimension was almost beyond comprehension. Thus life in a tube could not know of life in an adjacent tube and would not recognise another tube even if it crossed right in front of it, seeing only the part of the other tube that was directly ahead.

He was particularly pleased with his argument that had determined that from within any dimension physical constraints would render casual transfer almost impossible and that recognition of the boundary would be unlikely given that the transition point would be alien to everything else within the universe.

However, that same boundary would be nothing more fascinating than (say) the skin of a bubble when looked at from outside the environment.

He was also happy with the hypothesis that time was a product of being inside a universe which was 'travelling' within the fourth dimension, given that the universe was a temporary creation within the fourth dimension of 'bigger space' always seeking to return to a normal state it seemed entirely reasonable that time would be nothing more than the drag felt as a result of that apparent movement. (Much like a headwind generated by a car or a running person on an otherwise still day)

The new part, the part that was concerning David was that if Time was the friction slowing things within the universe and causing them to return to the norm of the fourth dimension and the physical manifestation of that effect was gravity then he was looking at, what he believed was, a largely un-explored phenomenon and David wasn't sure he wanted that responsibility.

If time is the fourth dimension, then movement within that dimension means travelling back and forward in time – as we know it – and that would be no more remarkable than walking up and down a flight of stairs.

Up to the top and back down again in the fourth dimension would be possible but so would climbing the stairs and then returning to the point before the stairs were climbed instead of climbing back down.

Looking in on our universe from the fourth dimension would be like looking into the bubble.

While the bubble exists a person could look up, back over, under and continue to view the bubble from any angle they chose. If the bubble was made burst resistant that same person could look in – withdraw – revisit from a different angle and withdraw as and when they wanted.

Given that in the fourth dimension that could include forward and backward in time, then visits could be made on any occasion, and some of those occasions would be thousands of years apart as witnessed from within the universe.

David rubbed his temples.

Also, if the universe were to lose mass bit by bit then from outside it would look as though it was simply reducing in volume but as reducing implies that time is passing then surely the universe 'pops' into existence and just as it appears it disappears, all within the instant of the 'pop'.

However, because there is no movement of time in the fourth dimension – only movement through time, and in any direction - then the fragile infinitely small existence of the universe is irrelevant because having existed it is always there to be visited.

The apparent decay of the universe is only perceptible from within and gravity, it would seem, is the universe disintegrating as it reverts to a state it never really left.

David was feeling unusually depressed as these thoughts grew in his mind.

If his ideas were representative of a bigger reality than our universe, then that reality was such a fleeting non-event that it didn't seem, to him, that reality could possibly matter. Then again, if the universe existed at all in the fourth dimension, his thought processes had reasoned that it would be there forever because to exist for in instant in the fourth dimension meant that the universe could only ever be. It could never 'not' be.

David reached for a can. It was ginger beer and the feeling at the back of his throat, as he drank, was a welcome reminder that however fleeting this existence, there are some great tastes and feelings to enjoy.

21

That evening Brian lay on his bed.

He had the radio playing but he wasn't listening. He kept thinking about Helen and the fit of giggles they had shared at lunch.

He remembered the spilt water.

In her room Helen pressed her hand against herself where both the water and Brian's gaze had rested.

She felt a smile as it forced itself onto her face causing her expression to lift as if lit by a warming candle.

She sighed; he had only looked because she was wet. Probably her shirt had gone a bit see through or maybe in sticking to her he could make out more of her than was normally visible.

It didn't mean anything. It was probably no more than the normal reaction of a man who is suddenly presented with more of a view than he expects.

No, it probably meant nothing at all.

Brian shook his head as if to shake the picture from his mind. But it was lodged firmly in place.

He clicked the radio off and reached for his book on Egypt.

David couldn't sleep.

If gravity brought mass together, attracting more and more to itself until it became so compact that a black hole formed. And if that black hole was actually matter within the universe returning to its natural state in the fourth dimension. I.E. back to where time stood still, then it seemed to David that time must be acting on everything within the universe uniformly. Big or small it would make no difference.

Against the inexorable force of time, everything in the universe would be slowed until eventually it would come to rest.

This drag would pull every part of every molecule together so that every molecule would ultimately join with every other until sufficient mass was created that it simply dropped out of existence within the universe returning to its natural – fourth dimensional – state.

Could this explain why so much matter was apparently missing?

Scientists have calculated, using the current understanding of the way the universe was created and based on the research and hypotheses of leading theorists, that there is insufficient matter in the universe.

According to the most recent theories there should be much more matter than can be accounted for.

They have no answers to this conundrum but the laws of physics as they are presented today support their mystery.

David's model suggests, quite simply, that the scientists have probably calculated correctly but have not had reason to consider that the missing matter has simply returned, already, to its natural state and left our universe for good.

David realised that this model of our universe within a bigger space – the fourth dimension – and its relationship with that fourth dimension was resolving many of the issues that philosophers, theologians and scientists are debating on a daily basis.

David was feeling a little doubtful.

How could he get his ideas tested, even disproved?

He remembered his list. The one he had made just a few days ago and went to the place where he had secured it.

He wondered how many of his listed items had been resolved.

He looked at each item in turn and thought back over the conversations and thought processes of the past few days

- **Is time travel achievable?**

If it is possible to enter the fourth dimension then it should be possible to return to our universe from any point which means that in theory time travel should be possible but significantly out of reach for us at the moment.

- **What is time?**

Time is static. An inert state that can only be measured if travelled through. Time is a drag, the headwind affecting all matter slowing it until it returns to its inert and static neutral state

- **What is dark matter?**

No ideas yet.

- **Where is all the matter that is mathematically supposed to exist given the current thinking on the creation of the universe?**

The universe is constantly in a state of stress, returning bit by bit to its original – fourth dimensional – state. The missing matter has been resolved already and has returned to the fourth dimension.

- **What is gravity?**

The physical manifestation of the effect of time dragging all matter together until it reaches sufficient mass to return to the fourth dimension.

- Can the 'weak' and 'strong' forces be properly identified and even harnessed?

Long believed to have properties similar to gravity. These forces are also the manifestation of time acting at a micro level on our universe.

- **What really happens within a black hole?**

The black hole is the point where matter leaves our universe returning to its natural state within the fourth dimension.

- **Is the current theory on black holes and their event horizons accurate?**

Yes, given that matter leaving our universe, and the point at which any joining matter could never leave the pull of that event, would appear exactly as a point of exceedingly strong gravitational pull from within the universe.

- **What of light speed? Is it really as fast as it is possible to travel?**

This has been touched on, but not thought through, completely, yet.

- **If everything that we know of the universe can really be put down to 'the big bang', what went bang?**

The universe popped into and out of existence within the fourth dimension. At that instant it has to exist because time is irrelevant in that dimension. However, having appeared, our laws of physics stand within the confines of our universe as we travel through the fourth dimension and experience the effects of time.

- **What if the story of the universe being created in seven days is a metaphor that can be placed into a greater context?**

Given that the universe exists as an anomaly in the fourth dimension and given that it is possible to visit the universe and reach in at will, it is entirely acceptable to believe that a being from the fourth dimension could have created the earth in a series of steps. Each of these visits could have been advised by the telling of stories or the leaving of clues but the concepts described here-in would be so difficult to address that they would be told of as 'daily' interventions.

- **If there is a god, where is God hiding when we send space ships into what was once considered to be heaven, God's domain?**

Science has, until this theory, stolen all the places within which a god could exist. The concept of a fourth dimension brings with it a place for a god. The ability to visit our

dimension at will without the constraint of linear time has much of the mystery of the holy books. This includes the suggestion that a god is everywhere and with us all, all of the time.

- **Are there aliens? And, Do those aliens visit planets – earth included?**

For some people, the idea that aliens exist is easier to accept than the idea of gods. However, if, in our future, we learned how to leave the membrane that is the boundary of our universe and after entering the fourth dimension we were able to re-enter, perhaps at a different point in time, then our arrival and departure would be very much the sort of sighting that is being credited to aliens. This argument ignores the possibility that other worlds within our universe may have beings that have mastered travel that allows them to visit neighbouring stars and their orbiting planets. Perhaps a combination of both is what is experienced when people claim to have seen aliens.

David considered; the only points on his list that he felt were totally unresolved were

- What is dark matter?

And

- What of light speed? Is it really as fast as it is possible to travel?

David remembered that one of the reasons promoted for not being able to travel faster than the speed of light, indeed the reason why nothing was believed able to travel faster than the speed of light was that as an object approached the theoretical maximum speed it would attain infinitely large momentum. Clearly an object could not attain infinitely large momentum therefore it could not exceed the speed of light.

David's theory regarding the fourth dimension and his supposition that in that dimension time is inert includes the idea that gravity, which continuously brings matter together, within the universe, is a product of the drag created by time as the universe decays within the fourth dimension.

Momentum is the product of velocity and mass and velocity is a product of speed and time.

It follows, therefore, that momentum is a product of mass, speed and time. If time in the fourth dimension is inert and only recordable as a product of the universe travelling through time, then as an object achieves an ever increasing velocity, increasing its momentum as its velocity increases, then the drag of time must also increase its mass to a point where the object is able to escape the reality of our universe.

Similarly, when mass reaches a sufficiently dense state it's gravity grows and that increases the drag effect of time. When this time drag effect is at its greatest, recognised from within the universe as a black hole, we witness the transition point whereby matter leaves the universe to return to its natural state. The natural state of 'inert time', which can be defined as the norm in the fourth dimension.

Taking that point, and applying it to the mathematical prediction that with speed approaching that of light, matter achieves infinitely great momentum, then it seemed, to David, that as an object approached the speed of light in our universe it also approached a velocity sufficient to leave the universe.

In order that it leave the universe it has to have returned to the inert state of time that is proper to the fourth dimension which means that the time effect has once again increased the mass of the object to the point where it can leave the universe.

David realised that he had effectively defined two extremes of existence within our universe. One extreme is where sufficient mass is generated so that time can drag it out of the universe into the fourth dimension. The other is where sufficient speed is achieved so that matter acquires sufficient mass to move into the fourth dimension. Whichever way matter moved through the threshold leaving our universe, the effect would be the same; the universe would lose some of the matter believed to be missing by the scientists concerned with how the universe was formed.

24

Brian took out his cookbook bought when he was in Barcelona.

He opened the front cover and looked long and hard at the hieroglyphs that represented the name Helen.

When he had started his journey at the beginning of the summer, he had thought he might like to take Helen away and show her some of the things that were of interest to him. His purchase of the cookbook was his panacea for not having rung her to say, “why don’t you join me?”

He had considered returning home after Barcelona but decided that he would travel by road and hitch a bit of trip around northern Spain and Southern France.

Once he’d started he just kept going, which is how he came to be in Cairo. It was here that he realised that he was missing Helen and that he would bring a little something home for her.

Looking at the hieroglyphs and the cookbook, he decided that he needed to risk calling Helen.

Perhaps she would like to know more about his journeys and the things he did. If she showed an interest perhaps he would pluck up enough courage to give her the gifts.

He reached for his phone…

Could dark matter be matter that was already close to leaving the universe? Was it possible that it was either ready to leave or was itself the matter that made the film of the ‘bubble’ that was our universe suspended in the fourth dimension?

One thing that is certain is that if matter was effectively formed into a perimeter beyond our ability to detect and if that perimeter was total – like the skin of the orange or the filmy surface of the bubble – surrounding our entire universe, then it would be a considerably large amount of matter even if spread very thinly.

David thought that perhaps he had resolved all the items in his list.

Concerned that he might lose the thoughts or forget some of his arguments he decided to write the whole thing down in summary to see if he could get it at least into print somewhere.

He also decided that he would write under the name of someone he once knew. Here is what he wrote under the rather more pointed title ‘3D Time Environment’ as it later appeared in a magazine.[1]

1 - Many thanks to MENSA magazine March 2005 and the editor Brian Page

3D TIME ENVIRONMENT

The case for a 3D Time Environment is overwhelming. In this article, Bill Hibberd, makes the case for the existence of the 3D Time Environment and challenges the world's experts to come forward and test the theory against their most recent findings.

If only part of what Bill Hibberd theorises holds true, then science could be on the brink of another breakthrough with enormous potential.

"I don't claim to be any kind of scientist or mathematical genius. This theory is formed out of pure logic. My challenge is to the people who claim to be our leading scientists and mathematicians and to our leading theologians… Fit what we know and believe, to this model and see how well it solves and resolves key issues of the 21st century.

We live in a three dimensional world where we enjoy length, breadth and depth.

We can travel up and down. We can travel left and right. We can go forwards and we can go backwards.

We are so lucky.

Join with me and imagine, for a moment, that we are in fact one-dimensional creatures.

We are, say, a tube. We can go forwards. We can go backwards. Life is good. Occasionally something will appear in front of us but that's okay because it's no bigger than we are and, anyway, it appears and then it disappears. Sometimes, though very rarely, we make real contact with these things and that's too weird because it pushes us but not in any way we can recognise.

Tubes are lucky too because compared to a point; a dot; or a blip, a tube has got masses of movement.

A tube has a one-dimensional existence that moves forward and backwards and can you imagine how weird it must seem to the point/dot/blip thing when a tube passes through it?

I mean, all the point/dot/blip thing knows is that something materialised stayed a while and then dematerialised where, as we tubes know, we're going someplace and… whoa! What was that that just appeared and disappeared right before my eye?

From the perspective of the point/dot/blip thing, life's great. We are here and we can do most anything we want, so long as we stay here and obey the rules that belonging to 'here' imposes on us.

Occasionally something really weird happens and things appear and disappear but we have no way of explaining these things so we just push the idea away and we don't let anybody know that it really happened.

I have used a very light hearted illustration to try to give an impression of how dimensions can be all but invisible to any existence that operates at just one dimension less than those around it.

A three dimensional existence allows that a point can be approached from any direction up/down/left/right/forward/backward and that from the three dimension perspective can choose to arrive at a point from any of those directions.

From the point's perspective, it never sees the 3D thing coming, going or changing direction because there is no such thing as direction.

A two dimensional existence can be in any plane relative to a point and we can easily perceive, from our 3D reality, the variety of planes that are available to a two dimensional 'creature'. Any one of the two dimensional creatures can approach a point from any angle that is available on its flat plane of existence.

Once again, the point only knows that something has arrived and that it has gone. It has no idea from whence it came or where it went.

Similarly, the 3D creature can choose to be 'in the plane' of the 2D creature, or out of it and the 2D creature may not recognise where the 3D creature came from nor where it went. The 2D creature only knows that something was there and then it wasn't.

We've already seen life from the 1D creature's perspective and we've visited the perceptions of the creature confined to life in the point/dot/blip.

If you've kept up with this mental imaging this far, then you are ready for the next big step…

We exist in our 3D world and have carefully crafted laws of physics that we know are strong and safe. We have strong religious beliefs that bind the very fabric of nature and our societies and these, also, help to keep us safe.

We have many un-answered questions.

Let us consider TIME.

When it comes to TIME we exist as the 'point' we described earlier. We can remember our past. We can predict a likely future using experiential modelling such as weather forecasting and demographic predictions. What we cannot do is literally see into the future or physically re-live a moment that has already happened. Neither can we move to the side nor up or down. In a three-dimensional world of time we are as encapsulated as the point we chuckled at in our opening explorations.

Keep your mind open to this idea.

I'll summarise,

In our 'point' existence we have 3 dimensions, we have the laws of physics. To us our 'point' is vast beyond belief and the space within it is infinitely big.

We have not said that the 'point' doesn't move but any movement it makes through 3D time is completely outside of our comprehension.

Let us look at some of our biggest discoveries and assumptions regarding the universe and quantum physics and relativity and gravity and our perception of time.

In 3D time, a creature would be able to move around and come to a point from any direction and the point would not know where it came from nor where it went.

If 3D time is a truly three-dimensional environment then, relative to our 'point', we could be approached from any direction. It therefore follows that our concept of 'time' has no meaning 'out there'.

Okay, some of the big theories that we hold dear!

<u>BIG BANG THEORY</u>

The universe started when a massive explosion took place and the rapidly expanding gases were very hot. Over millions of years these began to cool and join together forming galaxies as the still hot balls of star materials attracted planets to form and orbit around them.

This works even allowing the 3D time environment plus, it gives us somewhere from which a big bang might have originated.

AT THE CENTRE OF EACH GALAXY IS A BLACK HOLE

This can be explained with the 3D time model.

Given that before the big bang there was nothing in our reality, it is acceptable to reason that our matter would gradually return to its original state. That it would eventually drop out of our reality appearing to us as if it were accelerating into nothingness and looking exactly as if it were disappearing down an enormous galactic plug hole, which, coincidentally, is exactly how black holes appear to us.

EVENT HORIZON

The point at which nothing can escape the pull of a black hole; bit closer you're in it; bit further away you're not.

Imagine two vehicles travelling at exactly the same speed and in the same direction as each other. Vehicle 1 suddenly starts to decelerate. The view from vehicle 2 is amazing. Pandemonium breaks out because what they see is that vehicle 1 has started to accelerate away from them. When vehicle 1 stops the view from vehicle 2 is that vehicle 1 is moving very quickly away from them. Imagine that vehicle 1 will eventually become unstable and just drop out of its previous reality. The point at which it can no longer return to the reality of vehicle 2 would be the event horizon.

NOTHING CAN TRAVEL FASTER THAN THE SPEED OF LIGHT

What if the speed of light is escape velocity for our 'point' existence and that over that 'speed' just moves you into the 3D time environment.

GRAVITY and the so-called WEAK and STRONG FORCES

These forces can also be reasoned into the theory of 3D time environment.

If matter in our 'point' reality has a natural 'pull' towards its pre 'big bang' state, then all matter in our reality will be subject to a force that is inexorably trying to return to 3D time. This will drag small matter to bigger matter and will cause the spinning that perpetuates the various orbits and rotations that we witness throughout our known universe. Be it large or small.

Now for a really big additional thought…

Time is a product of movement. At rest, time is irrelevant.

The only reason we have time in our reality is because our 'point' existence is moving through the 3D time environment.

Einstein theorised, and real time experiments later proved, that time is relative. If the pace at which something is moving through the 3D time environment is varied, then time relative to us also varies.

I suggest that outside of our 'point' reality, time is un-important; that it is possible to move in three dimensions of time; to look in and visit our 'point' reality from any direction.

Could it be that science fiction writers who invent warp-drive, subspace, hyperspace and the other alternative ways of getting around our light speed limitations have been fashioning their own versions of the 3D time environment all along?

The challenge to our scientists, mathematicians and theologians is this;

Applying all known relevant laws, formulae rules and theories show how the existence of a 3D time environment can be proved to not exist.

It is my contention that only the existence of this 3D time environment makes it possible that our current understanding of our universe and the things we hold dear can be true. It is also my contention that much that is in doubt and that cannot be proved, today, will become provable with this model in place.

David sat back and looked at what he had written and decided that, basically, he had captured most of the discussion points that he, Helen and Brian had explored.

He had no idea whether he had written something that would fire imagination or whether his ideas would simply get lost amongst the millions of other words printed day after day, the world over.

He fell asleep.

BILL HIBBERD'S

"ORIGINAL NOTES"

INTRODUCTION

When first I started to think about how science and religion interacted, I found it extremely difficult to make the leap of faith necessary to accept that there was but one God and that all things were created by this God.

My problem is that science keeps moving the boundaries.

In early times man worshiped the bringer of light. As the sun rose high in the sky and as seasons changed so man worshiped the bringer of heat and light giving thanks and making some token sacrifice to ensure a good season.

Pagan festivals acknowledged the passing of the shortest day of the year and the beginning of the next era for crop growing and warmth and longer days. But gradually these simple but understandable truths were overwhelmed by knowledge, teachings and greater faiths and the belief in the 'one God'.

With the belief in one God came the idea that mankind would look to the skies for guidance and divine influence. But with learning and development even the sky became a place of mind-blowing expanse as the sky gave up its secrets to satellites, rockets and telescopes.

As mankind's knowledge and the ability to look further and further from home – even backwards in time by studying light and x-ray images from stars and galaxies from which the light that reaches us is as old as time itself, so the place that was reserved for a God became more and more inconceivable.

For me this became something of a logic puzzle. How could all that we are learning; all the laws and physical proofs be reconciled into one immutable argument that would be robust enough to stand against the ever pervasive and persuasive arguments of physics and maths and how could even this leave room for religious beliefs?

My thinking led me to propose the existence of a dimensional environment based outside of our rules of physics, not in our space – time but within which our existence could be explained, maintained and within which the physical laws being proved and hypothesized would stand. My thinking also created a solution to the question of where a God may have started all the work that became the universe, as we know it.

What follows is an exploration of the this alternative dimension, as I see it, with some explanation of how what we know, scientifically to be true, can be maintained and accommodated without breaking the laws of physics. Indeed, some of the mysteries that confound scientists can be reasoned away by applying this model.

My writing is likely to be simplistic and yet involved, contentious and controversial and yet I believe that many will sit back and take comfort from the ideas that are being outlined here, finding satisfaction in the opportunities that my idea offers for the expansion of our thinking and the space this rationale lends to the development and redevelopment of ideas.

My thanks to Brian Page who saw enough potential in my original musings, on this subject, to publish them in the MENSA magazine back in March 2005.

INDIVIDUAL DIMENSIONS

1

When my children were growing, we had a family tradition whereby we would all sit down to a proper Sunday lunch.

Sunday lunch times were a family gathering where all four of us would join together and enjoy a full meal, taking time and pleasure in each other's company.

Amongst the many topics for discussion during these extended meal times would be debate on the 'big bang'. We would explore the concept that the universe was created by a singularly massive explosion and that the expulsion of gases and matter became the raw ingredients for the universe, as we know it. We would compare this with the writings of the Bible within which it is written that the world was created over a six day period, with the seventh day being the day of rest.

We explored both arguments without ever reaching a satisfactory solution as to how the two arguments of the big bang and the six day creation fitted together.

Often our debate would become disjointed when we tried to work out what it was that went bang in the first place.

Indeed, scientists today maintain that a lot of what is calculated to have been created by the 'big bang' cannot now be accounted for. In other words confidence is high that something went bang but there appears to be insufficient residue to support the quantity or the magnitude of the blast that has been calculated.

We would also debate light speed and the scientifically maintained argument that nothing can travel faster than light. Here our questions were about our ability to detect light and other radiations and that perhaps it was simply our inability to detect things that travel faster than light. Logic here explored the idea that a being who could not observe light, whose entire experience of things, was focussed not in the light and radio and microwave limitations known by us, but to sound and sonic emissions. For these beings, nothing faster than sound would be conceivable or measurable. Would they, therefore, conclude that nothing could travel faster than the speed of sound?

We would discuss what held the molecules together, the variable force of gravity, black holes, religion in-fact anything and everything that was to enter our heads.

It is from these debates that the questions started to join together in my head. Could all the scientific postulations be held within one bigger theory? Could

some of the current scientific mysteries be resolvable within one all embracing model? Is it conceivable that our reluctance to look outside of the models that are currently used to define our universe is holding us back?

Read on and judge for yourself.

2

How do we explain dimensions to each other? Most of us can appreciate the difference between a ball being thrown towards us and the risk of it hitting us or the pleasure to be had from catching the ball when compared with watching the same action on a TV screen, but how do we describe this phenomenon?

How would a person who exists in an entirely two dimensional (TV type) environment even begin to understand a third dimension?

Can we comprehend the relationships between three and two dimensions and, if we can, is it reasonable to assume that there are similar relationships between two dimensions and one dimension?

It is this understanding that will open our minds to the alternative dimensional environment that can I believe can co-exist with what we hold dear and true.

As we have already suggested, there can be few people that struggle to differentiate between a two-dimensional and a three dimensional world.

In a three dimensional world we can experience up, down, forward, backward left and right. We can explore this environment in any combination of these six opportunities and can go over, under, round even through spaces and objects.

We can enjoy spirals, spheres and roller coasters. We can stack things up and then stack things next to the first pile and then put another stack in front.

We can dig holes, piling the earth next to the hole and we can walk round the hole to admire our work. While we are digging, a bird might fly over our heads and these things are completely natural and taken for granted.

Pictures, on the other hand, are two-dimensional. Everything exists within a flat plane. In just the same way, a television screen is a flat or near flat surface upon which an image is crafted to give the illusion of three dimensions. The illusion of depth is shattered the moment you try to reach through the screen to grasp something that is displayed as ‘set back’ or behind.

Mirrors display a three dimensional world but the whole reflection is held upon a flat sheet of glass with a reflective surface. It is possible to see an object that appears a good distance behind the mirror but impossible to grasp that item as seen in the reflection.

Now consider for a moment that your world is two-dimensional; flat is everything.

In a flat world of just two dimensions the movements available are reduced from six directions to just four. They maybe forward backward left and right but they could just as easily be up, down, left and right. They could be forward, backward, up and down.

What cannot happen is that a two dimensional world allow that anything in it can have four directions that require a move that lifts it from the surface of the two dimensional plain.

Let's explore this in more detail.

Suppose that a picture is standing on a table. The picture maybe propped from behind so that the picture slopes back slightly to keep it from toppling forward. Anything that was limited to an existence on the flat front of the picture would be able to move all over the picture glass. It would never be able to push through the glass and it would not be aware that there was anything remote from the surface of the glass. Indeed, if the picture was moved, even laid on its face the object that exists on the picture glass would have no knowledge that anything had moved.

Similarly, anything that existed on the tabletop would be equally constrained. It would have access to the entire surface of the table but even if it encountered and recognised an obstruction at the base of the picture frame, it would have no idea that the picture towered above it because it doesn't know 'up' any more than it knows 'down'.

We have just compared how limited a two dimensional environment is when compared with a three dimensional environment. We have also demonstrated that there are an infinite number of plains within a three dimensional environment upon which two-dimensional environments can exist.

It is like comparing a cargo ship afloat on the ocean with a submarine. The ship is compelled to operate on the surface where, in the same ocean, the submarine can choose to mimic the directions of the ship above it but at any depth available to it.

Let's now look at a one-dimensional world.

In a world of one dimension we lose two more of the directions so that in a one-dimensional world everything exists in a straight line. Only two directions are available to the one-dimensional world they can be up and down or left and right they can be only two opposing directions. There is no perceivable curve or change of direction possible from within the one-dimensional world.

In just the same way as we saw that there can be any number of different plains of existence for two dimensional worlds within a three dimensional environment, we can see that one dimensional worlds can exist in a line laid on the surface of any two dimensional plain.

Imagine that you are a tube. You are a long straight cylinder.

You have the ability to travel forward sliding, worm-like through your world. You can stop and you can slide backwards. If you have the misfortune to collide with anything that you cannot get through you are bound to stay or reverse direction. For you there is no such thing as a change of direction to move left right up or down because your world is a forward backward world.

There may be other tubes that exist very close to you. If they are parallel to you then you can never know of each other because you will never cross paths. One

could move across your line of sight but if it were just slightly off your line then you would never know.

For each of the dimensional existences we have described so far, we have explored movement but what if movement is of no consequence?

What if you have no perception of up, down, ahead, behind, left or right? What if everything you know is contained within. Closed like a mirrored bubble from which you cannot see out?

It should not be too difficult to extend this argument now to a world without any perceivable direction relative to the other worlds; where compared to the three dimensional environment where there were combinations perceivable in six possible directions; where, in a two dimensional environment there were combinations of movement in four directions and where, in a one dimensional environment there were two possible directions of movement. It is entirely consistent with this line of reasoning that there can be an environment which does not move relative to the one, two or three dimensional worlds.

3

Having considered dimensions, it is time to start bending some of the rules a little.

We hear of scientists who talk about ‘bending’ space and we hear of suggestions whereby great distances maybe traversed across space if we fold space.

To be honest, this seems a little too much of a stretch to comprehend. However, if we take a look at the one-dimensional world we might be able to get some idea of what is being suggested.

In a one-dimensional world there are only two directions which, for convenience we’ll label forward and backward.

Any movement in this environment is limited so that it can travel forward at any speed or backward at any speed. Travel maybe unlimited and if there were intelligent beings that existed within this environment they might prove that their existence is without boundary.

We might compare this world with the inside of a fibre-optic cable.

Life inside a fibre-optic cable is bright and without limitation. Any pulses of light that are transmitted through a fibre-optic cable are constrained, without any input from the sides of the cable. Similarly, as the light shoots along the inside of the cable, none gets out. The light bounces around inside this tube forever moving along at colossal speed completely isolated from the very similar cables bundled with it and wound around it.

The reflective surfaces of the cable ensure that light gets bounced around inside without losing it’s message and whilst from the inside there is still only forwards or backwards, we can look at the cable from the outside and we can bend it and shape it how so ever we please. Indeed, if the fibre-optic cable were fashioned into a very large circle, anything that was travelling within it might never ‘know’ it was travelling in a circle.

We can apply similar logic to the two dimensional environment.

Imagine that the two dimensional environment is a piece of paper. For this example we will consider that something near to one corner of the paper has become aware of the enormity of its universe and wishes to traverse the sheet of paper.

From within the two dimensions the distance across the paper is vast but we can see that by rolling the paper or folding the paper, the object wishing to reach the other end of the sheet can be put in contact with the other end in an instant.

If we were to really play with the science of a two dimensional paper world from the vantage point of three dimensions we would fashion a piece of flat paper into the form of a Mobius strip.

A Mobius strip, named after the German mathematician Mobius, is where a sheet of paper has both ends joined together to form a continuous loop, but only after one end has been turned through 180 degrees. (A twist)

The resultant loop has just one traceable edge and just one traceable surface.

Now lets re visit the one-dimensional world within the fibre-optic cable.

We have demonstrated that from inside this cable there is only forward and backward but we also talked of the light bouncing off the inside surface of the fibre-optic cable. This demonstrates that although there is only forward or backwards available to this dimension, from within the dimension movement is perceived as being more complex than has been described. Light travelling along the inside of the tube cannot experience that it is changing direction but as the tube bends so the light is compelled to hit the edge and be re-directed to remain within its dimension.

This range of movement, so inconsequential when compared against the available movement in a truly three dimensional environment, gives the impression of complete freedom from within the lesser dimensions.

In the environment which has no directional movement when compared to the three, two or even one dimensional environments, it is possible that things move, that the space contained within the point is perceived as being without boundary as if infinite.

4

Inter-dimensional relationships.

We have considered the perceived ranges of movement in three, two, one and no movement dimensions. We have also explored the idea that when looking at a dimension smaller than the one in which we live, there appears to be very limited opportunity for movement in the ‘lesser’ dimensions.

We have also explored the notion that, from within a dimension, it may appear that there is no restriction of movement.

Things become quite surreal when we consider how the various dimensions interact. When we consider what happens when there is conflict or contact between the occupants of dimensions that exist even only one dimension apart.

INTER-DIMENSIONAL RELATIONSHIPS

1

Lets start with two dimensions.

When we first considered the two dimensional existence, everything on one flat plain, we considered the picture glass framed and standing and a desk.

We considered the fact that two parallel surfaces would allow that neither would ever meet and that neither would ever know of the other.

Similarly, neither the picture nor the desk could know of each other except at the very margin where the desk and the picture frame actually touch.

Two-dimensional plains can intersect and where the plains intersect is a line of contact. At this line, both plains will be aware of each other but neither will be able to discern any part of the other that is not within its own area of perception.

[Illustration required]

Indeed, a single disc offering two dimensions could be intersected in several places by similar plains all of which intersect at different angles.

[Illustration required]

If we consider how that intersection would appear on the surface of a two-dimensional plain; the only 'visible' evidence of the other plain would be where the two surfaces intersect. Remember, there is no up or down relative to either plain. If the two plains are, in fact, moving relative to each other then the 'visible' disturbance will travel across each plain but only be visible at the point of intersection and rather than being able to predict when the disturbance is likely to start and stop (easy if you can see up and down) only the fact that there is a disturbance will be recordable.

If we explore now how a one dimensional being might perceive the arrival of a two dimensional environment we can get the idea that only what is happening directly in-front of, or behind, our one dimensional being will be perceivable thus if the one dimension 'cylinder' is passing through a two dimensional 'disc' then only the point within the perceivable frame will be recordable. There is no left right up or down so within the frame of reference that is a one dimensional existence something simply arrived – stayed a while – and left.

Similarly, where the one dimension crossed the two dimensional plain something arrived, stayed a while and left but from the frame of reference on the two dimensional plain, the 'event' was something that could be manoeuvred around. Rather like a tree in a field.

Where a two dimensional plain or a one dimensional cylinder encounter a closed point – like the mirrored bubble – then, from the frame of reference within the point something arrives – stays a while and then departs. From the closed point

it is not possible to tell whether the visit was from a one or a two or even a three dimensional environment because only the point of contact is discernable and nothing of the shape or form of the 'visitor' can be determined.

Beings from a three-dimensional environment can look at these interactions from any direction. They can see all points of contact. They can calculate duration of contact. They can move around so that contact can be observed from any direction. For beings in a three dimensional environment there is no mystery about these intersections because all is visible to them.

Intersections with a two dimensional plain can be explored by moving around them but never by looking up or down thus a line of intersection can be explored as can the effects of a cylindrical one dimensional intersection.

While the closed 'point' is in-line with the cylinder or within the plain of a disc it can perceive their presence and each of the two environments can perceive that it is there, but only within the frames of reference we have described here.

The theory

The planet maintains a 'fresh water constant' of around 68,000,000,000 tons.

Maintaining this fresh water constant can impact on the concentrations of minerals and pollutants in the oceans affecting marine life and the ecosystem as a whole.

Stored water, (ice), is the earth's resource with which the oceanic balances can be maintained thus allowing the fresh water constant to be maintained.

The human population is expanding and this expansion is taking up large amounts of water.

As the human population expands water is being taken out of the water cycle to make it possible for our bodies to exist.

At the current rate of population growth 3,000,000 tons of water is being removed from the earth's water system annually.

Water is being removed, not for drinking but simply because our bodies are almost 80% water.

About water

Water is finite and to a large extent fixed as a commodity on this planet.

Water exists in three states, Vapour, water and ice.

There is a water cycle that means oceanic water evaporates (as do lakes etc) clouds form, weather moves clouds to land masses. Rising clouds chill and water distils into droplets, which fall as rain, providing moisture to flora and fauna and refreshing the land. Water eventually finds its way through the land to water courses into rivers and back to the sea.

Water is retained by life, aquifers, soil and in ice.

326,000,000 cubic miles is the total of all water available to planet earth. Of which less than 1% is in the atmosphere and just over 4% available as fresh water in lakes, rivers and as ice.

1 cubic mile of water is equivalent to 4.168 cubic kilometres.

1 cubic kilometre weighs 1,000,000,000 tons. Therefore there is 1,358,768,000,000 tons of water in, on under the surface of planet earth.

Only 67,938,400,000 tons of which are available for farming, drinking and to support life.

The Earth

Our planet is regarded, by many, as being a self-balancing system. Physical properties check and balance one-another to create equilibriums.

The world can maintain a balance in a number of different states. It is possible for the world to remain in balance as a cold planet, a temperate planet and a hot planet.

Ice ages are the cold state, essentially desert represents the hot state. We currently enjoy a temperate state.

Global warming suggests the world is leaving its temperate state.

Water / land levels have been much different from what is experienced today.

During the ice ages, much of land was covered by water in its solid – ice – state. Vegetation was less and there were fewer mammals.
Temperate regions were away from the poles. Desert areas were few. The oceans were full of life.

Today, ice is melting, tundra is thawing, deserts are expanding we have had vast forested areas which are in decline often because of felling.

Weather is becoming more extreme.

If the planet has a self regulating system it would seem that these extremes – to us – are the planetary attempts to retain the current, temperate, state.

When there was a surplus of water, the planet took it up and stored it as ice.

Maintaining the constant of 68,000,000,000 tons of ‘fresh’ water is causing oceanic changes and large land areas are experiencing drought. Clearly the planet is resisting a shortage of water, which means that the planetary stores of ice are having to be released to the ecosystem.

Ice is melting.

The release of water into the ecosystem is a good thing as, ultimately, a wetter (fresh water) environment supports more land/air based life. However, the ice is mostly being released into the oceans with the amount of water available to land, rivers, flora and fauna remaining fairly constant if not always falling where expected or in the amounts to which we have become accustomed.

The human component

There are a number of natural and man-made pollutants that are affecting our atmosphere but one factor that has not been recorded – to my knowledge – is the effect of a vastly expanding population of humans on the planet's water balance.

Almost 80% of the human body is water.

The average human weighs about 50kg (worldwide and all ages and health states)

40kg of each human is water. Each human has extracted from the environment 40 litres of water just to exist. This has nothing to do with consumption over time. It is the amount of water that has been extracted from the environment as cells grow to make a person.

After death, decomposition or cremation will allow the body to release that water back to the environment.

There are 6,600,000,000 people on the planet, which means that there are 6.6billion times 40 litres of water removed from the environment's water cycle.

This means 264,000,000,000 litres of water (264 million tons) is walking crawling, driving cars, filling nappies, farming, building and growing as you read this.

That is 264,000,000,000 litres of water not available to the planetary ecosystem purely because people have been born. This figure does not include water retained for other forms of life.

Currently the world population is growing at the rate of 76,000,000 people each year, which means that each year a further 3,000,000 tons of water will be removed from the ecosystem. (76,000,000 times 40 divided by 1,000)

Water retained within human bodies cannot be available for rain, rivers, oceans, or for drinking.

If the population of humans continues to grow at the rate demonstrated today 76,000,000 each year, (it won't because more people will create even more people so the rate of population increase will increase) then there will be no water left for drinking, for rivers for farming or to support land based life in just 20,000 years.

Checks and balances

In fact, the global system won't allow that to happen. Instead, if the rain cycle can be maintained, there will be an increase in the concentration of salt and mineral deposits and pollutants in the oceans as water evaporates and is held in the atmosphere to create rain and to feed rivers.

In a global temperate state approximately the same amount of water will be available as fresh water regardless of the amount of water taken up by life. That figure stands at about 68,000,000,000 tons.

It is entirely conceivable that water, with its unique properties (of being at its most dense in a liquid state at 4 degrees centigrade, of being stable in three distinct states vapour, water and ice), is the primary regulator in the self-balancing of the planet earth.

The increasing concentrations of salt and other minerals in the world's oceans could have a big impact on oceanic life affecting food sources, food chains and ultimately lead to long term effects on the atmosphere. These atmospheric effects will be variations in weather patterns and a change in the oxygen / carbon dioxide ratios.

The melting of ice caps is acting to dilute the oceans. Diluting the oceans is reducing the concentration of salts and other minerals. This melting ice may have a stabilising effect that will allow oceans to regenerate, to some extent.

If the oceans are able to regenerate then there is a chance that weather will become less extreme, the oceanic food chain will return to a healthier state, the world's oxygen / carbon dioxide ratio will remain optimum for us to be comfortable.

Conclusions

Water is probably the main component in the planet's self regulating system of checks and balances that maintain a global equilibrium.

Approximately 68,000,000,000 tons of water remain accessible to atmosphere, farming and to support land based life.

This amount of water remains, as a constant which means that global equilibrium, if it is to be maintained, will cause surplus fresh water to be stored as ice.

Where the Earth has a large amount of stored water (ice) the temperature drops, oceanic life is abundant we experience an ice age.

Where maintaining this constant quantity of life giving water causes the oceans to become more salty and mineral laden, the earth will release stored water (ice) to return the oceans to a more dilute state.

When there is insufficient ice to regulate the mineral content of the oceans, the oceans will become almost devoid of life, the atmospheric ratios of life supporting gases will change, under extreme duress the constant atmospheric water volume will drop and there will be global extinction of most life forms.

The dead flora and fauna will give up its water and the planet will return to a state where life could, once again, thrive.

Bill Hibberd 2005

About the Author

Sharon A Woolsey-Hibberd is currently enrolled at Huddersfield University, UK reading English Literature and Creative Writing. Additionally, holds a Master Degree in Music and Psychology.

Her grandfather was a Royal Navy Engineer, two uncles served in the Merchant Navy, her late husband served as a Midshipman on Cargo Ships and a brother in law that rose to the rank of 2nd Mate.

In Blackpool, she worked as a volunteer upon the Lifeboat and a member of the National Lifesaving Institution before moving onto Ireland gaining experience onboard a sailing ship and a luxury yacht. Today is currently an inshore lifeboat volunteer and a passion for cruising. She is a retired musician, disillusioned Accountant and fasciculate Wedding Planner, with an incredible eye for photography and a passion for golf. Over the years has written Wedding Related Articles for some of the UK's leading Wedding Magazines. Now lives in South Yorkshire, but wishes it was by the coast, as she has a love for anything nautical, but instead is happy with an old golf course converted to a reservoir.

She enjoys many different genre, writing and reading. Has always got a project on the go. Feel free to like her "Nautical Times" Facebook page and don't be afraid to drop her a line.

Additional Note:
Sharon is the widow of the Late Bill Hibberd, and has decided to publish her husband's work, which appeared in the March 2006 edition of the Mensa Magazine.

Sharon can be found at the following:

Twitter: @ShazHibberd
Website: shazhibberd.wordpress.com

Other Works

"Distant Memories"
Collection of Poems
August 2013