Into the Fold
Alan Stummer, 2023

Part 1, Before

Chapter 1, Proposed Experiment

If Robert had to classify himself, he would say that he was a folder. That is to say, he preferred the model that time and space could be folded rather than looped around. Those were the loopers and there was an almost friendly competition between the two groups. Regardless, they all said that skipping ahead in time and space is possible and only the physical representation of the process differed.

Most of the effort was in travelling through space, yet to be tested in the lab. That was the flashy side. Robert, or Bob as called himself, was one of the few researchers working in the time domain. All of the big money was being thrown at the space side, he took the few scraps that he could catch.

Theory and early experiments showed that this would be a messy experiment. The apparatus itself was possible but the conditions were strict. The killer was that the experiment had to be totally enclosed in a reasonably good conductor. He had tried a Faraday cage, a skiff, an almost complete metal enclosure used for testing electronics. The results, to say the least, were zero, nothing. This puzzled him for a while. Eventually the penny dropped: the wiring had insulation and created gaps. His theorist friend and co-worker Ted agreed. For time-space folding to work, the apparatus must be completely enclosed.

That presented a problem that sent Bob down the experimental rabbit hole. The actual folding would take time, estimates varied wildly but enough that he would have to live inside a self-contained environment for weeks or months. That brought up a plethora of other problems. Where would he get power? What about food and drink? What if the structure suffered damage while he was in it? But most of all, what about his wife, Alice, if he was away for an unknown time? A manageable experiment now grew and grew.

That evening he broached the subject. He launched into a what would be a long description of the issue until Alice reined him in.

“Whoa Bob.” she said, “Slow down. Give me the big picture.”

Where to start? Bob drew a breath and said “Look. You know that time and space folding stuff I’ve been working in. Me and Ted, really.” She nodded. “Well, I plan to do a real experiment and it will take time – so to speak.”

He launched into the technical aspects until she stopped him again. He paused, thought about how to say it and made a decision.

“What the experiment needs is a full metal enclosure, large enough for the people inside to run the equipment. And the problem is that we don’t know how long it will take – for us inside.”

“Us?” she said.

“Ah, yea.” he said sheepishly. “It may take months, maybe weeks if we are lucky. So of course you will be in it too.” He grimaced as he realized his lack of tack. If nothing else, Alice had taught him how to function in society. He had just stepped out but she overlooked it.

“I still don’t get it.” she said. “Are we to be trapped inside this experiment while it runs?” He opened his mouth and shut it as she raised a finger. “And alone, just us?”

That threw him off track. His focus was the experiment, not people. Oh, he thought to himself, oops. Alice was a smart cookie, some say that she was better in her field of genetics that he was in physics. Step by step she drew out of him what would happen, or at least what should happen.

“And how far ahead do you expect us to travel?” she asked.

Bob thought about it, being sure to consider her. After a couple of false starts, he began. “Well, depends whose theory you believe. Most people say that we will be there for a month in our time and that should be about a year for the rest of the world.” They were already talking about the two of them.

“Why not less, say an hour?” Alice asked.

“Won’t work.” said Bob. He paused. “I don’t know how to explain it. Actually, I don’t really understand it but the numbers work. It’s nonlinear, that’s the issue.” and Alice raised a finger before he could launch into details.

“Okay, how’s this.” said Bob. “Imagine you have a sheet of paper or plastic or something. Now fold it it half. Now there will always be that little gap right at the fold...” he gestured, pointing at his thumb and finger “...and you can’t get

rid of it. Sure, can make it smaller but it will always be there." He liked that explanation because it made sense to Alice.

"Ted can probably explain it better." he said but she laughed.

"Ted!" she exclaimed. "Ted! His head is so high in the clouds he can't see where he's walking! Why, when we get together with them it's always you and Ted huddled in a corner while Eve and I have a nice conversation. I like her. Him too if I could keep his feet on the ground."

Bob laughed at the description. It was true. They discussed the plans further. Alice had a sabbatical year coming up so no teaching and her grads could be supported by other researchers. Bob was a wild card, the university had given up on him having grad students but liked his work and his teaching enough to keep him on. The big problem for Alice was being cooped up with Bob for a month, or worse, a year. They decided to ask Ted and Eve to join them. Now the experiment chamber had to grow. In the back of Bob's mind was something like an old plane, big enough to make rooms for the space people needed and even a basement.

They discussed the plans in more and more detail. Alice had a fairly good gasp on what should, or at least could, happen. Drawn into the excitement of being the first people being in warped time, she was making her own plans regarding her work.

"How do we communicate with the outside world?" she asked, but asking had revealed the answer to her and holding up a finger to stop Bob, she smiled.

"I know." she said with a big smile. "We can't. We are in different time frames. They are buzzing around like busy bees while we plod along slowly."

"You got it!" Bob cried out and gave her a big hug. Then the realization hit him. "Oh. We can't." and his elation turned to dismay. "We will be alone."

Now the tables had turned. Alice had accepted what had become obvious to her while Bob had not even though about the practical side.

Chapter 2, A Crowd

The next day, Bob called Ted and asked them over that evening, not saying anything about the plans. Alice was the diplomat, she would know how to broach the subject. True to their standard time, Ted and Eve arrived at Bob and Alice's house at the crack of an hour late.

"It's him again." Eve announced, "For someone who theorizes about time, he can never manage it himself. If it wasn't for me he would still be scribbling away on those papers. Come on Ted, give them the wine."

Ted froze. "I thought you had it."

Eve threw up her arms in exasperation. "Well, seems like your wine tonight and you're driving, Ted."

He nodded. They entered and everyone was soon seated, wine in hand, except Ted. Shortly, Ted and Bob had a side conversation going while Eve and Alice were catching up. Eve was telling her how volunteer work at the preschool for disabled children was going. Alice enjoyed hearing all about it, having visited the preschool a few times. It interested her and she was glad that Eve was helping. Eventually, the time came to involve everyone.

"Bob." she said, interrupting their talk. "Bob, can we all talk together?"

They all turned to her, wondering if there was some bombshell to be dropped. She briefed the experiment for Eve and Ted.

"Look," she paused, unsure what to say, "long story short, if Bob and me are to be in there for a while, we want you two too."

The room was silent for a few seconds. No one moved.

"What experiment?" Eve asked innocently. "What ...what is in there mean?"

Ted took over, knowing better than to explain physics to her. He explained only what was to be done, not why or how. Eve got the gist.

"So you want the four of us to cram together..." she started but Bob cut in.

"No, no, no, there will be enough space. We can bring what we want." he said.

She changed tack. "What about my kids in the school? Will we be away from them for a month?"

Ted paused then said "Look, Eve, we will be gone maybe a month but it will be a year for them."

Eve had hit her limit, too much too fast. Ted tried to explain it but the different time frames concept was not sinking in. She decided that she could handle an adventure for a month away from her kids and with knowing nods the others agreed. The rest was details. They all liked the airplane fuselage idea. Ted was already planning what to take. Of course his pool table which elicited a small groan from Eve. He was a mediocre pool player on a good day and Eve cleaned up when she played too. For him it was about organization, methods, trigonometry. For her, she just liked the game.

“What happens if we get stuck inside?” Alice asked. Although a reasonable question, Ted explained that the problem was to keep the experiment going and that anything could stop it. They could open the door, even just turning the latch would kill the experiment. To keep her happy, he agreed to having a fire axe near the door so that they could break out if need be. That was even a good safety feature, glad she asked.

Bob and Alice had their work. Both had more than enough to do in isolation. Of course they had other activities. Alice would have to give up running for the time so she would brind a treadmill. Bob would provide a good supply of movies for all of them.

Bob would of course be the primary person to run the equipment. Ted the theorist was a danger around equipment and was all but banned from Bob’s lab. His strength would be supporting the experiment. Alice could learn how to run the experiment. Although not biochemistry, lab work is lab work, she could learn.

Chapter 3, Preparations

Bob had one bigger issue to work on, the aircraft fuselage and life support. He had one in mind, a large abandoned passenger plane at the nearby airport. The next few days were spent tracking down who owned it, what it would cost, where it could go and how to get it there. There was the problem of funding of course, what grants could be used. Slowly, step by step, he worked though it all and the plan come together.

Ted was still trying to solve the timing problem. To describe it, he used the analogy of a very, very long pool table. Of course anyone could hit the cue ball and have it hit the far end but the problem was, where? So many factors could deflect it and a tiny deflection near the start would have a huge effect of where the ball would end up.

Alice split her time between preparing her students for her sabbatical, her work, her teaching and learning how to operate the equipment for the experiment. She had little time for herself but knew that that would come.

Eve spent as much time as she could with her kids. They were only at the school for a few hours a day and she tried to be there for all of it. She would miss them, short a time as she thought it would be.

The plane was too big to move far. It was stripped of wings, fin and landing gear and almost empty inside, then moved to a corner of the airport. A few of the business class compartments were thrown in for free, they were too old to be reused in a new plane. Even before the plane was secure in place, Ted claimed one for his work station. The plane was partitioned into a room for each couple, a common area with the kitchen and the small lab for the experiment. Although the outside door was in Bob and Eve’s room, once closed it would not be opened for a month or more.

Alice all but took over preparing the plane. She arranged for riggers to secure it then metal workers to seal every tiny hole through the metal. That gave her a lot of trouble because the workers did not appreciate that no holes meant no holes. They decided to keep the cockpit intact and cover the windows with aluminum, even though all of the instruments were removed. Sitting in the pilots’ seats was an informal game they could play, flying blind. The machine shop for Alice’s lab worked closely with her to make a door that was both functional and would be totally free of gaps when closed. Ted spent days working out the size of the largest hole in the fuselage that would still let the experiment work. The seemingly simple calculation became quite messy. Bob tried to help by being a sounding board, having Ted explain the problem. Eventually there was an answer, sort of.

“The final numbers” Ted said, trying unsuccessfully to sound dramatic with a drum roll on his work station, “is a circle of 7.278 micron diameter, with two sigma error, maybe.” He paused. “But that is for one hole. There can be lots of holes as long as they add up to less than about 8 microns, max, or so. Yes, about that big.” He smiled, expectantly waiting for a bit of confirmation.

“Oh.” said Bob and Alice simultaneously, dejected. Bob continued “That’s not much.”

The experiment table and equipment, their personal belongings, food and water and power sources were moved in as the workmen plugged what they regarded as insignificant holes in the fuselage. Alice ran several pressure tests until the loss rate was not only ridiculously low but acceptable. Bob was obviously the lead in setting up the equipment, with the help of Alice and to everyone’s surprise, Eve. She did not have a clue what the equipment did but she was adept at

assembling it as told. Bob spent days aligning the optics and electronics. Test runs were possible as long as the door was ajar.

Satisfied that the equipment had gone as far as it could, Bob began to help Alice with setting up their living quarters. They had two business class compartments, a treadmill, a bed and a folding table. Ted and Eve only had room for their small pool table, his work compartment and a bed. For a dry run, they stayed locked in for what should have been a week. Three days later they all agreed that it was going well enough to cut the test short. All four loaded up with more entertainment, otherwise set to go.

Alice's niece Mary Anne wanted to house sit. She and her husband George were in a tiny apartment, a whole house for about a year would be a luxury. They moved in as Bob and Alice moved out.

Chapter 4, The Experiment Starts

On the morning of the departure day, nicknamed D-Day, the four entered the plane. Although not expecting a marching band and speeches to see them off, they entered with only Mary Anne waving goodbye as Alice shut the door.

"Well, we're here." Alice said. "Let me do a quick pressure test." Bob was already starting the equipment, Ted went for a quick round of pool and Eve stayed to the side, watching as the equipment came to life.

"Okay, give me a few minutes, should be running soon." Bob said, leaning over the experiment table and gently turning knobs. With the others now watching, Bob said "Here we go!" and flipped a switch.

"What?" he said. "Nothing is supposed to happen." as the others watched expectantly. "It's running, I hope."

From Ted and Eve's room came the sound of pool balls slowly colliding and dropping into pockets. Ted looked over. He was confused.

"What... how... but they were on the table and I levelled it?" he said while going to their room. "The balls are all in one end." he said, returning. "Why would they move?"

The confusion grew when Bob noticed that the experiment had stopped working. He began checking it step by step. For some reason it was all out of whack, he would have to spend spend days realigning it from scratch. There was a knocking at the door, not so much a knocking but something was hitting the side of the fuselage around the door.

"Now what!" Bob exclaimed in frustration. "Guess the experiment wasn't running." he mumbled as Alice went to open the door. There was a slight pressure change as the door opened.

"Well," Bob yelled in her direction, "what do they want?" No answer. "Alice?" he called then with no response he ran over to her at the door. She was standing in the doorway, not moving. "What is it?" he asked anxiously, then he too froze. Where minutes ago they had climbed up a few steps into the plane, there was a rough dirt ramp leading up to ground level. Two boys on bicycles were watching them from the top of the ramp. Their bicycles has no tires, only the metal rims. One seat looked wooden. As soon as Bob appeared, one boy dropped the few stones in his hand and yelled "Let's get out of here!" to the other and they madly peddled out of sight.

"Who was that?" Ted asked as he and Eve came to the door.

"What happened?" Eve asked as all four looked out of the doorway. They just stood there.

Ted chuckled, "Seems like good old Evanovitch was right. Have to talk with him later, show him the experimental proof." No one else was listening to him, they were overwhelmed with the incomprehensible sight.

"But it can't be..." Bob said, his voice fading. There was no denying that something unexpected had happened.

Bob and Alice were having a hard time understanding the situation. Alice closed the door and they quietly walked back to the common room. Ted's elation had faded as he began to understand the implications. Eve just kept asking anyone and everyone what was going on.

"I need a drink," Alice said and was quickly joined by the others. They sat quietly looking at each other.

"You better bring me ...us up to speed on Evanovitch." Bob said to Ted.

"He's that guy who wrote the paper on what he called his super-folding hypothesis. No one listened to him, too far fetched and the paper was vague, not even peer reviewed." Ted said quietly.

"I know of him," Bob said as Alice listened intently to them, "but I dismissed his paper after just glancing at it."

"He said, he said he can show that folding time and space is not really a finite fold but a super tight bend." Ted explained then launched into details of the math before being stopped.

"If, and that is a big if, Evanovitch was right, then where, no when I should say, are we?" Bob asked.

“Yes, any idea of when?” Alice asked. Ted thought a minute as all eyes were on him.

“I need to go over his paper.” he said and went to his work station. Still shaken and after a second round of drinks, the others waited impatiently.

“Is it over?” Eve asked innocently. Not sure what to say, Alice told her “Maybe. Wait for Ted.” and downed her drink. Ted was lost in the paper when Bob interrupted him for any early results. Ted shook his head and mumbled something incomprehensible. The three sat and nervously talked about anything but the elephant in the room. Ted returned.

“Got something.” he said. “Really hard to tell, I’m no expert in this branch of numbers theory so I’m guessing a lot.” The others waited expectantly. “So, hard to tell, maybe a year, maybe more, maybe much more. Look, assuming Evanovitch is right or even close, I need more time to work this out.” He went back to his work station, the others tried to keep themselves busy. Ted stayed up very later, the others gave up and went to bed.

Part 2, After

Chapter 5, Greetings

The next morning, Alice opened the door. The sun was shining, they were still below ground level but now there were a few people sitting on boxes and on the edge of the ramp. As soon as they saw her the people started talking quietly among themselves. She heard snatches of “..they look so...” and many sideways glances and some quick pointing. Alice stepped out, followed by the others. They were silent, trying to make sense of the situation.

An elderly lady leaning heavily on a cane toddled out of the group, coming down the ramp towards them. A similarly aged man followed. With a big smile she said “Alice!”. With a tiny step backwards, Alice tried to say something. She had never seen this lady before.

“Alice!” the old lady said as she reached the group. Seeing no response she added “Aunt Alice. I’m Mary Anne.” Alice froze. Her niece?

“Hi?” she said tentatively. “Mary Anne Evans? Niece? But we were gone barely an hour.” She paused. “George?” she asked, pointing.

“Ah, no. This is Walter. I’m sorry to tell you that George died long ago. Walter and I have been together, oh now, 48 – no 49 years.” She looked at the four then continued. “You have a lot of catching up to do. May we come in?”

Mary Anne and Walter together told the story. Nothing happened when the four left, when the experiment started. The fuselage became extremely heavy and solid. It could not be moved, it became harder than diamond, nothing could affect it. Mary Anne was concerned about her aunt and was told that they must be okay because the experiment was still running and it cannot run by itself. She came to see the plane regularly. Over the years it had sunk deeper and deeper into the ground. The ramp was dug as the plane went lower and lower. Over the years people had lost interest in it because nothing could be done to it, nothing observed, other than its great weight. Yesterday some boys had come by and thrown rocks at it as they often did and were shocked when the door opened. The boys raced home to tell their parents and very soon everyone knew. We came to see you come out.

“How long... what year is this?” Alice asked.

“You’ve been gone 62 years.” Mary Anne said. Alice went to say something but did not know what.

“There’s a lot more you should know.” said Mary Anne. “There have been troubles in the world.”

Chapter 6, Troubles

“Would you like some coffee?” Eve asked, being the good host. Walter made a valiant attempt to jump out of his seat. “Yes!” he said a bit too loud. As the coffee was brewing, Mary Anne and Walter continued. Within a few years of the experiment starting, a pandemic spread quickly around the world. No place was spared. It was airborne, quite virulent and quite lethal. However labs were able to develop and manufacture large amounts of vaccines with surprising cooperation. Maybe one billion people died before it was stopped, wiped out. But a few government labs around the world kept samples. China, USA, Russia were known to have them, many others were suspected. The second wave started somewhere in the Americas, no one knew exactly where. It was far worse, it spread very fast, days or weeks, carried everywhere by planes and boats and in the air. No one knows how many people died, few survived. The guess is that the survivors had some gene or something. No one knew why, no one could know anymore.

The coffee was ready, Eve brought cups for Alice's niece and Walter. He was so excited by the coffee that he blew and blew on it to cool it and then gulped it down, holding out his cup for more. Eve refilled it then gave the other two cups to Bob and Alice. Four cups, they were not expecting visitors.

The elderly couple continued. Mary Anne's husband George had died in the first wave. She had met Walter after the second wave. At first there were not a lot of people around, not many anywhere as far as they knew. Life was a mix of feast and famine. Although they had access to huge amounts of resources left abandoned, there was no electricity, soon no fuels, soon little mechanized. The farmland was fertile with plenty of fertilizers to be had, for anyone who wanted that life. She and Walter did farm for quite a few years. When they aged out of that life, they returned to the city, or what remained of it.

Mary Anne paused, looking at her hands in her lap. "Your nephew, my brother..." she began. Alice and Bob faced her, not breathing. Mary Anne stayed silent, fidgeting. She tried to talk, to tell them. Alice knew. Bob was confused, unsure, but when Alice took his hand, he knew. "They didn't survive the second wave." said Mary Anne with a wave of her hand. "It was the second wave...". The room was silent for a while.

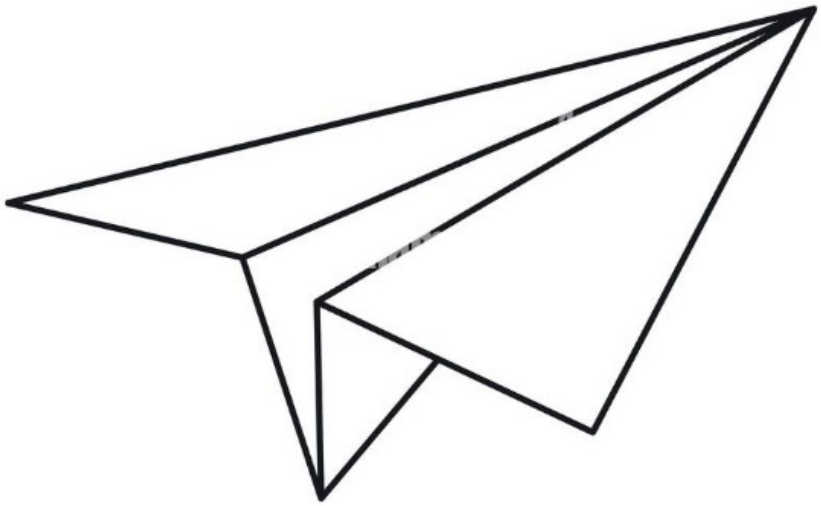
"You're a great, no great-great aunt, or something like that." she proudly told Alice. "Those two boys on the bikes are my great-grandchildren. They know nothing of the world before." she said sadly. "Walter and I are some of the last to remember."

"Are we immune?" Bob asked Alice. She gazed into the distance for a while, working out the genetics.

"I probably am, can't tell about you three." she said. "But, I doubt that the virus is still around. It hasn't had a host for..." she looked towards her niece, "...decades. It's probably simply vanished."

Chapter 7, A New World

The next day, their first real visit outside showed a whole new world. The climate had become dry and dusty. Mary Anne told them that only irrigated areas could be farmed. They lived in a nearby village beside the river. There was another village about half a day's walk downstream. The rare traveller would talk of other villages. With Mary Ann as tour guide, they attracted stares and a small entourage of children. Most people had never seen people they did not know, let alone were related to. She showed them the irrigation channels, greeting those who were working on them.



"When the rains became less and less, we had to dig channels for the water. The first one was nearby, over there" she said, waving upstream. "But the river got lower and lower so we had to dig channels further and further away. Lucky for us the river is not far down or we would never get any water". A short walk brought them to the water wheel. Slowly it turned, scooping water up, emptying most of it into a wood trough then running into a channel. "This is the fifth or sixth wheel. The first couple fell apart, the next ones eventually rotted, this one, well it's on its last legs. Without it...," she began, "without it we would have no water, no crops, no water for anything. We are lucky."

The four stayed on the plane. Bob and Eve removed all of the sealed window covers to let in light. Although the plane had been stocked with supplies for a long stay, that did not last. A couple of years later, the last can was opened, the last rice cooked. The experiment was not much use to anyone so it literally collected dust. The power died too and candles became their lighting. Bob's tools were better than the worn out tools people had.

Alice, Bob and Eve took to farming as if they had been doing it all of their lives. Both Alice and Eve eventually assumed the management of the village's chickens and sheep, relieving Mary Anne and Walter of much of their duties. The men worked the fields. Bob took over running and maintaining the water wheel. At first Ted floundered. Given a hoe or shovel, he attacked the ground with no sense of pacing and a weak idea of purpose. Over time he learned by rote how to work efficiently, he even improved the willy-nilly irrigation channels to optimize the use of water. For the first time in most peoples' memory, water was available in the village square.

Ted kept his precious pool table intact. Alice, who played by feel rather than Ted’s calculated shots, became the de facto world pool champion. She found that her experience with disabled children was useful, there being many because of the close relationships within the village.

To say that they flourished would be an exaggeration. They survived, survived well considering the circumstances. But they were far too close to their previous lives to be really happy. Life goes on, the world still turns, regardless of what they thought or wanted.