

Chapter 1

Beware the Pipers

‘Watch yourself!’ the driver said as he pulled up to let Narlo out. ‘A hitch hiker was murdered here last week.’

The car drove off leaving Narlo alone in what looked like a ghost town on a road with very little traffic. It was starting to get dark and spots of rain were blowing into his face as he gazed along the deserted main street. Apart from the wind and the banging of a loose sheet of corrugated iron on a nearby building, the only sound was of the car that had dropped him off speeding up a dirt road into the hills as if in a hurry to get away from the place.

Narlo wasn't feeling the best. All day, he had had a nagging sense that something bad was going to happen – something really bad. There was nothing he could do though, apart from walk down to the end of town in the hope that someone would be heading his way – someone who didn't murder hitch hikers. He started to walk.

Reaching the building with the loose metal, he could see it had once been shops. Hanging over the crumbling pavement outside the first, creaking mournfully in the wind, was a sign that read *Butcher & Lynch, Funeral Directors*. Through the dirty front window he could see a pile of coffins and, just visible in the background, hanging from a wooden beam, a noose.

The next place was a stonemason with grave stones on display. The last place looked like it had been a florist: the flowers were still there, though they were all long dead. Flapping from the florist window were the torn remains of an old poster advertising a play or something, seemingly called *Beware the Pipers*. The title seemed ominously significant to Narlo – as if it were a message meant particularly for him.

After the building he crossed a small bridge and below the bridge he noticed a body lying in the mud, its head half submerged in a

puddle. From the way it was starting to blend in with its surroundings, it looked like it had been there for a while.

Narlo had been getting progressively more uneasy. Seeing the body, his unease crossed the line into panic and he broke into a sprint. He ran as far as the next side street and hurried breathlessly round the corner as if to hide.

But turning the corner brought him face to face with the pipers – four gigantic hairy Scotsmen, dressed in kilts, each wielding a set of bagpipes. They stared at him menacingly for a moment, then one spoke: ‘Och laddie, ya made a bad mistake comin’ here.’

‘I didn’t mean to,’ Narlo answered nervously and apologetically – and somewhat out of breath. ‘I just got . . .’

‘Ya di’ na mean to?’ interrupted another, more loudly and leaning down into Narlo’s face. ‘Did ya no see the sign?’ he continued, pointing with one arm. ‘Your type are nay welcome in these parts.’ By now all four had moved closer and had Narlo surrounded.

‘I don’t . . .’ Narlo began, but his words were cut short by a sudden stabbing pain in his side. One of the men had thrust a blowpipe into his ribs. Another then picked him up from behind and stuffed him head-first into a black plastic barrel which was standing there on the footpath.

The lid was screwed on and Narlo was trapped, claustrophobic and very uncomfortable with one ear pushed against the bottom of the barrel, his arms squashed in around his chest and his legs somewhere where legs don’t normally go. The barrel was thrown onto the back of a truck and driven off down what seemed like a very bumpy road.

Narlo knew he was going to die. He bounced around for what felt like a mile or two before the truck came to a stop. He could hear the muffled, gruff Scottish voices as the barrel was tipped onto the ground, rolled across the dirt, then pushed off a cliff. That sudden

intense visceral feeling of freefall told him in unmistakable terms that he had gone off a cliff. The barrel hit the ground below with a deathly crash and Narlo responded with a gruesome deep-throated yell – something between a desperate bellowing cry for help and a scream of absolute terror. As he died, he managed a second yell.

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Narlo made the second yell sitting up in his bed. In the semi-light he could just make out his bedroom. Although it now seemed that he wasn't dying, he couldn't stop himself from giving a third quick yell for good measure.

A shaking hand scrambled frantically for the bedside light, desperate to see for certain where he was. A measure of relief came with the light. Now he could see what was around him – and perhaps more importantly – what wasn't around him. His heart still pounded in his chest, though, and everything scared him.

As he began to settle down, he noticed the clock – 4:23 am. What he needed more than anything else was some company, someone to put their arms around him and hold him until all this was more comfortably in the past. He wanted to wake someone up – that was assuming he hadn't done so already – but he knew better. This sort of thing happened quite often. The first couple of times, someone had come to see what the commotion was about, but this time he was on his own.

Narlo had had dreams like this on and off for the past 16 years. The dreams always had a theme of death, usually accompanied by a dark foreboding. They would end in his being killed, though he would always wake up just as he died.

He knew why he had the dreams: 16 years earlier he had killed one of the only three people he knew. Her body was still with him, strapped to the wall outside his room just a couple of metres from

where he slept.

On top of this there was the fact that he himself was quite possibly going to be burnt to death in less than three weeks time.

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A bit after 5, Narlo decided he wasn't going to go back to sleep, so he got up, put on some clothes and went outside. He walked carefully down the stairs into the living area, holding the rail to avoid being thrown off balance by the invisible forces which always accompanied such an action and which made him feel not quite right in the head. The living area was a room about 10 metres by 4 metres. Unlike most living rooms, though, the floor was curved so that both ends were higher than the middle where he was standing.

He walked to one of the ends, the room seeming to roll as he went so that he was always at the lowest point. Unable to go further, he turned round and walked back. He did this a few times. Something inside him told him it was serving some kind of purpose; though something else told him he was just wearing out the carpet.

He sat down at a desk and pressed a few keys on a keyboard, causing a picture of stars to appear on a monitor in front of him. He zoomed in on one particular star which turned out to be a gibbous disc, bluish white in colour. He gazed at it for a few minutes, far away in wistful thought. This could have been a time of triumph and excitement – a time when he might be hailed as a hero.

To be sure, he was still looking forward to the possibility of landing back on Earth, but the excitement was tempered by the very real possibility of misjudging the approach, entering the atmosphere at high speed and being incinerated. Even if he did make it down alive, he would have to face the consequences of that incident 16 years earlier.

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The date was 22nd July 2120 and Narlo was 19 days from home after a 76-year space journey. Having lost radio contact with Earth just six years into the mission, he was totally unaware of the transformation that had been sweeping the human race.

History shows that most humans will accept anything they think will make their lives more enjoyable or less painful (as long as it doesn't seem morally wrong and doesn't adversely affect others). In the latter part of the 21st Century, a technological advance had provided for any person, rich or poor, young or old, the possibility of a life so much better than what most people had enjoyed previously, a life without pain or sickness, fatness or ugliness, ageing or death, a life packed with fun and exciting experiences, fulfilment and contentment. In this life, people could look just the way they wanted, do whatever they wanted without suffering the usual consequences and have whatever they wanted done to them. Once this heaven on earth became freely available, it should be no surprise that many people took it.

The technology that was needed for this new life was being developed even at the start of the 21st Century, though at that time, few had seen where it would lead. By the end of the century, with the benefit of hindsight, it was very clear which way things were destined to go; to many the new life seemed a natural and inevitable step in the evolution of mankind. People want good lives and ultimately there is no way to stop them from doing what they can to realize that desire. Indeed it's hard to come up with a convincing reason why anyone should stop them – unless of course one sees the transformation as the work of the devil, luring mankind into godless debauchery and hedonism.

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Narlo put his hands behind his head and leant back in the chair. He swayed to and fro a couple of times, then fell over backwards, landing with a bit of a crash on a small pile of board game boxes someone had left on the floor behind him.

Chapter 2

Rory and Misha

Trauma can be physically and psychologically incapacitating as well as unpleasant in the extreme. But for Rory, the accident that left him maimed and his mother dead when he was only seven years old was possibly the best thing that could have happened to him.

In the same way, Misha might, like most people, have just got old and died if terminal cancer hadn't opened up an exciting new world for her.

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Rory Pope was born in Epping on the northern outskirts of London in 2029. His mother, Bella, wasn't the most discerning person in the world when it came to things like deciding who to have sex with and who not to. Consequently Rory had been born when she was still too young and she'd brought him up on her own. Despite this, she'd loved him and cared for him as much as any mother and had laid the foundations for an inner security.

Rory was invited to his friend Seth's seventh birthday party. Bella took him then picked him up a couple of hours later. He

obviously enjoyed the party and told his mum all about it on the way home. At one point, when he was showing her what was in his party bag, Bella ran an intersection and hit a truck that was coming across from the right.

Rory remembered his mum's laughter turning to a scream. He remembered the deafening crash, the shattering of glass and the grinding of metal as the front of the car was torn apart.

Bystanders pulled Rory out of the wreckage, but Bella was trapped. When the leaking petrol ignited, she just stayed where she was and burned. Though Rory was injured, he was aware of what was happening and, despite the efforts of his rescuers to get him away, he saw the charred figure of his mother as she died behind the curtain of orange flames, a sight that would haunt him for years to come.

Rory spent four months in hospital. The doctors did their best with reconstructive surgery, but he was left disfigured with a permanent seemingly unpleasant and unfriendly expression. He could speak and eat only with difficulty and he walked with a limp.

Bella had no relatives capable of looking after him, so, when he came out of hospital, Rory was placed with a retired couple he'd never met before, Mr and Mrs Simmons. They treated him well, but they never made up for his mother whom he missed terribly. He missed so much about her: her soft warm body, her pretty face and her reassuring smile. He missed the way she sat and talked to him if he was upset as if nothing else in the world mattered, and he missed the things they did together – cooking treats, walks in the park. Life had been so good and it had never occurred to him that all that could end. Worst of all was the knowledge that if he hadn't insisted she look in his party bag, she would still be there with him.

A week after coming out of hospital, Rory started at a new school. He started in November, a couple of months after the beginning of the school year, and quickly became that ugly new

kid that everyone talked about but tried to avoid going near. He became timid and found it easiest just to keep to himself.

After a while, some of the children began to accept him, but others seemed to feel it was their duty to make his life even more miserable than it already was. He would finish many days crying himself to sleep alone in his room.

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But Rory turned out to be good with his studies – in no small part because he had plenty of time to spend on them. He was particularly good at logical thinking, did very well at maths and science and had a gift with computers. This did earn him a certain respect from some of his peers. As well as that, his interest in computers gave him something to do and helped take his mind off the rest of his life. On his computer he could talk to people with common interests without them knowing what he looked like.

Rory finished university and got himself a job in IT – a job where he worked with machines more than with people. He never really developed the art of socialising, never married, never even had a girlfriend. He lived alone in a London apartment.

He did get into his work though. He often worked on projects that were a bit of a challenge and on which he could produce some outstanding results. These would give him a sense of satisfaction and make him feel proud of himself as well as getting him accolades from others.

He had other pleasures in life too. He liked to go for walks in the country. They were of necessity fairly short, slow affairs, but he delighted in the fresh air, the open meadows, the forests, the blue skies, the crisp frosty mornings and, on rare occasions, the snow which, for a few days, transformed the landscape into a magical wonderland. On his walks he would see cottages tucked away

privately amongst nature and would dream of owning such a place.

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In 2071, Rory started working for Hartigan Electronics. His new workplace was in Central Wales, so he did finally get his cottage in the country. By this time, though, he was suffering quite a bit from arthritis, so he couldn't get out and enjoy the outdoors as much as he would have liked. Instead, he had an extension built on the back of his house. The glass walls looked out across a field to a tree-lined stream and the hills beyond. He worked a lot from home, mostly in the glass room. He still didn't have a stunning social life, but by now he was good at getting by without.

A few years later, Hartigan joined a consortium of companies which aimed to give people with dysfunctional bodies a chance of a normal life. In 2082 the consortium was looking for its first guinea pigs. Rory knew it would be a risk, but, if it paid off, his new life might be so much better than his old one. He decided he had more to gain than he had to lose and he volunteered. The operations were being performed in Australia, so he flew there, said goodbye to his defective body and got himself sliced.

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In the same year Misha Grutowski, who was working for one of the other consortium companies, made the same decision.

Compared to Rory, Misha's life had been fairly normal. She'd been brought up near Bristol, done a degree at Bristol University, then taught science in secondary schools. She found her subject more interesting than the kids she taught, lending credence to the adage 'Primary teachers love their kids; secondary teachers love their subject; and tertiary teachers love themselves.'

At 34, still unmarried, she started a PhD in neurology. This led to involvement in work on brain mapping with SybroTech, an organisation that was experimenting with the production of artificial brains. She enjoyed this work and stayed with it until, at the age of 47, she was diagnosed with ovarian cancer. Though the tumour was removed it was found to have spread to several other organs. She was given two months.

Fortunately for Misha, this happened at the time that the consortium was looking for guinea pigs. She had even less to lose than Rory.

Chapter 3

The Shack

Narlo picked himself up from among the now slightly squashed boxes, straightened them out as best he could, put them somewhere more out of the way in case he fell off the chair again, and sat himself back at the monitor.

Narlo, the ship and the other three crew members (one of whom was now dead and hanging outside his bedroom) had spent the last 76 years travelling to Tartarus and back. Although Tartarus is the Greek name for hell, it is also the name of a dwarf planet orbiting the sun about four times as far away as Pluto.

The space craft Narlo was travelling in was affectionately called *The Shack*, not so much because of the way it was built, more because it was named in honour of Ernest Shackleton, Antarctic exploration hero of the early twentieth century. The Shack consisted of two pods connected by a long shaft. The whole ship rotated about a point part way along the shaft to provide gravity.

The curvature of the living room floor ensured that gravity was everywhere perpendicular to the floor so the furniture didn't slide downhill. It was the Coriolis effect of the rotation that produced the strange feelings when walking down the stairs.

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Narlo's mission was part of Project Ericsson. The project was named after the Viking, Leif Ericsson, not the phone company. Leif established a settlement in Newfoundland nearly 500 years before Columbus 'discovered' the New World.

The ultimate aim of Project Ericsson was to land people on planets of other star systems likely to host life. Phase 1 of the project consisted of launching small unmanned probes on journeys to extra-solar planets. Narlo's mission was part of Phase 2. The main aim of Phase 2 was to road test three technologies that it was thought would be needed in Phase 3 when people would be travelling to other star systems.

The first of these technologies was the cosmic ray protection system. The main component of the system was a magnetic field around the ship to deflect charged particles. Another component was drugs designed to reduce the impact of chromosome damage caused by the particles that made it through the shield. Only two of the astronauts were given these drugs though. Narlo wasn't one of them.

The second technology was the recycling of food, water and air. All human waste was re-processed using energy from the ship's reactors to recreate the clean water, oxygen, food etc. that the crew needed to keep functioning. By now, they had eaten the same food about 10 times, they'd drunk the water about 20 times and they'd washed in it many more times than that.

The final technology was hibernation. For most of the trip the

astronauts had hibernated for all but 12 days out of every four months. In hibernation, gravity was reduced and their body temperatures were lowered so that all their biological processes slowed. As a result, in the 76 years they had aged only about as much as they would normally do in 20 years.

Without hibernation, all four of the travellers would probably have been dead before they got back. The only other option for having live people in the ship for the whole journey was to breed in space. This might have been fun in a way, but hibernation was considered to be less complicated. Besides, the crew didn't really want to get old and die before they got back. And what sort of life would it be for the next generation who would be born in the ship, spend possibly their whole lives without stepping foot outside the front door, then die in the ship, only to be eaten by their children? One could argue that, not knowing any different, they wouldn't mind, but the people on Earth who make these decisions tend to be sentimental – or at least don't want to be criticised by others who are.

In fact, steps had been taken to make sure they didn't breed: Narlo had been doctored so that they couldn't, and additives in the food ensured that none of them particularly felt like going through the motions anyway.

It was sort of ironic that, by the time they were due back to Earth with the results of the trials, neither food re-processing nor hibernation would be required any more. Humans would be able to embark on space journeys of thousands of years with no food or water, no air and less living space than one finds in an average coffin (if you can call the space in a coffin living space). And yet they would be fully conscious and alert within a second of any incident that required their attention.

The visit to Tartarus was primarily to use the planet's gravity to sling-shot the Shack back towards Earth and so save time and fuel.

Close-up observation of the planet was a bonus.

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Only one thing had gone seriously wrong with the ship and that was the loss of radio contact with Earth. Six years into the journey the Shack had collided with an object about the size of a small pebble. Such a collision would have been no big deal at low speed, but at 25 kilometres per second, it had been a deal of considerable magnitude.

The object punched a hole through the outer wall of the ship and sprayed the nearby electronic equipment with high-temperature plasma. The shock and heat had rendered the electronics inoperative.

Luckily, the crew weren't in hibernation when it happened. They were, however, asleep. They were woken by the sound – sort of reminiscent of a cannon going off in the next room. A few seconds later, alarms sounded in response to the drop in air pressure in the affected compartment of the ship.

The equipment that was burnt wasn't crucial to the running of the ship, but it was crucial to communication. Up until then, there had been regular communication with Earth; since then there had been no contact. They tried various ways to replace the lost circuitry, but with the lack of available spare materials, they had had no success.

Despite the loss of contact, the mission had continued fairly much as planned. The looming problem, though, was getting back into Earth orbit. As they hadn't passed very close to Tartarus, the on-board guidance system had been sufficiently accurate to manage the fly-past.

But it would be a different matter when they approached Earth where they had to be a lot more precise. The thrusters on the ship

provided only very gradual acceleration, so sudden last-minute corrections weren't possible. The idea had been to use the very accurate ground-based guidance system to bring the ship in. But of course, that required the communication system to work and now it didn't. So the crew were having to guide it in as best they could manually using the less accurate on-board system. The errors involved could quite easily be enough to cause the ship to plunge into the Earth's atmosphere or miss the Earth completely rather than going nicely into orbit. All they could do was give it their best shot and hope.

Even if they did get successfully into orbit, they had no way of getting down to the ground by themselves. Hopefully, the organisation that sent them would still exist and would be expecting them. But after so much time without contact, there was no guarantee of that. They would just have to wait and see.

Chapter 4

Hannah and Narlo

At 5:30 Narlo was still the only one up, so he went and had a shower. When he got back, Hannah was sitting at the table with a coffee.

Like Narlo, Hannah looked like she would be in her forties. She was medium height with fair skin and blonde hair parted down the middle and hanging to her shoulders in loose curls. Her body was soft but still quite shapely and her roundish features and smooth complexion made her look almost baby-faced. She was wearing a knee-length skirt and sleeveless top, both of which fluidly followed her shape – a result of the countless washings. Her feet were bare.

‘G’day,’ said Narlo. Narlo was from Australia.

‘G’day,’ said Hannah. Hannah wasn't from Australia, she was Irish, but she'd learnt to say G'day. Hannah was a country girl, brought up in a farming family in a small town in County Down. After finishing school she'd studied psychology and human relations in Belfast, then accepted a job in Australia with Project Ericsson. A year later she'd started training as an astronaut.

Hannah's parents had been members of a Presbyterian church. Hannah had grown up believing in God and at the age of 16 had made a serious commitment to the Christian faith, a commitment from which she had never resiled.

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Narlo first met Hannah a couple of years before they left Earth when they were introduced as potential crew members for the space missions. She was 26 then, two years younger than him, and Narlo had found her quite ordinary, her personality not particularly interesting. She was quiet and reserved and, talking to her, Narlo got the impression she was very proper and almost prudish: she didn't laugh a lot and she could be disapproving of some of the things he said, particularly things said in jest.

From then on, they got to see each other quite regularly. Narlo learnt to be more selective about the things he said in her company and gradually he got to see a different side of her. Though she was still quiet, he found that he could talk to her very easily and he got to understand where she was coming from. Despite her somewhat dull exterior, she turned out to be warm and encouraging and he felt secure and relaxed with her. Though he hadn't done so at first, he came to see her as quite attractive physically. As they got to know each other, she became more open and smiled more. They were both pleased when they found they'd been assigned to the

same mission.

Narlo and Hannah both enjoyed philosophical discussion and had spent many hours during the trip sharing their thoughts on the meaning of life. Narlo's intuition made him an atheist, though he realised that he could be wrong and worried a bit about what might happen after he died if he was.

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Narlo walked across and ordered a latte. He was wearing a pair of shorts and a t-shirt, also both well worn. He was a couple of inches taller than Hannah and thinly built. His hair was brown with highlights of silver. It was neither straight nor curly and never looked tidy: it seemed to go where it wanted to go rather than where one would have thought he would have wanted it to go.

Narlo had the sort of face that looked open, friendly and trustable, if sometimes a little mischievous. There was no trace of male arrogance in him – in fact quite the opposite – he tended to be somewhat self-effacing. He rarely got overtly angry. For most of the 76 years of the mission, he'd been an outwardly cheerful character, though, like Hannah, not loud. Since causing the death of Saphira, however, he'd been more reserved and less sure of himself.

Narlo was born in Denmark but had moved to Brisbane with his mother and twin sister Anya when he was six. He joined Project Ericsson after completing a degree in electrical and electronic engineering and working for an aircraft manufacturer for a couple of years.

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Once the coffee had poured, Narlo sat down opposite Hannah at

the table.

‘Been up long?’ she asked.

‘Oh a while,’ Narlo replied, not volunteering any details.

Hannah looked at him as if waiting for him to elaborate.

‘Did I wake you?’ he asked.

‘Oh I sort of half woke up.’

‘Sorry.’

‘That’s OK. Bad dream?’

‘Yeh.’

‘How d’it happen this time?’ she said a little facetiously, but with a warmth that conveyed genuine concern and made him feel comfortable about elaborating.

‘Got thrown off a cliff by a bunch of crazed Scotsmen,’ he said.

Hannah stopped herself from laughing, but not before a quick one had got out. ‘You should write these down. You could publish them if we get back . . . *1001 Ways to Die a Horrible Death* by a psychotic astronaut. It would probably be a first.’

Narlo nodded thoughtfully. This had actually entered his mind. It had occurred to him that he displayed considerably more imagination in his dreams than he did in his waking life.

Chapter 5

Dog's Breakfast

They didn't have a dog in the Shack. Whatever dangers faced them, they weren't expecting to need a dog. There wouldn't have been enough room for it to run around; it probably would have fallen down the stairs; and they wouldn't be able to put it outside to go to the toilet or if it needed to bark all night.

Those who designed the food re-processor, however, seemed not to have realised this: breakfast every morning looked like something for the dog. To be fair, the meals were quite palatable with the possible exception of one they had had early on in the trip – a black thing with spikes. It had been kind of like eating a crow – not just the meaty bits but the whole thing.

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While Narlo and Hannah were sitting talking, Jolee, the other surviving member of the crew, staggered down the stairs, groped her way to the table and sat down next to Hannah.

Jolee was wearing a pair of soft cotton shorts like cut-off pyjamas – and nothing else.

‘Morning,’ said Hannah.

Jolee gave a grunt. It took her a little while to come good in the mornings. She sat with her head in her hands.

‘Lost your clothes?’ Hannah asked.

‘Ah, they’re in the wash. I’ll go and get them in a minute.’ Jolee would sometimes walk around mostly naked. Hannah had been a little uncomfortable with the practice at first, but hadn’t complained and now had gotten used to it. Narlo had never had any objection.

Hannah put a cup of coffee in front of Jolee. Jolee gave the impression of having a hangover, but she didn’t. Part of her state was due to the fact that she’d been up late working on the trajectory in the attempt to get the Shack safely into Earth orbit. She and Narlo both had the skills to do the work, but Jolee insisted on doing it by herself. Narlo and Hannah had decided that it might be better just to let her.

Jolee was American, a mechanical engineer by background. She was a year older than Hannah, about the same height, but thinner,

with an almost boyish figure – very little in the way of those things that distinguish a woman. Unlike the others who were quite white, Jolee was a mixture of a few races, partly Hispanic, but with definite African genes.

‘Breakfast's ready,’ Hannah said. She’d started it when Jolee appeared. She put three plates on the table. This morning, it was a mound of yellow stuff with red specks.

‘Ah, scrambled eggs,’ Narlo said.

It tasted a bit like scrambled eggs. They knew it would because they’d had it about a hundred times before.

In the early days they’d had a bit of fun making sarcastic comments about the food, but they’d got over that. Now they just ate it. Narlo went over and picked up three glasses of orange drink – orange in colour, that is, not necessarily bearing any relation to the round fruit that goes by the same name.

The sequence of meals was pre-programmed. It could be overridden if necessary (as long as the required raw materials were available from the re-processing plant), but on the whole they’d taken what they got – except for the crow – they deleted that from the menu after the first serving.

Chapter 6

Killing Saphira

One could be excused for feeling that the circumstances surrounding Saphira’s death were a little suspicious: Narlo had talked to Hannah and Jolee about killing her, then, a few days later, had gone into her room late at night when everyone else was asleep and stabbed her. He didn’t deny doing that, but he did maintain that

it had been Saphira's fault. Not everyone on board shared his view.

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For most of the trip the four crew members had got on well. Narlo and Hannah had formed a natural pair as had Jolee and Saphira, but there'd been no animosity between the pairs. Apart from the loss of contact with Earth, things had gone really quite smoothly.

Saphira had been the oldest on board. She was also the tallest – and solidly built. She had an almost matronly demeanour, her straight dark brown hair parted down the middle and usually pulled back tight across her head into a pony tail. She was Dutch, though she'd studied and practised medicine in the UK.

55 years into the trip, when they were well on their way home, Saphira began to express her disaffection with Narlo and Hannah. Later she seemed to become deliberately argumentative. She also started to become lax about following ship routines and this led to further arguments. In these disagreements, Jolee often sided with Saphira.

One of Hannah's roles on the ship was to ensure that people stayed sane and continued to get on as a group. Despite her training and efforts, she was clearly not being totally successful. The four did at times discuss the issues and try to work out solutions, but the discussions usually led either to disagreement or to resolutions which were soon abandoned.

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16 years before they were due back home, things changed from unpleasant to dangerous. Saphira became pessimistic about getting back to Earth in one piece and about the reception they would meet if they did. She began to express the feeling that it would be better

if they didn't even try to get back, suggesting that they redirect the ship so it never went anywhere near Earth. The others knew that getting back alive and being well received were far from guaranteed, but none of them could understand Saphira's view that it wasn't even worth trying. Gradually, even Jolee became concerned about Saphira's state of mind.

Being the one with the medical knowledge, it had been Saphira's job to put the crew into hibernation. She would get the other three into their capsules and fit them with the tubes that would feed them the necessary nutrition and drugs and remove waste products while they were out. Then she would start the timer, get into her own capsule and fit her own tubes.

Being in control of the process gave Saphira the opportunity to put the other three down while staying up herself: once the others were connected and ready, they couldn't see what she was doing.

Narlo, Hannah and Jolee talked about this in Saphira's absence one night and decided to ask her to let Hannah control the hibernations. Saphira reacted to the proposal with surprising belligerence, which of course made it all the more important in the eyes of the others that she not be in control. The three decided not to hibernate again until they'd found a way to ensure that Saphira couldn't do any harm. Saphira reacted badly to this idea too and relations became more strained.

A few days later the food re-processor stopped working. For three days there was no food. Narlo and Jolee managed to get it going again. It seemed that interference had caused the problem and it seemed likely to all that Saphira had been responsible.

After the food re-processor incident, Narlo, Hannah and Jolee again stayed up to discuss the problem after Saphira had gone to bed. It was still 16 years back to Earth and it was obvious that she presented a serious threat to their survival.

In the absence of other workable ideas, Narlo tentatively

suggested, ‘Just an idea, but suppose we try somehow to keep her in hibernation.’

‘What, for 16 years?’ exclaimed Jolee. ‘She would die.’

‘She would,’ Hannah agreed.

There was a pause. Narlo had reasoned to himself that it could be worth sacrificing one person, who seemed to be going mad anyway, so that the rest of the crew could get back alive. He decided to share this thought. He started slowly . . . ‘If we don’t do anything, we’re quite likely all going to die.’ He looked at Jolee and Hannah for their reactions, then continued. ‘If the only way we can stop Saphira from leading us to disaster is to do something . . . that might kill her . . . then maybe it could still be worth considering it . . . It’s probably better for three of us to get back than none of us.’

Jolee looked at Narlo intensely and with some obvious degree of anger. ‘And you would do that?’ she asked rhetorically.

There was clearly no way she would agree. Hannah was more ambivalent, but had difficulty agreeing to a decision to take someone else’s life, whatever the reason. As Jolee was against it, Hannah wasn’t prepared to go along. Without their support, Narlo knew that that option was ruled out. Consequently, nothing was decided.

‘Let’s all think about it for a few days and see what we can come up with,’ Hannah suggested.

Narlo nodded. Jolee was obviously still angry, but agreed to sleep on it.

* * *

Four nights later Narlo heard a quiet knock on his door. They’d all gone to bed about half hour earlier, but Narlo was still awake. He got up and opened it. It was Saphira.

She spoke very quietly, almost in a whisper, ‘I’m having trouble with my tablet. Could you have a look at it for me?’ The crew members had electronic tablets on which they could read books, watch movies etc.

Saphira’s manner was more polite and amiable than it had been for some time and Narlo was pleased to be able to do something for her. He went into her room and picked up the tablet which was sitting on her bed.

‘What’s it doing?’ he asked.

Saphira closed the door and took a step towards him. Noticing her proximity, Narlo looked round just in time to see the pointy end of a large screw driver coming at him. He reacted in time to catch Saphira’s arm, but she didn’t give up. She grabbed Narlo with her other hand.

‘What the . . . ?’ Narlo exclaimed, somewhat taken by surprise.

Saphira didn’t answer (not that it had really been a question). She struggled, trying to push the screw driver towards him. Narlo managed to push her back onto the bed, but Saphira still had hold of him and she rolled them off, landing on top of him in the space between the bed and the wall. He still had her wrist with one hand and had managed to grab the shaft of the screw driver with the other, but wasn’t able to wrest it from her. In the confined space, he wasn’t able to push or roll her off either.

He was surprised by her strength and was acutely aware of his plight. He started to give a yell, but Saphira quickly responded by putting her hand over his mouth. He kneed her in the back, enough to throw her off balance for a moment and to give him a chance to wrench the screw driver out of her hand. He grabbed the handle with his other hand, then, before she could get her hands back onto it, he pushed it into her side.

The whole 20 cm of the shaft went in surprisingly easily. Saphira gave a groan and stopped fighting. A relief came over Narlo for a

moment, very shortly followed by the realisation of what he had done.

Though she'd stopped fighting, Saphira could still move. She stood up, the screw driver still in her side, then stood shaking and whimpering. Narlo scrambled to his feet, still keeping his eyes on her. They looked at each other for a moment. The emergency had passed and Narlo's fear started to be replaced by an urge to protect her. She fell to her knees and looked at him with pleading eyes.

He wanted to put his arms around her to try to make up in some way for what he had done. But at that moment, there was a knock on the door followed by the sound of Hannah's voice.

Saphira fell sideways to lean against the bed. Narlo vacillated for a moment between trying to decide what he could do for Saphira and attending to the door, but then the door opened. Hannah looked at Narlo with obvious concern. Then she looked at Saphira.

'What's happening?' she asked.

Narlo didn't answer. He just looked at her as if he was a bit stupid. Hannah knelt in front of Saphira and lifted her head which was now lying on the bed. She was conscious, but not really with it. Then Hannah noticed the screw driver. She touched it warily, at which Saphira winced. Hannah looked at Narlo with a mixture of puzzlement and accusation. 'Get Jolee,' she said impatiently.

Narlo ran across to Jolee's door, banged on it and yelled her name. Jolee appeared, startled, but seemingly three parts asleep.

'Saphira's hurt,' he said. The two of them went back to Saphira's room. Hannah and Jolee tried to deal with her while Narlo stood by hoping for a request for help, but feeling distinctly unwanted.

Jolee asked Saphira what happened. Saphira struggled to answer, 'Narlo came into my room and stabbed me with a screwdriver.' She didn't say much more after that.

She lived for about 15 minutes. The screw driver had punctured a major blood vessel and her subsequent movement had allowed

internal bleeding. On Earth, she might have been saved, but here they just didn't have the facilities to perform the surgery that would be needed. Even if they had, Saphira was the only one who could have done it confidently.

* * *

No one went back to bed that night. Jolee threatened to kill Narlo. Hannah suggested he go to his room, which he did. The thing Narlo needed more than anything was someone to comfort him. Instead, he had the uninspiring inside of his pokey room. He knew he would be in there for hours and there was no way he was going to sleep. He alternated between abject misery and self-righteous indignation.

Nine hours later Hannah brought him some water and something to eat. Narlo asked if he could go to the toilet. He felt like a naughty boy who had been told to stay in his room. He was allowed, though Hannah and Jolee stood together and watched him as he went in and again as he went back to his room.

He had plenty of time to think about what had happened. He tried to convince himself that he hadn't really tried to kill Saphira – that he was just defending himself the only way he could – that he'd wanted only to hurt her enough to put her off trying to kill him. But he knew he had previously suggested killing her and that he hadn't held back in pushing the screwdriver into her flesh, so he had trouble believing his own story.

At the same time, he couldn't get over the coincidence of Saphira attacking him just a few days after he'd suggested to the others that it might be better to kill her. It had actually worried him after saying what he did that Jolee might say something to Saphira. Of course, he couldn't know, but he had a strong suspicion that she had.

Later that day Hannah and Jolee came to his room again. This

time Hannah asked him to stand outside. Jolee went in and spent a few minutes searching the place while Hannah stood in the doorway keeping an eye on both of them. At one point Narlo asked Hannah what they were looking for, but she just shook her head. Tidying up afterwards at least gave him something to do.

* * *

It was two days before Hannah called Narlo out. By then, she and Jolee had dealt with the body: they had attached it to the outside of the ship where it would stay deeply frozen until they got back to Earth.

The three of them sat down at the table and Hannah asked Narlo to explain what had happened while Jolee recorded the conversation. Narlo gave the facts as he saw them. Jolee seemed totally unwilling to believe him. Hannah was more attentive, but didn't really give it away whether she thought he was telling the truth. After the questioning, Narlo asked if anyone had said anything to Saphira about the conversation a few days earlier. Both said that they hadn't. He left it at that.

After the interview, Narlo wasn't confined to his room. But for the next few days, Hannah and Jolee stayed together at all times and both slept in Jolee's room.

Narlo felt isolated and alone, untrusted, cold and empty inside. He had another 16 years with Hannah and Jolee in the Shack and then who knows what sort of 'justice' when and if they got back to Earth.

Jolee spoke to Narlo only when she needed to and then very formally. Hannah was more conciliatory in her tone and spoke to him more than the bare minimum.

* * *

Eight days after the incident Narlo was woken in the night by his light coming on. It came on only low, but it still caused him to sit up in bed with a fright. It worried him that Jolee might try to take things into her own hands. But this was Hannah. She was standing in his room by the door and the door was closed. ‘Can I come in?’ she asked.

It occurred to Narlo that she already was in, but he answered, ‘Sure.’ He’d missed Hannah more than anything, not that he didn’t see her any more, but the closeness they’d enjoyed was gone.

‘Jolee’s asleep. I crept out to talk to you.’ The two hadn’t talked without Jolee being present since the death.

‘Do you want to sit down?’ Narlo asked.

Hannah sat on the bed, fairly close to him. ‘This is awful, isn’t it?’ she said.

Narlo didn’t answer, but held his arms out to her. Hannah moved towards him and put her arms around him. Narlo grabbed her tightly and began to sob. Knowing he couldn’t afford to make a lot of noise, he buried his face in her shoulder and tried to get a grip on himself. Hannah told him it was ok and to take his time. When he’d pulled himself together, he looked at her and noticed tears in her eyes too.

‘Jolee reckons you’re gonna try to kill us.’

‘What do you think?’

‘I know you’re not. I don’t know what happened, but attacking Saphira seems out of character for you, whereas attacking you seems much more in character for Saphira.’

Narlo let her go on.

‘Jolee insists Saphira was the innocent victim, but I think that comes more from grief and anger than from reason. I think her insistence that you want to kill us comes from a desire for revenge. She wants to see you isolated and miserable. But of course that

means everyone else is miserable too.’

‘If I hadn’t said anything that night, none of this might have happened.’ Narlo said.

‘Maybe not. But it could have been for the better in the long run. The rest of us will probably get back alive now.’

Narlo looked at Hannah, surprised that she would say that. In a way, he felt justified in what he’d done, but he’d assumed that both Jolee and Hannah saw it differently.

‘What was Jolee looking for in my room the other day?’ Narlo asked.

‘The screw driver had been sharpened,’ Hannah said. ‘She thought we might be able to find where it was sharpened.’

‘Did you?’

‘No. We searched Saphira’s room too – and everywhere else that it could’ve been done, but didn’t find anything.’

They talked for a bit longer then Hannah said ‘I’d better go back.’ They hugged again. As she left, Hannah said, ‘If Saphira had killed you, I would have been left here with Jolee and Saphira – and if that had happened, I don’t think any of us would have made it back.’

Hannah’s visit changed Narlo’s life almost as much for the better as Saphira’s visit a few days before had changed it for the worse. He lay there for half an hour savouring the feeling of knowing that things were still ok between them. Then he went to sleep and, for the first time in eight days, slept through the rest of the night.

* * *

Over the next few weeks, things gradually became more normal, though Jolee spoke to Narlo only when she had to. She would sometimes go to bed before Hannah, leaving Hannah and Narlo to talk. Those times were important to Narlo and he realised they were

important to Hannah as well.

The three of them discussed resuming hibernations. It had occurred to them that it could have been the hibernation that had caused Saphira's altered state of mind or maybe even the cosmic radiation drugs. Jolee and Saphira were the two on the drugs.

Jolee stopped taking the drugs in case and they were all somewhat wary of starting hibernations again. Jolee actually admitted that she didn't feel quite the same as she used to. On the other hand none of them wanted to spend 16 years awake and getting old while they waited to get back, so they decided to continue, but to monitor each other each waking period.

Fortunately, after Saphira, Hannah was the person most qualified to put them down. They started the next hibernation four and a half weeks after Saphira's death. They did another 44 without further incident.

Two hibernations after the death, Hannah managed to negotiate a peace. She and Narlo agreed to make an effort to ensure that Jolee felt she was as much part of the group as they were. In return, Jolee agreed to put things behind her and to give Narlo the benefit of the doubt – until they got back. She made it clear that it was only *until they got back*. She made an effort to keep her side of the deal, though she was never again the person she had once been.

Chapter 7

The New Rory and Misha

On 22nd July 2120, Rory and Misha were both still alive and living in Empyrean. They were enjoying life more than they ever had in their earlier years when they'd been subjected to the

misfortune and dullness of their biological existence and shackled by the constraints and limitations of the physical world.

Rory's face was fixed now – in fact he was devilishly handsome. He could walk properly and, unlike through most of his previous life, he could run. He could even fly. His arthritis was just a memory.

On top of that, he was young again – and he would stay young – maybe for hundreds of years – maybe forever. He had a body to die for. He was strong and in perfect health. Even more importantly, he was loved – by a wonderful woman. Rory and Misha were made for each other.

* * *

It was late afternoon. Rory was lying back on a beach lounge under the shade of a spreading tree. He looked out towards the sea which was calm, protected by the surrounding coral reef. The surface was barely rippled by the gentle breeze and the white sand beneath it gave the water a dappled turquoise glow.

Rory heard Misha yell, 'Shark!' He sat up to see her running up from the beach towards him, still wet from her swim.

Like Rory, Misha appeared to be in her mid twenties. Her creamy-white bikini contrasted with her smooth golden-tanned skin which covered a healthily plentiful, yet firm body. Her wavy blonde hair hung down over her shoulders framing a face that could have belonged to a movie star.

Rory ran down the beach towards her. 'Where?' he asked as they got close enough to talk comfortably.

'Just over there. It was about that far from me,' she replied, putting one hand in front of her face and the other at arm's length.

'What sort?'

'Dunno . . . grey with lots of small brown spots – quite pretty

really. Just watched me for a while, then swam off.’

The two looked at each other in a way that said, without any words, ‘Shall we?’ Then they both ran into the water.

The water was crystal clear. What’s more they could see perfectly without goggles and they could stay underwater indefinitely without breathing apparatus. They swam together for a couple of minutes, heading back to the place where Misha had seen the shark. There were plenty of other fish – thousands of them in fact, in a myriad of bright colours, some swimming peacefully, others darting this way and that in shoals glinting in the sunlight as they turned. Below them, coral of many shapes and colours stood sentry in a 3-dimensional display, their soft parts waving in the gentle tidal flow.

They looked around for a few moments. Then Misha grabbed Rory’s arm and pointed towards an area where an overhanging fringe of coral formed a sort of grotto. In the bottom of the grotto, lying almost motionless, was the shark.

Rory’s eyes widened. It was huge – maybe eight metres. They swam cautiously towards it keeping close together. They could see it was watching them with one small cold eye. Its tail moved slightly from side to side and its gills opened and closed in a slow deliberate rhythm.

The swimmers kept as still as they could, using just gentle movements of their legs to counter the tide.

The shark stayed put, suspended just above the coral. There were no other fish around it apart from two remoras, one hanging onto the shark’s underside, the other swimming nearby, but trying to stay out of sight of the humans. Misha and Rory continued to move in. The shark opened its mouth slightly, revealing several rows of jagged serrated teeth. An instinctive fear went through the swimmers, but they held their ground. The teeth and the small cold eye reminded them that this was a killer. But even so, it was

beautiful, its body sleek and streamlined. The spots were actually more like small circles – golden brown with a whitish edge inside and out, contrasting with the grey surrounding skin.

Then it moved – not slowly this time, but with a sudden violent flexure that seemed to spring load it in preparation for an explosion of speed. It swam directly at Misha. But, almost before they realised it was coming, it had deviated slightly and passed her. Both felt the shock wave – the sudden rush of water that pushed against them almost violently enough to wind them. They turned and watched as the shark swam off into the distance.

The adrenalin peak came after the shark had gone. Their hearts thumped in their chests, but at the same time they felt no urgency to get away. They looked at one another, at first wide-eyed, then with expressions of satisfaction. Then they turned and headed back to the beach.

* * *

They walked up the sand, Rory's arm around Misha's shoulder.

'That gave me a fright,' Rory said.

'It gave *you* a fright?' Misha replied. 'I thought it was going to eat me!'

'I would have saved you,' said Rory, obviously tongue in cheek.

'Yeh right,' Misha laughed.

'Do you know what sort it was?'

'Not off hand. We'll have to look it up.'

They got back to where Rory had been lying under the tree.

'I feel like a drink,' Misha said, followed shortly by 'Ooh, look at that!'

'Mm,' Rory replied in an interested tone.

The white feathered front of a storm cloud was advancing across the blue sky from the west and was just beginning to soften the rays

of the afternoon sun. They sat back on the beach lounge and talked for a while longer, then Rory got up and went into the house – more a beach shack really, though a very tastefully built one. Three or four timber steps led up to a timber floor underneath a roof which appeared, on the outside at least, to be made from palm leaves. In the hot tropical air, the shack looked invitingly cool. There was very little in the way of walls – just a timber balustrade in places. Inside could be seen a wooden table and chairs to one side and a timber-framed bed to the other side, the mattress covered by a crisp white sheet.

A minute later, Rory was back with some drinks. They sat beside each other on the lounge and took their first sip, which sent expressions of rapturous pleasure across their faces. They looked at each other and laughed, then took a second sip and a third before sculling the rest and falling back off the lounge and onto the sand in apparent ecstasy.

‘Ah, they are *so* good,’ Misha said.

* * *

As they lay there, the first rumbles of distant thunder could be heard.

Rory turned his head and looked to the west. The sun was hidden now behind the thickening curtain blowing out from the thunderhead. The sky on the horizon was black and forks of lightning flashed between the clouds and the darkening sea. They watched the lightning for a while and listened to the ever closer thunder. They both loved storms – the fiercer the better – and the excitement was starting to build.

Low dark clouds rolled above them. Then came an intense flash of white light accompanied by a thunderous crack as lightning struck the tree just beside them, causing it to explode in a shower

of sparks and flaming fire balls which fell to the ground all around them.

‘Far out!’ said Misha as they both scrambled to a sitting position. They watched the blaze produced by what was left of the tree, seemingly quite entertained by the spectacle and showing no signs of concern either for their own safety or for the welfare of the tree.

As the crackling died down, they heard, despite the continuous thunder, the sound of the rain front moving towards them across the island, rustling the leaves as it came. The torrent started almost instantaneously.

They looked at each other, laughed and lay back together on the beach lounge watching the raindrops coming down into their faces, radiating from a point in the sky the way stars zoom past as one flies at impossible speed through the galaxy. The rain was cool, but not cold and they lay there until it started to ease.

‘Do you feel like dinner?’ Rory asked.

‘What you gonna make me?’

‘Dunno, I’ll go and see what’s on the slab.’

He got up and went into the house. A couple of minutes later, he was back with an assortment of bite-sized delicacies with a range of exotic flavours.

The rain continued while they ate. The food got a bit wet, but it was still good. The sky was still dark with pendulous storm clouds. Rainwater was running in sheets over the grass towards the sea carrying leaves and other debris. The thunder still rolled, but now it was coming from all directions.

* * *

Despite the background noise, Rory noticed a dull rumbling coming from the west, different from the thunder. He looked over to see the dark rotating column of a massive tornado no more than

half a mile away. The top merged with the dark swirling clouds above; the bottom was surrounded by spray from the sea that was being whipped up around it.

‘Hey, look at that!’ he exclaimed.

Misha turned around and stared wide-eyed. As they watched, the wind started to blow around them, firstly a couple of gusts, then a more steady breeze which built up to a gale and made it difficult for them to hold their ground. The rain got heavier again and they found it impossible to keep their eyes open looking into it – the drops seemed to drill themselves into their eyeballs.

The column was moving towards the island. When it hit land, it became noticeably green as it stripped the leaves from trees in its path. Then it turned and headed straight towards Rory and Misha. There was nowhere to go, nothing they could do. Their shack would be no protection. Running would just as likely take them into the path as out of it.

Rory stood behind Misha, put his arms around her and told her to sit down. They sat there together facing the enemy, his arms tightly around her, one leg either side of her. And they waited.

The column contained and was orbited by flying debris it had picked up from the ground and from the trees it was demolishing in its path. A strike from any one of these would be the end.

A palm leaf left the roof of their shack and flew across in front of them, quickly followed by a further flurry of leaves, then most of what was left. The last few, along with the walls, the floor and all the contents became airborne just as the column began to engulf the house.

Despite the wind, they’d managed to remain where they were. But then a small branch tumbling across the sand hit Rory on the arm and sent the two rolling. Misha screamed. Rory didn’t let go. They stabilised themselves again lying together, but neither could open their eyes to see what was going on.

As the column engulfed them, it picked them both up bodily. This time they didn't manage to hold on to each other. Rory landed in the sea few seconds later. He tried to hold his head above the water to see what was happening, but it was too rough and too many things were flying past. He gave up and decided to be a bottom dweller for a while: it was calmer there and he'd had enough excitement – for the moment at least.

When he came back to the surface, he saw Misha standing in water up to her waist about 20 metres away.

'Mish,' he called.

She turned towards him, smiled, then started to wade wearily in his direction. They met, fell into each other's arms and held each other for a while before walking back out onto the beach.

They both loved storms – the fiercer the better.

* * *

As the wind died down and the rain stopped, the last rays of the evening sun began to shine across the island, bathing it in a warm golden light. The tree was now a steaming black stump surrounded by bits of smouldering wet ash. Their home was just a few wooden posts and some scattered debris. But, by dark, they had the floor rebuilt and a new bed – a dry one.

They lay on the bed looking up at the sky.

'The stars are good tonight,' Misha said.

'Who needs a roof?' Rory responded.

There were thousands – maybe millions of stars. They twinkled in beautiful iridescent colours like the sparkles of light on a dewy lawn in the early morning sun. Some were moving visibly. There were planets too – not just points of white light, but bodies so close that they could see their surface features. Some had beautiful ring systems.

One of the stars exploded while they were looking at it. The initial flash of light was followed by the sight of a spherical shell of multi-coloured glowing gas which expanded away from the explosion site. They watched it spread. A few minutes later, the shell reached the Earth, sparking the most dazzling auroral display, joined shortly afterwards by a shower of a million shooting stars.

‘Wow!’ said Rory.

Misha snuggled closer to him. ‘What shall we do tomorrow?’ she asked as they lay watching the shimmering curtains of light from the aurora.

‘Mmm,’ was the initial reply. They had a week off work. They’d been on the island for a couple of days. The previous night they’d taken the jet skis across the lagoon to the mainland to go to a concert.

They’d had seats right in front of the band. The music was great and the light show was out of this world. At one point, thousands of fireworks went off all around them, not at a safe distance, but so close that they were actually inside the halos of coloured sparks. They made an awesome noise that formed part of the music. Misha and Rory felt the heat and the force of the explosions on their faces and chests. It was almost scary at times – but then they liked to scare themselves.

After the concert, they had drinks with some friends, then returned to the island.

‘Feel like skiing?’ Rory suggested.

‘Mm . . . ok’

They had a ski lodge in the Swiss Alps. It was at the top of an enormous network of runs which they still hadn’t finished exploring. They both loved skiing. The snow was always great – fresh powder and fast groomed runs. They loved the après-ski parties which happened every night too, though sometimes they preferred to stay in the lodge and sit by the open fire – or maybe

have a hot spa under the stars or in the falling snow.

‘Alright, get up at 5 so we can be on the slope for sunrise?’

‘Sunrise will wait for us.’

‘Ok 6?’

‘7’

‘Done.’

* * *

There were a lot of different places Misha and Rory could stay. Among their favourites were a penthouse apartment on 42nd Street in Manhattan and a log cabin in arctic Canada.

They never had to worry about any of these places being booked up. In fact no one else was ever in them and no one ever messed them up before they got there.

Rory and Misha weren't part of any elite. They hadn't won the lottery. They hadn't made a fortune in business or been the beneficiaries of any inheritance. In fact about a billion of the world's 12 billion people now lived the way Rory and Misha did. And did the other 11 billion work to pay for their extravagant lifestyles? Not at all. Many of the 11 billion were better off for the existence of the one billion. The one billion used far less of the Earth's resources per capita than did the 11 billion. Their existence was truly sustainable.

Life for Rory and Misha wasn't all leisure, though: they did work, but they enjoyed their work, so it wasn't a chore. Rory worked in relations between the converted and the unconverted. Misha was an educator. They had a special assignment coming up: they would be spending a few weeks welcoming and inducting some space travellers who it was hoped would be returning in a few days time.

Chapter 8

Incineration Day

As the Shack got closer to Earth, Jolee continued to work on the trajectory, making occasional fine adjustments as their position got easier to pin down. She wasn't very forthcoming when the others asked her how things were looking. Generally she told them they seemed to be going ok, but she wouldn't know for sure until a couple of days out. She hoped to go into Earth orbit on August 10.

But on August 8, she walked away from the work station and told Hannah and Narlo to sit down. She spoke solemnly. 'We're heading too close. The thrusters are firing at maximum power to try to correct, but it's looking like we're going to enter the atmosphere and burn.'

Hannah and Narlo felt their spirits sink. No one said anything for a moment, then Jolee, looking almost tearful, said, 'I'm sorry. I've let you down.'

Narlo got up, walked across to Jolee's chair and told her to stand up. She did, looking rather uncertain as to what he had in mind. He put his arms around her and hugged her. Somewhat to his surprise, Jolee hugged him back.

'You gave it your best shot,' he said. 'No one else could have done more. And you never know, we might still survive.'

Hannah got up and joined them. That was the first time in 16 years that Narlo and Jolee had displayed any affection towards one another.

'When will it happen?' Narlo asked.

'About 2 am on the 10th.'

‘Tomorrow night?’

‘Yeh.’

* * *

That evening, after Jolee had gone to bed, Narlo knocked quietly on Hannah’s door. She was pleased to see him. Narlo asked if he could stay. They spent the night in each other’s arms – the only night they had ever spent together.

The next day they spent a lot of time sitting quietly. Hannah prayed in preparation for the meeting with her maker. Narlo prayed too, in the hope that, if there was a judgment coming, even though he couldn’t convince himself to believe, he might be given some sort of special consideration on the basis of . . . whatever.

Jolee, as usual, wasn’t interested in that sort of superstitious nonsense. Instead she kept an occasional eye on the trajectory. They had the view of Earth up on the screen and looked at it from time to time as it got larger and they could see more detail.

* * *

Having had a lot of time to think about their possible fate, they had worked out the likely sequence of events. Because the ship was well insulated, it would be unlikely to get terribly hot inside before it broke up. If the break up and consequent air loss were gradual, they would feel the pressure drop in their ears and heads and become short of breath, eventually suffocating and passing out. If the rupture of the living area was sudden, the immediate drop in air pressure would cause painful damage to their lungs as well as causing their bodies to inflate slightly. The air rushing out of the ship might throw them about and suck them out. Once outside, they would have about 10 seconds of consciousness, but during that

time they would be blasted by a 7 kilometre per second wind. This would not only cook them, but would blast the burning skin and flesh off their bones as well.

This wasn't a pleasant thought, but the fact that it would all be over in 10 seconds was consoling, even more so as victims of serious trauma often take more than 10 seconds to register what is happening and to start to feel any pain.

All in all, none of them was dreading the process of dying. It was just the disappointment of not living any longer and not getting to see their earthly home again, especially after coming so close. For Narlo it was also the worry of what might follow death.

* * *

At 10 o'clock, with about four hours to atmospheric entry, Narlo and Hannah were sitting together in the living room. Jolee had gone to her room about half hour earlier without saying anything to the others.

Narlo and Hannah talked occasionally. Narlo felt that their last few hours together were in some sense special and important and that they should make the most of them and enjoy themselves. Something about imminent death, though, kind of made it hard to really have fun. On the other hand he reasoned that these were possibly the least important hours of his life because they were the ones that he would have least time to remember. So, in that sense it was quite ok to be miserable.

He shared these thoughts with Hannah who was more cheerful than he was and generally handling the situation better.

* * *

At 10:15 an alarm sounded – one they'd never heard before. This

produced an adrenaline rush in both of them. They jumped up and went over to the control panel. Jolee came back down the stairs and came over too. It turned out that the alarm was indicating that there was a foreign body in the vicinity of the ship. None of them made sense of this straight away. The computer calculated the direction of the foreign body and turned the telescope towards it. They could see a small bright object in the distance. It was moving only slowly relative to them, but it was getting gradually larger indicating that it was moving towards them.

All three of them seemed to pick up together that this could be something come to rescue them and the atmosphere changed immediately to one of excitement and hopeful anticipation. They had a lot more to say after that. As it got closer, they could see that it was indeed some kind of craft rather like a plane with a longish body and short wings.

The alarm continued for a good five minutes before anyone thought to turn it off. The craft docked with the Shack. They felt a clunk and heard a rumbling sound. Then the floor started to tilt and gravity began to decrease, culminating in weightlessness as the rotation of the ship came to a stop. Then all three of the astronauts fell backwards against the wall opposite the monitor. The fall wasn't hard, but the ship was clearly accelerating at maybe 0.1g. There wasn't much they could do but sit there on the wall, relishing the thought that they might yet survive.

They were there for about three hours. They worked out that whatever was rescuing them was helping them into a more suitable orbit which wouldn't plough into the atmosphere. The acceleration stopped quite suddenly and they were weightless again. They waited in anticipation.

After a brief silence, there was a bit more clunking followed by a knock on the outer door of the airlock. No one had ever knocked on their door before. Through a monitor they could see a man

floating in a bellowed tube with cross section about the same size and shape as the door. The monitor showed that there was normal air pressure outside the door, so they let air into the airlock, opened the outer door, then opened the inner door. The man floated through the tunnel into the Shack and stopped himself by holding onto the door frame. He was a very welcome sight.

At first nobody moved or said anything. The man's gaze alternated between the three travellers. He was average height, but thin with longish black wavy hair parted down the middle and held down against his head in the weightlessness by a thin band. He also had a modest distribution of black facial hair. There was a haunting serene handsomeness about him.

'Hello, I am Jesus,' he said in an accent that suggested he didn't normally speak English.

Hannah looked at him wide-eyed, obviously not completely clear what was happening.

'That what people call me. I not *the* Jesus,' he said to Hannah as if she needed reassuring. 'My name Iff. People say I look like Jesus.'

'You do a bit,' said Narlo.

'Can we call you Iff?' Hannah asked.

'Ok.'

'Hi Iff,' Jolee said, pushing herself excitedly towards him in the weightlessness. She seemed to push herself a little harder than she intended; she hit him slightly off centre and the two spun back, crashing into the other side of the door frame.

'Sorry,' she said.

'Ok,' Iff replied. 'You please to see me. You Jolee?' Iff looked round still holding Jolee by the shoulders. 'Hannah,' he said, looking at Hannah, 'and Narlo.'

Hannah and Narlo moved towards him more carefully and he gave each of them a welcoming hug.

‘Saphira outside?’ he asked reverently.

‘Er . . . yes,’ said Jolee with a frown. ‘She’s in the bag.’

‘Sorry,’ said Iff. ‘There is . . . er . . . story here?’

‘There is,’ Jolee replied.

They didn’t pursue the story, but Jolee did ask about taking Saphira down. It took a couple of goes to get the question understood, but then Iff told them that they would leave her there and come back for her later. Jolee seemed a little concerned about leaving her, but she didn’t argue. The ship had kept the side Saphira was on away from the Sun. As a result she would have been deep-frozen. She was again in the shade and would hopefully stay that way until they came back to retrieve her.

Iff did ask them if they wanted to take anything down. None of them had thought about that, but they each floated off to their rooms and put a few things in a bag. They said a quick goodbye to their home of 76 years, then moved through the tunnel into the rescue craft.

The doors were closed and the tunnel evacuated and retracted. They were in what looked like a smallish plane. Iff started the engines. The plane turned to face the opposite direction to which the Shack was travelling, then started to accelerate. The Shack moved into the distance behind them.

* * *

The Earth was surprisingly close, taking up close to half the sky. They couldn’t have been more than a few of hundred kilometres from the ground. They all looked at it in wonderment for a while.

Hannah asked Iff, ‘Where are you from?’

‘Mongolia,’ was the reply.

The three looked at him somewhat puzzled as he didn’t look at all Mongolian.

‘Do you speak Mongolian?’

‘No,’ he said with a laugh. ‘Logal.’

‘What?’

‘In Morinya speak Logal.’

‘Morinya?’ Narlo queried, but Iff didn’t answer, so, even though all three were wondering about Morinya and Logal, no one pushed the matter further.

On the way down they asked him a few more general questions about what Earth was like, but he wasn’t very forthcoming with answers. They weren’t quite sure whether the problem was the language or just a general uncooperativeness.

By the time they entered the atmosphere, they were moving at an aeronautical rather than orbital speed and from there on it was just like landing a plane.

Iff spent some time talking on the radio in a language they didn’t understand – presumably Logal. They recognised their names and the odd English word, but not enough to know what was being said. When he’d finished the conversation, Iff just looked at the others and smiled.

They’d set off from the Palmer Base in Northern Australia and were expecting to land in the same place, but they could see that they were landing somewhere in Northern China – or maybe even Mongolia. Five hours after leaving the Shack, the shuttle was standing on a concrete runway.

Chapter 9

Lubai

It was mid afternoon local time on 10th August – a warm sunny

day. There was a clear deep blue sky above and green grass around them. There were trees in the distance. They had had pictures of this sort of thing with them and had looked at them at times to reminisce. Now it was there for real.

As they opened the door, they heard birds. They smelt Earth. It was a smell they'd forgotten. In fact it was one that they'd never really been aware of before they left. But now they couldn't miss it. And, despite the fact that it had been so many years, it was instantly familiar – the smell of trees and soil, grass, fresh air and openness. It seemed to go with the sounds of the birds. They climbed down, walked across to the grass and stood on it together. Narlo crouched down and felt it. It was great to be back. It was great to be alive.

* * *

Two people were walking towards them from a nearby building. One was a man, a bit taller than Narlo and more solidly built. He looked about 40, handsome with medium-brown skin and a thin layer of frizzy black hair – obviously a good part Negro. Even before he spoke, his manner and expression conveyed a cheerfulness and a warmth.

His dress was smartly casual, his collarless shirt having an intricate pattern of spots and rings and, though they weren't at first obvious, disguised by the pattern, quite a few small round holes.

The other, a woman, was also attractive, a little younger, shorter and more Asian in appearance with petite features. Her straight black hair was parted down the middle and hung to her shoulders. She had holes in her top too. Her expression conveyed more formality.

The woman introduced herself as Misha, shook hands with each of the crew and kissed them all on the cheek. Then the man did

likewise, except that his name was Rory. Narlo expected Misha to be Chinese, but both she and Rory spoke fluent English with English accents: Rory had a London accent; Misha had a more west-country tinge.

‘I hope your homecoming wasn’t too traumatic,’ Rory said.

‘We were a bit worried for a while there,’ Narlo answered with obvious understatement.

‘It’s very good to have you back,’ Misha said.

‘It’s really good to be back,’ Narlo said. ‘Did you know we were coming?’

‘Only as of a couple of months ago. We thought we’d probably lost you. But we knew that, if you were still alive, you should be coming back about now, so we kept a lookout.’

‘Are you the only people here?’ Jolee asked.

‘No, there are more inside,’ Rory said. ‘We didn’t want to overwhelm you as soon as you landed . . . We thought we’d give you a few minutes to get used to the place . . . then overwhelm you.’

‘Oh, that’s very considerate.’

‘No, there’s not a huge crowd,’ Misha added.

Rory and Misha picked up the bags and the five of them set off towards the building. Iff stayed at the shuttle.

‘So where are we?’ Hannah asked.

‘Lubai Aerospace Port in Manchuria,’ Misha replied.

‘Why not Australia?’

‘Bit of a long story, but we can’t use the Palmer Base any more.’

‘How come?’

‘Australia is full of Africans now.’

‘What? What happened to the Australians?’

‘They mostly moved to China.’

Hannah shook her head in puzzlement. ‘Musical countries?’

‘We’ll explain later,’ Misha said.

* * *

They walked through glass doors (opening them first) into a spacious and pleasantly decorated room. There were just three people in the room – along with eight comfortable-looking black leather chairs surrounding a low table with a spread of food and drinks. The crew were introduced to those present – Helen, Baal and Xavier.

Helen was a white woman, probably in her late thirties. Baal was of Mediterranean appearance. Xavier was somehow very English looking – thin face, largish nose and brushed-back fair straight hair. The men had holes in their shirts. Narlo thought about asking whether they had trouble with moths, but thought better of it. He'd always been a bit of a fashion cynic.

Helen and Baal spoke fluent English with somewhat American accents. Xavier spoke more broken English: clearly his English looks didn't tell the whole story.

There were also four screens on the wall, each with a face on it, and they were introduced to these too – John, Mardi, Sav and Tahnee.

Those physically present then sat down. Rory pointed out that cameras that allowed the screen people to see them also acted as television cameras so that people around the world could watch them.

‘So we're on TV?’ Narlo asked.

‘Yes,’ Rory answered. ‘But it's on just one of several thousand channels that people can choose from. Are you ok with that?’

‘Yeh,’ Narlo said and the others agreed.

‘Thank you for picking us up,’ Narlo continued.

‘Oh, not a problem,’ Helen replied.

‘It was quite a relief.’

‘We imagined it would be. We could tell that we needed to get

to you before the atmosphere did.'

Baal leant forward and said, 'We didn't know if you'd be hungry, but we brought a bit of food in case.'

Narlo, Hannah and Jolee looked at the food. It had been a while since they ate and they enjoyed their first taste in over 70 years of food that hadn't already been eaten by someone else.

Narlo noticed that, of all their hosts, only Xavier ate anything. 'Not eating?' he said to Rory, somewhat cheekily.

'No,' was the reply, without any elaboration.

* * *

Helen asked a few questions about the trip. The first was about how the loss of contact happened and Narlo spent a few minutes explaining.

Then they moved on. 'So obviously, three of you survived.'

There was a moment's silence before Hannah took up the job of explaining about Saphira. She looked across at Narlo. Narlo had prepared himself for this moment, but couldn't completely hide his apprehension. She then started her story. 'Saphira died 16 years ago. She died violently.' She looked around at the reactions of their hosts. The mood was more serious and everyone was listening attentively. 'Narlo killed her. That's not in dispute. But there is disagreement about the circumstances. Neither Jolee nor I saw it. Narlo says it was self-defence; Jolee believes it was pre-meditated.'

Hannah paused again to check reactions, then continued, 'I can give you both sides of the story if you like, but it'll take a while.'

Helen thought for a moment, then said, 'We might leave that till later: we're really more of a welcoming party than a court of investigation. Has the incident produced any tension between the three of you?'

'Hannah continued, 'The 16 years since the incident have been a

bit difficult.’

Helen looked at each of the three and asked, ‘Are you ok being here together?’

‘I think that’s ok,’ Hannah said looking at the other two for confirmation. ‘We survived the 16 years.’

Baal then took up the discussion. ‘So apart from Saphira dying, how were the 76 years?’

Hannah talked about how things had gone – the hibernations, the food, the boredom and so on. The discussion continued for an hour or so, then Helen drew it to a close: ‘There’s nothing further on the program today, so you can have a chance to get used to being home again. Misha and Rory will take you to where you’ll be staying tonight. Over the next few days there will be some debriefings and medical examinations. But they’ll be interspersed with some fun and relaxation.

‘As you’ll find out, there have been some rather dramatic changes since you left. Misha and Rory will introduce you to some of these, Tahnee will tell you about others. A couple of the changes will have a significant impact on your lives: once you understand the changes, you will have a major decision to make.’ She made this sound somewhat ominous. ‘You will need to decide where you’re going to live. You’ll have three options. The first two are fairly similar to each other and to what you would be used to. The third is dramatically different and like nowhere that existed before you left.’

The crew looked somewhat intrigued.

‘With the Saphira incident, we’ll probably get you all to make statements sometime soon, then a bit later, a court will meet to try to work out if there is any blame to be assigned, if further investigation is needed and what action to take.’

There was a moment’s pause, then Narlo asked, ‘So I won’t need to be locked up yet?’

‘No,’ said Helen with a bit of a laugh. ‘Even if you do turn out to be culpable, you’re probably not going to be killing anyone else or running away.’

Helen’s matter-of-fact tone reassured him considerably: at least she didn’t seem to see him as any sort of danger.

Misha said, ‘Your bags are in the car. We’ll head off if you like.’

Chapter 10

Different World

A vehicle was waiting around the side of the building. It was shaped like a bus, but more the size of a car. Otherwise it wasn’t greatly different from the vehicles they’d been familiar with – four wheels, windows in the top half etc.

Inside there were three seats at the front and three at the back with the two rows facing each other. Behind the back row was a compartment for the luggage. Notably absent was a driver’s seat or steering wheel – any controls in fact.

Once they were all in, Misha said something that wasn’t English and the car started moving. Hannah looked a little startled. Misha reassured her, ‘It’s alright; it’s meant to do that.’

Rory explained, ‘No one needs to drive; you just tell it where you want to go and it takes you. There are sensors in the road and in the car. Both feed in to computers. Between them they control the traffic on the roads and see to it that everyone get to where they want to go without hitting anything on the way.’

‘It’s more reliable than human drivers,’ Misha added. ‘The computers drive responsibly, they have very quick reactions and they don’t get distracted or fall asleep.’

‘Mm . . . And you have to speak to it in . . . ?’ Narlo asked.

‘That’s Logal,’ Rory replied. ‘It’s the language everyone speaks now.’

‘Ah,’ Narlo said, seemingly a little worried. ‘Iff mentioned that.’

‘Some people obviously speak English as well,’ said Hannah.

‘A few,’ said Rory. ‘Your welcoming party do – it would be a bit awkward if we didn’t.’

‘So . . . are we going to be able to get by with English?’

‘It won’t be easy. You won’t find many people who speak anything but Logal. There are portable translators, but in the long run it’s going to be a lot easier to learn Logal. All signs and writing will be in Logal.’

‘Oo,’ said Hannah.

Jolee didn’t say anything: she just frowned.

Misha came in, ‘If we hadn’t lost contact with you, we would have sent you stuff so that you could learn the language on your way back. But it’s easy to learn – and you’ll get lessons.’

‘Is it a new language?’

‘Yes, it’s an invented language, like Esperanto. It’s designed to be very easy to learn.’

‘And everyone in the world speaks it?’

‘Logal is the language used in Morinya. Morinya is a political union which takes in about a third of the world.’

‘Which third?’

‘Basically the northern third – most of Europe, North America, North, East and Southeast Asia, and India.’ Morinya has a union government as well as national and local governments. But all Morinyans can live and work anywhere in Morinya. There’s a single economy, a single defence force and, to a large extent, uniform laws. The education system and curriculum are mostly uniform, though in the early days, there were still a lot of different languages taught in schools and spoken at home and work. As

workers became more mobile, this became a real problem. That's where Logal came in. Logal was developed in the 2050s as a common second language.'

'English wasn't serving that purpose?'

'To some extent it was, but there was some concern about the fact that the language of part of the union was being imposed on the rest of it. More importantly, English is a difficult language to learn. Its irregularities and totally wayward spelling meant that it took a lot longer than necessary for people to become competent in it. Logal was designed as a simple and logical alternative. The spelling is totally phonetic, so after just a few lessons students can spell and read any word. The grammar is simple and logical too: a few small words indicate the case, number, person, tense, mood etc. of words so there are no changes to the form or endings of the words. And the system works exactly the same way for every word, so it only takes a few lessons to master the grammar too. The vocabulary is the biggest job, but a lot of the words are based on pre-existing languages and a lot come from English.'

'Non-English speakers were happy with that?'

'It didn't seem to be a problem – a lot of people who didn't speak English as their first language already knew it as a second and so it made things easier for them. Words with related meaning tend to have similar forms too, so it's often possible to guess the meaning of words you haven't heard before. Anyway, all up, it takes about a quarter as long to learn Logal as it does to learn English.'

'Mm . . .'

'After 2059, all Morinyan school children were taught Logal as a second language and adults were encouraged and helped to learn it. By the 2080s Logal was understood pretty much throughout the union, at a basic level at least, and signs and public communication in Logal were readable by everybody.'

'The initial intention was to keep the local languages and just to

have Logal as a lingua franca for the union. But as more and more people came to live and work in areas where different languages were spoken, Logal gradually took over as the primary language. Books, songs, TV shows and movies were produced in Logal and much of the Internet was in Logal. Since the 2090s, all education and public communication has been in Logal and now in 2120, few people speak anything else.

‘An incidental benefit is that kids at school spend a lot less time mastering their language and don’t have to learn a second language. So they have a lot more time to spend learning useful things. And every future generation will benefit from that.’

‘Mm . . . What about the rest of the world? Do they still speak the old languages?’ Narlo asked.

‘Yes.’

* * *

The car joined a more major road which had a bit of other traffic on it. This road took them a kilometre or two to some buildings they’d seen as they were landing.

There were five buildings in a circle. They were sort of pyramidal and patchily covered with foliage, tasteful in their design and very clean and new-looking.

They drove in under one of the buildings; the car parked amongst other cars; they got out, carried their bags to a lift and went up to the 16th floor, which seemed to be the top one. They walked along a corridor to a door on the left. Misha pushed on the door knob and the door opened. ‘In here,’ she said.

They were in what looked like a living room. Four doors came off the sides. Misha pointed out that three of the doors were bedrooms, each with its own bathroom; the fourth was a cupboard. The wall in front of them was glass and looked out onto a balcony.

‘This is nice,’ Hannah said.

‘This is where you’ll be staying tonight,’ said Misha. ‘Rory and I will be next door.’

Rory pressed a button causing the glass wall to fold back turning the room and balcony into one big open area. They walked out. There were lush green plants around the balcony and chairs and a table among them. The outer edge was a low glass wall over and through which they could look out across neatly maintained parklands between the buildings. There were quite a few people in the park, some in groups and some by themselves.

‘Would you like a drink?’ Rory asked.

Everyone seemed happy to have one. He went back inside and returned with three glasses of fizzy green liquid. Each had a thin layer of suds on the top, making it look rather like a green beer.

‘You’re not having one?’ Jolee asked Rory and Misha.

‘No.’

She looked at them with puzzlement, but didn’t say any more. They all tasted it suspiciously, but found it surprisingly pleasant.

‘What is it?’ said Jolee.

‘Karra,’ Rory answered.

‘Ah . . .’ said Jolee, really none the wiser. ‘Is it alcoholic?’

‘No.’ Though it did taste sort of alcoholic.

‘Does it do anything to you?’

‘No,’ said Rory, ‘just quenches your thirst – and tastes good – oh and it sometimes causes hallucinations – makes people think they’re being eaten by porcupines.’

‘What?’ Jolee said with some degree of alarm.

‘Ignore him,’ Misha said. ‘He’s talking drivel. It’s just a drink.’ She looked at Rory and added, ‘Behave yourself.’

Rory gave a mischievous grin.

When they’d finished the drinks, Rory invited them for a walk in the park. They headed back out to the lift. The door shut behind

them.

Chapter 11

Blips

Narlo noticed that no one seemed to have locked the door. He also remembered that Misha had opened it when they arrived just by pushing on the knob. ‘You don’t lock doors?’ he asked.

‘It’s locked,’ Misha replied.

Narlo couldn’t suppress his curiosity. He went back and pushed on the knob. It didn’t open. He tried turning it – one way then the other. It was indeed locked.

Misha smiled. She walked back and pushed gently on the knob with one finger. The door opened. She removed her hand and it swung back, closing again.

Narlo couldn’t resist. He pushed the knob with one finger just the way Misha had. But it didn’t work for him. He grabbed it and gave it a good push, then a vigorous shake. It was definitely locked! He smiled sheepishly, shrugged his shoulders and walked back towards the lifts.

‘The door opens if the knob is touched by a person who has entry rights,’ Misha explained.

‘How does it know?’ asked Narlo.

‘Everyone carries a transmitter called a blip which emits a unique signal about five times a second. When you touch the door knob, your electrical signature is picked up and sent to a detector in the room. The detector is connected to a central computer. If you have the right to use the room, then that right will be registered on the computer and it will unlock the door.’

‘Mm . . .’ said Narlo. ‘Does everyone’s place work the same way?’

‘Pretty much,’ said Misha. ‘The lifts work the same way too – and cars.’

Rory summoned the lift, it arrived and they got in. He then touched one of the lower buttons – they were marked, but not with English characters – and the lift descended.

‘Where do you keep the blip?’ Narlo asked. Misha looked like she was about to answer, but, realising that the lift was stopping, said, ‘Ask me later.’

* * *

When the doors opened, they came out into a sort of café. It was a big area, nicely decorated with a dark marble floor and a lot of timberwork. There were tables and chairs around the sides; the centre was clear and led out into the park. It wasn’t crowded, but there were more people than the three had seen in a long time.

Almost as soon as they got out of the lift, people’s eyes started to turn to them. The babble of conversation was hushed. Then one or two stood up and started to clap. Within a few seconds the whole gathering broke into applause – and a few cheers.

The travellers were a little taken aback. They followed Rory to the centre of the room, where he stopped, looked around, then made a short speech, presumably in Logal. There was another round of applause and they continued to walk through to the park.

‘Sorry,’ said Rory. ‘I should have warned you. People here at the base are going to know who you are. Hopefully that won’t be too much of a problem. They should be restrained and they’ll know they can’t talk to you.’

They were actually quite touched by the display of respect.

* * *

The park was very picturesque, with the last rays of golden sun lighting the tree tops and the surrounding buildings. They stopped for a moment to look around. To their left was a small crowd gathered around three young women who were playing musical instruments in a very animated manner. Further in the distance were a few dozen people doing some ballroom dancing.

‘Is there something going on?’ Jolee asked.

‘Nothing special,’ Misha replied. ‘A lot of people meet in the park late afternoon and a bit of entertainment is always laid on.’

‘Mm . . . That’s rather nice.’

Straight ahead a gravel path led into some woods, but they walked to the right across the grass to a lake with water falling over some rocks.

There were seats beside the lake and people on some of them. They found a couple of vacant ones and sat down. Some people nearby obviously recognised them. A bit further round, a group of people looked like they were cooking a barbeque while some children kicked a ball around.

‘Some things don’t change,’ said Hannah.

As it began to get dark, hidden coloured lights started to illuminate the waterfall and some of the trees. Before long they lit up the surroundings in very pleasant way.

‘Does this happen every night?’ Narlo asked.

‘Yes,’ said Misha. ‘From just after sunset to about midnight. Then after that, just a few lights are left on so people can see where they’re going.’

‘Is it safe walking about out here late at night?’ Hannah asked.

‘Yes,’ said Misha with a bit of a laugh. ‘People don’t get attacked.’

While they were sitting there a man walked past with a panda on

a lead – the black and white giant type. The kids ran over and patted it. Narlo, Hannah and Jolee were all quite surprised – not only that he had a panda but that he thought it safe to let the kids pat it. Rory pointed out that it wasn't a real panda – just a battery-powered look-alike that didn't bite or scratch.

* * *

They sat for a few more minutes, then Narlo remembered the conversation in the lift. 'You were going to tell us about those blips,' he said to Misha.

'Oh yes.'

'Is it something you can show us?'

'No – it's in my head.'

Narlo, Jolee and Hannah were all somewhat taken aback.

'In your head?' Hannah repeated.

'Yes, blips are surgically implanted through the fontanel a couple of days after birth. They sit at the base of the fissure between the left and right hemispheres of the frontal lobes – in there,' she said, pointing to her forehead.

'Mm . . .' said Narlo. 'And they do this to everyone?'

'They have done for about 30 years now.'

'So do people over 30 have one?'

'Yes, but not in their head: they have theirs in their wrist.'

'How big are they? Jolee asked.

'They're round, about a centimetre in diameter and about 4 millimetres thick.'

'And they keep working right through your life?' Narlo asked.

'They're designed to. They had a bit of trouble with some of the early ones, but they seem to be pretty reliable now.'

'How are they powered?'

'By your pulse. The head blips are wedged between the left and

right anterior cerebral arteries; the wrist blips are inserted against the radial artery.’

The three newcomers looked thoughtful, Narlo interested and Hannah and Jolee somewhat concerned.

‘Does anyone object to having them implanted?’ Hannah asked.

‘It’s hard to object when you’re two days old,’ Misha replied with a bit of a subdued laugh.

‘I suppose it is, but do parents ever object? – or does anyone ever object when they grow up?’

‘It was a contentious issue at first, but it’s pretty well accepted now. After all, all parents already have one themselves.’

Misha continued, ‘There are lots of things you wouldn’t be able to do if you didn’t have one. For example, people don’t carry IDs to get into places any more: you’re identified electronically. And lots of public amenities work on the signals. Also, you can’t buy anything without one.’

Hannah looked more concerned. ‘Why?’

‘There’s no cash or cards any more. When you want to pay for something, you use your blip. You touch your finger on a metal sensor. That allows your electronic signature to be picked up by the store computer. The computer then checks with your bank that you have enough money and displays the details of the transaction. If you’re happy with the details, you touch a second sensor while still touching the first – and it’s done.’

‘Why can’t people just carry cards instead of using the blip?’ Hannah asked.

‘The blip’s better,’ Misha answered. ‘You can’t lose it or forget to take it with you when you go out. And, most importantly, it can’t get stolen. Even if someone were to kill you to get your blip, it wouldn’t do them any good, because after five seconds without a pulse, it’ll cease to operate.’

* * *

‘The blips serve another purpose too,’ she continued. ‘As well as emitting an electrical signal, they emit a radio signal. These are picked up by sensors around the place and by satellites. So the location of every person in Morinya at every moment is known. This makes it very difficult to get away with most crimes.’

‘So someone knows the whereabouts of everyone?’

‘No, a computer keeps track of the information. In general, no human ever gets to see it. But let’s suppose Rory was to come out here at two in the morning, find a woman on her own and murder her . . .’

‘As I like to do when I’m bored,’ Rory interjected.

‘Shut up,’ Misha said, though in good humour. ‘I’m trying to explain something. Anyway, five seconds after her heart stops, her blip would stop transmitting. The computer would immediately notify and dispatch investigators to find the body and attempt resuscitation. At the same time, the computer would check who else was at the same location when she died. It would find that it was just Rory. It would then notify other investigators of Rory’s up-to-date location, and they would go and apprehend him.’

‘Is that why people don’t get attacked?’ asked Narlo.

‘That’s a good part of it,’ said Misha. ‘Most people won’t commit a crime if they know for certain they’ll get caught.’

‘What if someone commits a crime in which no one dies?’ Hannah asked.

‘Then the victim will generally be able to say where and when it happened and, again, the computer will be able to tell who else was there at that time.’

‘Mm . . . So it doesn’t worry you that all your movements are recorded?’ Hannah asked.

‘On the contrary,’ Misha said. ‘I think I’d feel a bit insecure if

they weren't. And I'd feel even more insecure if other people's weren't.'

Chapter 12

Three Options

'So everyone has a blip?' Hannah asked.

'Everyone here does – except you three.'

Misha explained that blips were developed around 2060. 'At first they were used on volunteers – many of them criminals who took them as an alternative to jail. In 2072 they began to experiment with intra-cranial blips for babies (with the parents' consent of course). About this time there began a significant political push for compulsory blipping for all. Much of the value of the system lies in having everyone blipped. But as you might expect, there was resistance. The two main concerns were privacy and religious considerations – in particular a lot of people saw them as the mark of the beast from the bible. There was a lot of very passionate debate. Both sides of the argument were given good public airings. The issue was responsible for a bit of violence too.

The concerns about privacy were allayed to some extent by the fact that in general no one sees the information and fairly strong safeguards were put in place to ensure that. The religious concerns were harder to dispel, though. As most people don't change their religious views on the basis of argument, it was clear that consensus wasn't going to be reached.

'By 2077, the majority of Morinyans were in favour of blipping for all. But because it was clear that a significant minority would never be happy with it, a compromise was reached. Parts of

Morinya were set aside as sanctuary areas where people would not be blipped and only those in Core Morinya were blipped. The sanctuary areas became semi-autonomous states, but still part of Morinya and still under Morinya's protection.

'This of course required people to move – either into or out of the sanctuary areas.'

'That would have been quite an upheaval,' Narlo said.

'It was, but the migration was planned and managed quite well: the migrants sold up and took their wealth with them so they could get established in their new home. Because there were similar numbers going both ways, there were homes for everyone. An effort was made to keep communities together and that reduced the trauma involved.'

Narlo nodded slowly in tentative approval.

'It was still somewhat traumatic, but compared to having to be blipped, most saw moving as a lesser evil and most consider it to have been worth it in the long run. As it happened, there was another reason why people needed to move, so the migration killed two birds with one stone.'

'What was the other reason?'

'It was to do with religion too, but we'll tell you more about that later.'

'So where are the sanctuary areas?' Narlo asked.

'Scattered around. There's one in Southeast Asia, there are two in China, two in India, one in Russia, one in Poland, one in Italy, one in France, one in Ireland, three in the USA and one in Canada.'

* * *

'Mm . . .' said Hannah. 'Will we have to be blipped?'

Misha thought for a moment, then said 'As Tahnee said, you're going to have three options. The two more ordinary ones are being

blipped and living in Core Morinya . . . and staying un-blipped and living in a sanctuary state.

‘And the third?’

‘The third is the one that’s dramatically different . . . you can become trogs.’

‘Trogs? . . . as in brutish, uncouth, ignorant people?’ Narlo said. ‘I’ll be one of them – I’d be good at that.’

‘No,’ Rory interrupted with a laugh, ‘troglodytes – as in people who live in caves.’

‘People who live in caves?’

‘Yes.’

‘They don’t really live in caves,’ Misha started to explain.

‘Don’t take any notice of her,’ Rory said. ‘They do.’

‘No they don’t.’

‘Yes they do: that’s why they’re called trogs!’

Misha gave a tut and a sigh and shook her head.

Narlo and Hannah looked back and forth between Rory and Misha, quite surprised by their argument, but noticing that it was good-natured.

‘Ok,’ said Narlo ‘it’s hard to see how you can disagree on something like that. But let’s assume for a moment that they do live in caves. The obvious question is *Why?*’

‘Trogs live in Empyrean,’ Misha said. Empyrean is the third option Helen mentioned – the place that’s like nothing that existed when you left. You’ll be having your first world affairs lesson the day after tomorrow and it will be about trogs and Empyrean: all will be explained then. Rory and I aren’t supposed to tell you too much about them – that’s Tahnee’s job. It’s not something you can explain in a few minutes. A lot of people consider it to be far and away the best option though, and millions have taken it.’

Narlo gave a puzzled look. Though he was intrigued, he decided to be patient.

* * *

‘Can we have a walk round the lake?’ Hannah asked after a brief pause in the conversation.

‘Of course,’ said Misha.

Narlo stood up offering Hannah a hand and they walked, talking about the day – there was a lot to talk about. Jolee, who hadn’t said much during the conversation, stayed with Rory and Misha at the seats.

When they got back, the other three were sitting talking, though the conversation stopped when they got within earshot.

‘Feel like something to eat?’ Rory asked.

‘I do,’ said Narlo. Hannah and Jolee nodded.

They walked back to the café they’d come through on the way out. Misha explained what was on the menu and did the ordering, though she ordered nothing for herself or Rory.

‘Aren’t you eating?’ said Narlo.

‘No,’ said Rory.

‘You didn’t eat any lunch either.’

‘We don’t eat a lot.’

Narlo looked at them a little suspiciously as if he wasn’t quite satisfied by the explanation. The three ate the food and Rory paid for it. No one else offered to pay.

Afterwards, Narlo, Hannah and Jolee went back to the apartment. Rory and Misha went to the apartment next door.

Chapter 13

The Mark of the Beast

When they got back, Jolee went to bed. Hannah and Narlo sat down and talked.

‘What do you think about the blips?’ Narlo said.

‘Don’t know.’

Narlo knew she would have trouble with the idea.

Hannah got up and pulled her tablet from her bag, found the bible and turned to Revelation. ‘Here,’ she said, ‘Chapter 13’.

Narlo moved closer so he could look on.

‘He also made everyone, small and great, rich and poor, free and slave, receive a mark on his right hand or on his forehead, and no one could buy or sell anything unless he had the mark, which is the name of the beast or the number of his name. This requires wisdom. If anyone is wise, let him calculate the number of the beast, for it is man’s number. His number is 666.’

‘Mm,’ Narlo said.

The blips weren’t exactly marks – you couldn’t see them, but some things did seem a bit much for mere coincidence – the fact that you couldn’t buy anything without them (in fact it would be difficult to live in society at all without them) and the fact that they were located behind one’s forehead or near one’s hand.

Narlo continued. ‘If we do get blips and it turns out that they are the mark of the beast, that would be rather bad luck.’

‘That’s putting it mildly,’ Hannah said. From the same page she read *‘If anyone worships the beast and his image and receives his mark on their forehead or on their hand, he will drink of the wine*

of God's fury poured full strength into the cup of his wrath. He will be tormented with fire and brimstone in the presence of the holy angels and the lamb. And the smoke of his torment will rise for ever and ever. There will be no rest day or night for those who have worshipped the beast or his image, or for anyone who has received the mark of his name.

‘I’ve spent all my life trying to go about things the right way,’ she continued. ‘I don’t think I could risk throwing it all away for a blip.’

Passages like this disturbed Narlo too: he didn’t want to be tormented with fire and brimstone, not even for a short while, let alone for ever and ever. Although it seemed to him that the fire and brimstone it talked about most likely didn’t exist, even a one in a thousand chance that they did was enough to make him worry. And if he had to put a figure on the probability, it would be a lot more than one in a thousand.

Mind you, it hadn’t escaped his notice that hell was just the sort of horror story that people would make up if they wanted to scare other people into adopting their religion.

All the same, Narlo agreed with Hannah that, given what they knew so far, taking a blip would not be a wise move.

‘What is brimstone anyway?’ Narlo asked.

‘Yellow stuff that smells,’ Hannah answered.

‘Oh . . . Like what we had for breakfast the other morning?’

‘Yeh, probably.’

With that they went to bed.

Chapter 14

Separation

Narlo was woken up the next morning by music playing. The sun was up and shining in through the open window. He lay there enjoying a state of semi-sleep for a few minutes before the bed, without any warning, tipped 90 degrees to the left, dumping him and his sheet unceremoniously in a tangled heap on the floor. Luckily the floor was fairly soft, so it wasn't terribly painful, but it did get his heart going – jumping right up his throat in fact.

He untangled himself, stood up eyeing the bed suspiciously in case it had any other nasty tricks up its sleeve, then finished the job of getting his brain into gear with reality.

He wondered whether the others had had the same experience. He hadn't heard any yells. He thought about going and warning them, but decided to have a shower instead.

When he went out into the living room, breakfast was sitting on a tray on a bench at the side of the room. The others hadn't appeared, so he went out and sat on the balcony in the sunshine.

As it turned out, the others had a more peaceful start to the day with just the music. Obviously, he'd just been the lucky one.

They ate breakfast – bacon, eggs, tomatoes, mushrooms and something else, then Misha and Rory came in. They asked how breakfast was and how they slept.

'You didn't warn me about the bed!' Narlo complained.

'What do you mean?' said Rory.

Narlo explained for the third time that morning what had happened.

Rory and Misha both laughed. ‘Sorry,’ said Rory. ‘I should have checked. The beds can be set to do that. Some people find it’s the only way they can get up when they want to in the morning. Most people don’t use it though.’

Misha added, somewhat puzzled, that it shouldn’t have done that, because the settings are put back to default when someone new takes over the apartment. Rory smiled guiltily. Misha noticed, looked at him intensely through squinted eyes, then punched him on the arm – quite hard.

Narlo and Hannah were both surprised by the display of violence, though Narlo at least thought he deserved it.

Narlo looked at Rory and said, ‘You’ll keep.’

* * *

Once things had settled down again, Rory explained that he and Misha would be taking Hannah and Narlo to Taonan that day and that someone else would be taking Jolee. Narlo noticed that this seemed to be neither a surprise nor a disappointment to Jolee. He didn’t say anything, though.

A few minutes later there was a knock on the door and Misha introduced Robyn. Robyn spoke English. She seemed to be about Rory’s age and gave the impression of being more business-like in dress and manner. Both Misha and Rory were dressed a little more casually than they had been the previous day, and this made the dagginess of the astronauts’ attire less of a contrast.

Jolee already had her stuff together and with very little ceremony she and Robyn left. After 76 years without being more than a few metres apart, Jolee had gone her own way with just the words, ‘It’s probably better this way.’ Narlo and Hannah were disappointed. But then Jolee had been looking forward to getting away from them for a long time.

Rory explained that Jolee had asked to be separated. Narlo had actually thought that he would prefer it that way too; he just hadn't asked. What upset him most was that, though Jolee had been civil and though in the last few days they had come through some tough times together, clearly there had been no underlying change of heart and probably no forgiveness. He worried about what she might be planning: he remembered the words '*only until they got back.*'

* * *

Sensing the mood, Misha waited a while before explaining what was on the agenda for the day. 'First we have an appointment for your first medical examinations. They will take most of the morning. Then, after lunch we'll be driving to Taonan, a city about 70 km away, where we'll stay for a few days.'

Narlo and Hannah packed their stuff and the four of them headed down to the car. The medical examinations took place back at the base. They involved quite a battery of questions, tests and scans. The initial finding was that neither of them had anything seriously wrong with them and that both appeared reasonably sane. They were pleased with the result, particularly the bit about being sane.

After the medicals, they went for lunch. Neither Narlo nor Hannah ate much and Rory and Misha, as usual, ate nothing. Then they set off for Taonan.

* * *

Once out of Lubai, the road passed through agricultural land with scattered houses alternating with fairly bare undeveloped ground and occasional treed patches. They passed through a town with some large buildings in the centre of a mosaic of suburban areas,

parklands and some very picturesque lakes. It was a lot greener in the town than it was further out.

‘Everything looks so clean and new,’ Narlo commented. In fact nothing they had seen since they landed had looked the slightest bit old, shabby, run down or neglected. Even the woods looked neat and tidy.

Misha explained that the building materials they used now kept their looks better. ‘And a lot of people are employed to keep everything looking good.’

‘So do people work long hours?’ Hannah asked.

‘Not really. The standard is 15 hours a week. Even on the basic wage that’s enough to get you a place to live, food and other necessities and a little extra for entertainment, occasional holidays and so on.’

‘Do some people work more?’

‘Yes, people can work more if they want to and most people do. 25 to 30 hours is probably about average. The extra pay allows them to eat better food, live in a better place and to pay for more entertainment, more exotic holidays, travel and other luxuries.’

‘Like clothes without holes in them?’ Narlo chipped in facetiously.

‘Don’t you like the style?’ Rory said in the same mode.

‘It’s different,’ Narlo replied. ‘I can see it would improve the airflow.’

‘It does. Fashions don’t always make sense from a practical perspective, but this one has its merits.’

‘I guess I could get used to it.’

‘You probably will.’

‘Anyway, you were saying about working longer hours.’

‘Oh yes. The other thing people can do by working longer hours or doing better-paid work is save up so that they can stop working for a while, like if they have kids.’

‘What happens if people are sick and can’t work?’

‘If they can’t work, they get 10 hours a week of the basic wage plus a bit extra if they have kids, so they still get by ok. Though, unless they have savings, they have to live quite basically. Medical expenses are all paid for by the state.’

‘What sort of work do people do?’ Narlo asked.

‘Well,’ said Rory, ‘children just go to school from the age of 4 until they’re 12. After that, they work part-time as well as studying part-time. Some finish school by the time they’re 16; others continue until they’re in their twenties; and some come back to education after they’ve worked full time.’

‘A lot of people work in service industries in shops, resorts and so on; some work in production industries – building and producing consumer items; some work on maintenance. Some teach and look after kids; some work in health services.’

‘Do many people get sick?’ Narlo asked.

‘Yeh, quite a few. We’ve eliminated a lot of health problems and found cures for others, but there are still things we can’t fix, particularly the effects of getting old.’

‘So everyone still gets old and dies?’

‘Yes . . .’ said Rory hesitantly.

Narlo noticed the hesitation. ‘Some don’t?’

‘Troggs don’t . . . which is part of the reason people choose to become trogs.’

‘But that’ll be explained tomorrow,’ Misha interrupted.

Narlo’s initial disappointment turned to a feeling of intrigue. Now he was even more curious about these trogs.

Narlo had long had a secret hope that ageing would be cured by the time he got back. He was hoping not to have to die – not so much because life was so fantastically enjoyable, but partly because he didn’t want to face what might happen afterwards and partly because he just wanted to know what happened next. Life to

him was a bit like a movie. Even though he would have been happy never to have started watching the movie, now that he had started, he wanted to know what happened next. The difference is that most movies come to a resolution after a finite time, whereas life probably never would.

* * *

There was a lot more traffic on the roads now. When cars got close, they joined together in trains. The trains reminded Narlo of lines of high-speed caterpillars. Merging with other traffic was the scariest. Misha and Rory were obviously used to the fact that a car can squeeze into a gap not much longer than the car while moving at what seemed like about 120 kilometres per hour.

After the initial shock, though, the newcomers found it fascinating. Rory and Misha were obviously amused by their fascination. The newcomers were slightly embarrassed by their amusement.

Chapter 15

Easy Life

‘So life is pretty easy now,’ Narlo said after a bit of a pause.

‘It’s better than it has been,’ Rory answered.

‘Is it like this everywhere?’

‘It is in Core Morinya.’

‘What’s it like elsewhere?’

‘Generally not quite so easy.’

‘Why?’

‘Well, in the sanctuary areas, they don’t have blips, so the crime rate is significantly higher and people have to be more careful. More importantly, though, they don’t have trops.’

‘I would have thought that would be a plus,’ Narlo said, seemingly trying to stir a little.

‘No, trops make life a lot better.’

‘How?’

‘We’ll explain that more tomorrow. But they do a lot of the work that needs to be done.’

‘Do they come out of their caves to work?’ Narlo asked with a hint of provocation.

‘No, so they can’t paint your house or do your plumbing,’ Rory answered, ‘but they can do cerebral work.’

‘And that doesn’t take employment away from normal people?’

‘Yes, it does, but the normal people don’t want to do the work. . . . The trops don’t need to be paid, so normal people get the benefit of the work without it costing them anything.’

‘Trops don’t get paid?’

‘No.’

‘Are they some sort of slave?’

‘No, they don’t have to do the work.’

‘So what happens to them if they don’t?’

‘We kill them.’ Rory said in a way that suggested that that was the only reasonable thing one could do.

‘Is that right?’ Hannah asked Misha.

Misha ummed a bit, but then admitted that it was . . . sort of.

‘So, they work for no pay and if they refuse, you kill them. In what way is that not slavery?’

‘In the sense that they are very happy with the arrangement and they go into it quite voluntarily.’

Narlo frowned. ‘Very strange, these trops.’

‘Actually,’ said Rory, ‘we do pay them but only with pretend

money.’

‘I get the impression you’re deliberately trying to confuse us,’ Narlo said.

‘Ah, not really,’ Rory said, his tone implying that really he was. We’re trying to answer your questions, but, as Misha said, we’re not supposed to tell you too much about trops until you’re told about them properly. It will all make perfectly good sense tomorrow.’

Narlo and Hannah nodded.

There was a bit of a pause, then Hannah went on, ‘Ok, so life is easy in Core Morinya and a bit less so in the sanctuary states. What’s it like in the rest of the world? You haven’t told us anything about that.’

Misha took a moment to collect her thoughts as if she had something complicated to explain. ‘Some parts are quite affluent, but most are considerably less so than Morinya.’

‘Why’s that.’

She paused for another moment, then continued, ‘Well, the fact that the rest of the world doesn’t have blips or trops makes a difference. But there’s another reason. Morinya and Celestia (that’s what we call the rest of the world) have quite different approaches to population management. Celestia takes a laissez-faire approach. People tend to have more kids than would lead to a stable population.

‘People’s religious beliefs have a bit to do with this. Those who believe that this life is just a brief introduction to eternity and that it won’t be of any real significance in the long run tend to take a different view of the world. And of course, there’s the fact that there are various religions and the adherents of each religion feel that theirs is the only true one and that God wants the entire world to have their religion. It’s hard to convert the world; it’s easier to outbreed the other religions.

‘As long as the population keeps increasing to take up all the extra resources provided, material life tends not to get a lot better. And as long as people’s duty to God takes precedence over their duty to themselves and each other, population growth will take precedence over comfort.

‘Celestia’s population was about 4 billion when you left. Now it’s over 7 billion.

‘Wow!’ said Hannah. ‘But Morinya’s different?’

‘Morinyans breed a lot less. When you left, the population of Morinya was about 4.5 billion. Now it’s about 2.1 billion.’

‘2.1 billion! – more than a 50% reduction!’ Narlo said, obviously finding this somewhat astonishing. ‘How have they managed that?’

Misha continued, ‘A few ways. Firstly, Morinyans are essentially humanist and, as such, feel a responsibility to make life good for their people. They don’t feel any need to outbreed anyone to spread a religion.’

‘So no one in Morinya is religious?’ Hannah asked.

‘Oh a few are, particularly in the sanctuary states, but most people in Core Morinya aren’t.’

Hannah looked thoughtful.

‘Anyway, a second reason why Morinya’s population is falling is that Morinyans expect a high standard of living and active, varied and fulfilling lives, so many choose not to have children. And a third is that quite a few become trops: the 2.1 billion doesn’t include the trops. But the most important factor is the introduction of fertility controls,’ she said.

‘Fertility controls?’ Hannah repeated.

‘At the age of 10, everyone in Morinya gets an implant which prevents fertility. It can only be removed surgically. At any time between their 20th and 35th birthdays, they can apply to have it removed.’

‘And then they’re fertile again?’ Hannah asked.

‘It takes a couple of months, but then they are.’

‘You say ‘they can apply’. Do some people not apply? . . . and do some have their application refused?’

‘Yes to both questions. Obviously, people will only apply if and when they want to have children. Until then the contraception is handy.’

‘So who gets their application rejected?’

‘People with serious inheritable abnormalities sometimes won’t get theirs removed, although this can often be gotten around by embryonic screening and, because many of these abnormalities have been largely eliminated from the population, rejections on a genetic basis are rare.

‘Most rejections are on a person’s CI – Contribution Index.’

‘What’s that?’

‘From the time people start school, a contribution index is kept. Those who score badly don’t get their implants removed.’

‘How do you score well or badly?’

‘The CI is basically a measure of what you contribute to society – whether you are a positive or negative influence. Those who work hard, care for themselves and others and generally make a positive contribution score well; those who don’t and those who take advantage of or mistreat others or are a negative influence on society score badly. Any criminal actions count against you obviously.’

‘So who decides your CI?’

‘Anyone can record information about anyone else, positive or negative, on a central database – the CID. Obviously people like teachers, employers, the police and so on play a major part here, but anyone can record anything – good or bad.’

‘How do they know if it’s true.’

‘They don’t. But over one’s life, thousands of entries will be made and the idea is that the few dubious or mischievous ones will

be swamped by the genuine ones. So the resulting CI is a statistical measure. The index lies between -100 and 100 and you only have to be 50 or above to be allowed to have children.'

'What would stop someone who hates you from making a thousand bad entries against your name?'

'They can do that if they want and the first one will be given the normal weighting. But subsequent entries from the same person or from people they associate with will receive progressively less and less weight. Also, entries from people who have made lots of entries for lots of different people are given less weight (unless they're made in the person's professional capacity). This stops people from providing a public service to people they don't really know, maybe in return for some other favour – not that that's likely because you can never know whether someone has made an entry for you or whether it was good or bad. And entries from people with low CIs are given less weight too.'

'All in all, it's very unlikely in the long run that a good person will get a bad CI or that a bad person will get a good CI.'

'How many people end up with a CI below 50?'

'Not many. At first it was about 10%, but now I think it's more like 1%.'

'Mm . . . What if someone who at 20 has a CI of 40, but later gets it up to 50?'

'People can apply at any time up to the age of 35, so that wouldn't be a problem.'

There was a short silence, then Misha added, 'There are a couple of incidental benefits of CIs.'

'Mm?'

'The first thing is that people tend to behave themselves both at school and in society in general: they learn more in school, are more productive in their jobs and are less inclined to be anti-social.'

'Mm'

‘And the second is that people tend to bring their children up to be responsible.’

Narlo gave a questioning look.

‘Most people who want children would like their children to be able to have children too. If you don’t bring up your children well, you probably won’t have any grandchildren.’

‘I suppose not,’ Narlo said. ‘But some people are just better at bringing up children than others.’

‘True. But before getting the implant removed, people have to do a parenting course. It’s quite an intensive program, run for six hours a week over three months. If you put what you learn into practice, it’s fairly hard to be a bad parent.’

Hannah came in, ‘Do you have to do the course with a partner?’

‘Yes. In fact, you won’t get the implant removed unless you have a serious partner that you’ve lived with for twelve months and that you intend to bring up the children with.’

Narlo recapped, ‘So first you find a partner and live with them for twelve months, then you decide you want to have kids, then you prove to the authorities that you are good enough, then you do the parenting course, then you both get the operation, then you can go ahead and breed?’

‘That’s about it.’

‘Not like the old days, is it?’

‘No,’ Misha answered, ‘for better or for worse, it’s not like the old days.’

Hannah asked, ‘Once you’ve had the operation, can you have as many kids as you want?’

‘You get a quota,’ Misha replied. ‘For some couples it’s two, but for others it’s more. They’re tending to give higher quotas now the population is getting lower.’

‘What stops you going over the quota?’

‘When you go to hospital to have the last one, they replace the

implant.’

‘What if you keep your baby secret and have it at home?’

‘Then it won’t get a blip.’

‘No, I suppose it won’t.’

* * *

Hannah thought for a while. ‘How do people feel about the state keeping track of their deeds and controlling their reproduction?’

‘Well, where would you rather live – in an affluent society where people can be trusted, or in an overpopulated country with not enough to go round and a good share of criminals ready to take what little you do have?’

Hannah didn’t answer: it seemed like a rhetorical question.

‘Some people found these things offensive at first, but that’s because they were used to there being no restrictions. People usually object to a change in the status quo because they see the way things were when they grew up as being the ‘right’ way. Like people objected to drink-driving laws and anti-smoking laws when they first came in because they were used to having the freedom to drive drunk and to blow smoke at non-smokers. In fact in the early days, if you ran someone over and killed them, you could get off by proving that you were drunk and therefore not responsible for your actions. People objected when that law was changed.

‘The people alive now have grown up with the controls, so they see the new way as the ‘right’ way and wouldn’t want to go back. I mean lots of other aspects of life are controlled by laws and no one objects because they know that life is generally better that way. In fact many would object to the controls being lifted now with the same moral indignation shown by people who objected to their implementation in the first place. To them, it would be akin to removing the laws against drink-driving or against assault.

‘Most Morinyans would consider Morinya to be a much better place to live because of the controls. The small population means that there are ample resources for everyone to have a comfortable life – even without having to work long hours. And the negative element in society is quite rapidly disappearing.’

* * *

Narlo made a point: ‘The CI obviously acts as an incentive to be good for those planning to have children. But it wouldn’t be an issue for those who weren’t.’

Misha continued: ‘The CI is used for other things too. CIs are publicly accessible. So, employers can access them and take them into consideration when deciding whether to give you a job. They will be considered when you apply for a place to live. Even a potential mate can check your CI and learn a lot about whether you’re the sort of person they want.’

‘Do people want a mate with a good CI?’

‘The vast majority do. You restrict your market a lot if you have a bad one. Those with bad CIs tend to pair up with others with bad CIs, but then of course they don’t get to breed.’

‘Making those scores public seems to remove any vestige of privacy.’ Hannah said.

‘You could see it that way, but the public can only see a number – they have no information on what you’ve done. And again, people are used to it and most wouldn’t want things to be any different. Most people would rather have public scores than risk going into a business arrangement or personal relationship with a person that they would have known to avoid if they’d known their CI.’

‘Lots of people keep track of their own scores and get a sense of pride and achievement from them, and this gives them an extra

incentive to be good people and to make a positive contribution to others.’

Misha continued, ‘Another thing that the scores are used for is in determining where you get to live if you become a trog.’

Narlo looked surprised. ‘As in whether you get a nice cave or a cold, damp, dingy one?’

‘Not quite, but something along those lines – more the range of experiences you have access to in your cave.’

‘So you admit trogs live in caves?’ Rory said, catching Misha out.

‘No . . . yes, ok,’ she admitted, seemingly feeling that it wasn’t worth arguing.

Narlo raised one eyebrow.

‘It’ll all make sense tomorrow,’ Misha added.

‘Can anyone become a trog?’ Narlo asked.

‘Anyone can once they reach the age of 24 – as long as they don’t have kids; if they have kids, they have to wait until their youngest is 20.’

‘Is that because they don’t allow kids in the caves?’ Hannah asked.

‘Sort of.’

‘Mm . . .’

‘So the CI acts as an incentive,’ Misha continued, ‘even for those people who just want to be trogs and don’t care about having kids, getting good jobs or even getting a mate.’

‘Are there many people like that?’

‘A few.’

‘Must be a good life – being a trog.’

‘As we said, a lot of people choose it.’

* * *

‘Morinya’s small population has another advantage,’ Misha went on. ‘A lot of Morinya’s land has been or is being returned to its natural state without human habitation. There’s a lot more forest now than when you left and endangered animals are getting their habitats back and getting a foothold again.’

‘Mm . . . That sounds like a good thing.’

‘In Celestia, humans have wiped out so much of the natural ecosystem that it could really only be described as a disaster.’

Chapter 16

Taonan

By now they were coming into Taonan. They drove to near the centre of the city and pulled in under a building. Rory and Misha took them up to an apartment that was quite similar to the one at Lubai, though a little smaller and only on about the third floor. It had a balcony looking out over some gardens and then across the town. From the balcony they could look straight down to the ground below. They sat there and had a yellow drink.

Misha then turned on one of a pair of video screens for their first debriefing, poked it a bit, said something to it, then sat back and waited. The others waited too, thinking that something was likely to happen. It did. A middle-aged man called Bill appeared and spent an hour or so conducting the first part of the debrief.

Afterwards, Misha took Hannah and Narlo shopping. The shops weren’t greatly different from the shops that had been around before they went away. One thing they noticed, though, was that there was generally only one of each type of item on display. Beside each item was a small touch pad.

‘If you want something,’ Misha explained, ‘you touch the pad and your order is recorded. When you’ve finished, you go to the checkout, you get an itemised list of the things you’ve ordered that you can check if you want, then you pay.’

They headed to the clothes section. Misha gave them a hand choosing and they each ended up with a range of things, some quite conservative, others a bit more adventurous. By the time they’d made their choices, Hannah was actually feeling quite enthusiastic about her new look.

They met Rory in an outdoor café and had dinner. Once again, Rory and Misha didn’t eat – or drink. ‘Do you ever eat?’ Narlo asked.

‘Yes,’ Rory answered.

‘When?’

‘We eat at night when you’re not watching.’

‘Why?’

‘We eat worms and it’s rather disgusting, so we don’t subject you to it.’

Narlo thought Rory was probably having him on, though he wasn’t completely sure. He looked at Misha for confirmation.

‘Don’t believe a word of it,’ she said, rolling her eyes. ‘We’ll explain soon.’

After dinner they went back to the apartment where their new clothes were waiting for them. They got changed. The clothes felt good – for new clothes – very soft and comfortable.

‘Tomorrow morning is your first world affairs lesson,’ Misha said. ‘It’ll be about trops.’

‘Ah good,’ Narlo said. ‘Hopefully the lesson will make more sense than what you’ve told us,’ he said somewhat cheekily.

‘It will,’ Misha said with a smile.

‘When will we need to start learning Logal?’ Hannah asked.

‘That won’t be for a while yet. We’ll work it out once you’ve

decided where you're going to live.'

'As in whether we get blipped, trogged or whatever?'

'Yeh.'

* * *

Misha walked over to the video screens. 'You can watch a movie tonight.'

'Put on *Ramnut*,' Rory suggested.

'Hannah wouldn't wanna watch *Ramnut*,' Misha said as if that had been a really ridiculous suggestion.

'She might.'

'No, I'm going to put on *Softening Up Alice*.'

Rory walked over to where Misha was at the controls and started to interfere. The ensuing scuffle culminated in Rory getting a knee in the groin. After that he seemed to accept defeat.

'There, you got your nut rammed,' she said.

Hannah and Narlo watched the altercation, somewhat entertained, though Narlo obviously felt for Rory when he copped the knee.

'Didn't hurt,' Rory muttered under his breath, as he walked off.

Misha obviously heard what he said and replied, 'No it wouldn't – there's nothing much there to hurt.'

Rory looked back at her, seeming to take those as fighting words, though he didn't pursue the matter.

Having sorted out Rory, Misha turned back to the control panel, touched a couple of buttons, spoke to it a bit in Logal, then stood back and watched as a movie came on.

Once it was working, she walked over to Rory and put her arm around him. Rory hugged her back and seemed just as happy as ever – totally unruffled by what had just happened.

Misha turned to Hannah and Narlo and reassured them that the

knee wouldn't have hurt Rory. They weren't totally convinced.

'This is from about ten years after you left,' she said. 'It's a bit of a classic. And it's in English! I think you'll enjoy it.'

And they did.

Chapter 17

Trogs

The next day started more peacefully for Narlo and he got himself out of bed without any assistance. Misha and Rory arrived after breakfast. The world affairs lesson was at 8:30. Misha turned on the video unit and Tahnee, whom they'd met when they first landed, came on. She was an attractive woman seemingly in her early thirties. She was sitting in a comfortable-looking red chair in a sunny room that looked out onto a cottage garden with lots of flowers

'You might remember Tahnee,' Misha said.

'Nice to meet you again,' Tahnee said. 'So how are you finding Earth so far? This is the first time I've met anyone from outer space.'

'We like to think that we're still from Earth,' Hannah said, 'even if we're a bit ignorant.'

'Ah, we'll soon fix that – the ignorant bit I mean,' Tahnee said with a bit of a laugh. 'By the way, it's an honour for me to be able to work with you.'

'Well thank you,' they replied.

'Over a few lessons, I'm going to fill you in a bit on some of the things that have been happening in the world while you were away.' She spoke in a somewhat proper but friendly manner.

They talked casually for a while. Tahnee told them that she was in Moskva, that she was a historian and that her main job was producing educational materials. She told them that today's lesson was going to be about trogs.

'Good,' said Narlo. 'We've been wondering about these trogs.'

'So what do you know so far?'

'That they're people who *might* live in caves. Though there does seem to be some doubt about that.'

'Tahnee looked a bit puzzled. I suppose they do live in caves.'

'See!' Rory interrupted.

'Shut up!' said Misha.

'I told you they live in caves.'

Misha grabbed Rory around the neck and put her hand over his mouth. 'Carry on,' she said.

'Thanks,' said Tahnee. But everyone was totally distracted by the violence playing out in the corner.

She let him go, but raised a warning finger towards him. Rory seemed to take the warning.

'Right,' said Tahnee. 'Thanks for that contribution. Where was I?'

'Living in caves,' Rory called out before cringing as Misha turned to him again, obviously ready to do whatever was necessary to keep him quiet.'

Narlo and Hannah were quite entertained as usual. Narlo got the impression Rory enjoyed Misha's acts of aggression and stirred her up deliberately. Misha seemed to enjoy carrying them out too.

'Right, living in caves,' Tahnee continued a bit more forcefully. 'In a sense they do live in caves, but that is sort of incidental. They're not what you would probably imagine. A trog is a person whose brain has been replaced by an artificial electronic one.'

Narlo looked puzzled. 'Why would anyone want to replace their brain with an electric one – and then go and live in a cave?'

‘Do they live in caves because they like caves or because normal people won’t let them out?’ Hannah added, somewhat frivolously.

The conversation degenerated into laughter.

‘Maybe I should start again,’ Tahnee said. ‘It’ll make a lot more sense when it’s been explained a bit better.’

Narlo looked at her with one eyebrow raised – a look that said he wasn’t totally convinced.

‘We’ll start from the beginning. Forget about the cave bit for the moment – that’s not important and we’ll come back to it later.’ She started to explain with the help of occasional pictures on the other screen.

* * *

‘Troggs came about from a rather radical plan to help people with dysfunctional bodies – paralytics, people with organ failure, autoimmune disease, terminal cancer and so on. The original idea was to remove the person’s brain from their body and keep it alive artificially.’

‘Brain in a bottle,’ Narlo suggested.

‘Kind of, yes,’ Tahnee said. ‘But of course having your brain kept alive might mean that you’re conscious, but having no sensory input would be rather unpleasant.’

‘It would,’ Narlo said thinking about how it might feel finding himself in silent darkness, able to feel nothing, having no sense of position or where his body was or which way was up, no idea of what was going on, whether anyone was around or how long he might be in that state – and on top of all that, being totally unable to do anything about it. It would actually be quite frightening.

‘Obviously sensory input would need to be provided. The plan was to develop a way of connecting the brain’s sensory and motor neurons to a computer – an environmental interface computer or

EIC – which would take on the role of the person’s body and their surroundings. It’s fairly easy to connect a motor neuron to a device which can tell when it fires and pass the message on as an electric signal; and it’s quite easy to connect a sensory neuron to a device which can cause it to fire when it receives a signal. Thus it would be possible in theory to use the motor output from the brain as input to the EIC and to use the output from the EIC as sensory input for the brain.

‘The EIC could be programmed with the details of an environment, say a garden, and it could send output to the brain so that the brain sensed what one would sense if one was sitting in that garden. When the brain responded by trying to move around, the motor output would be read by the EIC, which would then calculate the effect of the desired movements, recalculate what the brain would see, feel etc. from the person’s new position and feed that back to the brain as new sensory input.

For the brain, it would be like being a real person in that garden, able to walk around, smell the roses and bump into the trees. The difference would be that he could have a good virtual body instead of his defective real body.’

Tahnee paused to check whether that made sense to Narlo and Hannah. It did.

She went on. ‘There were some serious practical problems with this though. The first was the resources that would be needed to keep the brain alive and functioning. It would need a blood supply providing the right amount of oxygen, glucose and other chemicals. That would need quite a bit of machinery and ongoing maintenance and, unless blood could be made artificially, it would have to keep being replaced with blood from a donor as the blood cells grew old and died. Also, because the brain would have no immune system, everything would have to be kept scrupulously sterile. The biggest problem, however, was the fact that the brain has some 200 million

sensory neurons coming into it and providing input signals. So there would have to be 200 million input wires and 200 million converters to change the electric currents from the EIC to neuron firings. That's without the motor neurons going the other way. All in all, the idea was considered not to be feasible at anything like a reasonable cost.

* * *

Hannah looked puzzled. 'But they did make trogs though?'

'Yes, there was another way to do the job which avoided those difficulties. It did introduce new difficulties, but these were solved eventually so that trogs could be made at quite reasonable cost.'

'Mm . . . Reasonably priced trogs,' Narlo quipped.

'Exactly,' Tahnee replied. 'This other way was to replace the brain with electronics as well as the body.'

'So there was nothing left of the original person at all?' Hannah queried.

'That's right.'

Hannah looked sceptical. Narlo remained cautiously interested.

Tahnee continued, 'Fortunately the brain is quite a simple thing.'

'That's not what I've heard,' Narlo said looking at her somewhat incredulously.

'It's simple in the sense that it consists of neurons all of which do basically the same job – and quite a simple job. It's only complicated in the sense that there are billions of those neurons, most connected to quite a few others.'

Narlo accepted her point though he still wasn't sure that *simple* was quite the right word for what was possibly the most complicated kilogram of matter in the entire universe.

'Anyway, we've known for a long time what neurons do and for quite a while, we've been able to build electronic components that

do the same job. Basically they fire when stimulated sufficiently by the firing of upstream neurons – ones which have synapses onto them; and when they fire they stimulate downstream neurons – ones onto which they have synapses.

‘One crucial detail though is that each time they fire, the effectiveness of their synapses onto the downstream neuron changes. In most cases it increases – and sometimes new synapses form to increase it further. This is all that changes as we learn, so it is our synapse strengths that hold all our knowledge and all our memories. They make us who we are and give us our identity.’

This wasn’t a totally new idea to Narlo and it fitted with the way he thought about the mind, but Hannah thought differently. Though she kept it to herself, she was fairly convinced that one’s identity lies within one’s non-physical soul and isn’t just a facet of synapse strengths in a blob of gelatinous grey matter.

Tahnee continued. ‘To make an electronic brain to replace a particular person, we not only have to be able to make electronic neurons to simulate the biological ones, but we have to connect 100 billion of them together the way they are connected in that person’s biological brain – and the characteristics of each synapse need to reflect those of the synapse it is replacing. To do this, we need to be able to scan the biological brain to determine what neurons are there, which ones are connected to which and the characteristics of each synapse – its type, how effective it is and how its effectiveness changes with use.

‘Technology to scan a brain and obtain this information took longer to develop than the technology to make the artificial neurons. We’d managed to map the neurons and connections for very simple animals like worms and insects well before you left, but it was the early 2050s before we made any real progress with determining synapse characteristics. Once we found a way to do that, though, we quite rapidly developed the techniques so we could

use them on more complex animals like rats.

* * *

‘We were then theoretically in a position to produce an artificial rat’s brain and connect it to an EIC and in 2059 we did just that. The EIC was set up with extra output that allowed the experimenters to see what the virtual rat was doing. It did seem to respond to stimuli in a way similar to how a normal live rat would. What’s more, the rat remembered things that the live rat had known and it was capable of learning new things, though its intellect did seem to be somewhat impaired.

‘Over the next few years, similar experiments were done with other animals including rabbits, sheep and dogs. At the same time techniques for determining synapse characteristics were improved and by 2065, they had produced a virtual dog that recognised its home and its owners (programmed into the EIC), enjoyed being stroked, patted, played with and fed (again all programmed into the EIC) and could do the tricks that it had been taught as a real dog. Basically, they had reproduced the dog in silicon. And not just any dog, that particular dog. The dog seemed to have no idea that it was no longer the real dog it had once been.

‘What’s more, because the characteristics of the artificial synapses could change with use in the way real ones do, the electric dog could develop new memories, learn new things and thus continue to live a normal life.’

* * *

Narlo said, ‘So this virtual dog was made of presumably a few billion artificial neurons each connected to a number of others. That sounds like it would have been incredibly complicated to

construct. How many kilometres of wires would have been involved? And on top of that, there's still the problem of the 200 million wires going between the dog and the EIC.

'Good point,' Tahnee said. 'The first virtual animals made were worms with just a few hundred neurons. These were made the same way as the real worm with a wire corresponding to each synaptic connection and each sensory and motor neuron. But when it came to brains with millions or billions of neurons, this method obviously became impracticable. So instead of having neurons connected by wires to each neuron they were connected to in the original brain, they gave each neuron an address and the firing messages were sent through a much simpler network with the address of the neuron they were intended for – a bit like the way data travels around the Internet.

'Because the messages were sent with an address, there was no need to have 200 million input wires for the brain. Each sensory message has an address for its destination and so all messages could travel along the same wire. In fact they did use quite a few wires to speed up the traffic, but nothing like 200 million.'

Tahnee gave Hannah and Narlo a moment to let this sink in.

'The artificial brain was a collection of silicon chips. The chips contained a processor for each neuron and each had its address. Each processor also had registers in which it stored the level of stimulation for each part of that neuron. The neuron received firing messages from other neurons, and adjusted the stimulation levels. If any of the levels reached a critical threshold, then the neuron fired. When it fired, it read other registers which contained addresses for all its downstream neurons and the locations on those neurons it was attached to and the characteristics of those synapses. It then sent the appropriate strength message to the address of each downstream neuron. Then it updated its own synapse characteristics.

‘Using this approach, the silicon dog was built as a rectangular block of connected chips that could fit on a desk.’

‘Desk-top dog.’ Narlo said.

Tahnee smiled then paused again to ask them how they were going.

‘Just one little thing,’ Narlo said . . . ‘Could you say it all again?’ He wasn’t serious – he’d got the gist of it, but Tahnee did spend a few minutes recapping to make sure.

Then she went on, ‘As you know, the brain is not just an electrical machine; it has chemical controls too – internally produced chemicals like dopamine, adrenaline and so on as well as introduced ones like alcohol and opiates. What these do is modify the synapse strengths of some of the neurons.

‘So a central register was kept of the levels of each relevant chemical in the virtual blood stream. These were constantly adjusted, for instance when neurons fired that put these chemicals into the bloodstream or when they were ingested or metabolised. The neuron processors read these levels and adjusted their firing signals accordingly.

After a short break, Tahnee continued. ‘When the artificial dog was first programmed, the data from the scanning of the original brain was used to place values in the registers. Once this was done, the virtual dog had the memory of the original dog – and therefore its identity. From then on it continued to live its own life in its virtual world and to change over time as it learnt from new experiences.’

* * *

‘So presumably,’ Narlo began, ‘they then did the same thing with humans.’

‘Exactly. By 2070 they could produce virtual dogs quite reliably

and they had quite a pack of them. They were then ready to try it on a human. Not everyone was convinced that this was a good idea: it did involve thinly slicing the biological brain and throwing the slices away once the job was done, along with the rest of the body. But despite this, their invitation to people with dysfunctional bodies elicited far more volunteers than they could handle.

‘Euthanasia had been socially and legally accepted for quite a while by then and slicing a person’s brain and replacing it with an artificial one was at worst tantamount to euthanasia.

‘The first human went under the slicer in 2072. He was a Chinese man, Ming Hu, one of the leading researchers in the field of artificial brains. Ming was a brilliant man, but at 43 was diagnosed with bone cancer. Like many others who volunteered, he was probably going to die soon anyway so he figured he had little to lose and possibly a lot to gain.

‘The technique was almost exactly the same as for the dog except that the block was a bit bigger because it had to fit more neurons. Just like with the dogs, it worked. They set the virtual Ming up in a house with a garden. The EIC was set up so that the experimenters could see Ming and hear what he was saying and in the same way Ming could see and hear the experimenters.’

‘And did he seem to be the same person?’

‘He did. He could talk to the experimenters and seemed to have the same personality as he’d had as a biological person. He even had the same accent. He reckoned he could remember his earlier life just as well as before the conversion and quizzing him confirmed that. Most importantly, he said he didn’t really feel any different, was conscious and had the same sort of feelings that he’d had before. It seemed that Ming’s life was continuing as normal, just with a silicon substrate rather than an organic one and eventually he continued with the research he was doing before his conversion.’

Hannah was looking concerned. Tahnee asked her how she was feeling.

‘Don’t know,’ she said. ‘This will take a bit of digesting.’

‘That’s ok. People here on Earth got used to the idea over many years and even then not everybody was happy with it. We’ve hit you with it in just a few minutes.’

They stopped for a short break and a cup of coffee.

Chapter 18

Empyrean

‘So Ming is a trog?’ Narlo asked after the break.

‘Yes, Ming was the first trog.’

‘And did he live in a cave?’

Tahnee laughed. Rory looked like he was about to say something, but, noticing the look Misha gave him, changed his mind. Tahnee continued, ‘We’ll explain the cave bit later. The proper name for people like Ming with electronic brains is *sibrin*, though no one uses that term now; everyone calls them *trog*s. Normal biological people are called bobs to distinguish them.’

‘Bobs?’

‘*Bob* is short for *beobrin*, but no one uses that term either.’

‘Obviously there’s more than one trog.’ Hannah queried. ‘Misha said something about there being millions.’

‘Once it was clear that trogging worked and provided a good life for people whose bob lives had not been good or were about to end, then there was a proliferation of organisations with the technical capacity to produce trogs.’

‘So how many trogs are there now?’

‘About 860 million,’ said Tahnee. ‘More than a quarter of the population of Morinya are trogs.’

Both Narlo and Hannah were somewhat astonished. ‘Presumably not all of those people were paralytic or terminally ill.’

‘No. In the early days, it was only people with little to lose who offered themselves or who were accepted. But as trogs started to accumulate, more and more work was put into developing virons – environments that is – for them so that they didn’t have to spend all their time sitting in the one garden. Virons became more interactive too, so that, in a lot of cases, the experience was more important than the environment. As the virtual world isn’t constrained by the limited resources of the real world or even the laws of physics, many of the experiences were ones people couldn’t have in the real world and many of them were a lot of fun.

‘Eventually, there were enough virons and experiences that the trogs had pretty good lives – more interesting than most bobs’ lives. Another thing was that bobs could interact with trogs and see the lives they had. Gradually, a lot of bobs came to see trog life as an attractive alternative. Add to this the fact that trogs won’t get old and die and it wasn’t long before healthy people were being trogged and from there the number of trogs started to increase exponentially.

‘So where are all these trogs kept?’ Narlo asked.

‘They’re kept in colonies in various places around Morinya.’

‘And what about the virons?’

‘All virons are stored on a Morinya-wide network, so any trog can access any viron. Each trog is attached to his own EIC which is connected to a colony server which in turn is connected to the Morinya-wide network. The EIC and colony server call up the virons requested by the trog.’

* * *

‘Can trogs meet other trogs in their virons?’

‘Yes. Most people don’t want a hermit’s life. Trogs can interact with each other and with verns. ‘But before I talk about that I need to explain that there are private virons and public virons. A private viron is downloaded from the network onto your EIC. You can then interact with the viron.

‘You can invite other trogs into your private viron if you like and then your EIC does the work of your guest’s EIC as well. It allows you both to modify the environment and the other one sees the modifications. So you can see, hear and feel one another.’

‘Can you have more than one guest?’

‘Yes, you can have quite a few. It’s limited only by the capacity of your EIC to deal with everything it has to do.

‘A public viron on the other hand is downloaded onto the colony server which has a much bigger capacity than the EICs. Anyone in the colony can go into the viron. It processes the input and output for everyone in there and everyone can interact with everyone else and with the environment.

‘Can you have intimate contact with other trogs?’ Narlo inquired.

‘Yes,’ said Tahnee, ‘though you’d probably do that in a private viron.’

Narlo played with that idea for a while, then asked, ‘Can trogs talk to normal people?’

‘To bobs?’

‘Yeh.’

‘Yes, just like with the dogs, bobs can see trogs in their viron, see what they’re doing and hear what they say. And the trogs can see and hear the bobs.’

‘And what do the trogs look like on the screen?’

‘Generally like bobs. Trogs can choose their looks.’

‘Mm . . . that’d be good,’ Narlo said.

‘It is. Trogs can look however they like and can change their looks whenever they like too.’

‘Mm . . .’

* * *

‘You mentioned verns,’ Narlo said.

‘Yes. Trogs are real people who have been trogged. Verns are just programming artefacts – a bit like a tree or a vase. They are objects that can be added to the virons, but they look like people and are programmed to interact with trogs as much as possible the way people would. Their conversation isn’t brilliant, but the programming is improving.’

‘Why would people want to interact with verns when they can interact with other trogs?’ Hannah asked.

‘Sometimes other trogs won’t do what you want them to,’ said Tahnee. ‘Verns will do whatever you want.’

Narlo was intrigued by the thought. ‘So verns look like real people, indistinguishable from other trogs?’

‘They can look however you want – you design your own,’ Tahnee replied.

‘And do they feel like real people?’

‘Yes.’

‘Exactly?’

‘Exactly.’

‘In every respect?’

‘In every respect.’

‘And can you interact with more than one at the same time?’

‘As many as you like.’

At that point Hannah cottoned on to what Narlo was thinking about. ‘Hey!’ she said with more than a hint of reprimand.

‘Sorry,’ Narlo said, bringing himself back to reality. ‘The

chemicals must be starting to wear off.’

‘We’d better watch out,’ Tahnee said. ‘Most trogs do interact with verns – and have a lot of fun doing so. But there are plenty of other enjoyable things to do too. A lot of people have spent a lot of time now creating virons. You can engage in just about any sport; you can go parachuting, gliding, you can even fly without any assistance – the law of gravity doesn’t have to apply in the virtual world. You can go climbing in Tibet (and the experience is just like actually being there), you can explore other planets, you can walk around in Ancient Rome or Neanderthal Europe, you can explore fantasy places where all sorts of strange, wonderful and unexpected things happen. There are more virons now than anyone could get through in a hundred years. And most of them are more fun than anything in the real world.’

‘Mm . . .’ Narlo pondered. ‘Do bad things ever happen?’

‘Not unless you want them to,’ Tahnee replied.

‘Then I guess they’re not entirely bad anyway.’

‘You can jump off a cliff, hit the ground and smash yourself up or you can walk into a fire or get shot or punched in the head if you want, but as soon as you decide you don’t like the results, you just switch out of the viron – and you’re as good as new.’

‘How do you switch?’

‘You just ask. The computer picks up your message.’

‘What if you’re too badly hurt to ask?’

‘Your mental faculties always stay intact whatever happens, so you can always ask. Even if you’ve lost your voice box, just the mental attempt to ask is enough.’

Narlo and Hannah sat there for a while taking this in.

Tahnee added, ‘The virtual world that the trogs live in is called *Empyrean*.’

‘Why *Empyrean*?’ Narlo asked.

‘It comes from Dante’s *Divine Comedy*. *Empyrean* is the name

Dante gave to the highest level of paradise. He described it as a region beyond physical existence – the dwelling place of beings so divine and so beautiful that they consist of pure light.’

‘That’s very poetic,’ Hannah replied.

‘It is rather, but in a way it’s quite a suitable description of the trog life.’

Narlo and Hannah looked thoughtful.

‘Well that’s given you something to think about,’ Tahnee said.

‘Mm, certainly has,’ said Narlo.

‘Our next lesson will be in a few days time,’ Tahnee said, so I’ll see you again then. You’ll probably have lots of other questions, but Misha and Rory should be able to answer most of them.’

‘Mm,’ said Narlo. ‘Thanks for the stuff so far.’

‘That’s my job.’

* * *

Tahnee left. Misha ordered lunch, which arrived through the delivery hatch a few minutes later. Hannah ate without saying much. Narlo ate too. Rory and Misha just talked as usual. ‘Narlo looked at Rory and Misha with a resigned look, knowing that asking about their starvation diet wouldn’t get him anywhere.

‘All will be explained,’ said Rory.

‘There are more surprises to come, aren’t there?’ said Narlo.

‘One or two. But we’ll give you some time to digest the ones you’ve had first.’

Though he was inquisitive, he agreed that they did already have a fair bit to digest.

After a few minutes Misha got the conversation onto what they were going to do that afternoon. They had the second debriefing there in the apartment. After that, it was a short walk to a resort for a massage and some general pampering.

* * *

In the evening, Hannah and Narlo sat in their apartment and discussed what they'd been told. Narlo felt that trogging was justifiable for people about to die anyway, like Ming, especially if they were dying young. He needed to think more about trogging for perfectly healthy people, though he couldn't come up with a convincing argument against it – not one that didn't involve a soul and a god anyway.

Hannah had to sort through issues related to her beliefs. If, as she believed, a person has a soul as well as a physical brain, the obvious question was 'what happens to the soul when one is trogged?' One possibility was that it moves into the machine. Somehow, this didn't seem right. Though, as Narlo pointed out, the brain is just a physical machine. Another possibility was that the person died on trogging and the soul went the way all souls go when the body dies. This would mean that the trog was not properly human. If the soul contained the consciousness, then the trog wouldn't be conscious – it would be a zombie. If this was the case, it would gain nothing from its own continued existence. A third possibility was that the soul could somehow go into suspended animation or even be destroyed by the experience.

Narlo pointed out that, from a Christian perspective, trogs shouldn't be a problem. Christians generally wouldn't go for trogging because they would rather go to heaven. Non-Christians are going to hell anyway, so delaying the process, or maybe even averting it, could only be a good thing.

Hannah wasn't sure it was quite as simple as that. However, she was comforted by knowing that, whatever happened, ultimately, God was in control and that, as long as she stayed close to him, he

would guide her in any decisions she would have to make.

Though Narlo thought she was probably wrong, he sometimes envied the simplicity and certainty that her beliefs brought.

Chapter 19

Hearing

Next morning Misha and Rory arrived and took Narlo and Hannah for their second medical examination. This took place in Taonan and took a couple of hours.

After the medical, they had some morning tea, then Rory and Misha took them to another building a few hundred metres away. On the way, Rory explained to them that they would be giving statements concerning Saphira's death.

Both Hannah and Narlo were a bit concerned that they'd been given no notice. Rory explained that this was partly so they wouldn't have to worry about it beforehand, but more because they wanted them to be unrehearsed and natural.

Narlo's eyes lowered for a moment. But then he remembered that he'd decided to approach this positively, and that, so far, things had been very encouraging. So he made an effort not to get despondent. Hannah noticed this and, without saying anything, offered him moral support.

As they entered the building, Rory explained that they would be making their statements separately. 'Jolee will be doing the same thing elsewhere. You'll both be interviewed by a face on a screen I'm afraid. But we will come in with you.'

Rory took Narlo into one room while Misha took Hannah into another. The room Narlo went into was small but pleasant with two

comfortable chairs facing a monitor on the wall. On the monitor was a man about 50, well dressed and friendly in appearance. He watched the men come in, welcomed them and asked them to take the chairs.

‘This is Bruce,’ Rory said. ‘Narlo.’

‘Pleased to meet you,’ Bruce replied.

Narlo was relieved that Bruce seemed friendly. In fact it didn’t take Bruce long to make Narlo feel quite comfortable. He talked in general terms about the trip and how it felt to be back.

Then they got down to business and Bruce asked Narlo to give his version of what happened – from start to finish including everything that he saw as relevant.

Narlo spent a moment getting his thoughts together, then began. With a bit of prompting from Bruce and a few requests for clarification, Narlo spoke for nearly an hour. Bruce congratulated him on the thoroughness of his account.

They finished off, then Bruce said, ‘I imagine you’re wondering what will happen if it’s decided that you acted inappropriately.’

‘The thought has entered my mind,’ Narlo replied.

‘Don’t be too concerned,’ he said. ‘It’s fairly clear that you’re not going to be a danger to society, so there’s probably nothing to be gained by banishing you.’

Narlo was more than a little relieved.

‘The law has changed its philosophy a bit since you left. Then, it was largely concerned with retribution. If you did something bad to someone, the victim and society wanted to see something bad done to you. The victim would often say they wanted justice, but two wrongs never made a right: what they really wanted was revenge. In many cases the offender was more a victim of circumstances than the person offended was a victim of the offence. Retribution is not a factor in determining consequences now.’

‘So what are the factors?’

‘One is protection of the public. If you are likely to be a danger to others, then you’ll be prevented from doing them any harm. The other is deterrence. People are less likely to be anti-social if they know there will be negative consequences.

‘Now the public probably doesn’t need to be protected from you. And, whatever happened while you were in space, there are unlikely to be many others in the same situation who would take what happened to you into account before deciding to do a similar thing.

‘Besides, many people nowadays would have agreed with you that it would be better to sacrifice Saphira’s life than to let her cause the death of all four of you.’

Narlo looked at Bruce for a while without saying anything. Bruce’s few words had lifted a heavy weight off his shoulders.

‘How do you feel?’

‘A lot better,’ said Narlo. ‘I wish I’d known this 16 years ago.’

‘I wish we’d known 16 years ago what had happened. Communication can be a great thing.’

Bruce then said, ‘I’m going to leave you now,’ and, after a few last words, he switched himself off.

Rory looked at Narlo and nodded slowly as if to say Narlo should be happy with what had happened. Rory and Narlo spoke for a short while, then they went back out to find Hannah and Misha waiting.

Hannah looked excited to see Narlo. She seemed to pick up that he was feeling the same way and the two of them hugged each other with a long, almost passionate hug. Then they sat and compared stories for a few minutes before Misha asked if they were ready to leave.

* * *

Narlo had been intrigued by Bruce's reference to 'banishing' him and in the car he asked Rory and Misha about it.

Misha explained that people found guilty of serious offences were generally banished from society.

'As is sent overseas or sent to jail or what?'

'Generally they're given the choice of death or trogging.'

Narlo looked puzzled. 'Surely for some people that would be a good thing – especially if they were planning being trogged anyway.'

'People who are trogged for criminal offences have to make reparations as a trog. This might mean many years of quite hard work and meagre living to pay off their debt to society before they can live a normal trog life with the usual benefits. So being trogged for an offence is still a deterrent.'

'Mm . . . So jail's not an option?'

'No. Keeping someone in jail is very expensive and was largely abandoned not long after you left Earth. In the old days, someone who had shown sufficient contempt for someone else's life to murder them or rape them or whatever was kept alive in jail for 20 or 30 years at everyone else's expense. The money that it took to do this was often enough to provide medical or emergency aid to people in a poorer part of the world which would save the lives of dozens of people who hadn't committed any crime.'

'People began to realise that when money was limited (which it always is), a choice has to be made between keeping one criminal in jail for 30 years or providing help that would save the lives of dozens of good people in a poor country and allow them to live productive lives. Up to then the former option had generally been taken. This was justified partly on the basis that the criminal was from our country and the poor people were from somewhere else and partly on the basis that it was wrong to take someone's life, but less wrong to let someone die through inaction.'

‘Eventually, people came to see both these arguments as invalid and no longer tenable by reasonable, compassionate people. There was quite a bit of public debate, but within a couple of years a clear majority were in favour of the change. The change was made even before trogging became common when the only choice was death. Nowadays, with the option of trogging very few people are unhappy with the system.’

* * *

The car stopped, Rory jumped out and got some take-away food. They then drove to a park and ate it. Afterwards they went go-cart racing, then in the evening they went and watched a sort of cabaret act that had a fair bit in common with a circus performance.

Chapter 20

The Lake

The next morning they drove out to Xianghai, a lake resort about 80 kilometres southwest of Taonan. The resort looked very pleasant – a few tastefully designed small buildings, none more than two stories, and meandering pathways shaded by spreading leafy trees. They walked down to the beach which was made of fine white sand, a bit like what Narlo remembered from the ocean beaches in Australia. It was a beautiful sunny morning. The breeze had not yet come up and the water was as smooth as glass.

The four had brought swimmers and a picnic. They used a beach hut to get changed, Hannah and Narlo put on sun screen, then they

all headed for the water.

‘I used to be able to swim,’ Hannah said, ‘but that was a long time ago. I’m worried I might sink now.’

The four walked into the water which was a comfortable temperature. Despite their doubts about their ability, Narlo and Hannah were soon swimming, both delighted to be doing so again after so many years. Rory and Misha, however, walked in up to their knees, then stayed there.

‘Not coming in?’ called Narlo.

‘No,’ came the simple unelaborated reply. ‘But go and have fun. We’ll be on the beach.’

And they did have fun. Narlo was like a little kid, throwing himself around and splashing in the water. Hannah was less child-like, but she enjoyed swimming the swim.

They swam to what looked like a few wooden poles protruding a metre or so from the water. They found that they were joined by horizontal logs just below the surface. Hannah climbed onto one of them and Narlo followed. Hannah clearly appreciated the chance to have a rest.

‘I need to get fitter,’ she said.

‘I think we both do.’

‘It’ll be easier now we’re off the ship.’ Though they’d exercised on the ship, it had been a chore. It was hard to make it interesting. Now they could walk places, swim, climb mountains and play sports.

‘This is hard to believe,’ Narlo continued after a short silence.

‘What?’

‘Being here . . . this beautiful water . . . this place . . . just being on Earth . . . and,’ he continued after a moment’s thought, ‘not being treated like a murderer.’ The relief after so many years of worry and nightmares almost brought a tear to his eye.

Hannah obviously sensed his emotion. She reached across and

took his hand under the water. Narlo put his other hand on hers for a moment, then lifted one leg over the log, moved towards her and put his arms around her. Hannah did her best to reciprocate from her sideways position. They managed a short awkward hug before Hannah fell backwards off the log taking Narlo with her. After the initial squeal, some laughter and a bit of spluttering, they helped each other back up.

In the Shack, the crew were supposed to refrain from physical affection and, until Saphira's death, they had. But after her death, there seemed to be more of a need and Hannah and Narlo would sometimes sit close together after Jolee had gone to bed and hold hands or put their arms around each other.

As well as other things, they had talked about their lives after they got back. They both realised that they would be unlikely to find anyone to replace what they had in each other. This had been more clearly the case since they'd found that very few people even speak the same language as them.

However, the sort of relationship that most couples have didn't – in a way – seem natural. For one thing, they'd known each other as colleagues for so long. For another thing the food additives designed to remove their sex drive seemed to have changed the way they saw each other. Narlo saw Hannah as a nice person, as fun, as a comfort and as lots of other things, but not someone to have sex with.

The food additives would take a few days to wear off too – even now they were back.

Also important was the fact that Hannah was a Christian and Narlo wasn't and that the bible discourages marriage between Christians and non-Christians. One can see the reason for this in a way – it's not easy to live one's life in a totally Christian way when one has to take into account the desires of someone who has no interest in the faith.

But . . . Narlo and Hannah had seen more of each other and been more dependent on each other while they were in space than most married couples ever are and Narlo had done nothing that made it at all hard for Hannah to live her life the way she needed to. God's directive against mixed marriages was a directive, but maybe there could be special circumstances.

Though they'd talked about this, they'd made no decisions or promises and there'd been no talk of love – not the type that normally forms the basis of a marriage anyway. Narlo didn't consider himself to be 'in love' and Hannah didn't give him the impression that she was either. But there was an undeniable bond between them. Both would be lost without the other – as they were after Saphira's death. Neither wanted a repeat of that.

* * *

Narlo looked up to see Misha and Rory rolling around on the beach, seemingly engaged in some form of combat. He laughed and Hannah noticed them too.

'The way they fight and argue, I reckon they've gotta be a couple,' Narlo said.

'Is that what couples do?' Hannah asked curiously.

'Maybe not all, but some seem to. People who are just work colleagues don't generally behave like that.'

'True.'

'They're a strange pair.'

'Like the fact that they don't eat?'

'Yeh, that's part of it . . . but it's more than that.'

Misha and Rory seemed to finish whatever it was they were doing and sat up beside each other. Hannah and Narlo decided to swim back.

'Bit of a disagreement?' Narlo asked as they walked up the

beach.

‘Nothing serious,’ Rory answered.

‘Who won?’

‘I did,’ Rory said quickly.

‘Yeh, right,’ Misha mocked.

‘I definitely won,’ Rory said to Narlo, at which Misha grabbed his ear and gave it a good twist.

‘Who won?’ she asked.

‘I di—’

She twisted harder until he yelped and admitted, ‘You did.’

‘I should think so,’ she said, letting him go.

Rory held his ear for a moment, then said, ‘We got you some morning tea.’

‘Ah good,’ Hannah replied, looking at the food laid out on a blanket nearby. ‘That’ll all be for me and Narlo, won’t it?’

‘It is,’ Misha replied.

‘Who put the sand on it?’ Narlo asked jokingly.

Rory and Misha both looked at it, then looked at each other, and then in stereophonic simultaneity each accused the other. Then they looked back at Narlo, and Rory said in a subdued voice with lowered eyes, ‘We did.’

‘That’s alright, I’m sure we can get it off.’

They ate. The food was good – a little crunchy, but good.

‘You’re going to tell us why you don’t eat, aren’t you?’ Narlo said.

‘Tomorrow.’

‘Tomorrow? So we only have to wait another day?’

‘Mm.’

‘I’m looking forward to it.’

Chapter 21

A Trog's Life

‘These trogs . . .’ Hannah said when she’d finished eating . . . ‘how do we know they’re conscious people . . . rather than just zombies programmed into a machine?’

Misha took up the question. ‘No one can know for sure whether anyone else is conscious. I know that I’m conscious, but it’s impossible for me to know for sure if anyone else (or anything else) is conscious and it’s impossible for anyone else to know whether I’m conscious.’

‘So you don’t know that I’m conscious?’ Hannah said.

‘How can I? Your consciousness is something you experience and only you experience. I can’t experience your consciousness: I can only observe your behaviour. If you behave in a similar way to me and react to things in a similar way, then I will assume that you’re probably conscious like me. A dog will react in a similar way to me to a lot of things – like food or a kick in the ribs, so I tend to assume it’s conscious. But then a computer can be programmed to react to things in the way a human would too. But does that mean it’s conscious.’

Hannah thought for a bit then said, ‘A computer’s not made of the same stuff as me.’

‘That’s right,’ Misha said, ‘but does that prove it’s not conscious? . . . The thing is we have no way of knowing if it is or isn’t. We have no way of knowing if anyone or anything else is conscious.’

Hannah tried to find a counter argument, but couldn’t.

Misha continued, ‘Most people have one of two views of bobs. The materialist view is that they are a collection of atoms organised into neurons and other cells and that the actions of those cells are determined purely by chemistry. They see the neuron firings in their brains as a simple consequence of the laws of physics – a consequence of the nature of the atoms they are made of. And they see thought processes and consciousness simply as a manifestation of the patterns of neuron firings. If the neurons stop firing, we become unconscious. These people tend to believe that the same patterns of neuron firings in trogs would lead to the same thoughts and the same consciousness.

‘The super-materialist view is that there is more to consciousness than that – that it is in some way dependent on some property of the neurons not explained by chemistry or, more likely, that it is the manifestation of a non-material or spiritual soul which is not dependent on atoms or any other feature of the world described by physics, but which is in some way bound to the physical brain of the person who owns it. These people tend to believe that trogs are not conscious – that they are just programmed zombies that do an excellent job of simulating a conscious person, but that they do it totally unconsciously. They see them in a way as sophisticated vorns.’

In saying this, it seemed to Hannah and Narlo that Misha had described the preferred beliefs of each of them.

‘So do most people think the materialist way?’ Narlo asked.

‘Most Morinyans tend to think the materialist way,’ Misha replied ‘and so most Morinyans believe that trogs are probably conscious – just like bobs.’

Hannah and Narlo looked pensive, but neither said anything.

‘But ultimately, we can’t know for certain. And it’s not just that we don’t have the technology to find out – there is no way of finding out and there never will be. It’s no more possible than

travelling back in time and killing yourself before you had the chance to travel back in time.'

'So when people are trogged,' Hannah said, 'they take a leap of faith?'

'Exactly,' Misha replied. 'In being trogged you trade a 100% probability of a conscious bob life for say an 80% probability of a conscious trog life.'

'I would put it at a lot less than 80%,' Hannah said.

Misha looked at Hannah for a moment as if she had revealed something about herself, then continued, 'Depending on their view of what humans are, different people put it at very different percentages. Just like people put the existence of God at very different percentage probabilities.'

'Some people who take the bunch-of-atoms view of life would put the probability that trogs retain the consciousness of their bobs at close to 100%. Very religious people who see the soul as the main component of a human tend to put it close to 0%. Most people are somewhere in between. Those at the upper end of the scale are the ones who tend to be trogged; those at the lower end are the ones who stay bobs and die a natural death.'

'There are two things that tend to persuade a lot of people that trogs are conscious.'

'The first is that consciousness in people seems to be related to certain patterns of neuron firings and brain waves in certain parts of the brain. When these patterns are disrupted by the application of electrodes, consciousness stops and the person becomes inactive and seems to go into suspended animation. Once the stimulation is stopped, the person continues as if nothing had happened and with no memory of the suspension. This seems to suggest that consciousness results from certain patterns of neuron firings.'

'If one assumes that consciousness is the result of having a soul rather than of patterns of cerebral activity, then it's hard to explain

why interrupting brain waves can eliminate consciousness.

‘Now it’s not such an easy job to follow neuron firing patterns in a trog, but modified trogs have been made which contain circuitry which does allow the firing of neurons to be recorded. In these trogs, we find the same firing patterns that seem to be associated with consciousness in bobs.

Misha waited to check that the significance of this had sunk in, then she continued, ‘The other thing that people find convincing is just talking to trogs. A conversation with a trog is just like a conversation with a bob. Trogs say they are conscious and have emotions. Sometimes their emotions are obvious. They give every impression of being conscious. They remember their bob lives and feel that their trog life is a continuation of it. Most reckon that they don’t feel any different as a trog.’

* * *

‘That’s another thing that worries me,’ Hannah interrupted. ‘Even if the trog is conscious, how do I know that the trog that replaces me is still me? It makes sense to me in a way to think that I’ve died and a new person has been created.’

‘You’re not alone there,’ Misha answered. ‘This is another question that’s hard to answer conclusively. Different people see it differently. To some, it clearly is the same person, to others it clearly isn’t. Again, most people are somewhere in between. And again, it’s a matter of faith.’

‘There’s a lot of faith required for this,’ Hannah thought out loud.

‘There is, but is it any more than most people need in order to follow a religion – or to not follow a religion and risk the fires of hell?’

‘Mm . . .’ Hannah pondered. There was a moment of silence.

Then Misha continued, ‘Crucial to this question is what we think

makes up our identity. Again, not all agree on this, but a common view is that our identity is contained in the memory of our past.

Other things like our bodies and our skills are incidental. Losing your body and having your brain transplanted into someone else's wouldn't stop you from being you; losing your ability to run or talk doesn't stop you from being you.

But if you lost all memory of your earlier life, then in a sense you would have become a new person starting again from scratch. You would be a different person in the same body – a bit like if someone else's brain had been transplanted into your body.

'If your identity does lie in your memory, then, as a trog has the same memories as the bob he or she was made from, it would seem that the trog is the same person.

'There's another way of looking at this problem: a thought experiment. Imagine that you could replace one of your brain neurons with a silicon substitute and you did so. Would you still be you?'

'I suppose so,' Hannah said quizzically.

'Your brain cells are dying all the time, so losing one isn't going to stop you from being you.'

'No.'

'Now suppose you replaced a second and a third and so on. Assuming the silicon neurons could be integrated into your organic ones and receive and send the same firing messages as the ones they replaced, then it still shouldn't affect who you are.'

'Mm . . . ' Hannah said.

'Now suppose you kept going, one neuron at a time, until a significant part of your brain was replaced with silicon, then kept going further until it was all replaced. Would there be a time at which you stopped being you? If there was, it would have to have been the result of replacing one neuron. But the way the brain works, no single neuron is indispensable. There is no neuron

which, if it dies, will cause you to stop being you. So it would seem that you would still be you.’

‘Mm . . .’

‘Now, if you accept that, the next question is *Would it be different if you replaced them all at once?* After all, the end point is exactly the same.’

Hannah thought for a while then said, ‘Is it possible that, as you replace each neuron, you become progressively more not the same person until, when the last one is replaced, the process is complete?’

‘That’s one theory, but is it possible to be partly you and partly not?’

‘Don’t know,’ Hannah pondered.

‘As you get older, you change quite a bit. By the time you’re 60, you’re quite a different person from the person you were when you were 10. But you never stopped being you – not even a little bit.

‘The crucial thing as you grow old is that there is continuity of your memories: they accumulate and change progressively, but each moment they are pretty much the same as they were the previous moment. If your identity is in your memories and if they remain largely unchanged from moment to moment, then you continue to be you, despite the changes that happen over the long term. Conversion to a trog doesn’t involve any real change to a person’s memory. Using this thinking, the trog is the same person.’

Misha gave them a moment to consider, then added one last thought. ‘There’s a nice analogy between continuity of identity and a thread of cotton. A thread of cotton is made up of thousands of separate fibres each just a few millimetres long. Each one overlaps with many others along the thread, though none of them stretch from one end of the thread to the other. The thread is still continuous, though. At any point along the thread there are hundreds of fibres starting one side of that point and continuing to

the other side. Because of this, the thread holds together.

‘But suppose there was a point along the thread such that no fibre stretched from one side of that point to the other. What would happen?’

‘The thread would be broken,’ Hannah answered.

‘Exactly. You would have two different threads instead of one. Continuity of identity is like an unbroken thread. When someone converts to a trog, there are plenty of memories that exist before the conversion and continue after it. Using the cotton analogy, their identity is unbroken.

‘I know the analogy doesn’t prove anything: but it’s a nice illustration.’

All four sat quietly thinking for several minutes. Then Misha added another last thought. ‘Some people see the question of whether the trog keeps the identity of the bob as not being a meaningful question. They say that to mean anything, there must be a definition of identity, but that identity is an undefined concept, maybe even an illusion. They see the question as being as meaningless as say the question *Do you see green the same way that I see green?* or *Could time slow down?*’

* * *

‘I’m not sure my brain’s up to this,’ Narlo said. Then, after another short pause, he suggested, ‘For healthy people to take the risk of not being conscious and the risk of not being themselves, they must be fairly convinced that the trog life is significantly better than the bob life.’

‘They must,’ Misha replied. And trogs don’t generally change their mind once they find out what it’s like to be a trog.

‘In some ways, life as a trog is quite like life as a bob. You go to work some days and have some days off. But what you can buy

with a day's work is a lot more than what a day's work buys for most bobs. So effectively, you are a lot richer. No trogs live in slummy inadequate housing: even a basic wage allows you to live in a well-appointed, spacious, tastefully designed place with a pleasant atmosphere and pleasant surroundings. You don't have neighbours unless you arrange with someone to be your neighbour. So you only get good neighbours – ones you like.

‘Your food is tastier, more interesting and more varied than what most bobs eat. And of course it doesn't make you fat: you can eat all night if you want to.

‘In your non-working hours, there are vastly more things you can do than there are for bobs. The range of viron and experiences is growing faster than anyone can keep up with them, so you'll never run out of new experiences.

‘If you're a bob, you're constrained by the laws of physics. If you're a trog, you aren't, so you can fly unassisted, you can stay underwater without having to breathe, you can travel through space as fast as you like, go a thousand times the speed of light. You can go exploring on other planets, meet alien life forms, befriend them or do battle with them. The only limit is the collective imagination of all the people who develop the viron.

‘There are totally fantasy viron, surrealistic ones, amazing or breathtakingly beautiful ones. There are a huge number of educational viron where you can go to learn things. You can go and live in a medieval peasant village or explore the Inca Empire. You can meet Albert Einstein and have general relativity demonstrated in graphic detail – much easier to understand than equations in a book. New viron are being produced faster than anyone can try them out, so you're never going to run out of things to do.’

‘Of course you have to pay for the viron experiences, but even on a basic wage, you can have a much more entertaining life than

what most bobs get.

‘The best thing for a lot of converts is that you can choose your body. As most bobs are dissatisfied with their body and their looks in general, that’s a good thing. And even if you’re 60 years old, you can have the body of a 25 year old. Along with that of course, you don’t get old, you don’t get sick and you don’t die. If you have an accident, you can fix it as good as new in an instant. It costs a little, so it’s worth trying not to have accidents, but everyone can afford to get fixed when necessary.

‘Having the body and face you want means that no one is disadvantaged by their looks in the competition for friends, mates and jobs. Personality and cleverness still have an impact of course, but for people not well endowed in these areas, there are other people similarly poorly endowed who will generally be happy to be your friend – and there are enjoyable jobs suitable for all levels of talent.

‘As well as real friends of course, there are always the verns. Admittedly, you can’t form as deep a relationship with a vern as with another trog, but they can still be entertaining and fun and they can satisfy most of your needs. They’re certainly good enough to stop people from getting lonely.

‘Even trogs who, as bobs, were lucky with the hand life dealt them, will generally say life is better after their conversion. For those who were not so lucky, there is often no comparison between the two parts of their life.

‘Mm . . .’ Hannah said.

‘So in a sense it really is a paradise – like the name *Empyrean* implies,’ Rory added.

‘Heaven on Earth?’ Narlo suggested.’

‘In a sense, yes, but most people see heaven as living in a city of gold or sitting on a cloud playing a harp. Given the choice of that or living in Empyrean, I know which I’d take.’

Mm . . . But,’ said Hannah, ‘sitting on a cloud playing a harp might sound boring, but it’s your state of mind while you’re doing it that’s important. People might find that playing their harp makes them deliriously ecstatic. There are two ways to have a good time after all: one is to do what you like; the other is to like what you do.’

‘That’s a good way to put it. I like that.’

‘Thank you.’

‘But are you sure you’ll be ecstatic on your cloud?’

No answer.

‘And you can probably get the same level of ecstasy in Empyrean, by doing things that are much more interesting. If you find you’re not ecstatic enough for your liking, you can adjust your level of endorphins until you are.’

‘So you can change the levels of those chemicals voluntarily?’ Narlo asked.

‘You can. Though mostly, people enjoy life enough without doing so.’

* * *

The distant drone of an engine got louder and a small plane came into view. It seemed to be an old-style propeller plane. As it passed overhead, what looked like people fell out of it and started plummeting towards the ground.

‘Hannah seemed somewhat concerned and asked whether they were in fact people.’

‘Yes, they’re probably committing suicide,’ Rory replied.

By now Hannah had got to know Rory well enough not to take him too seriously.

‘Either that or they’re parachutists,’ he added. ‘I guess we’ll find out in a moment.’

Sure enough, a moment later, parachutes opened and the people floated down gracefully onto a bit of empty ground just to the left of the lake.

‘Are they doing that for fun or is it some sort of military thing?’

‘Just for fun,’ Rory said. ‘Parachuting is quite popular and this area is used a lot by beginners.’

Chapter 22

A Cat’s Life

After the parachutists had landed, Hannah looked at Misha and said, ‘A trog’s life is very hedonistic, isn’t it?’

‘Totally,’ Misha replied.

That wasn’t quite the response she was hoping for. ‘Is that a good thing?’ she continued.

‘If the purpose of life is to enjoy yourself, then yes.’

‘But the purpose of life isn’t just to enjoy yourself.’

‘Yes, it is’ Misha replied, ‘the purpose of life is pleasure – nothing more, nothing less.’

‘Rubbish,’ Hannah said. ‘There’s a lot more to life than that.’

Misha looked at her for a moment, then asked ‘Can I try to convince you?’

‘Be my guest,’ Hannah answered, seemingly quite assured that she would fail.

‘Ok . . . You’re probably aware of the pleasure response experiments done on animals like cats.’

‘What?’

‘A classic experiment was performed in the 20th Century – and similar things have been done since. They put electrodes into a

certain part of a cat's brain and found that, when a current was applied, it produced a reaction of obvious pleasure.'

'In the experimenter?' Narlo interrupted.

'No, in the cat,' Misha replied with a laugh and an expression that said *Silly boy*.

'Ah right . . . what sort of cat was it?' he asked.

'Just a common domestic tabby.'

'Someone's pet?'

'Yes, it probably belonged to the janitor,' Misha said facetiously.

'Shut up Narlo, I wanna hear this,' Hannah interjected jovially.

'Sorry, keep going.' Narlo decided to be serious.

'Right.' Misha continued, hoping Narlo had finished. 'Anyway, they set up a device with which the cat could administer the current for itself by pressing a lever with its foot and holding it down.'

'Mm . . .'

'The cat just sat there with its foot on the lever and with the sort of expression on its face that a cat gets when you rub them under the chin.

'But then they changed the set-up so that the cat got just a one-second burst of current when it pressed the lever. So if it wanted more it had to release it and press it again.'

Hannah nodded.

Misha went on, 'The cat soon learnt to keep pressing and releasing the lever and in fact kept doing so until it was totally exhausted. It ignored food and water and any other attractions that were offered. These other things would have provided pleasure, but obviously not as much pleasure as pressing the lever.

'The conclusion was that a cat's actions are motivated entirely by stimulation of its pleasure centre. It seemed that all a cat's actions were just an attempt to maximise pleasure and minimise displeasure.

'Of course, in normal life, this is best achieved by doing the

normal things a cat does – eating when it needs to, sitting by the fire when it's cold, rubbing its nose on someone's leg, keeping away from the dog and so on. The feeling of being fed would stimulate the cat's pleasure centre to a certain level – say 30 points. Being warm as well would stimulate it a bit more – say 50 points. Having a leg to rub against would raise it a bit more still – 60 points. Seeing the dog would counter these effects and reduce the pleasure level – to say 10 points. Feeling the dog's teeth in its neck would reduce it quite drastically – maybe to minus 80 points.

'All the cat's actions are just an attempt to get the highest pleasure level it can.

'Pressing the lever produced an instant pleasure level of 100. The electrode produced more stimulation than any of the normal activities the cat engaged in or stimuli it experienced. The normal activities stimulate the pleasure centre to some degree. But the electrode stimulated it totally. Why would the cat get off the lever to go and eat something when doing so would take its pleasure level from 100 down to 30? It wouldn't. And it didn't.'

'Does that work for all cats or was that just an odd one?' Hannah asked.

'The experiment has been repeated quite a few times on different cats, rats, rabbits etc. and it appears that this is the way all these animals work.'

'Mm . . .' Hannah said again.

'It makes sense when you think about it,' Misha continued. 'Cats in the wild don't know that they need to eat and keep warm to survive. They certainly don't know that they need to find a mate and copulate to ensure the continuation of the species. What's more, they probably wouldn't care about the continuation of the species, even if they did realise that there was such a thing as a species.'

'So any system that depends on cats working out what they need

to do to survive is not going to lead to the survival of cats. This is where the pleasure mechanism comes in. Cats' brains are wired in such a way that the situations that are likely to lead to survival stimulate a certain part of the cat's brain. Their brains are also wired so that they are motivated to do what leads to the greatest stimulation of this part of their brain. This successfully enables cats to survive as individuals and as a species.

'Theoretically, cats wouldn't need to be conscious of this stimulation, but for some reason, they are – or at least they seem to be. The consciousness of the stimulation takes the form of pleasure.

'The pleasure mechanism seems to be the survival mechanism for most animals, certainly the more complex animals like mammals. It would be the mechanism used in apes, and it would have been inherited by humans.'

'Humans can work out what they need to survive though,' Hannah suggested.

'That's true,' Misha continued 'but knowing how to survive is no guarantee that we would survive. We might know how to produce and raise children, but if we got no pleasure from sex or from having children around, would we reproduce?

'[Not that there is any fundamental reason why our species should survive – it's just that species which don't have a strong built-in survival mechanism will become extinct in favour of those which do – so inevitably the world becomes filled with species which do.]

'So, whatever we think about it, everything a cat does is aimed at maximising pleasure. And the same would be true of humans – everything a human does is aimed at maximising pleasure.'

All this made sense to Narlo, though Hannah seemed less convinced.

'If this doesn't seem right,' Misha went on, 'think about the things we do. Given a choice of two things which produce different

amounts of pleasure, most people would go for the one that gives the most. If you were cold and hungry and you had the choice of going into a pub, sitting by the fire and having a hot meal on the one hand, and sitting outside in the rain on the other hand, if you chose the latter, you probably wouldn't be considered normal, would you?'

'No, not really,' Hannah said with a bit of a smile. She thought for a moment then said, 'Has the same experiment been done on humans?'

'It has,' Misha answered. 'And it works the same way, though of course letting humans starve themselves to death tends to be considered less ethical than letting a cat starve itself to death. Besides, humans have better higher reasoning powers than cats and realise that they need to stop pressing the lever occasionally and have something to eat.'

'One of the greatest boosts to a human's pleasure level comes from using drugs like heroin. This is probably a similar experience to what the cat has when it presses the lever. Addicts will neglect their other needs to keep getting that high. Often they will end up killing themselves.'

* * *

'But,' said Hannah, 'most people don't take heroin even though it would raise their pleasure level. Doesn't that counter your argument?'

'That's a good point,' Misha replied. 'As babies our motivation is for raising our pleasure level in the here and now. As we get older we learn to take the future into account as well. If we didn't do this, most of us would never go to work. We would always be getting ourselves into trouble by doing what is fun now and not heeding the consequences down the track. We wouldn't survive very long.'

‘We don’t take heroin because we know that it will reduce our pleasure more in the long term than it will raise it in the short term. If we view our actions as being chosen to maximise our total pleasure over time, then not taking the heroin makes sense.

‘We’re quite often good,’ Misha went on, ‘when being bad would be more fun – and the reason is that being bad will generally lead to consequences which will be less pleasant in the long term.

‘Of course, not everyone gives equal weighting to all times between now and death. Most of us put more importance on the near future than on the distant future.’

‘This makes sense,’ Narlo said, ‘because we know we’re alive now, but we might not be in 10 years time.’

‘That’s right,’ Misha agreed. ‘People who heavily favour the near future are often either delinquent or about to die.’

Narlo looked thoughtful then asked, ‘About to die because they don’t think of the future or don’t think of the future because they’re about to die?’

‘Could be either.’

* * *

Hannah came up with another thought. ‘What about when people make sacrifices for others – giving away something they need because someone else needs it, putting themselves in danger to rescue someone else, bravery in battle, risking their own life for others. Don’t these things show that there is more to us?’

‘Maybe,’ Misha accepted. ‘But we won’t usually give away things we need if the person we give them to doesn’t need them more. And we won’t risk our lives unless someone else stands to gain through our actions.

‘These are our so-called higher motives. These lead us to act in a way that may well lower our own pleasure level or chances of

survival. But we will generally only act that way if the action will increase someone else's pleasure or survival chances. So we can at times be motivated to sacrifice ourselves for others. But the motivation for our actions is still pleasure. It's just somebody else's pleasure rather than our own.

'This self-sacrifice for others is built into our cerebral programming to help with the survival of our gene assemblage and the species as a whole. It's particularly strong when the sacrifice is for our own children: they carry the closest approximation to our own gene set.'

Hannah said, 'Mm . . .'

'We generally place a higher value on our own pleasure and the pleasure of our loved ones than on the pleasure of people we don't know, particularly if those people live a long way away and look different from us. This makes sense when we consider that the result of the survival instinct is the continuation of our own gene assemblage. We have that assemblage exactly; our relatives have a close approximation to it, people from other races have less of it still, but they still have a lot more of it than members of a different species, which we might quite happily eat to ensure our own survival.'

* * *

'What about people who forgo worldly pleasure for religious reasons?' Hannah asked.

Misha had an answer to that too. 'Religious people tend to maximise their pleasure over eternity rather than just over their lifetime. For those who believe in an after-life, most of existence is after death. These people will sacrifice pleasure before death for the reward of greater and longer-lasting pleasure after death. 'The basic motivation system is still the same though – maximising

pleasure.

‘So there’s no getting away from it: we live for pleasure. We do everything we can to maximise pleasure. The more pleasure we can produce, the better. Pleasure is our ultimate aim in life. Nothing else takes priority over it. In fact, nothing else really matters at all.

‘Pleasure is the purpose of life – it’s the meaning of life,’ Misha said with a distinct air of triumph. ‘So living a trog life *can* be seen as the ultimate fulfilment of the human purpose,’ she concluded.

‘Well I’m glad we sorted that one out,’ Rory chirped up. ‘Somehow I never did think the meaning of life was 42.’

‘What?’ said Misha, but Narlo knew what he meant.

Chapter 23

Too Much Pleasure

Hannah still wasn’t completely satisfied. ‘People who are brought up with everything they want tend to get bored with life: nothing excites them; they’re spoilt and they are often less happy than people who have to struggle a bit.’

‘That might be the case,’ Misha conceded. ‘But it generally happens only if people get everything they want handed to them on a plate without having to work for it. Troggs have to work for what they want in life and even then they don’t always get everything they want. As well as money, a lot of experiences require the trog to have certain knowledge and skills; these might take time and effort to develop and some may be quite beyond the troggs ability however long he works at it: you may never get that job you would just love, or hit it off with that person you would love to have a relation with.

‘As well as that, luck and misfortune are still factors in trog life. You might spend a while working to earn enough to climb Mt Everest, but then fall down a crevasse and kill yourself before you get a quarter of the way up. You then forfeit the rest of the expedition and have to pay for it again. Personal relationships can be a source of great pleasure, but also of great personal grief when they change or end.

‘So all in all, trogs generally appreciate what they get and don’t suffer the bored spoiled child syndrome.

‘Many trogs have long-term goals. These might be part of their work or might be personal ambitions. These goals provide a sense of purpose in their lives . . . for those who need a sense of purpose.’

Hannah looked quizzical. ‘Are some people happy not having any purpose?’

‘Yes. I would say most Morinyans and trogs wouldn’t have an ultimate purpose if you asked them.’

‘Doesn’t having no purpose make life a bit meaningless and pointless?’ Hannah asked.

‘In the sense that ‘meaning’ and ‘point’ are other words for ‘purpose’, yes, I suppose it does. But being without purpose doesn’t stop it from being worthwhile and certainly doesn’t stop one from enjoying life and being happy.’

Misha looked at Rory and Rory spoke. ‘I went through a bit of a crisis as a teenager when I realised that my life had no purpose. The logical conclusion was that, if it served no purpose, then I might as well just end it – kill myself. The fact that I wasn’t enjoying life that much just seemed to help justify that conclusion.

‘The conclusion was more a logical curiosity than a deep commitment, so I never actually got to the point of planning my own demise. But I did keep thinking through the issue and eventually came to the conclusion that having no purpose in life was actually not a bad thing. A purpose involves responsibility: if

you're here to perform a certain role, you have a bit of an obligation to perform it – and performing it may not be what you would want to do.

‘On the other hand, if your life has no purpose, then you don’t have any obligatory task to perform and your life is yours to do whatever you want with.

‘It was quite liberating for me in a way to realise that my life had no purpose and that it was mine to do with as I pleased. What I wanted to do with it was improve my situation so that I was less miserable and enjoyed life more. And later on I did manage to improve it.

‘I still see my life as mine to do with as I pleased. What I want to do with it is things like enjoy myself, make a mark on the world for the better, come to understand life and the universe as much as I can, do my job well etc. I think other people might call these things their purpose in life. In a sense they are, but in a sense they're not. The 'deeper' meaning of purpose (purpose in the sense that I was looking for when I was a teenager) involves a responsibility placed upon me to do something for some interest outside of me - like for God or some human cause. The 'less deep' meaning of purpose is just the things that I decide to devote myself to and put effort towards in my own life. *Goals* might be a better term for these ‘less deep’ purposes. My main goals is to enjoy myself – pleasure.’

* * *

After a moment’s silence Misha continued, ‘To many bobs, unless they have doubts about whether they will be conscious and keep their identity as a trog, the trog life seems more desirable than their bob life. This is especially the case if they don’t have a particularly good bob life, say because of disability, sickness,

poverty, lack of success with relationships or whatever.

‘This guarantees that some people will take the plunge and convert. Then, the more that convert, the more that the remaining bobs get to see their lives as better versions of their own, and so the more new converts there will be.

‘Once the technology becomes available, it is pretty well guaranteed that people will use it and that trogs will begin to accumulate. Because they don’t die and because they take up so little of the Earth’s resources, it’s also guaranteed that the number of trogs will keep growing and that they will eventually outnumber bobs.

‘In a sense, trogs might be seen as an inevitable consequence of man’s development of technology. In fact many consider it likely that any life form which gets to the evolutionary stage that humans have reached will get similar advantages from converting to an electronic form and living in a virtual world.

‘Before you left Earth, it was a mystery why Earth hadn’t been colonised (or seemingly even visited) by aliens, even though billions of Earth-like planets have had billions of years longer than us to develop intelligent life and to travel the galaxy. This was known as the Fermi paradox. A possible explanation is that, once life is intelligent enough, it will choose to move into a virtual universe of its own making rather than spread out and colonise the real one.’

There was a lot there for Hannah and Narlo to think about and they sat quietly mulling it over for a while.

* * *

‘You mentioned happiness before,’ Hannah said to Misha. ‘Isn’t that more important than pleasure?’

Misha thought for a moment. ‘Happiness is a form of pleasure.’

Hannah gave her a questioning look..

Misha started to elaborate. ‘Happiness is a feeling that life is good. In other words that life is mostly the way you would like it to be, in other words mostly pleasant. Pleasure, the memory of past pleasure and the prospect of future pleasure, for you and those you care about, are what generally makes people happy. Happiness is a sense of satisfaction and well being, but the reason we want it is because it is a pleasant feeling. Happiness just provides a bit of positive feedback to our striving for pleasure.’

Hannah mulled over that idea.

Chapter 24

Working Trogs

‘The virons that the trogs spend their time in,’ Narlo said, after a break in conversation, ‘Who develops them?’

‘Trogs mainly,’ Misha replied.

‘Trogs? How do they do that?’

‘Well, trogs interact with computers. Basically, they are just developing computer programs. From the trog’s perspective, they are sitting at a computer, manipulating objects, assembling and modifying them to produce virons. Often a team will work on the one viron. Some virons are written from scratch, some use images of things in the real world as their building blocks; a lot are modifications of pre-existing virons.

‘The real-life virons which simulate being on the real Earth – or elsewhere in the universe – like for instance going exploring in New Guinea or taking a dog sled across Alaska or walking on Mars – these are made fairly automatically from images of these places.

‘The fantasy vironns which are different from anywhere in the real universe involve more imagination and creativity, so more manipulation and constructing from scratch are involved.’

‘You told us that trogs do a lot of work for bobs,’ Narlo said.

‘They do. The first trogs had everything laid on – though there was a lot less to lay on then. But now all trogs work. Some of the work is for trogs, some is for bobs.’

‘How much do they do?’

‘Maybe 20 to 30 hours a week. They can please themselves.’

‘And obviously they get paid for working?’

‘They do.’

‘What do they get paid in?’

‘In Emphyrean dollars. That’s the trog currency.’

‘So that’s the pretend money you talked about?’

Misha thought back. ‘Yes, though *virtual money* would probably be a better term.’

‘And obviously they spend some of it on viron experiences.’

‘Yes. They have to rent or buy a place to live. They might improve their homes or to buy other things. Someone who works 20 to 30 hours a week can have a pretty good time for the rest of the week.’

‘Would anyone work more than that?’

‘Some do. There are some premium experiences that are particularly expensive and they have to save up for them. Trogs tend to enjoy their work – and if they don’t, they can always adjust their chemicals till they do. Some get very engrossed in their projects and just don’t want to stop. They can then save their money and have a long holiday later.’

‘So they have a bank account?’

‘Yes, just like bobs.’

‘I suppose that with 860 million trogs each doing 20 to 30 hours work a week, there’s scope to produce a lot of vironns.’

‘It’s probably only about a quarter of the trog work force that work on virons Three quarters do bob work. Trogs are dependent on bobs: bobs manufacture them, do the conversions, provide them with electricity, with somewhere to live and with protection. In return, trogs do a lot of the work that bobs used to do.’

‘What sort of work do they do?’

‘Obviously they can’t dig trenches or serve food in restaurants, but anything of a cerebral nature they can do, anything that involves creativity – designing, writing, artwork, composing music. They produce a lot of educational materials and do some teaching. Any administrative or legal work they can do; any computer-based work; a lot of engineering and logistics work and so on. They are used a fair bit in government because, not being part of the bob world, no bob can ever offer them anything that’s of value to them. So, in this respect, they’re immune from corruptive influences.

‘Trogs can make money through their own enterprise too rather than working for authorities. Some pay other trogs to work on their projects and some quite big businesses have formed.’

‘So successful trogs can get rich, just like successful bobs?’ Narlo asked.

‘Yes, there are some quite rich trogs.’

‘What do they do with their excess money, because it sounds like it’s hard to spend more than a certain amount?’

‘They generally use it in their business. Trogs who get successful in business don’t usually do it for the money – it’s more for the satisfaction and because it allows them to make their mark.’

‘Sounds like there are more types of work that trogs can do than there are that they can’t.’

‘Yes, that would be true, and that’s partly why bobs don’t have to work a lot and yet still have a good standard of living.’

* * *

‘Mm . . . So you would say bobs are better off because of trogs?’

‘Oh, definitely. Trogs use up virtually none of the Earth’s resources. A trog takes up about a cubic metre of space and 60 watts of electricity. She doesn’t eat or drink, doesn’t need a house, not a real one anyway, doesn’t need clothes, doesn’t need any transportation, doesn’t need any entertainment – except in a virtual sense of course which is just data in a computer.

‘So trogs are much more environmentally friendly than bobs. It’s estimated that one bob uses as much of the Earth’s resources and does as much damage to the environment as about 200 trogs.’

Hannah continued, ‘I can see why bobs would be happy about the existence of trogs. And I can see why people would want to become trogs. So how come you’re still a bob?’

‘Good question,’ said Misha, ‘but we’ll talk about that tomorrow.’

Narlo was getting the impression that a fairly major revelation was going to be made tomorrow, though he didn’t say anything.

Hannah asked, ‘Could we see a trog?’

‘Do you want to see the person or the hardware?’

‘Both would be good.’

‘Well,’ said Misha, ‘you have met some trogs.’

Hannah eyes opened wider in surprise.

‘Tahnee is a trog.’

‘Tahnee? – our teacher?’ Hannah said with even more surprise.

‘Yes,’ said Misha, giving Hannah time to take it in . . . ‘and so were some of the people on the monitors when you first arrived. Oh – and Bill who did part of the debriefing. And Stobie . . . and Sophie who took your statement . . . and Bruce who took Narlo’s.’

Narlo and Hannah both looked a bit stunned. They looked at each other, then back at Misha.

‘Seems most of the people we have come across have been trogs.’

‘Mm,’ Misha agreed.

‘Why?’ Hannah asked. ‘We were told there are more humans in the world than trogs.’

‘Trogs are human.’

‘Sorry, there are more bobs than trogs. Why have most of the people we’ve met been trogs?’

Misha looked at her knowingly. ‘Because most bobs weren’t alive when English was spoken.’

‘Ah.’ That made sense once she mentioned it.

‘But what about you two?’ said Narlo looking at Rory and Misha. ‘You both speak English like natives.’

Rory laughed, breaking the silence he had kept while Misha did the talking. ‘Tomorrow.’

‘Ah tomorrow! Narlo said with a degree of affected resignation.

Rory and Misha both smiled and the four sat for a moment without saying anything until Hannah remembered her question hadn’t been fully answered. ‘What about the trog hardware? Can we see that?’

Misha looked at Rory with a bit of a smile, then looked back at Hannah. ‘I think you know the answer to that question.’

Hannah looked at her, slightly puzzled, then looked at Narlo, then it occurred to her. ‘Tomorrow?’

Rory and Misha smiled.

* * *

It had got warm while they talked, even in the shade of the trees. Hannah and Narlo decided to go for another quick swim to cool off. Then the four of them walked back to the resort and looked around the shops and the other buildings. The place had a

pleasantly relaxed holiday atmosphere and soon Narlo and Hannah were both feeling pleasantly relaxed themselves.

After some lunch at the resort, they went and got a couple of canoes.

‘Now you two can take one and Rory and I will take the other,’ Misha said, ‘or we can mix up.’

Neither Narlo nor Hannah was overly confident in their ability to drive the things, so they mixed up – Narlo went with Misha and Hannah went with Rory. They paddled out into the lake, got into a bit of a water fight until everyone was thoroughly wet, then came back.

Chapter 25

Reflection

That evening, on the balcony of their apartment, Narlo sat pondering the concept of trogs while Hannah had a shower. It was an interesting idea and he couldn't help thinking that being a trog wouldn't be an entirely bad thing.

He was fairly confident that trogs were conscious: he couldn't see a lot of difference between thoughts generated by silicon neurons and thoughts generated by carbon neurons. After all, he did see it as the patterns of firings that determined the thoughts, not the atoms in the neurons or a soul.

There were obvious advantages to being a trog, he thought. Trogs didn't get old or die. Maybe that secret desire for immortality that he had could be realised after all. And putting off death indefinitely could well save him from that nasty fate that might await him if he did die.

But then he noticed a flaw in his own logic: there would only be a nasty fate awaiting him when he died if he had a soul, and, if he had a soul, then being trogged probably wouldn't save him anyway – it might just hasten the arrival of that nasty fate. Mm.

Assuming for a moment, though, that he was soul-less, the decadent lifestyle did seem to be a real plus. The idea of the verns fascinated him. There were experiences he had long fantasised about but that he wasn't ever likely to have as a human – as a bob. It could be so much fun – a bit immoral maybe – but fun.

* * *

But he knew Hannah would never go that way and that complicated things. It wasn't as if he had made any life-long commitment to Hannah, but they were soul mates (even if he didn't have a soul), they had a long history together, they had come through a lot, they were content and comfortable in each other's company and her embrace seemed to protect him from the pain and worries of the outside world.

And, besides, he still found her attractive – she was pretty, she had a good body and she had just the sort of personality he would want in a partner – sensible, dependable, wise, and yet warm, caring, thoughtful. Some people seem to go for the unpredictable, tempestuous type, but that wasn't Narlo's style. Life would be much less comfortable without Hannah.

* * *

Narlo didn't see Hannah walk up behind him. The first he noticed was her arms encircling his neck, then her head beside his. She pulled him against her chest, but didn't say anything. She stayed there for a while, then came and sat beside him.

‘I don’t know what I would do without you,’ she said. Narlo could see that it wasn’t just a casual or light-hearted remark – she was clearly somewhat emotional.

Narlo didn’t say anything, but just put an arm around her shoulder. She turned towards him, putting her face down into his chest. Narlo just held her.

A feeling came over him that this had happened before, though at the same time he knew it hadn’t. It was like this was an exact replay of a scene he had experienced somewhere else. Everything about the scene was familiar. A little while later he found himself thinking, ‘This is the part where she cries.’ And right on cue, she did – nothing obvious – just very subdued sobs – almost silent.

There was no need to look at her face – he knew what was happening – and there was no need to say anything – he knew she knew what he was thinking.

Then, almost as quickly as the feeling had come over him, it left. He wanted to ask Hannah whether she had had the same thing, but, he thought, if she hadn’t, it would spoil the moment. As the next couple of minutes passed, he started to be unsure of quite what the feeling had been like and as the clarity and immediacy of his recollection faded, so did the appropriateness of mentioning it.

They said nothing for quite a while. Then Narlo asked Hannah if she wanted to lie down. She said yes, and they both went and lay on Narlo’s bed, arm in arm. And there they fell asleep.

* * *

Sleeping together seemed right. It was nothing more than sleeping together, but it meant a lot to Narlo and he could feel that it meant a lot to Hannah.

Chapter 26

Visiting a Trog

Tomorrow came. Narlo was awake at the crack of dawn. And as dawn cracked about 5 o'clock, that was quite early. Hannah was still sleeping, but was now facing the other way.

Narlo lay there for quite a while as the sky got lighter, then got carefully out of bed so as not to wake her. He stood for a while, watching her sleep. She slept cutely; she was beautiful, like a child.

Narlo went and had a shower in Hannah's bathroom so as not to wake her. When he came back out into the living room, Hannah was there standing by the table. She walked slowly over to him, put her arms on his shoulders, linking her fingers behind his head, then said, 'Thank you.'

Narlo half smiled, half sighed, put his hands on her waist for a moment, then in a completely different tone, put his arms right around her, squeezed and laughed out loud.

Hannah laughed in return. 'Well, it's tomorrow,' she said.

'Misha and Rory will be here soon. We'd better have some breakfast.' As usual, breakfast was there waiting for them. And sure enough, Misha and Rory came in just as they finished.

* * *

The four of them drove (got driven) about 120 km north of Taonan to the town of Ulanhot to see a trog. Ulanhot was a bit smaller than Taonan.

They pulled into a large building near the town centre. They

drove down a fairly steep, dimly lit tunnel and parked. It was a short walk to a solid-looking metal-bar gate somewhat reminiscent of a portcullis. Rory touched a pad on the wall beside the gate. The gate then opened – upwards! They walked through and along a passage to another portcullis-type gate. They looked through a barred window on their left. On the other side of the window was a man somewhat reminiscent of one who might guard a portcullis. He nodded to Rory, then came out of the room he was in through a door on the other side of the gate. The second gate opened, also upwards. The guard spoke briefly to Rory, then gave a smile which was surprisingly warm. They got into a lift, went down a few floors and came out into what looked like a waiting room. A young man came out of another room and greeted them.

Rory introduced the young man as Ushul (or something like that). Ushul didn't speak English. Ushul opened another door which let in a sound of rushing air. As the door opened, lights came on beyond it. They went through the door into a long straight dimly lit corridor which ran for quite a distance in either direction. The far side of the corridor had an opening every three or four metres. This side had, in addition to the door they had just come through, occasional vertical ladders giving access to floors above and below.

They were led through an opening not far from where they had entered the corridor. The opening led into another passageway perpendicular to the first. Lights came on in this passageway as they entered, brighter and more cheerful than the lights in the first corridor. This passageway was wide enough for two people to pass and tall enough for a tall person to be able to walk comfortably.

Both sides of the passage consisted of shiny black metallic panels, each running from floor to ceiling and about half a metre wide. The panels were separated by vertical chrome rods a couple of centimetres in diameter. On each panel there were a few small lights, some illuminated, some not, some round marks flush with

the panel, what looked like a small display that wasn't displaying anything, and some printing in a coppery colour, presumably in Logal.

Each fourth chrome rod was replaced by a vertical light – a bit like a fluorescent tube – the same size as the rods, but giving a warm, slightly golden glow. These lights alternated on either side of the passage.

Both the floor and ceiling consisted of a metal lattice, a bit like you sometimes see in prisons. This allowed them to see that above and below were further passageways very much like the one they were in. There were only occasional lights on the other levels, though, so it was hard to tell how many levels there were.

* * *

‘This is one trog,’ said Rory pointing to one of the half-metre-wide panels. ‘The bit from here up (signalling about chest height) is the trog; the bottom part is the trog’s EIC.’

Rory read some writing in Logal on one of the panels. ‘This one is Hogan Mansfield.’

‘How you going, Hogan?’ Narlo said.

Hogan didn't answer.

Hannah looked at Narlo like he was acting a bit stupid, but then asked if they could actually talk to Hogan.

‘Not from here,’ Rory answered. ‘You have to go to the communication room to talk to the trogs – and we haven't got permission to do that. You can have a look inside though.’

Rory spoke to Ushul who then touched one of the round marks and the top half of the panel swung open letting out a louder noise accompanied by a considerable draft. ‘That's the ventilation system,’ Rory said. ‘It keeps the trogs cool.’

The open panel revealed a rectangular block of connected computer chips, though with gaps between them to let air through. He could make out the next slab half a metre further to the left.

‘Are there any wires?’ Narlo asked.

‘Yes,’ said Rory. ‘The slab is connected by a cable to the EIC.’ Rory signalled to Ushul who opened the bottom half of the panel. This revealed a number of parallel boards, a bit more akin to what computers had looked like before Narlo and Hannah had left.

‘This is the EIC. It’s connected to the colony server which is connected to the Morinya-wide network so that all trogs in all colonies can access all viron.’

‘Can we take the trog out?’ Narlo asked.

‘You can’t take the trog or the EIC out without turning the trog off.’

‘You can turn them off?’ asked Hannah.

‘They can be turned off, though they won’t do it for us.’

‘Can they be turned on again?’

‘Yes,’ said Rory with a laugh. The neuron firings stop, but the data in the registers isn’t lost, so when you turn them back on, they just continue as if nothing had happened. They wouldn’t even notice that they’d been off unless they are in a viron with other trogs who weren’t turned off.’

‘It’s bigger than a brain,’ Narlo observed.

‘It is,’ said Rory. ‘We haven’t been able to match nature yet in terms of size, but we’re not doing too bad on reliability.’

‘What’s behind the trog?’ asked Narlo.

‘There’s a space for the wiring and for the air ducts, then there’s another trog in the next passage backing onto this one.’

* * *

‘How many trogs in this building?’ Narlo asked.

Again Rory referred to Ushul, then replied, ‘Just over 45 000 at present. There’s room for 72 000. There are 5 levels like this one. ‘Mm . . . so this is the cave?’ said Narlo.

‘. . . Ah, yes,’ said Rory, suddenly more animated. ‘As I said,’ (He looked at Misha to check she was listening.) ‘troggs live in caves!’

‘Troggs are generally kept underground.’ Misha conceded. ‘But really they live in Empyrean – their virtual world.’

‘Mm . . . I can see merit in both points of view.’

‘That’s very diplomatic.’

‘Thank you. I thought so too.’

Misha laughed.

‘*Trog* isn’t a very complimentary term, though, is it?’ Narlo continued.

‘No, the word was first used in a derogatory sense to mock them, but then it stuck,’ Rory explained. ‘Nowadays, it doesn’t have connotations of whatever you said . . .’

‘Uncouth and primitive?’

‘That’s it.’

‘Why are they kept underground?’ Hannah asked.

‘Couple of reasons,’ said Rory. ‘For one thing, a good view would be wasted on them. For another, it makes them a less accessible target.’

‘Target?’

‘There are still people in Morinya who don’t totally approve of troggs and there are still occasional attacks on trogg installations. The attacks serve less purpose now, though. When a trogg is made, a backup copy of the information used is stored on the network in a number of widely separated places. These profiles are updated now and then. So if a trogg is destroyed, it can be rebuilt. Of course it wouldn’t remember anything that had happened since the last update.’

* * *

‘I want to show you something else,’ Rory said in a different tone. The group walked further down the passageway. Rory looked closely at the writing on the panels on his left as he went past them. Then stopped at one and said, ‘I wanted to show you this one.’

After a moment’s puzzled pause Narlo asked, ‘Why? Is it any different from that one?’

‘No,’ Rory answered, ‘just thought I’d show you.’

Narlo and Hannah looked at each other inquisitively, then Rory and Misha laughed. Hannah shook her head.

Then they walked back to the waiting room and, after a few pleasantries with Ushul, they got in the lift and went back to the car.

Chapter 27

Roamers

After they left, they drove to the base of a nearby mountain.

‘Feel like a walk?’ Rory asked with undisguised enthusiasm.

Hannah and Narlo were both happy to give it a go.

Rory took a small backpack out of the car and they set off along a narrow walking track through the forest.

Narlo thought to himself as they walked along. They had seen the trog hardware as promised, but they still didn’t know why Rory and Misha didn’t eat – or why they both spoke English so well.

They walked at a fairly business-like pace for 20 minutes or so up a gentle incline. Then they stopped for a rest.

‘So what did you think of the trog?’ Misha asked.

‘Not quite what I expected,’ Narlo answered. ‘But then I don’t really know what I expected.’

Hannah was even more non-committal.

‘Ready to go again?’ said Rory after what seemed like a very short rest.

‘Oh, can we have a few more minutes?’ Hannah asked, clearly not nearly as fit as Rory and Misha.

Rory took off his pack and put it on his front, then backed up to Hannah offering her a piggy-back. She laughed and turned down his offer, but when he insisted, she jumped on. They set off again, Rory and Hannah at the front, followed by Narlo, then Misha.

They walked for another fifteen minutes up some much steeper slopes. Narlo was amazed that Rory still had Hannah on his back and that he hadn’t once stumbled or shown any sign of tiring. Meanwhile Narlo was finding the going hard, even with no one on his back.

‘I don’t know how he can do that,’ Narlo said, turning round to Misha, the exhaustion showing in his face.

‘We’re used to it,’ she said.

‘What, do you carry people up mountains too?’

‘Not often but jump on.’

Narlo looked at her incredulously. She was smaller than him. ‘You’re not serious?’

‘Yes I am. Jump on.’

‘Alright.’ Narlo got on Misha’s back – more to see if she could carry him than anything. And she could. She carried him the rest of the way to the top – another good ten minutes’ steep climb – without a single rest stop.

Rory and Misha put down their loads, not looking even the slightest tired. Hannah and Narlo looked at each other in amazement. ‘How can you do that?’

‘We’ll tell you in just a moment,’ said Rory, ‘but first some lunch.’

* * *

‘There’s sometimes a good view from here,’ Rory said, but unfortunately it was cloudy and for the last part of the climb they had been in the cloud. The view was just uniform greyness in all directions.

Rory took out the lunch and gave one package to Hannah and one to Narlo. Once they had started eating, he said casually, ‘You know that second trog we went and looked at?’

‘Mm,’ replied Hannah and Narlo in unison.

‘That’s me.’

At first that statement didn’t mean much to either Hannah or Narlo. But then Narlo started to weigh up its significance. It still didn’t really make much sense, but it did seem quite significant. Hannah was obviously busy thinking too.

‘That trog is you?’ Narlo repeated.

For a while Rory didn’t say anything further.

Hannah said, ‘How can you be a trog? Trogs live in a virtual world . . . and you’re here – a real person.’

Rory still didn’t say anything, giving them time to think things through.

‘This has something to do with why you don’t eat?’ Hannah guessed.

‘Yes.’

‘And why you could carry us to the top of a mountain without working up a sweat?’

‘Yes.’

Narlo had expected more helpful answers to the questions.

‘What you see when you look at me is a robot,’ Rory explained.

‘With most trogs, the motor output goes to the EIC or colony server, which performs the necessary recalculation of what the trog will see, feel etc, then sends the calculated sensory signals back to the trog.

‘In my case, the trog sends its output via the EIC, the colony server and the network to my robot (he slapped his chest) – part of the way by an optic cable network, then the rest of the way by radio signals. The robot then performs the required actions.

‘At the same time, the sensory data that the robot collects, is transmitted back to the servers and fed into the trog.

‘So the trog senses whatever its robot senses and the robot does whatever the trog is doing.’

A moment’s silence.

‘You’re one too, aren’t you?’ Narlo said to Misha.

‘Yes.’

Narlo gave an ‘Oooo’ and a bit of a shudder. ‘That’s weird . . . but . . . it sort of makes sense . . . You don’t look like robots though . . . and you don’t feel like robots.’

‘What does a robot look and feel like?’ Misha asked.

‘I don’t know. . . . Like you I guess.’

‘A lot of effort went into making the robots look real. They’re a lot more acceptable that way.’

‘So what’s inside you? . . . obviously not a stomach’

‘No,’ said Misha with a laugh.

‘No internal organs I guess.’

‘Not really.’

‘Our vision is in our eyes, our hearing in our ears, our smell is in our noses and our feeling is in our skin, muscles and joints. Our balance is in our heads. Equipment to receive, transmit and process data is in our chests. We have lungs in our chests too, though not for getting oxygen – just for talking. We have bones and muscles modelled on human ones, though not made of the same stuff. Most

of the contents of our abdomens are for storing power and distributing it as necessary.’

‘Where does your power come from?’

‘Electricity. We get recharged at night.’

‘So after you leave us at night, we go to bed and sleep and you go and plug yourselves in to the mains.’

‘That’s about it.’

‘What do you do while you’re recharging?’

‘We turn off the robots and go back to Emphyrean. And then we get some sleep.’

‘Ah. So trogs sleep?’

‘Yes, trogs sleep. Our brains need to do the same stuff that bobs do as they sleep.’

‘I suppose they would.’

Narlo thought for a while, nodding his head slightly. All this was beginning to make sense and seemed somehow to give him the impression that he now had quite a good grasp on things. Hannah hadn’t said anything for a while.

‘What do you reckon?’ Narlo asked her.

Hannah raised her eyebrows and nodded.

‘Can I feel you?’ Narlo asked Misha.

‘Help yourself,’ she said.

‘Hey!’ said Hannah.

‘What?’

But Hannah didn’t elaborate.

Narlo moved closer to Misha, tentatively took her arm and felt the skin, then applied a bit of thumb pressure to feel what was under the skin.

‘Does feel very real,’ he said. ‘Can I feel your ribs?’

Misha lifted her shirt. She seemed totally unruffled by Narlo’s caresses and then a bit of prodding and poking.

Then, just as boldly, he asked, ‘Can I feel your boobs?’

Misha had no objection . . . but Hannah did. There was an indignant ‘No’ followed by a slap on Narlo’s arm. ‘Naughty!’ Hannah seemed more surprised than shocked by Narlo’s forwardness and obviously could at least partly see the funny side. Rory and Misha just laughed.

Narlo was acting mainly out of curiosity. Somehow, feeling a robot’s boobs didn’t seem to be inappropriate to him. Obviously it did to Hannah though. Narlo did without his feel. Thinking about it afterwards, he could see Hannah’s point and felt a little embarrassed.

Changing the subject, Rory pointed out that the robots were usually called *roamers*.

‘Because they can move about I suppose,’ Narlo said.

‘It actually stands for *remotely operated andro-mechanical electric robot*.’

‘Ah . . . that sounds like one of those names where they decide on the acronym, then find words to fit it,’ Narlo said.

‘I think you’re probably right.’

* * *

Cloud still shrouded the top of the mountain as they packed up and readied themselves for the walk down. Rory and Misha didn’t offer lifts down. Instead, Misha asked Narlo for a piggy back. Narlo took the challenge. Misha held his shoulders, then jumped onto his back. Narlo just about collapsed.

‘God you’re heavy!’ he exclaimed.

Rory and Misha both laughed. ‘See, I’m not made of the same stuff as you,’ she said. ‘You can probably see why we didn’t swim.’

‘Yes.’

‘We could have walked around under water for hours, but that would’ve seemed even weirder than not eating.’

‘Mm . . . it would.’

After that, they all walked. Somehow, finding out that Misha and Rory were not just like him made it seem a little less natural to talk to them. Narlo told them this. They were both understanding and took it with humour. ‘You’ll get used to us again,’ Rory said.

On the way down, it started to rain – not just a light drizzle but fairly heavily. Narlo and Hannah both got wet and a little cold.

Misha said it was a pity about the weather, but Narlo had a different perspective on it. This was the first time in 76 years he had experienced the elements in a way that he couldn’t ignore. In a sense, the experience did a lot to bring him ‘back to Earth’.

They arrived back at the car, got in and returned to Taonan via a different route.

* * *

Even though they were wet, Narlo had more questions . . . and he asked them. ‘How many other trogs have robots . . . sorry, roamers?’

‘A roamer doesn’t belong to a particular trog,’ Rory explained. ‘Any roamer can be connected to any trog. ‘Misha and I could swap bodies tomorrow. But we won’t. You’re probably just getting used to us the way we are.’

‘Mm . . . ok, so how many roamers are there?’

‘Oh yes. There are something like 300 000. Not nearly as many as there are trogs.’

‘300 000? Why are roamers produced?’ he asked. ‘I can see that having Rory and Misha to talk to us and take us around is better than just having a couple of video screens, but you don’t get hundreds of thousands of returned space travellers to induct.’

‘No we don’t. Roamers do lots of other things. Their main use is in doing jobs which are difficult or dangerous for bobs. A lot of

roamers work in the nuclear power industry. They're not affected by radiation the way bobs are. They work with dangerous chemicals; they work in mines. But their main work is in the armed forces.'

'Armed forces?' Narlo repeated.

'Roamers have a lot of advantages over bob soldiers. They're physically tougher; they are much harder to immobilise; they are immune to biological warfare agents and are much less susceptible than bobs to nuclear and chemical weapons. On top of that, they're stronger, faster and don't tire – not till their battery runs out anyway. They don't feel pain and have no reason for fear. If they're destroyed, it's a bit expensive but no one dies. Another thing is that they are much easier to keep in touch with and to coordinate.

'Most roamer production has been to develop defence capability. . . . A few roamers have gone into space too.'

'Into space?'

'Mm . . . We've sent four manned probes to planets in other stellar systems – well, roamer probes. The fifth one is due to leave later this year for Harpik.'

'Harpik?' Narlo repeated. 'Harpik? Is there really a planet named *Harpik*?'

'Yes. It's an Earth-like planet orbiting 121 Cancri, 28 light years away.'

'Why do they give planets of other stars such stupid names?'

'I don't know,' Rory replied, 'but is *Uranus* really any better?'

'I guess not.'

'It was probably named after a Lithuanian telescope salesman or something,' he said somewhat light-heartedly . . . 'Anyway, the advantage of sending a roamer over a bob is that the roamer can be switched off until it gets there.'

'How long will it take to get there?'

'A few hundred years. You went into space in a huge ship

containing all sorts of heavy equipment as well as living space. It weighed about 800 tonnes. The roamers go in a ship that weighs about three tonnes, most of which is fuel. Space roamers are made specially small and light – they weigh about 12 kilograms. And the trog weighs about 10 kilograms.’

‘So the trog goes too?’

‘Yes,’ said Rory with a bit of a laugh. ‘By the time the roamer is 28 light years away, communication between the trog and his body would be a bit slow.’

‘Mm . . . I suppose it would.’

‘12 kilograms,’ said Narlo playing with the thought ‘leprechauns! Do they look human?’

‘Not really. Anyway, because the pay load is so small, they can reach much greater speeds.’

* * *

‘When’s the first one due back?’ Narlo asked.

‘They don’t come back,’ Rory replied.

‘They don’t come back?’ Narlo said, seemingly a little surprised. ‘How do they feel about that?’

‘Good question.’ said Rory. ‘But there’s never been any shortage of willing volunteers, so probably not too bad.’

‘What do they do once they’ve done their job?’

‘They can enjoy the place for as long as they want, then they turn themselves off.’

‘Unless the place is really exciting, that doesn’t seem a fantastic pay-off for their sacrifice.’

‘It’s not. But we don’t send existing people. Instead we made a copy of a trog who volunteered and sent the copy.’

‘A copy?’ Hannah repeated quizzically.

‘Would the copy be the same as the original?’ Narlo added.

‘Exactly the same. Every time we do an update of the backup data on a trog, we have to read all the registers in the existing trog and store the data. If we have to reset the trog, we copy the data back into the slab. When we duplicate a trog, we just copy the data into a new slab.’

‘So does the copy think and feel the same as the original?’

‘Yes, it has the same memory, knowledge, everything. When it’s made, the copy is the same person as the original. If it hadn’t been told it was a copy, it would never know. It would think it was the original. It’s just as much the original person as the one who stays home is.’

‘So there are two Fred Smiths?’

‘If that’s his name, then yes.’

Hannah and Narlo both sat thinking about the consequences of this idea. Something about it didn’t seem right – a contradiction – an inconsistency – something that couldn’t actually happen.

‘Let’s say I’m the person volunteering,’ said Narlo. ‘In a sense, it’s not a problem because I will still be here on Earth enjoying life. It will only be a copy of me that’s going away to its death and I will know nothing about it.’

‘But on the other hand, the copy will be me too. So I will wake up and find myself on a foreign planet light years away, with no way to get back and nothing to do but poke around until I get bored enough to kill myself.’

‘That’s about it.’

‘That’s weird. So in a sense,’ Narlo continued, ‘I will give my life for the mission. And yet, I will still be alive at the end of it. So when I’m duplicated, ‘it’s a gamble whether I wake up here on Earth or on some planet far away?’

‘No, there’s no gamble,’ Rory replied. ‘You will wake up in both places.’

* * *

Narlo continued to look puzzled and spent a while playing with that idea.

Then Hannah said, ‘So let’s say I made a copy of you . . . then killed the original you. Would I be guilty of murder?’

‘That’s an interesting point.’ Rory replied. ‘In a sense that’s what happens when we convert someone from a bob to a trog. But you’re talking about duplicating me as a trog. In that you’re cutting short my life, no, because I’ll still be alive afterwards. But the Rory that you killed might feel unhappy about it if he knew in advance that you were going to do it. Life, death and murder take on somewhat different meanings once duplication is brought into the equation. A whole new morality has to be worked out.’

‘Has it been worked out?’

‘Morality isn’t a logical construct with a right answer. A lot of debate has gone into trog morality and a lot more is still to go in. But the debate isn’t about getting the right answer: it’s about trying to get others to think the way we do.’

‘Isn’t that a bit of a problem?’

‘Well, is it any different with bob morality? There are no absolutes with any morality. A moral system represents no more than the way the person who constructs it would like other people to think.’

‘That’s assuming you take an atheistic perspective,’ said Hannah.

‘True,’ said Misha. ‘You’re not an atheist, are you?’

‘No, I’m a Christian.’

‘I thought you might be. From a theistic perspective, I imagine you would consider copying a person and killing the original wrong.’

‘To me, making trogs in the first place is wrong,’ Hannah replied, expressing more of her feelings than she’d intended. ‘These

inconsistencies only arise because you've made a false assumption somewhere. I don't even know if a trog is a person. It seems quite likely to me that the person died when you sliced his head up.'

'So you reckon I'm dead?' Misha asked.

'No . . . I don't know . . . I'm sorry . . . This has made a bit of a mess of the way I picture life. I've got a lot of thinking to do.' Hannah got on top of her frustration and managed a half smile.

'No one ever gets it all worked out,' said Misha sympathetically. 'Some people get a mental model of life which they are happy with. But lots of different people get lots of different models and they are all happy with them. No one will ever know which is right . . . Unless of course we die and go to heaven and find we can see it all clearly from there.'

'Are you a Christian too,' Misha asked Narlo.

'I'm more an agnostic, but I do lean towards the atheistic view of things.'

With that, the car pulled up in Taonan.

Chapter 28

Trog Snog

When they got back to the apartment, they were still damp, so they changed into some dry clothes. Then they went out for dinner at a restaurant in town.

Narlo continued his interrogation. 'How long have you been trogs?'

'We were both trogged in 2082,' Misha replied.

'Together?'

'No. It just happens to have been the same year. We didn't meet

until after we were trogged.’

‘How did you meet?’

‘We were both put into the same colony.’

‘Do you get to know everyone in a colony?’

‘When Rory and I were put into the colony, there were only 46 trogs in it. So we all got to know one another. But later on, they closed that colony down and moved us to a more modern facility in Rockhampton in Australia. Later we got moved to Ulanhot. There are 45 000 people in the Ulanhot colony. You couldn’t possibly know all of them. But people in one colony do socialise with other people in the same colony.’

‘How do trogs get to know one another?’

‘Mostly they come across each other in public virons.’

‘Mm’

‘Quite a few meet at trog parties.’

‘Trog parties?’ Narlo interjected, seemingly amused by the idea.

‘Trogs have good parties,’ Misha said. ‘Lots of young sexy people, lots of good stuff to eat and drink, good music, good things to do and games to play. Beats anything we ever had as bobs.’

‘So are you two an item?’ Narlo asked, a little unsure of whether that was a bit too personal.

Misha said, ‘We are,’ then swapped warm cuddly glances with Rory.

‘We wondered,’ Hannah said. ‘But you don’t make it obvious – except for the fact that you fight a lot.’

Misha laughed. ‘We’re here to help you settle in to life on Earth, not to snog in front of you.’

Narlo laughed. ‘Do you snog at all?’

‘Not as roamers.’

‘As trogs?’

‘We have a good sex life as trogs.’

‘As good as when you were bobs?’

‘No comparison,’ she said. ‘Sex as a trog is superb. I mean . . . there’s quite an industry in developing designer orgasms.’

‘Oo. That’s an interesting thought . . . So are you both exactly what each other wants in a sex partner?’

‘Not always, but then there are the verns. They will do whatever you want.’

‘Do you have sex with verns too?’

‘Yes.’ Misha said.

Narlo looked at Rory. ‘How do you feel about that?’

‘Fine.’ Rory said. ‘I do the same. Most couples do. Verns aren’t people. No vern could ever replace Misha and they don’t spoil my appetite.’

‘Do people make monogamous commitments at all?’ Hannah asked.

‘Rory and I have been together most of the last 38 years. People stay together as long as both sides are happy with the relationship. Then they move on. 38 years is actually a very long time for a trog partnership.’

‘Congratulations,’ said Hannah.

‘Thank you.’

‘Do people fall in love?’

‘Some do. And sometimes people will miss people quite badly if they leave. But there’s plenty to stop life being miserable if you lose a partner. There are always lots of others to try too.’

‘Tell us about your life as a bob,’ Narlo asked Rory.

‘It wasn’t the most exciting life,’ Rory answered. Then he went on to talk about the accident, his mother’s death, his injuries, his work in a basement, his nearly non-existent social and love life and so on.’

Misha seemed touched by his account, even though she would have heard it all before. She gave her story as well, though it was more ordinary than Rory’s.

Rory and Misha shared a lot of other things about being trogs and the comparison with bob life. By the time they'd finished dinner, both Narlo and Hannah saw trogs much more as real people with real lives, real emotions and generally very much like themselves.

It seemed strange to be making friends with trogs.

* * *

When they got home, it was about time for bed. Misha reminded them that they had lessons again the next day and that breakfast would arrive at 7:30, Rory and Misha at 8.

As they were leaving, Narlo asked Misha and Rory if he could see what they did at night.

Misha and Rory looked at each other for a moment, then Misha said, 'Sure – if you want.'

All four walked a few doors down the corridor and went into Rory and Misha's room. It was smaller than their room, more like an old-style motel room with a bed in the living room and a bathroom off to one side.

Misha went to her bag and pulled out what looked like a black rod about 10 cm long and a couple of centimetres in diameter. She fitted the rod into the centre a similar-coloured disc about 10 cm in diameter. The last centimetre of the other end of the rod was chrome-coloured and hollow with a chrome rod up its axis. From the disk extended about a metre of electrical cable with a plug on the end.

She placed the device on a chair, plugged it into a nearby power socket and turned on the switch. It sat with the disk on the chair and the rod pointing vertically upwards.

An uncomfortable thought started to creep into Narlo's head.

'Now you may not want to watch the rest, but I remove my pants and sit on that,' Misha said in a remarkably matter of fact way.

‘Eww!’ was Narlo’s almost involuntary response.

‘No, we won’t watch the rest.’ Hannah made her contribution to the discussion.’

‘Then you just sit there all night?’

‘The roamer does. I go back to Empyrean and have a sleep.’

‘And you do the same?’ Narlo said to Rory.

‘Yep – exactly the same,’ he said.

Narlo looked puzzled for a moment. ‘Why up your bum?’

Misha laughed. ‘Why not? If the plug was on my forehead it would be fairly obvious that I was a roamer.’

‘I suppose it would.’

‘And there’s nothing smelly or nasty up there,’ Misha added, ‘just a power socket.’

‘Mm, I suppose so,’ Narlo said, almost with an expression of relief.

‘And no feeling – except to know when I’m plugged in and turned on.’

‘But . . . how can you be turned on if there’s no feeling?’ Narlo quipped.

Misha looked at him with an expression that told him his attempt at a joke was a bit lame.

‘Sorry,’ he said as Hannah hit him on the head.

‘We’ll go to bed now,’ Hannah said, as if to get Narlo away before he caused any more embarrassment.

Rory walked back with them and opened their door. ‘Sleep tight,’ he said.

Narlo and Hannah went in and closed the door behind them. Hannah folded her arms at Narlo. ‘You’re a worry sometimes.’

‘Sorry,’ Narlo said, without managing to look at all as if he was.

‘And I can’t believe you asked Misha if you could feel her boobs.’ She spoke in a reprimanding tone, though giving it away that she could see the funny side. ‘I mean you’ve known me for

eighty years and you've never asked if you can feel my boobs.'

Narlo wasn't sure quite how he should respond to that. He thought for a moment, then said hesitantly, 'Can I feel your boobs?'

'No!' was quick and definite response, followed closely by another whack on the head. With that Hannah went off to bed, though not without a last cheeky glance over her shoulder as she went.

Narlo thought about saying, 'Worth a try,' but then thought better of it.

* * *

Narlo didn't go to sleep for a while. He lay thinking about life as a trog – and once or twice about Misha's breast. It intrigued him. Though he didn't really want to admit it to himself, it excited him. Life as a trog that is.

Intuitively, it seemed natural to him that trogs retained all the consciousness of the bobs they once were. Their lives seemed so much fuller, more interesting and more satisfying than his was ever likely to be as a bob.

But he was fairly sure that Hannah would not be trogged or blipped – her only option would be a sanctuary state. So he knew that being trogged would mean leaving her. He didn't want to do that, though he realised that his reticence was possibly more out of concern for Hannah than for himself.

He knew that sometime soon, he would have to make a decision between life as a trog in Emphyrean and life with Hannah in a sanctuary state. He was glad he didn't have to make it right yet.

Chapter 29

Hiding

Narlo was woken by a hand shaking his shoulder – not gently, but roughly and alarmingly like there was some sort of emergency. A nearly full moon was shining in the window and in its light, Narlo could make out the shadowy figure of a man.

‘Rory . . .’ he said in his somewhat startled but still not really with-it state.

Rory put his finger to his lips indicating for Narlo to keep quiet. Then he handed him a card and shone a dim torch on it. It had writing on in black hand-written letters. Narlo rubbed his eyes trying to see the writing clearly enough to read it. It said: *We have an emergency. Don't turn any lights on or make any noise. Get dressed. Get Hannah up. And meet me on the balcony.*

Without really thinking about it, Narlo did as he was told and he and Hannah walked out onto the balcony where Rory was waiting, now with the hood of his jacket pulled over his head.

Hannah obviously wanted to ask questions, but Rory signalled not to.

Rory then produced another card and shone his torch on it so Hannah and Narlo could read: *Climb down the ladder and wait for me at the bottom.*

He then brought their attention to a wire ladder at the end of the balcony that was hanging from the balcony above down past theirs. He motioned to Narlo to go first.

The realisation of what he was expected to do completed the process of waking up for him. The thought worried him; he leant

over the balcony and looked down to see where the ladder went. It hung past the balcony on the next floor down and seemed to reach the ground.

He hesitated. Rory grabbed a rung of the ladder and lifted his feet off the ground to show Narlo it was sturdy. Then he moved a chair into place to make it easier to get on.

With a little difficulty, Narlo got himself on and slowly made his way down to the ground. He wasn't particularly worried by heights, but the instability of the ladder made the experience a little perturbing.

He then saw Hannah following. She did ok until nearly at the bottom when her foot scraped on the corner of a wall. She got down biting her lip – obviously in a bit of pain. She lifted the leg of her pants. Narlo put his hand on her ankle and felt the wetness of blood.

Rory followed, much more quickly. When he reached the bottom, he unfolded a sheet of paper and showed it to Narlo and Hannah. They read together by the light of the torch *'The Gur-Pahn, a resistance organisation, know you are here and are planning an attack. We have to move you urgently. Misha and I cannot come with you. Follow these directions and you will be met. Don't speak until you are in the car.'*

Underneath the writing was a map indicating that they should go left out onto the street, turn left, walk two blocks west, then three blocks north. They were then to wait on the pavement on the northeast corner of the intersection.

They looked at each other to confirm that each was prepared to follow the instructions, though it was hard to discern much expression in the dark. They looked at Rory, though they couldn't really see his face under the hood, then went to take the paper. Rory indicated that they couldn't take it, so they looked at it again to make sure they could remember the route, then headed off. Narlo wanted to speak, but he kept his silence until they reached the

allotted intersection.

* * *

There was no one around, though the odd car did go past. They got into position and waited. It was a couple of minutes before a car slowed down at the intersection, with the sliding door on their side open. A young woman beckoned them in. The car didn't completely stop, but they managed to scramble in. The door closed behind them.

There was enough light in the car to be able to see their host. She looked about 30, thin face and pointy nose, dressed in a black jacket and slacks over a white blouse. Her blonde hair was parted in the middle and hung with a slight curve a couple of inches past her ears. She said in English, 'I am Sonya. We are hiding you for a while. You will be safe. Just relax.' She didn't sound like a native English speaker.

Narlo asked her, 'Where are we going?' but she indicated that she didn't understand the question. He then turned to look out of the window, but noticed he couldn't see anything – just a faint slightly distorted reflection of what was inside the car.

'We can't see out,' Narlo commented. Their host looked at him, but didn't respond. Hannah tried to look out and put her hand around her eyes to shield out the light from inside, but couldn't see anything either.

Sonya looked at her, smiled, shook her head and waved her hand slightly. Her smile seemed quite genuine and reassured Narlo a bit. But both still found it a little unnerving being in a moving vehicle unable to see out.

Hannah whispered to Narlo, 'I'm worried about this.'

'Not being able to see out?' Narlo replied.

'No, the whole thing.'

Narlo looked pensive.

‘I don’t know. It just seems a bit suspicious,’ she continued.

Narlo looked at Sonya, worried about whether she could understand them. Hannah obviously shared the concern. They sat quietly for a minute or two, then Hannah decided on a test.

‘I think we can get out,’ she said, in a whisper but loud enough for everyone to hear. ‘I picked up that kitchen knife on the way out – the sharp one. It’s in my pocket. I’m going to stab Sonya in the throat.’

‘What!’ Narlo said somewhat alarmed and grabbing hold of her arm.

‘Then we’ll stop the car and get out.’ Hannah kept a surreptitious eye on Sonya’s reactions. Nothing.

Then Narlo caught on to what she was doing and let go.

Hannah got out of her seat, reached into her pocket and pretended to pull out a knife at the same time as moving towards their host. Sonya seemed taken aback, but didn’t seem particularly to prepare herself for a knife attack and didn’t make any attempt to protect her throat.

Hannah sat back down and apologised.

Sonya looked at Hannah with a combination of surprise and suspicion. Then she looked at Narlo. Narlo shrugged. She then muttered some stuff in Logal (presumably) that conveyed the idea that she wasn’t all that pleased with Hannah’s little performance. From then on, she seemed somewhat wary and watchful. She didn’t smile any more.

Though Hannah’s performance seemed to have soured relations with their host somewhat, she and Narlo were now both reasonably confident that Sonya couldn’t understand them. So Hannah started to speak. ‘Are you comfortable with this?’

Narlo thought for a moment, but, before he’d come up with a response, Sonya reached into her pocket, took out another piece of

paper, unfolded it and showed it to them. It told them that the car would slow down soon at an intersection. The door would open and they were to jump out and go for another walk. Directions were provided. Then they would be picked up again and taken on. As with the earlier instructions, they weren't allowed to take them, so they memorised them.

Sure enough, a couple of minutes later, the car did slow down and the door opened. They jumped out and the car moved off, leaving them standing on the street corner. They seemed to be in an outer part of town. This area was quiet too and there was little other traffic.

* * *

Narlo spoke first. 'You reckon this isn't what they say it is?'

'I just have a bad feeling about it,' Hannah replied. 'They say they're protecting us from being attacked. But how do we know that this isn't some sort of abduction?'

Narlo thought for a few seconds. 'I suppose it could be, but it could be just what they say it is too.' He thought for a moment more. 'If it was an abduction, why would Rory be in on it?'

'Don't know . . . But are you sure that was Rory?'

This thought hadn't occurred to Narlo, but, once Hannah mentioned it, it seemed quite possible that it wasn't.

Hannah continued, 'In the dark and with that hood on, it would be pretty hard to tell. And why didn't he speak? And where was Misha?'

Narlo admitted that he didn't have answers, then there was a few seconds silence. 'We've really got no way of knowing either way . . . What are our options? We can go along with it or wander off somewhere else.'

Hannah nodded slightly.

‘Suppose we go along with it. Then, if it is the authorities protecting us from an attack, we’ll probably be protected and ok; if it’s an abduction, then we’ll be abducted and maybe held for ransom or whatever.

‘Suppose we wander off instead. Then, if it’s the authorities protecting us from an attack, we’ll have thwarted their efforts to protect us and maybe put ourselves in danger of being found by the resistance and taken from some place unknown to the authorities. If it’s an abduction, then we’ll be wandering round these backstreets in the dark. The resistance will have a very good idea where we are and will probably quite easily find us. The authorities on the other hand will have no idea that we’re not in our beds asleep.

‘So, if we wander off, it’ll be bad either way. Overall I reckon our prospects are better if we go along with it.’

Narlo stopped there and waited for Hannah’s response. She was unable to fault the logic and didn’t want to argue further anyway.

‘I suppose, on balance,’ she said, ‘it makes more sense to go along with it.’ She paused for a moment, then said, ‘I’m not happy about it, but I’m not going off without you.’

Narlo was pleased that she had agreed, but felt bad that she had done so under duress. He moved towards her and put his arms around her. For a moment, she didn’t respond, but then she put her arms around his waist, squeezed him and looked at him with a smile that said that, whatever she thought, she would go along with him as if it was their only option.

They held hands and started to walk.

Chapter 30

Ed

They reached the allotted pick-up point. This time the car pulled up just as they got there. The door opened and an old man stuck his head out, smiled and said, ‘Jump in.’

Once they were in, he said in fluent Australian English, ‘Hi, I’m Ed Richardson. You must be Hannah . . . and Narlo.’ He shook hands with them both. ‘Pleased to meet you, though sorry it’s not under more relaxed circumstances. We’re going to take you to a hide-out for a while.’

Ed would have been about 80. He had a jovial, friendly face, well wrinkled, and a good crop of white hair. He was short and wiry, spritely for his age. Narlo felt more comfortable. It was partly the fact that they could speak with him and partly his cheerfulness, partly his Aussie accent and partly the fact that he reminded Narlo of his grandfather.

As with the previous car, they couldn’t see out.

‘So what’s happening?’ Narlo asked.

‘We have information that the Gur-Pahn are planning to attack you,’ Ed explained.

‘What sort of attack?’

‘Not sure. Maybe an assassination or rocket attack or something.’

‘Why?’ Hannah interjected. ‘Who are the Gur-Pahn?’

‘The Gur-Pahn is an underground resistance organisation who have issues with a couple of things. Roamer production is the main one. They’re trying to get it stopped. You two are high-profile characters. Lots of people know about you, so attacking you would

bring attention to their cause.’

‘Mm’ Narlo thought.

Hannah asked, ‘So why would they want to put an end to roamer production?’

‘I don’t know how much you’ve been told. You know about trogs and roamers presumably?’

‘Yes.’

‘And you know that Rory and Misha are roamers?’

‘Yes.’

‘You know about the Gur-Pahn?’

‘Only what you’ve just told us.’

‘Ok, I’ll tell you a bit about them. They first started back in the early days of trogs because some people had reservations about trogging. But, for the most part, people either moved to Celestia or sanctuary states or came to accept them as part of life – especially as they make life easier for bobs.

‘But they’ve become more active since roamers started to be produced. Roamers are a relatively new thing. They started working on them about 30 years ago, but it took until 2110 to get them to seem real enough that people couldn’t tell the difference. The speech and facial expressions were the hardest part. Anyway, their numbers are still measured in the hundreds of thousands or millions rather than hundreds of millions. That’s partly because they’ve only been making them for 10 years but also because they’re expensive.

‘Roamers worry some people because they can, in theory, be used to look after trogs – to guard and maintain the colonies, to generate the power, even to manufacture trog hardware and manufacture more roamers. And that would, in theory, mean that trogs are not dependent on bobs. In actual fact, most of those jobs are still done by bobs. But just the fact that roamers have the potential to make the trog world self-sufficient worries some bobs.’

‘Mm, so bobs are worried about becoming redundant?’

‘They worry about the fact that trogs could come to see them as unnecessary – as a more primitive life form that takes up huge amounts of the Earth’s resources and does huge amounts of damage. They worry that trogs might eventually decide to eliminate the bob population.’

Narlo and Hannah both thought about this idea, though it seemed a little far-fetched.

‘Now because some bobs see trogs as a threat to their survival, some trogs believe that bobs may decide that they should eradicate the trog population before trogs wipe out the bobs.’

‘And, of course, this gives the trogs a more material reason to want to wipe out the bobs, which, in turn, gives the bobs more reason to want to wipe out the trogs.’

‘Anyway, that’s all complicated, but the thing is that people on both sides feel that people on the other side have the motivation to eliminate their side and that they may do so if they don’t act first.’

‘Mm,’ Hannah said.

‘The idea is that this problem would evaporate if there were no roamers.’

Narlo looked thoughtful, trying to come to grips with a new perspective on what he had learnt from Rory, Misha and Tahnee.

‘Have trogs and bobs talked about this?’ Hannah asked.

Ed continued, ‘It’s been the subject of a lot of public and private discussion. Most of the public talk is about harmony, co-habitation and mutual benefit, but neither side completely trusts the other.’

‘Has either side taken any steps to wipe out the other?’ Hannah asked.

‘The authorities would like to get rid of the Gur-Pahn.’

‘What stops them?’

‘The fact that they are too numerous and too nebulous. Gur-Pahn members range from those actively trying to get things changed to

those who sympathise but don't really want to get involved.'

'How many people are in the Gur-Pahn?'

'No one really knows – there's no central register of members, but it would probably be in the millions.'

'Ah,' said Hannah with an element of surprise. 'So what sort of things does the Gur-Pahn do to get things changed?'

'Persuasion by debate is one avenue, but a lot of them feel that this isn't achieving anything. So some are resorting to more forceful means.'

'Like?'

'They are trying to wear down the authorities by acts of nuisance. The idea is to get the authorities to feel that pursuing the roamer line is not worth the trouble. Obviously, the authorities will to some extent be swayed by what the people think, so they try to do things which will have a very public impact. Everyone knows about you two and considers you to be heroes, so killing you would be a suitably serious blow.'

'Heroes? really?' said Narlo, somewhat chuffed.

Hannah punched him in the arm playfully. 'You shouldn't have told him that. He'll be too hard to live with now.' She seemed to be feeling better.

Ed continued, 'If trogs did decide to wipe out the bobs, this of course would be an issue for the whole world, rather than just Morinya. So there's a lot of sympathy in Celestia for the Gur-Pahn.'

'Because of the threat from the Gur-Pahn and other countries, it is in the trogs' interest to be able to defend themselves and that is part of the reason why more roamers are being produced. Quite a few roamers are being produced by the military and, because of the secrecy provisions covering them, no one outside the military really knows the scale of production.'

'And, because of all this, Celestia is responding by building its defences.'

‘Mm . . . I can see why bobs would be concerned,’ Hannah said, but how come the forces of democracy don’t put an end to roamer production?’

‘Because the majority still see them as a good thing on balance. They mean that bobs don’t have to do the dangerous jobs and, more importantly, roamers are an important part of Morinya’s defence against Celestia. And most people don’t want Morinya to be overrun by Celestia.’

‘Is it likely to be?’ Narlo asked.

‘Some people worry about the possibility. Remember too, that trogs make up a good part of the voting population and there are lots of bobs who plan to become trogs later in life, so they’re not going to see roamers as a bad thing.’

‘If the government did declare an end to roamers, how would the Gur-Pahn know that they weren’t still being produced in secret?’ Narlo asked.

‘The Gur-Pahn would want access to sites that could be used for production.’

‘Is that likely to happen?’

‘It would compromise military intelligence and strategic advantage. But the Gur-Pahn think it would be worth making the concession for the sake of peaceful co-existence and the knowledge that neither side is a threat to the other.’

With that the conversation came to a bit of a natural pause and everyone sat quietly for a while.

* * *

‘We’ve still got a fair way to go,’ Ed said and suggested that they try to get a bit of sleep. He offered Hannah and Narlo the two long seats and he sat on a cushion on the floor between them.

Narlo dozed a little, but Hannah lay there awake, thinking.

About half hour later, the car slowed down and stopped. The door opened and, in the dim light, they could see that they were in some kind of underground car park.

‘Come with me,’ Ed said.

They walked to a lift, went up a few floors, along a corridor and turned left into another shorter corridor. Ed kept them talking as they walked.

At the end of the short corridor were two doors, one on the left and one on the right. They took the one on the right which opened into what looked like a living room.

Inside, a man and a woman were sitting on comfortable chairs. Both stood up as they entered. The man was Asian-looking, about 30, medium height but stocky, with dark hair cut to a military length. He wore a fairly formal black jacket over what looked like a black t-shirt. He reminded Narlo of a bouncer or hired thug. He smiled as they came in, but the smile didn’t seem totally genuine. ‘Maybe he was just pre-occupied with the operation,’ Narlo thought.

The woman looked a little older – maybe 35, also of Asian appearance. She seemed more relaxed and with a more genuine expression. She was dressed in a fairly short skirt and a thin jumper which, together, showed off her rather shapely body.

Ed did the introductions – the man was introduced as Sorg, the woman as Alex. It was clear, though, that neither spoke English.

Ed offered Narlo and Hannah the couch; Alex sat on a separate chair; Sorg went and stood by the door.

‘Coffee?’ Ed asked Hannah and Narlo.

Narlo was sizing up his surroundings and the company, but he focused for a moment on the request and answered ‘Yes please.’

Hannah said, ‘No,’ which surprised Narlo.

Ed walked through another door into what looked like a kitchen. When he’d gone, Alex noticed the blood on Hannah’s leg. She

pointed to it and said something in Logal that sounded like an expression of concern. She continued to talk in Logal as she knelt down and lifted the leg of her pants to see where the blood was coming from. It was just a graze really, but Alex fussed over it.

Ed returned a couple of minutes later with two cups, one for Narlo and one for Alex. Alex and Ed had a short conversation in Logal, though it was obviously about Hannah's leg, then Alex went into the kitchen and came back with some cloths. She cleaned up the wound, carefully dried it, looking at Hannah at times to make sure she wasn't hurting her, then put a dressing around it.

Hannah was obviously appreciative of the concern, even though she hadn't really been worried about the wound.

* * *

Ed sat in a chair next to Alex, facing Narlo and Hannah across a low coffee table. 'Sorry the accommodation's not more salubrious.'

'That's ok,' Hannah replied. 'Makes a nice change from a space ship.'

Ed laughed.

'How long are we likely to be here?' Narlo asked.

'Hard to say,' Ed replied. 'Depends on how quickly the authorities can satisfy themselves that it's safe to let you go back. Hopefully not too long.'

'Hours? Days?'

'Hopefully just hours, though it could be a day or so. We should probably get some sleep. We can talk more in the morning.'

'What time is it?' Narlo asked.

Ed looked at his watch and told him it was four o'clock. 'That couch folds down into a bed. Are you happy to share that or would you like a bed each?'

Narlo and Hannah looked at each other, then Narlo said that the couch would be fine.

A few things were organised. Narlo and Hannah were given some pillows and covers. Ed and Alex settled down in chairs. Sorg, who was now sitting on the floor with his back against the door, got up, dragged another chair to the door, placed it so that the door couldn't be opened without moving the chair, then made himself comfortable in it. The main lights were turned out, but a small light was left on so they could see.

Narlo and Hannah laid down facing one another. Narlo put his arm around Hannah's shoulder. She seemed to appreciate the comfort and snuggled in towards him.

He waited a few minutes, then whispered in her ear, 'How are you feeling?'

'Still worried.'

They both knew they couldn't say too much.

Narlo held her tighter.

They whispered a few more things, then decided to be quiet.

* * *

They woke to the smell of breakfast cooking. It smelt like bacon and eggs. As it turned out, it was bacon and eggs: Ed came in carrying two plates and gave them to Hannah and Narlo.

'What time is it?' Hannah asked.

'Just gone 7,' Ed replied. Narlo was surprised that it was so early. He felt like he had had a good sleep. There was no window in the room they were in and so no natural light. Neither of them had noticed this the previous night, but it seemed strange there not being daylight when they woke up. Sorg was still in the chair by the door. Alex wasn't in sight, but then she came in carrying three more plates. She gave one to Ed, one to Sorg and sat down with

one herself.

They ate on their laps. Ed made a few small-talk-type comments, some of which Narlo and Hannah responded to. The others just ate.

After they'd finished, Ed took the plates back into the kitchen. When he came back, he asked Hannah if she would like a shower. She accepted. Narlo had one too.

When Narlo returned, Ed and Hannah were sitting either side of a small table with a pack of cards.

'Cards?' Ed said to Narlo.

Narlo looked at Hannah. She seemed quite happy about the idea. 'Ok.'

* * *

The three of them sat and played a couple of games that Narlo and Hannah had known from earlier and a game they hadn't played before. Over the games, they got back to the conversation from the previous evening.

'You said there were *a couple* of things the Gur-Pahn have issues with,' Narlo said.

'Yes . . .' Ed continued as if trying to decide what to tell them next. 'Have you heard of the Second Chance Initiative?'

'No.'

'There is a proposal to make it legal to kill your children.'

'To kill your children?' Hannah said with a mixture of surprise and indignation.

'The Gur-Pahn have an issue with that.'

'I'm not surprised: I imagine most people would.' Hannah said.

'Anyway, it's only a proposal, and it's not the Gur-Pahn's primary concern.'

'Why would people want people to kill their children?' Hannah asked.

‘You’d need to ask those who are pushing for it,’ Ed said, seeming not to want to pursue the matter further.

* * *

They played cards for a while, then talked for a bit longer. As they talked, it seemed to both Hannah and Narlo that Ed actually seemed to be quite sympathetic to the Gur-Pahn. Narlo was getting more worried about what was happening.

Ed said, ‘I’ll put on a movie for you. We’ve got a few old ones in English. You’ll probably enjoy *Diamond*.’

They spent much of the rest of the day watching movies and engaging in lighter conversations. Ed told Hannah and Narlo a bit about his life. He said he used to be a lecturer in ethics, but had been retired a few years. Now he did a bit of contract work when there was a need for someone with his knowledge, especially if they needed someone who could speak English. He was actually 86.

Chapter 31

Mission

The evening meal wasn’t served until late. Hannah and Narlo only knew the time when Ed told them. The five of them sat down together for a dinner which Alex had made. It was traditional roast lamb with vegetables. Their hosts seemed to be making quite an effort to make them feel at home. When they’d eaten, Sorg returned to the door.

Then Ed looked at Hannah and Narlo and said, ‘We would like

you to do something for us.’

‘What, for you three?’

‘Not *just* us three – for the whole of humanity.’

Hannah gave Ed a somewhat worried look. ‘What can *we* do?’ she asked.

‘You went into a colony the other day to look at trops.’

‘Yes.’

‘Well, we would like you to go into another one tonight.’

‘What for?’ Hannah asked suspiciously.

‘We want you to take a case in.’

Ed said something to Alex in Logal and she went and fetched what looked like a large black briefcase.

Narlo interrupted, ‘I thought we were here to hide.’

Ed looked at Narlo with an intensity he hadn’t previously shown. Then he looked at Hannah. Then back at Narlo.

‘You were, but things have changed a bit. Now we want you to do something for us.’

A sinking feeling came over Narlo. It seemed to be turning out that Hannah’s suspicions had been correct.

Hannah vocalised what Narlo was half thinking. ‘So the story about the Gur-Pahn wanting to attack us was just a fabrication?’

‘In a sense it was true. The Gur-Pahn did attack you. But hopefully we did it nicely.’

Ed looked at them hoping that they would see the lighter side of the situation. They didn’t.

Hannah continued, ‘We will be working for the Gur-Pahn?’

‘You will be working for humanity,’ was Ed’s reply.

Hannah kept looking at him waiting for elaboration.

‘And the Gur-Pahn,’ he admitted.

Narlo looked at the ceiling and sighed.

‘Why do you want *us* to do it?’ Hannah continued. ‘Why don’t you get one of your people to do it?’

‘Well,’ Ed replied, ‘our plan was to kidnap you and to demand as a ransom that Gur-Pahn members be allowed access to the roamer production plants. The idea was not to let you go until they’d been in.’

‘Negotiations have been going on for a few hours, but now they’ve concluded with the authorities saying that they won’t agree. It became clear that they wouldn’t change their minds whatever we did to you.’

Narlo felt a little put out that their lives were so unimportant to the authorities, but he wasn’t in the mood to express these thoughts.

‘We knew there was a good chance that they would refuse, but we didn’t want to kill you and we didn’t want to set a precedent of just giving in if they refused to negotiate. So we had a plan B ready and this is it.’

‘The reason we want you to do it is that it has to be done by someone without a blip – and you are about the only people in Morinya more than a few days old without a blip. If one of *us* walks through the first gate, the alarms will go off and we will be trapped between the two gates. Security will be there in minutes.’

Hannah looked around at the door and Sorg standing by it and said ‘We’re not really in a position to work for the Gur-Pahn.’

‘You’re not really in a position not to.’ Ed’s voice was still friendly and almost sympathetic.

‘You’re not going to give us any choice are you?’ Narlo added.

‘No, we’re not.’

‘So why do you want the case taken in?’ Narlo asked. ‘What’s in it?’

‘A few things,’ Ed replied. ‘There’s a video camera and transmitter.’ He showed them a small well disguised lens in one end of the case. ‘The transmitter will tell us the case’s location at any time and relay the video to us. There’s a receiver. And there are explosives.’

‘Explosives!’ repeated Narlo with some degree of shock. ‘We’re going to blow up the colony?’

‘You’re going to damage the colony server. It will put the colony out of action for a few days. . . You’re both bobs,’ Ed continued. ‘Doesn’t it worry you that trogs are developing the ability to wipe us out and that we are just sitting here discussing it while they do so?’

‘I’m not really convinced that they are planning to wipe us out,’ Narlo said, ‘and even if I was, I’m not sure that this is the way to go about stopping them.’

Hannah didn’t say anything.

* * *

‘What are you going to do if we refuse?’ Narlo asked somewhat cautiously, fearing what the answer might be.

‘There is a contingency plan, but it’s not something you would want to happen.’

‘Are Rory and Misha part of this plot?’ Hannah asked.

‘Yes. Their part was to get you out of the building to the first car.’

Again, Hannah and Narlo looked at each other. Both found it very unlikely that Rory and Misha would be involved. It was hard to believe that roamers would be part of an organisation whose primary objective seemed to be the elimination of roamers.

‘So why all the secrecy – doing it at two in the morning, changing cars and so on?’

‘That’s all so that we can’t be traced.’

Hannah took over. ‘If we do this, will anyone get killed?’

‘No,’ said Ed with a small laugh that sort of confirmed that he wasn’t asking them to do anything that drastic. ‘You can’t kill trogs. They just get another slab and revert to the last back-up. I’ll

tell you what you're going to be doing. Would you like a coffee?'

'No thanks,' Narlo said.

Hannah waved her hand indicating that she didn't either.

* * *

'Ok, the colony is only a ten minute walk from here. You have to walk there, get in, put the case by the server and leave. It will be remotely detonated once you are out of the building.'

'And when we've done that, can we go?'

'You'll come back here. Then we'll take you a bit away from here and let you go.'

'This isn't going to do much for our reputations,' Narlo continued.

'You were kidnapped and forced into it,' Ed said. 'It's not going to be held against you.'

'Alright, so what's going to happen if we don't do it?'

'Hannah is going to stay here.'

On learning that she wouldn't be going, Hannah objected with an almost involuntary *No*.

Ed looked at her with raised eyebrows as if to say, 'You've got no choice, dear,' and continued, 'You are going to plant the case. We will know whether you did the job. Once the job's done and you are back, we'll take you both to where we'll let you go.'

Narlo and Hannah looked at each other with expressions that didn't convey total confidence in what they'd been told. They both knew they couldn't discuss any thoughts about what was happening or about what they should do. The fact that Narlo would be going by himself eliminated most of his half-thought-out plans of escape. His mind was racing, but not settling on any definite ideas.

'How do we know you'll let us go?' he asked.

‘What else would we do with you?’

‘Kill us.’

‘We don’t kill people: damage yes; murder no.’

Narlo wasn’t convinced. He thought for a moment. ‘How do I get in?’ He was still thinking there might be a way out for them, though he wasn’t hopeful.’

‘All the instructions are written here,’ Ed replied. ‘You’ll have some time to memorise them and we’ll go over them a few times to make sure.’

‘So I can’t take them with me?’

‘No.’ Ed unfolded a sheet of paper on the coffee table. ‘This map shows you how to get there. There’s a door opposite where we got out the lift. Sorg will open the door for you and let you out. You will be at street level. Turn right outside the building, go past the first intersection, turn left here, four blocks, then into this large building on your right. You’ll go into the car park. Onto this map now. Here. There are stairs here. Go down two flights, then walk to here.

‘Now there will be cars there. You need to find a place to hide. You’ll have a small gun that fires tranquilliser darts.’

‘When will I get that?’ Narlo asked.

‘Sorg will give it to you as you leave,’ Ed replied. ‘Anyway, about 15 minutes after you get there, a new guard will arrive to replace the guard on duty. The new guard is a woman. She will be wearing the same grey uniform that the guard would have been wearing when you went to the Ulanhot colony the other day. She’ll touch the sensor by the first gate; the gate will open and she’ll walk through. When the gate starts to open, shoot her.’

‘Shoot her with the tranquilliser gun?’

‘Yes.’

‘Can it go through her clothes?’

‘You can shoot her anywhere you like – though try to avoid her

boots.’

‘And how long will it take her to be tranquillised?’

‘About 20 seconds, but she’ll only be able to put up a fight for the first 10. So wait about five seconds. Then run in. About 20 seconds after the gate opens, it will close again.’

‘Ok so far?’

‘Keep going,’ Narlo said.

You then walk towards the second gate. The guard’s office is at the second gate. There is a door opening out beyond the second gate and a barred window looking out to the area just before the gate. Walk to the window. The other guard should be in the office waiting to be relieved. This thing here is a limpet.’ Ed pointed to a small dome-shaped thing on the brief case, then pulled it off. ‘You just place it on the window like this and press this button. It will break a hole in the window. Be ready with the gun to shoot the other guard through the hole. The bars will still be there, so make sure you don’t hit them – or any glass that’s still in the window.’

‘What if he comes out before I get there?’

‘Then shoot him through the gate.’

‘Ok, now I’m stuck between the gates.’

‘We’re going to give you this battery-powered cutter. You use this to cut out two bars of the second gate. That will be enough for you to be able to get through.’

‘How long will that take?’

‘About four minutes. Then you climb though. Then, on this map, walk down to here. Just round here you’ll find a ladder. Go down three floors; walk to the third corridor on the right; then go right to the end. You’ll see the colony server. It looks like this,’ Ed said pointing to a picture. ‘Put the case down with the camera facing the server, then head back out.’

‘Will it be a big explosion?’

‘As long as you’re back at the gate, you’ll be ok.’

‘How will I get back out of the outside gate?’

‘The guard will be lying there. She’ll be out of it, but her blip will still be working. There’s a touch pad inside the gate. You just have to pick her up and touch some part of her skin on the touch pad and the gate will open.’

‘Will she be heavy?’

‘You’ll manage. Walk through and come back here.’

‘Could I not use the guard to get through the inside gate instead of cutting it?’

‘The inside gate will only respond to the person who’s on duty at that time, so no.’

* * *

In the back of Narlo’s mind, still almost at the subconscious level of intuition, was the thought that these plans would lead to his captors being identified and picked up. The thought started to crystallise into something more definitive. Narlo would have no trouble finding the place they were being held if asked to later on. Then it would be a simple matter to use blip data to work out who was there during the time they were held captive. Why would they allow that? Maybe the act of terrorism was worth their freedom. Probably not – not for such a piddling little bit of damage.

The only way they would get away with it was if Narlo and Hannah couldn’t say anything after he did the job. Maybe they had some drug that would produce a partial amnesia. Or maybe they just weren’t planning to let them go. They had no guarantee that they were – just their word for it. It would be easier for them if they just killed them both once Narlo got back. Or maybe they would just set the explosion as soon as Narlo placed the case. Then the police would find the remains of Narlo at the scene and their hosts would just have to dispose of Hannah.

For the first time, Narlo became seriously frightened. He tried to tell himself that he probably had it all wrong. He started to think that maybe it was all one of his bad dreams and that he would soon wake up.

Hannah remained calm, though concerned.

‘When do I leave?’ Narlo said.

‘In about 40 minutes.’

Ed started him memorising the instructions. He let him read them a few times, then got him to recite them – over and over – with actions. Narlo wanted to work out what options he had other than going along with Ed’s plan, but it was hard to do that at the same time as making a convincing show of engaging with the memorisation program.

* * *

A bit later Alex got up and went into the kitchen. When she came back, she walked around behind Narlo and Hannah. As she passed Hannah, she quickly put what looked like a small gun to the back of her neck. There was a sound – not like a gun going off – more like a sudden burst of compressed air. Hannah gave a yelp, put her hand on her neck, then groaned in pain.

Narlo got up and went for Alex, not as part of any plan – just an instinctive reaction to what she had done. But Alex continued straight towards Sorg and Narlo found Sorg between him and her. He took a swing at Sorg. But the punch didn’t even connect. Sorg grabbed his arm and gave it a twist putting Narlo on the ground. Clearly, force wasn’t going to get him anywhere.

Narlo got up again, holding his elbow and went back to Hannah. She seemed to be in less pain.

Ed explained that Alex had injected a mildrin capsule into Hannah’s neck. He said that there was an anaesthetic with it and

that, in a couple of minutes, she wouldn't feel anything. Narlo could see the end of the capsule sticking a couple of millimetres out of her skin.

'Why did she do that?' Narlo asked.

'It's an extra incentive for you to get the job done and come back for her,' Ed explained.

'What do you mean?'

'The capsule contains mildrin. It's radio controlled. It can be switched off and in that state, it won't do her any harm and it can be safely removed. It can be put on stand-by. In that state, it still won't do her any harm as long as no one tries to remove it. It can also be set to release. Then it will release the toxin into her bloodstream. If someone tries to remove it while it's on standby, it will go straight to release. At the moment it's on stand-by.'

'So what does mildrin do?' Narlo asked, now somewhat belligerently.

'It reacts with the blood to produce PTV. PTV then stimulates pain nerve endings to fire.'

'So she feels pain?'

'Yes.'

'Which pain nerve endings?'

'All of them.'

'Right through her body?'

'Right through her body. The PTV is produced progressively over about half an hour, so the amount of pain will increase over that time. Most people die of shock some time around the end of the half hour – but that last half hour is the worst half hour of their lives.'

Narlo looked at Ed with a mixture of incredulity and accusation. Hannah clearly understood what this would mean. Narlo clenched his jaw. He was angry, but powerless.

'I thought you weren't in the business of killing people.' Narlo

said.

‘We’re not,’ Ed replied calmly. ‘As long as you do your job, no one will die. It will be your decision if Hannah lives or dies.’

Narlo clenched his teeth harder and growled, but had no comeback.

‘Now we want you to wear this,’ Ed said to Narlo, taking a small gold object from his pocket. It was like a bracelet cut into two halves and hinged at the join. Narlo looked at Ed, knowing he had no choice. He put out an arm and Ed clipped it on.

‘That will tell us where you are. If you decide to go somewhere other than where we have asked you, we will set Hannah’s capsule to release.’

‘Why didn’t you put a capsule in my neck?’ Narlo asked.

‘We have our reasons,’ Ed replied. ‘Now, it’s time to go.’

* * *

Narlo turned to Hannah. He put a hand on her shoulder, kissed her on the forehead, then said, ‘Sorry.’

Hannah cried, put her arms around his neck and held on to him. Narlo returned her embrace and they held each other tightly for a moment. Ed didn’t interrupt. They let go and Narlo stood up to leave. Ed handed him the case with the limpet re-attached. He then picked up the cutter, showed him how to use it and clipped it onto the back of the case.

‘Sorg will give you the gun as you go through the front door. It will be obvious how to use it. It has six shots. There’s no need to reload. Only use the spares if you miss. Two shots in the same person could kill them and, if the guard dies, the authorities will be alerted. Besides that, her blip won’t let you out.’

Narlo walked towards the door. Sorg opened it. Narlo looked back at Hannah who by now was trying to compose herself. He

sighed and started to go.

At the door Ed said a final ‘Good luck’.

A quiet ‘Fuck you!’ was Narlo’s reply.

Ed didn’t respond in anger. Instead, he said calmly, ‘Look at my neck,’ and turned sideways.

Ed had the same capsule.

Narlo looked Ed in the eye, but now more sympathetically.

‘I’m sorry,’ Ed said quietly. Then he closed the door.

Chapter 32

Execution

Narlo followed Sorg to the front door. Sorg opened it, then took a package out of his pocket and gave it to Narlo as he walked through. The door then closed separating him from Sorg. The package was obviously the gun and it didn’t take a lot of undoing.

Narlo’s anger had now given way to a feeling of regret that his last words to Ed had been so unsympathetic. He was sad too that those words might be the last words Hannah ever heard him say. He also regretted that his last words had been to Ed, not Hannah.

* * *

It was dark outside and there was no one around. Narlo stood on the pavement and again tried to think about what he could do. This time, things seemed to come clear. There seemed to be three possible options.

The first was that he would complete the job and return. He had been almost convinced that, if he did this, he and Hannah would

both die. Now he wasn't so sure. He tried to rethink things in the light of Ed's revelation. Maybe it was Ed and his colleagues who were going to do the dying. Maybe Ed had shown him a dummy capsule just to throw him off the train of thought they expected him to take. On balance, though, it seemed most likely that if he took this option, he and Hannah would both die.

The second option was to run away. If he did this, he might live, but Hannah would probably die.

The third option was to try to alert the authorities and get them back to Hannah before the capsule killed her. If it went wrong, Hannah would die and quite possibly he would too. If it went right, they might both survive.

The third option seemed to be the only one to take, so he made a quick decision to go with it. As he walked towards the colony, he sketched out a plan in his head.

He would try to make it seem that he had done his best, while hopefully alerting the authorities and getting help to Hannah.

He reached the car park. There were three cars, only one suitably placed for him to hide behind. He crouched down between the car and the wall where he was not very visible, but where he had a view of anyone approaching the gate.

He waited. In the quiet, he lamented the fact that things had taken such a bad turn and wished he was back with Hannah, Rory and Misha doing the things they had done the previous days. He thought about Rory and Misha being involved in all this, but it just didn't seem right.

He thought about how he and Hannah had survived a perilous 76-year space trip and an even more perilous return to Earth orbit, just to get home and, within a matter of days, get themselves into this mess. He thought about how trivial and insignificant would be the outcome of his little terrorist venture and how so much might be sacrificed for it. He couldn't understand the motivation to go to

such effort to achieve something which would have so little impact. He thought about the agony Hannah would suffer if her capsule was released. He thought about the agony he might suffer if he did end up dying and there did turn out to be a hell.

* * *

He waited what seemed a lot longer than 15 minutes before he heard a car approaching. It pulled up near the gate and a woman got out, wearing a grey uniform. There was no doubt that she was the guard. She was about 40, of solid build with a hard face. He wasn't sure if it was her or the uniform, but she reminded him of a prison warden.

He had decided on his timing. She touched the button to raise the gate. It rose slowly and she looked around as it rose, almost as if she was expecting some sort of ambush. Her eyes stopped on the car Narlo was hidden behind. Narlo was aware that, although the light was dim, part of him was in view. But then she looked back in the direction of the gate and started to walk through.

Narlo took careful aim. As soon as she was inside, he fired, hitting her in the side. She flinched and gave a yelp, then looked down at her side, grabbed the dart and pulled it out. She looked back towards Narlo, but Narlo wasn't waiting for the tranquilliser to take effect: he was already running towards her, gun in one hand, case in the other.

The guard started down the passageway towards the second gate calling out as she went. She made only half a dozen steps, though, before she started to stagger and fell.

Narlo ran past her to the window. The other guard was sitting at a desk seemingly unaware of what was happening. Narlo put down the case, making sure that the video camera could see what he did. Then he limped to the window and fired between the bars into the

guard room. But he made sure he missed. The guard retreated into a back room and closed the door. The fact that he'd missed couldn't be seen from the case.

Narlo was now between the two closed gates with a tranquillised guard and a case full of explosives. It occurred to him that, if it became obvious that he was failing in his mission, the case could probably be detonated at any time. He moved the case to a few metres from where he would be cutting the gate, but made sure it faced the gate so he could be seen. Then he started to cut through the first bar. It cut surprisingly quickly – too quickly he thought. So he held back on the pressure to slow it down.

He was still cutting about three minutes later when he heard footsteps running outside the outer gate, then heard shouting. He stopped, dropped the cutter, raised his hands and walked back to the outside gate, keeping as far as he could from the case.

There were three guards. They aimed guns at him and shouted at him in Logal. He said a few words in English, then lowered his head and stood there looking beaten.

One of the guards touched the sensor and raised the gate. He then stood outside with his gun trained on Narlo, while another approached him with handcuffs and the third one attended to the woman on the ground. Narlo turned away and stretched his arms out behind him. The guard put on the handcuffs. Narlo turned around to face him and gave a sigh of relief.

The guard seemed a little surprised. The man with the gun started to speak, apparently to himself. The two men then took Narlo, one by each arm and marched him off down the passageway. Narlo realised they were walking back towards the suitcase. He stopped walking, pointed at the case as best he could with his eyes, and said, 'Boom!'

The guards seemed to get the message and walked him out of the colony instead. The one who was speaking to himself seemed to

relay the message about the bomb.

Narlo started to repeat the words ‘Narlo Jessen’ and ‘Speak English’ to them. At first they ignored him, but then one of them seemed to realise what he was saying. The two guards had a quick conversation in Logal, then made it clear that they knew who he was. One of them again spoke in a way that made it clear he wasn’t talking to the others. Narlo was hoping that he was talking to base.

He was also hoping that, once they got back to the base, they would be able to contact a trog who spoke his language. He knew time would be running out for Hannah. By now, Ed would have seen that he wasn’t doing what he was supposed to be doing. He was hoping that he really was sympathetic and that he wouldn’t have fired Hannah’s capsule yet, but he realised that he probably had instructions to follow and little choice in the matter.

* * *

Two of the guards took Narlo into an office. There was a screen on the wall with a face on it. It was Tahnee, looking like she’d just woken up. Narlo wanted to kiss her. But he didn’t. He explained as quickly as he could what had happened. She told him to take the guards back to where Hannah was. Then she spoke to the guards in Logal.

The guards took off the handcuffs. Then they took him to a car that was parked outside and got in. One directed the car, with guidance from Narlo, back to the hide-out, while the other continued a conversation with someone else who wasn’t there. They jumped out. One of them tried the outer door. It was locked, so he took a small package from a pocket, pushed it onto the door near the lock, then stood back. There was an explosion – one that seemed to Narlo to be more than would have been necessary – but it did the job. They stepped through the remains of the door and

went and did the same to the next door.

The three of them went into the room where Hannah had been captive. The room was empty. A cold feeling descended over Narlo, though he realised that it was probably a more promising sign than if they'd found her motionless on the floor.

The guards checked the other rooms. One of them called the other one into the kitchen. Narlo followed. Hannah was there, on her hands and knees in front of the sink, groaning, alternately grimacing and gazing wide eyed at the cupboard in front of her as if horrified by it.

He was relieved to see her and started to go to her. The guards stopped him. One of them picked her up and carried her through the living room and back to the car. Narlo and the other guard followed and the car sped off with the four of them in it. Hannah was curled up on the floor, shaking, breathing erratically and giving occasional groans and screams. She sounded a bit like she was suffocating. Her eyes were fixed wide open in a ghastly and frightening stare, though she gave no sign of being aware of what she was looking at. Narlo knelt beside her and put a hand on her shoulder. Her muscles were hard and rigid. There was no indication that she recognised him, but he held onto her and talked to her all the way to the hospital.

They were there in less than five minutes, but, by that time Hannah was moving less and making less noise. They were met by two men with a stretcher as they pulled up. Hannah was put on the stretcher in a foetal position and rushed inside. Narlo followed, but was not allowed into the room they took her into.

The guards came and sat with him, though they couldn't speak to him. One of them took Narlo's hand and squeezed it. Narlo didn't normally like the touch of a man, but this wasn't an issue now. The gesture made him feel less alone. The guards stayed a few minutes, then left him in the care of the hospital staff.

Narlo wanted to talk to someone to find out what was happening and whether Hannah was likely to live, but there didn't seem to be any way to do that. He sat, but he couldn't relax. He paced up and down, he looked at the ceiling. It wasn't very interesting. One of the staff gave him a drink, but he couldn't drink it.

Chapter 33

The Wait

Narlo tried to work out how much time would have elapsed between Hannah's capsule being fired and getting her to the hospital, but there was too much he didn't know. He figured it would have been close to 30 minutes, though.

He didn't know whether she could be saved. Was there an antidote? Would the effects wear off after some time? Could they keep her on life support until they'd worn off?

He felt empty. Hannah had been with him just about forever. For years she'd been his sole comforter, the only person he could share his thoughts with, his worries, his hopes. She was almost as much a part of his life as his own body was. And she was the part that made it enjoyable. He had no one else in the world. A future without her was like a big cold empty black hole. And the hole seemed to be threatening to suck him in. Hannah was there in just about all his thoughts and just about all his dreams. Even if he was able to talk to other people, no one would ever be what she had been to him, or what she might have been in the future. Hannah was beautiful and she didn't deserve this. He just had to know she was going to live. But no one was telling him. Again he grasped at the idea that this might all be a bad dream and that he would wake

up and Hannah would be there beside him, her usual self. But it had gone on for too long now. He knew it was for real.

* * *

The room Narlo was in was a sort of waiting room. There were about 20 chairs, but he was the only one waiting. There was a work area to one side and occasionally one of the hospital staff would appear and then disappear again.

Narlo sat down in one of the chairs. He had to force himself to stay there. The clock said 4:45 a.m. That didn't seem right. Narlo had thought it was late evening. Not that it really mattered. Time seemed to pass slowly.

10 minutes later, a group of men came through the waiting room from inside the hospital. They were carrying stretchers and they went through to the area where Narlo and Hannah's vehicle had pulled up.

Narlo watched them. If nothing else, it gave him something different to think about.

The men waited outside for a moment and another vehicle arrived. There was a bit of frantic activity and three people were brought in on the stretchers and taken through the same door they took Hannah through. They were Alex, Sorg and Ed. To Narlo all three looked dead.

No one took any notice of Narlo, but it seemed that the three had suffered the same fate as Hannah. Though they'd been his captors, Narlo felt bad. They'd been good hosts. They were nice people – at least Ed and Alex were. He guessed that this had happened because they had failed in getting him to carry out the mission and come back and so had to be stopped from talking.

A couple of minutes after it had begun, the activity was over and the people and the vehicle gone. Though the episode disturbed

Narlo, it did take his mind off Hannah's plight for a while.

He also noticed that it was starting to get light outside, though the sky was overcast and grey. The clock must be right.

* * *

For the next hour or so, nothing happened except that it got gradually lighter.

Still Narlo found it hard to get the time to pass. He heard nothing. No one said anything to him. No one asked him in to see Hannah. But on the other hand, no one came to tell him she was dead.

Then the entrance door opened again. Narlo looked around to see Rory and Misha. He looked at them wide-eyed for a second; they both stopped and looked at him, then all three ran and embraced one another in a long group hug.

Narlo couldn't help himself. He sobbed uncontrollably and the two of them held him tight. Narlo knew that they couldn't have been involved in the kidnap. Seeing them now was a joy he could hold onto.

He composed himself and they loosened their grip on each other. 'You don't know how good it is to see you.' Narlo said.

'Do you know what's happening?' Rory asked.

'Hannah was taken through there . . . and no one has said anything to me since.'

Misha walked over to the work area and called out something in Logal. One of the staff appeared and they talked for half a minute. Rory and Narlo watched her. She returned looking like she had news to tell.

'She's alive. They've put her into an induced coma hoping that the antidote will take effect in time. She's on life support.'

That seemed like good news to Narlo. 'How long will it be before we know if she'll make it?'

‘Probably a few hours yet.’

The thought of a few more hours of not knowing wasn't good news, but Narlo consoled himself with the fact that there seemed to be a realistic chance that she would make it – and with the fact that Rory and Misha were with him now.

A few minutes later three more people came into the room – a young girl and what looked like her parents. The girl seemed to have cut her leg and was quite distressed. While the staff were dealing with her, two more people turned up. These two were police – a man and a woman. Rory got up and greeted them and they spoke for a few minutes in Logal. Then he introduced them to Narlo and Misha.

The police sat down and started to interview Narlo with Rory interpreting. Narlo told them the sequence of events in as much detail as he could remember. They spoke at times into what Narlo assumed was a phone.

It turned out that it wasn't Rory who came into their apartment to wake them up and that there was no blip record for anyone else doing so during the night. This meant either that Narlo's account of what happened wasn't the truth or that the person who did the job was un-blipped and therefore probably an illegal immigrant. Rory seemed to give Narlo the benefit of the doubt and explained that a few illegal immigrants do get into Morinya, generally aided and used by the resistance organisations. Narlo pointed out that he had left the balcony door unlocked when they went to bed.

Because they'd walked to the first car and from the first to the second car, tracking down Sonya might be tricky, though they got as much detail as Narlo could remember about the routes they took.

The interview took about half an hour. When it was finished Narlo asked, ‘Would they have killed us both if I'd done what they asked and gone back?’

There was another short conversation in Logal and Rory told him

that they most likely would have. Narlo was comforted by the fact that he'd probably made the right decision to try to alert the authorities, though he felt bad about having followed the instructions to walk to the cars in the first place.

'Hannah thought the whole thing was suspicious from the start: she didn't think it was you in the apartment and she didn't want to follow the instructions. I persuaded her to. I should have just trusted her and gone somewhere else. If we'd done that, we'd probably both be ok now.'

Narlo felt a lump in his throat again and stopped talking. Misha put a hand on his arm and pointed out that they had no way of knowing.

'Were the three at the hideout blipped?' Narlo asked.

'They were, but were probably relying on you and Hannah not being able to say anything after you did the job.'

'And the fact that those three were mildrined means that they weren't the only ones in on the plot. The police are hoping to keep them alive and maybe to get them to talk. Because the plot went wrong, it may be possible to track down the ringleaders through their contacts.'

'Mm . . .'

Narlo took a few moments to get a clear picture in his head of how it would all have worked.

Then the police left and Misha changed the subject to something lighter. They kept Narlo talking and he felt a lot better than he had when he'd been sitting there alone. At about 7:30, the staff brought Narlo breakfast. He wasn't hungry, but he ate a bit while Rory and Misha kept talking.

* * *

Just after 9, one of the staff came over and talked to Rory and Misha. Misha then looked at Narlo. 'We can go and see her.'

‘Is she awake?’ Narlo asked.

‘No, but she’s stable.’

‘Is she going to recover?’

‘It’s looking like it.’

Though that wasn’t anything definite, it was a huge relief to Narlo. The three of them followed the nurse down a few corridors and into a ward. There was one bed in the ward and there was Hannah lying in it, on her back. Narlo walked over to her. She looked dead. Narlo looked to Rory and Misha for reassurance and they gave it.

There was a chair on one side and two chairs on the other. The room was nicely decorated and almost cheerful.

‘Can I touch her?’ Narlo asked.

Misha nodded and Narlo carefully took her hand. It seemed cold and lifeless, but he held it, gently as if she was still in pain.

There were various bits of equipment attached to her and various monitors conveyed information which Narlo assumed meant something to the initiated. People came in from time to time to check on her. Some ignored Narlo, others gave him a reassuring smile. Narlo sat holding her hand for the best part of an hour before deciding that he really had to go to the toilet. Rory went with him to ask for directions. He came back, feeling more comfortable, and took her hand again.

The fear that he would never get to talk to Hannah again was fading now. But in its place came the uncertainty of how she would react to his having got them into such a mess and to his not having done what he was supposed to do and to the pain that she would have suffered as a result.

Chapter 34

Coming Out

About midday, two doctors came in, greeted Narlo, talked briefly to Misha and Rory, then went to the apparatus that was attached to Hannah and changed a few settings. One of them then left; the other stood at the end of the bed and watched.

Misha explained to Narlo that the PTV was mostly out of her system, so they were going to bring her out of the coma and she should start to come to in a few minutes. She also explained that Hannah would still be in a bit of pain, though nothing like the pain she was in before she was brought in. She would be drugged to help her cope with it and make her feel ok, but she should hopefully be with-it enough to recognise them.

The first sign of life was a change in her breathing. She inhaled more deeply than she had been, then held the breath for a few seconds. As she held it, her face tensed slightly, though her eyes remained closed. Then she let out the breath and her face seemed to relax. This cycle repeated a few times, before she settled down again to a steadier breathing pattern. All those present watched closely. There was a bit of a whine, then a sigh and another period of quiet.

It was a few more minutes before she opened her eyes. She looked at the ceiling for a few seconds, then looked to her right towards Narlo who was leaning towards her, still holding her hand. It seemed to take her a few seconds to recognise him, but when she did, her eyes lit up in a smile and a look of deep relief came over her. Clearly she held nothing against him – she was relieved that

he was there.

Narlo must have mirrored Hannah's look – the same gladness to see her and the same relief. Hannah raised her left arm slowly and put it around Narlo's neck, pulling him towards her. Narlo let go of her other hand and returned her embrace. There they stayed for at least a couple of minutes. Then Hannah loosened her hold and Narlo moved away a bit so he could look at her.

'Thank you,' she said croakily, then coughed and held her chest. Once she felt better, she smiled at him again.

'I nearly got you killed,' Narlo said.

'We're both alive,' she said.

They talked about what had happened. Like Narlo, Hannah had doubted that they intended to let them live after the job. She had prayed that Narlo wouldn't do the job and come back. But at the same time she was frightened that he would be killed by one of the guards. She'd been allowed to watch the monitor which showed where Narlo was. She did her best not to show her relief when he didn't go through the second gate – even though she expected what was coming to her.

In fact, her capsule hadn't gone off until her hosts left, which was just after Narlo came back through the first gate.

'So how you feeling now?' Narlo asked.

'Achy – and exhausted,' she said.

'How bad was the pain when they set off the capsule?'

'Nothing happened for a couple of minutes. Then I started to get achy. Then my skin started to itch and my head hurt. It wasn't too bad at first, though it was all through me – everything – and it just kept building up. Later, I remember panicking and being really frightened. I found it hard to breathe, then I remember wishing I could just pass out. My skin was stinging all over like I was being whipped; the pain inside made it hard to move and to breathe and it still kept getting sharper and harder not to focus on.'

She seemed distressed as if she was reliving the experience in some measure.

‘Sorry, you probably don’t want to talk about it,’ Narlo said.

‘That’s ok.’

‘Do you remember us arriving?’

‘Yes, and I remember feeling relieved and wanting to hug you, but not being able to do anything. I did know you were there . . . I remember you carrying me.’

Narlo didn’t correct her. ‘Do you remember the car trip?’

‘Very vaguely. It was all a bit jumbled. The main thing I can remember is the pain getting worse, panicking, but being unable to move . . . and feeling confused.’

* * *

Hannah then looked at the ceiling as if something had saddened her. She looked pensive for a while, then looked back to Narlo.

‘Narlo,’ she said and waited.

‘Mm’

‘Thank you – for getting me out of that mess.’

‘If I’d listened to you, we wouldn’t have got into the mess in the first place,’ he answered.

‘Neither of us really knew what would happen either way.’ She stopped talking now and then and grimaced. ‘The thing is that you did what you thought best for both of us through the whole thing – and your quick thinking saved us. You’re my hero.’

Narlo felt that it was Hannah who had been the hero. But he didn’t argue. He just looked at her with a sort of admiration.

Hannah continued, ‘After they sent you out, I did some thinking.’

She paused. Narlo waited.

‘I thought about what life would be like without you. I decided that if we were both still alive after this was over. . . I would ask

you if you would marry me . . . Will you?

Narlo didn't answer. He put his arms around her and held her. 24 hours earlier he probably wouldn't have. To him, it wasn't even on the cards that she would marry him, him not being a Christian. And marrying Hannah would probably mean saying goodbye to any chance of living the life of a trog. Thinking about it logically, the answer would still have to be no.

But in the last few hours, he had tasted the emptiness of life without her and realised how much she meant to him. Maybe the joys of trog life could make up for not having her, but it wouldn't be the same. What he had here was what was important.

Though *No* was the logical answer, *Yes* seemed to be the right answer. He knew that what seems logical wasn't always right in the long term. He wouldn't know what was right until he had seen the consequences of his decision. Even then he wouldn't know because he wouldn't see it both ways.

'I would be honoured,' he said.

Hannah held him as tightly as she could in the circumstances, which was actually pretty tight. Narlo reciprocated.

The doctor at the end of the bed said something in Logal to Misha and Rory. Misha seemed to explain what had just happened. The doctor shrugged his shoulders and left. Though Misha and Rory were amused by the whole scene, they were obviously touched as well.

* * *

Hannah stayed in hospital that night. Rory and Misha went somewhere else saying they would be back in the morning. The hospital staff provided Narlo with a mattress which he put on the floor beside Hannah's bed.

'I'd come down there and sleep with you,' Hannah said 'except

I'm connected to all this stuff.'

'We'll have plenty of time.' Narlo said.

It took Narlo a while to go to sleep. He had just said goodbye to his chance of a trog life. But he wasn't sad. He had something good, something more sure and tangible and something that produced an emotional response which seemed to be more important, more compelling and more real than the promise of trog pleasure.

Chapter 35

Granny Throwing

Narlo and Hannah were woken at about six and offered breakfast. Hannah felt much better after the sleep and the feed. She was still a bit achy, but less than she had been the previous day.

At about 8 o'clock, Rory and Misha returned. They talked at some length to the hospital staff, then came over and told Hannah and Narlo that they would be leaving later that day. Both were pleasantly surprised. 'But before we go, the police will need to ask Hannah some questions about what happened.'

Rory, Misha and Narlo sat around the bed. Hannah sat up, quite alert and seemingly fairly well recovered.

The police arrived about 10, the same people as the previous day, and Misha did the translating.

During the interview, the police filled them in a bit more on what had happened.

'How were Ed, Alex and Sorg involved?' Hannah asked.

'It seemed that all three were peripheral members of Gur-Pahn. They were all mildrined and carried out the mission under duress.'

'Are they ok?'

‘Ed is dead. Sorg and Alex survived, but are in custody. Their seniors had told them to leave the scene when things went wrong. Once they were somewhere where they were less likely to be found quickly, their capsules were set off. The idea seems to have been to prevent what they knew from going any further.’

Narlo and Hannah both felt a sense of shock at Ed’s death. He seemed to be a good man. And Narlo felt bad about his last words to him.

Narlo asked about the colony guard he had shot. He was told that she was taken to hospital too, but was fine. He was relieved.

‘Can I meet her some time . . . to apologise?’

‘That shouldn’t be a problem.’

A doctor came in and gave Hannah one last going over, then had some words with Misha and Rory.

‘Well, you’re free to go,’ Misha said once the doctor had finished.

A car was waiting outside. The four of them got in and it headed off. It was back to the good old days again.

* * *

‘Where we going now?’ Narlo asked.

‘Back to Taonan,’ Misha replied, ‘but we’ll stop for lunch on the way.’

‘Ah good,’ Narlo said. He turned to Hannah and asked, ‘How are you feeling? Hungry at all?’

Hannah gave an uncertain ‘Mmm’ along with a bit of a shrug.

‘There’s a bit of Australian entertainment where we’re going to stop, so if you don’t feel like eating, you can be entertained,’ Misha told Hannah.

‘I might be the only one eating,’ Narlo thought out loud. ‘I can wait till we get back.’

‘No, we’ll stop: it’ll be fun.’

They pulled into a fairly large and busy car park beside what looked like an old-style Australian pub.

‘How come you get Aussie entertainment here in China?’ Narlo asked.

‘When we evacuated Australia, a lot of Australians settled in this area and have kept their traditions to some extent.’

‘Mm. You still haven’t told us why we evacuated Australia – or why it’s full of Africans.’

‘That’s part of a long story that you’ll be told soon.’

‘I guess we can wait.’

As the car door opened they heard the sound of a bush band playing music with a distinctive Australian flavour. Narlo was feeling quite at home.

They went in, found a table and ordered food. Narlo ordered steak and chips. Hannah ordered a salad. While they were waiting for the food, they noticed at the other end of the room a crowd of people gathered in a huddle all facing inwards and making quite a bit of noise.

‘Is that a fight?’ Narlo said.

Rory laughed. ‘No, it’s a toad race.’

‘I remember them,’ Narlo said and he and Rory went over for a look.

When they’d finished their meal, the four of them went outside to watch a granny-throwing contest.

‘Why would they throw grannies?’ Hannah asked.

‘Because there aren’t enough dwarves around nowadays,’ Rory answered.

‘Ah right,’ Hannah replied.

Misha laughed.

The granny throwing was actually quite good fun and no grannies were harmed in the process – not seriously anyway.

* * *

After the granny-throwing, they headed back to Taonan. On the way, Hannah and Narlo asked Misha and Rory about some of the things Ed had told them during their captivity.

Rory and Misha's perspective on relations between bobs and trogs was of course different from Ed's. 'Most Morinyans believe bobs and trogs can live together long term for mutual benefit,' Rory explained, 'and in fact, most bobs don't see trogs as a threat and most trogs don't see bobs as a threat.'

'Morinya needs to have strong defences and roamers are a vital part of that.'

'Who do we need to defend ourselves against?' Narlo asked.

Against Celestia.

Why?

It's connected to the reason why we had to vacate Australia and Tahnee will explain everything in a couple of days.

It's a big issue?

Very big. That's why we should leave it for now and let Tahnee tell you properly.

Narlo and Hannah both looked concerned.

After a bit of a pause, Narlo continued asking about the Gur-Pahn. 'So those who think like the Gur-Pahn are a minority?'

'Yes,' said Rory, 'Quite a small minority.'

'Ed said there were a few million of them.'

'There might be a million or so, but that's not many out of two billion.'

'No, I suppose it's not.'

* * *

There was another pause, then Hannah spoke, ‘Ed said something about making it legal to kill your children.’

Neither Misha nor Rory responded immediately. Then Misha explained, ‘That’s the Second Chance Initiative. It’s just a proposal at the moment and it’s one that will be discussed for quite a long time before a decision is made.’

‘So if the proposal is accepted, will it be legal to kill your children?’ Hannah persisted.

Misha thought a bit more, obviously aware that this would be a sensitive issue. ‘The proposal is based on a philosophical position that’s different from the one most people held before you left.’

Hannah and Narlo waited for her to explain.

‘Most Morinyans nowadays hold to the materialist view of humans – that we are physico-chemical entities without souls. The masterpiece theory developed as a logical consequence of this view.

‘Traditionally, people thought of a new baby as a complete human being worth as much as any other human being. The reason for this was mainly that it was believed that the baby had a soul just as complete and of just as much significance as anyone else’s soul. As it grows up it develops knowledge and memories, but its basic nature doesn’t change.

‘By this way of looking at things, which is sometimes called the canvas theory, there are three parts to a human – it’s physical body, its soul and the knowledge and memories it develops as it grows up and grows old.

‘The masterpiece theory is based on the assumption that there is no soul, so there are only two parts to the human – its physical body and its knowledge and memories. This theory sees the physical body of a human baby as no more significant than the physical body of a baby sheep. It has minor differences in its genetic code and physical structure, but that’s all. The theory sees the knowledge

and memories as being the significant part of a human – as providing the human with its identity.

‘As a new-born baby has very little in the way of knowledge or memories, masterpiece theorists view a new-born baby as not really being a person. The person develops as the knowledge and memories develop. The new-born is just a body – a template on which memory can develop, i.e. on which a person can develop – a canvas on which the masterpiece can be created. The value of a Picasso is not in the canvas, but in what is put on it. The canvas theory sees the canvas as the thing of value and the paint as decoration to make the canvas look pretty. The masterpiece theory sees the painting – the person – as the thing of value and the canvas as just being there give it something to sit on.

‘Thinking this way removes the moral objections to killing a new born.’

‘So everyone would kill their babies?’ Hannah rejoined.

‘Nooo . . . The proposal is to make it legal – not compulsory. Anyone who has a baby has gone through quite a procedure to do so and so is very unlikely to then want to kill it. And people have a built-in instinct to protect babies – an instinct that often over-rides logic.

‘The only time that a baby is likely to be killed is if it is in some way abnormal and wouldn’t be able to lead a decent life.

‘In the past, many people have devoted their whole lives to looking after a person who will always be incapable of looking after themselves and who will never get a lot out of life anyway. This proposal would give such people the option of having another go and hopefully ending up with a normal happy family like other people.’

Hannah and Narlo thought about this. Maybe it wasn’t as bad as Hannah had first envisaged, but it was still a proposal based on a view of humans that she didn’t share.

‘So it’s just when they’re first born?’ Narlo asked.

‘The proposal is that it would apply up to the age of two.’

‘But by the age of two, a child has knowledge and memories and so is a person.’

‘The idea is that a person isn’t an all-or-nothing affair: a person develops over many years and at age two is still in the early stages of development.

‘There is another chain of logic which comes from the axiom that we don’t have souls. It is that a long life is better than a short life and a short life is better than no life. And, as it isn’t considered in any way bad to decide not to conceive a child in the first place and therefore give it no life, it can’t be bad to give it a short life.

‘The main reason we have laws against murder is so that people can feel safe and so that people aren’t deprived of their loved ones. People under the age of two don’t understand murder or the law, so, if we allow the killing of one’s own children only up to the age of two, everyone still feels perfectly safe. And if the parents have the child put down, it would seem that they didn’t love it enough not to do so, so no one has been deprived of their loved ones either.’

Hannah looked pensive and like she was about to come up with something important. She then began, ‘What these thoughts do is blur the concepts of life and death. They used to be very clearly defined, but now people are coming up with their own definitions.

‘The new concepts seem to be much more impassionate. People seem to see life more as a chemical process which has no significance beyond the fact that part of being human is to feel that life is significant. It has no purpose beyond itself. Its purpose is purely internal and just a facet of the way we’ve evolved to think. Seeing humanity this way eliminates the sanctity of life.’

‘That was very profound.’ Narlo said.

* * *

Rory spoke. ‘I don’t know what your opinion on the matter is, but to my knowledge, most Christians believe that, if a young child dies, God does not condemn her to hell because she hasn’t accepted Christ. They consider that it’s only when a child is old enough to understand God and her options and decides not to believe the message, that she is considered responsible for her decisions and is condemned for her disbelief.

‘As most children grow up not to believe and so end up in hell, the best thing one could do for a child is to kill them before they reach the age of understanding and so guarantee their entry to heaven.

‘I could never understand why Christians have always been so set against abortion and why they would object to the Second Chance Initiative.’

Hannah gave Rory a puzzled look, but didn’t respond. Narlo saw sense in what Rory had said, but didn’t say so.

Chapter 36

Inquiry

The car pulled up again, this time at what looked like a compound with high walls, surveillance cameras and a sturdy-looking gate with a guard.

‘We’re moving you here for a few days,’ Rory explained.

‘Is it a prison?’ Narlo asked.

‘No,’ Rory laughed. ‘It’s more pleasant inside than a prison. It’s a sort of secure resort. It’s used by important people for conferences and the like. It should be a bit more secure than the

apartment we put you in before.’

Narlo and Hannah were quite happy about being more secure. After a brief interchange with the guard, the car was beckoned through and drove to a small building beside a large swimming pool and some lush gardens. They got out of the car, Rory and Misha showed them their room. Their few belongings had been moved there for them. Then they all went out to some comfortable chairs beside the pool.

‘We’ll just take it easy today,’ Rory said. ‘The induction program can wait a while.’

A waiter came over and Rory and Misha ordered drinks. After their recent ordeal, they enjoyed just relaxing and doing nothing.

* * *

The next morning the four of them went and sat outside again. Rory let Hannah and Narlo know that he had something serious to say. They listened, a little apprehensive.

‘We’ve got some bad news. We had a preliminary report on the inquiry into Saphira’s death.’

‘What did they say?’ Narlo asked.

‘It seems Jolee’s account of what happened was quite different from yours. She reckoned that you’d made it clear that you intended to kill Saphira. She contradicted the claims you made about Saphira’s state of mind and said that she wasn’t a threat to the mission – just that she and you didn’t get on. She also said that Hannah would side with you whatever and back up your story just to protect you.’

Narlo hung his head with a look of defeat.

‘Did the examination of the ship turn anything up?’ Hannah asked.

‘They found traces of the same metal that the screwdriver was

made of. They were in your bedroom,’ he said to Narlo.

‘Whereabouts?’ Narlo said with a mixture of surprise and puzzlement.’

‘Apparently they were in the space under the bed.’

Hannah looked at Narlo, also puzzled, but with what Narlo thought could be a hint of accusation.

Narlo shook his head. ‘So the screwdriver was sharpened in my room? Did the filings look like they’d fallen there during the sharpening or been put there later?’

‘They didn’t say,’ Rory replied, ‘but I imagine it would have been hard to tell.’

Narlo felt accused by those around him, though he realised that he was probably just being a bit sensitive. He knew he hadn’t sharpened the screwdriver, but wasn’t sure that anyone else was convinced. He was feeling somewhat overwhelmed. The last couple of days – in fact – the last couple of weeks – had been very emotionally draining and this seemed in a way to be the last straw. It wasn’t just the finding, but his perception that the three people with him – the only three people in the whole world that cared at all about him – appeared to doubt him.

Hannah seemed to sense his isolation and took his hand and that made him feel a bit better.

‘So what will happen?’ Hannah asked.

‘Both sides will have the option of presenting any further evidence in a hearing. But failing anything dramatic, there will most likely be an open verdict.’

‘Open verdict?’

‘It means that, while there is evidence that a crime was committed, it isn’t conclusive.’

‘So is he not innocent until proven guilty?’

‘In a sense, he is. He won’t be punished.’

‘Will there be any adverse consequences?’

‘His public image will probably be tarnished.’

‘Nothing else?’ Narlo asked.

‘It could impact on their decision to accept you if you applied for a sanctuary state. I imagine that, being a Christian, Hannah might prefer a sanctuary state to being blipped or trogged. And that, if you’re planning to be married, you might be considering it too.’

Narlo looked at Hannah, she looked back at Rory and explained that a sanctuary state probably would be their preferred option – for Hannah maybe the only option.

‘Would the verdict affect Hannah’s chances of acceptance at all?’ Narlo asked.

‘No.’

Misha spoke: ‘We don’t know what the verdict will be yet, you could still be cleared, and even if you’re not, we don’t know that a sanctuary state won’t accept you both.’

Hannah and Narlo looked at each other. There was still a chance that things would turn out ok, but the odds seemed to be that they wouldn’t. Their looks conveyed an element of disappointment, but there was also an element of anger in Narlo’s – not anger at Hannah, but at something else. ‘What has she got to gain by ruining our lives?’ he asked.

‘They’re not ruined,’ Hannah responded consolingly. Though . . .’

Narlo put his arm around Hannah’s shoulder and she put her head on his arm. They held each other quietly for a moment.

I feel really bad about telling you this. I would have preferred not to give you the bad news until we’d found out for sure, but the decision won’t be made until the final findings of the inquiry are published and that won’t happen until you’ve had the opportunity to defend yourself. And of course, for that to happen, you have to know what you’re defending yourself against.’

* * *

‘Do you mind if we go for a walk?’ Narlo asked.

‘Of course not,’ Misha answered.

Narlo and Hannah got to their feet and walked off slowly. They walked to a corner of the grounds where there was no one else nearby. Narlo turned to Hannah, took both her hands and said, ‘Do you still want to marry me?’

Hannah looked at him intently, then answered, ‘Yes,’ and smiled. Narlo sighed with relief – not so much because she wanted to marry him, but more because it showed that the revelation hadn’t seriously changed the way she thought of him.

‘I didn’t sharpen the screwdriver,’ he said.

‘I know that,’ Hannah reassured him. ‘Have you any idea how the metal might have got under your bed?’ she asked.

‘Jolee searched my bedroom – and she looked there.’

‘She did.’ Hannah said. ‘But a few microscopic iron filings on the carpet wouldn’t have been terribly obvious. . . . But . . . maybe Saphira put them there!’

Narlo looked both surprised and interested.

Hannah continued, ‘She could easily have sharpened the thing in her room, collected the filings on a piece of paper, gone into your room while you were downstairs or having a shower or something, wiped them onto the carpet under your bed, then put the paper into the food recycler with the scraps.’

Narlo looked at her, eyes wide. ‘Yes,’ he said.

‘It’s just a theory,’ Hannah warned. ‘We haven’t got any real evidence that Saphira did that, and Jolee might have more up her sleeve yet, but at least it might throw a bit more doubt on your guilt.’

‘I don’t understand why she didn’t just put them in the recycler,’ Narlo said. ‘They would have been totally untraceable then.’

‘Maybe because she wanted to incriminate you,’ Hannah replied. ‘Maybe her plan was to kill you, then claim it was in self defence because you had attacked her with a sharpened screw driver, then ‘find’ the evidence that you had sharpened the screw driver in your room.’

‘You’re a genius, Holmes,’ Narlo said with renewed enthusiasm.

Both now felt a bit more confident about fighting the case. Even though it was far from proof that Narlo wasn’t guilty of murder, it did promise to cast more doubt on the evidence that he was. He felt more optimistic.

With that, they decided to enjoy the day. They had a lot to celebrate after all. They were back on Earth; they were welcomed home; Narlo wasn’t in jail; they were being looked after by a couple of really nice people; they had survived the Gur-Pahn attack; and now they were in with a bit of a chance of clearing Narlo’s name.

They went back to where Rory and Misha were sitting and told them what they had come up with. Rory and Misha seemed encouraged.

The four of them spent the next few hours relaxing. Narlo had a massage. Hannah didn’t – she’d found the last one a bit rough and a little bit intimate for her liking. Narlo hadn’t minded on either count.

Chapter 37

Verdict

The next day Narlo and Hannah made an application for a court hearing and were assigned a lawyer. They got Steff. Steff was a

trog. She spoke good English and seemed very competent. They went over the case together and planned their defence. The hearing would be the next day.

They spent the rest of the day relaxing around the resort. They had a go at parasailing, which neither of them had done before. They hired a couple of jet skis and had fun chasing each other around the lake. They were fast – frighteningly so and neither of them was game to completely open them up. They looked around the shops. In an amusement arcade, they went into a forest to do battle with zombies; Hannah killed 77 of them and got eaten five times; Narlo, who fought more enthusiastically killed 114, though he did get eaten eight times. Between the entertainment, they enjoyed some very pleasant meals.

In the evening they went to a show – a sort of variety performance with quite a few different acts. Some played music, most of which Hannah and Narlo enjoyed; one did some conjuring which seemed very clever; one did a stand-up comedy routine, which of course was in Logal and so not the slightest bit funny to Hannah and Narlo.

They went to bed feeling more relaxed and mellow than they might have done considering the circumstances.

* * *

The hearing began the next morning at 10. Jolee and Robyn were there, though they were on the other side of the room and they didn't speak to them directly. The hearing was conducted in Logal and Misha translated for Hannah and Narlo. Steff debated the evidence with Jolee's lawyer. Both sides brought up some new ideas for consideration. Still the whole thing was over in about three hours and it wasn't long after the end of the hearing that the judge gave his verdict.

It was disappointing for Narlo and Hannah. He considered that the evidence against Narlo, though inconclusive, was still substantial. The verdict re his guilt was left as 'open'.

The judge explained that an open verdict meant that no disciplinary action would be taken. However, the verdict would be recorded and considered if Narlo was ever involved in a similar incident in the future.

The bit about the similar incident in the future didn't worry him: he wasn't planning going back to space and stabbing anyone else with a screw driver. It was the possible implications for his emigration that were of most concern.

That afternoon Misha asked Narlo and Hannah if they wanted to put in an application for residence in a sanctuary state. She pointed out that, now they had the final verdict, they could go ahead and do so if they wished. She told them that acceptance wouldn't commit them, but would give them the option. Narlo and Hannah figured they had nothing to lose by applying so, with Misha and Rory's help, they spent the rest of the afternoon filling in forms.

They discussed the relative merits of the different states and decided that Ireland would be their first choice; failing that, Canada and so on in a list of preferences. Misha said that they should get a decision within a couple of days.

After that they all went go-cart racing. The excitement was quite effective in taking their minds off things. In the evening they went to a bush dance and got a bit of exercise. After the bush dance, despite circumstances, they both slept well.

Chapter 38

War

The next morning it was back into the world affairs lessons. The four of them watched the video screens in Narlo and Hannah's apartment as Tahnee spoke. After congratulating them on surviving the abduction and sharing their concern regarding the court finding, she introduced the subject for the day.

'I'm told you've been wondering what happened to Australia and why we need to defend ourselves against Celestia.'

'Yes, we have a bit,' Narlo replied.

'Ok, it's a bit of a long story. But it's a vitally important one because there is a good chance that the situation will lead to war between Morinya and Celestia in the not-too-distant future.'

'A serious war?' Narlo asked, as if it were possible to have any other sort of war.

'If war does break out, it will most likely be a long and bloody one, quite likely exceeding the two world wars combined in terms of casualties, destruction and general misery. And, if we lose, it will probably mean the end of our civilization.'

'Mm . . . I guess that is serious.'

'It is.'

'So what's the problem?'

'There are two issues – religion and land. Throughout much of the 21st Century there was tension within Morinya between the irreligious and liberally religious majority and the fundamentally religious minority. The fundamentalists were unhappy with changes based on humanist philosophy – like the legalisation of

abortion, embryonic experimentation, euthanasia, condoned homosexuality etc. as well as the secularisation of education and society in general. Many wanted a return to a theocratic state with corresponding laws.

‘Those who believed that our primary responsibility is to God and preparation for the afterlife were appalled by Morinya’s general decadence, moral permissiveness and ungodly laws. Those who believed our primary responsibility is to people – to make their lives as pleasant as possible in this world – were saddened by the unnecessary restrictions they saw the fundamentalists wanting to place on human freedom and fulfilment.

‘Commitments to faith on the one hand and humanism on the other led to strong feelings and some of the faithful were prepared to take drastic measures to change things.

‘This is understandable when you realise that, to the faithful, God made the world and its people; he knows better than any human what is good for the people and what is right, so any human views to the contrary are misguided and probably inspired by the devil. God has told us what he wants and it is our duty to do that. If we don’t, we will suffer unspeakably awful consequences for the rest of eternity.

‘To the faithful, the difference between paradise and torment in eternity was infinitely more important in the long run than the difference between pleasure and pain in this world. Because of this, almost any action was justified if it could save souls from the fires and set them on the path to righteousness and paradise. If people can be brought under godly laws, millions could be saved at the cost of the lives of a few who were heading for damnation anyway. So occasional acts of violence and terrorism can be seen as a favour to society, even though society as a whole didn’t see it that way. The tension therefore resulted in sporadic conflict and violence. This had been happening since before you were born, but it

increased after you left Earth.

‘By the early 2070s the prospect of blips was looming on the horizon as a divisive social issue and exacerbating the situation. Work towards the production of trops just multiplied the problems.

* * *

‘By that time Morinya had reached its full complement of nations. It was seen by much of the rest of the world as a godless organisation that served the devil and oppressed the people of God within it. Despite their traditional differences and rivalries, people of different religions began to realise that the differences were small compared to the difference between them and the irreligious and that they had, to some extent, a common cause and a common enemy.

‘In 2072 a large number of non-Morinyan states declared the formation of a union to counter Morinya. Even though not all non-Morinyan states made a decision to join, the union declared that it stood for all countries outside of Morinya. Nearly all these countries had either Muslim or Christian majorities and most had a government and legal system based strictly or loosely on their faith. The union was named Celestia in acknowledgment of its foundation upon heavenly principles.

‘Celestia wasn’t a political union like Morinya – more a coalition that might take a unified stance in dealings with and defending themselves against Morinya.

‘Several of the countries that formed Celestia had given support in various forms to the actions of the religious fundamentalists in Morinya. After 2072 this support was more coordinated and violence escalated.

‘Morinya realised that the issue of blips would require the establishment of sanctuary states for those not willing to be

blipped. It was realised that this might to some extent solve the problem of tension with the fundamentalists. Plans for the division of Morinya into a humanist core and religious sanctuary states were made in the late 70s and early 80s and between 2082 and 2085 the division took place, most of the fundamentalists moving to the sanctuaries. At the same time, some fundamentalists moved from Morinya into the Celestian states and in return Morinya accepted some people from Celestia.

‘Some of the sanctuary states were predominantly Muslim, some predominantly Christian. Following their formation, they could have theocratic governments and laws and Core Morinya was largely freed from pressure from the fundamentalists. Core Morinya kept control of the defence of the sanctuary states, but otherwise the states were largely autonomous.

* * *

‘After the division, there was a period of relative peace. A significant change during this time was the introduction of compulsory philosophy education in all schools in Core Morinya. This is something the government had flagged in 2080 as a further incentive for religious fundamentalists to leave.’

‘Why would that cause people to leave?’ Hannah asked.

‘The philosophy lessons required students to come up with their own well-thought-through world view. Throughout the compulsory years of schooling they researched all the major existing world views including the many religions, non-religious spirituality, dualism, monism, conventional science, parapsychology, new age ideas, astrology and so on, as well as the various commonly held philosophical views on existence, knowledge, ethics and politics. They assessed the evidence for each view and gradually decided on their own view of things. This could

be one of the existing ideas, a combination of more than one idea, or something different and unique.

‘But it meant that people formed their beliefs on the basis of all the evidence available, rather than just the bits their parents approved of and allowed them to be exposed to. As such, they tended less to follow their parents’ world view and generally this led to fewer people being religious and more adopting a rational scientific view of things based on observation and logical induction.

‘Religion is generally based on total faith in one world view which is possible because of ignorance of the others and the religious establishment often does what it can to maintain that ignorance. Religion tends not to be supported by balanced knowledge. The knowledge that came from the philosophy education tended to make people realise that there is nothing all that special about any particular religion and that, in the light of historical evidence, most religions have trouble establishing the authenticity of their scriptures and the divine or divinely inspired nature of their founders.’

Hannah frowned. ‘Could parents still bring their children up to be religious?’ she asked.

‘Oh, for sure, and many did. But parents couldn’t excuse their kids from the philosophy classes, so the kids based their decisions on more than what their parents told them.’

* * *

‘You say there was a period of relative peace,’ Narlo said. ‘But things have obviously changed since.’

‘Yes,’ said Tahnee. ‘Terrorist activity based on religion is still less common that it was before the Division, but tensions over land have gradually built up and in 2102 Celestia made a demand for

the redistribution of land between the two unions. They wanted the sanctuary states to be excised from Morinya and to become part of Celestia, and they wanted Morinya to hand over Australia and New Zealand to them.'

'Why?'

'The demand for the sanctuary states was on religious grounds: they felt that the sanctuaries were part of the realm of God and so shouldn't be under the control of the irreligious Morinyans. But the demand for Australia and New Zealand was different.

'By this time, because of the falling population of Morinya and the growing population of Celestia, the population density in Celestia was considerably greater than in Morinya: certainly the ratio of population to food production capacity was very much greater.

'Morinya argued that this was because they had been responsible with population control, whereas Celestia hadn't. But the Celestians replied that it was their ancestors, not them, that had caused the difference and that it was wrong that they should have to make do with less than their fair share of the world's resources. Many Celestians considered it barbaric that large parts of the world's land were given over to wildlife while humans had nowhere to live and died of starvation.'

'Mm . . . So what did Morinya do?'

'Well, Celestia gave Morinya a year to consider the request. At the end of the year Morinya said, 'No'. Celestia responded by staging a massive arms and troop build-up around Australia with the apparent intention of taking it by force. Morinya considered going to war, but Australia is somewhat geographically isolated from the rest of the union and therefore not the easiest to defend. Also it had a bob population of only 19 million. And on top of that, it would have been very hard for us to amass nearly the force that Celestia had there within the time that was likely to be available.

‘So we decided that discretion was the better part of valour and negotiated a deal where Morinya ceded ANZ and the sanctuary states which were contiguous with Celestia. Celestia gave us two years to evacuate ANZ. Obviously no evacuation was needed in the sanctuary states: the change would just be a change from the Morinyan Union to the Celestian Union. The majority of the population of Australia and New Zealand moved to Asia. Celestia agreed that there would be no further territorial demands.’

Tahnee showed on the other screen a map of the world before the settlement.



And one after the settlement.



‘So that’s why Australia’s full of Africans?’ Narlo said.

‘Yes.’

‘And why we had to land in China?’

‘That’s right.’

‘That still doesn’t explain the war though.’

‘No it doesn’t. We’re coming to that. By 2115 there had been quite a change in the make-up of the Celestian council and they decided not to be bound by the agreements made earlier in regard to not making further territorial demands.’

‘So what happened?’

‘Last year, Celestia made a second demand for territory. They told us that they wanted the Indian subcontinent and Indochina. By this time the population of Celestia had grown more and that of Morinya had declined further. They said that the new territory is fertile land much needed to feed their population. Also it would consolidate their territory.’

Hannah looked puzzled.

‘At present Bangladesh and Northeast India are part of Celestia but are isolated from the rest of it, largely surrounded by Morinyan land. If Celestia gets what it wants, its states will form a more contiguous area – basically the southern two thirds of the world.’

Tahnee brought up another map of the world showing the

division demanded by Celestia.



With that they broke for morning tea. Over morning tea Narlo thought aloud, ‘All this was happening while we were blissfully unaware, living in our own far-off world.’

‘Could almost make you glad you lost contact,’ Misha said, half joking.

‘It almost could,’ Narlo replied.

They chatted over coffee and cakes for about 15 minutes, then went back for Part 2.

* * *

‘So what’s Morinya going to do?’ Narlo asked.

‘No decision has been made,’ Tahnee answered. ‘Celestia has given us until July next year to think about it and then three years to evacuate if we agree. Negotiations have been taking place sporadically, though Celestia seems to be fairly unwilling to compromise.’

‘What sort of things is Morinya considering?’

‘One obvious option is to comply. Some feel that Celestia will then be happy with their consolidated territory and make no further

demands. Most don't subscribe to this view though and feel that we should stand our ground. They point out that, if we give in to this demand, then Celestia will move into the new lands and, in another 20 years, they will have a bigger population as well as more land and more resources, while Morinya will have less of all of those. Celestia would then need to make another territorial demand and Morinya would then be in less of a position to make a stand. So we would probably give in again. The cycle would continue with Celestia becoming more powerful and Morinya less powerful until we ceased to exist. They say our best chance of winning has to be now: if we fight now, we may win or we may lose, but if we don't fight now, we probably won't fight next time or the time after and eventually we won't stand a chance: we will just have to accept the extermination of our culture, if not of our population.'

'Mm . . . So it looks like we will stand our ground and fight.'

'It does seem likely that we will stand our ground. If we do, Celestia may not attack, at least not immediately. But they more likely will.'

'What would happen to the Morinyans if there is war and we lose?'

'Probably the same as what would happen eventually if we don't fight: those that are left would have to live in a theocratic state. It would be the end of freedom of thought and enlightened Western culture.'

'That would be the case for bobs anyway. Troggs would most likely be turned off and destroyed – unless they could be useful as slaves. After all, to religious people who believe in souls, they're just machines and most religions have no objection to using machines to make life easier for people.'

'Mm . . . And if we won?'

'Then our culture and population would survive – at least for now – and our trogs would be spared. But we would have to take steps

to ensure that Celestia couldn't out-arm us in the future and fight again. We would have to find a way of preventing their re-armament, either that or make sure we win the arms race.'

'Is Morinya arming itself now?'

'It certainly is. And roamers are an important part of that.'

Narlo and Hannah both frowned and sat thinking for a moment. 'If there is war,' Hannah asked, 'how will it be fought – large-scale nuclear devastation or on-the-ground fighting or what?'

'Both sides have nuclear weapons, but both sides also have defence systems that could effectively shoot down any long-range missiles before they penetrate their territory. Also Celestia wouldn't really want to use atomic bombs on land and cities that they hope will eventually be theirs. So the fighting would more likely be a lengthy war of attrition on the ground with huge numbers of casualties.'

'Mm . . . So the way things are at present,' said Narlo, 'isn't necessarily the way they will be in a few years time?'

'Unfortunately no. Even without the current territorial issue, there is the fairly widespread view throughout much of Celestia that Morinyans are a godless horde put on Earth by the devil to test their resolve to fight for righteousness. With this view, some of them see attacking and annihilating us (or at least subjugating us) as a duty to their god.'

Narlo and Hannah sat quietly for a while, both looking pensive. Learning that the world they had seen might be only a temporary haven was a bit of a bring-down. Learning that progressive Western civilization could come to an end in the next few years was very sobering.

* * *

Work finished at lunch time and the afternoon was free. Rory and

Misha took Hannah and Narlo around the city and then to a simulator. The simulator was a very convincing virtual reality experience including all-round 3-d vision, sound, touch and a sense of movement. They had to put on suits and be fitted into machines for the experience. Rory pointed out that this was about the closest a bob could come to a trog experience. They had a choice of places to go and things to do and they each did quite a few.

Over dinner in the evening, Misha told Hannah and Narlo that they had now been told all the heavy stuff – they knew about blips, trogs and roamers, about Logal, Morinya and Celestia, and about the tension there and the threat of war. ‘You now have a fairly good understanding of the way the world is. There’s just detail to fill in.’

Hannah and Narlo were obviously relieved. Still weighing on both their minds, however, was the question of whether a sanctuary state would accept Narlo after the findings of the investigation into Saphira’s death.

Narlo lay in bed that night going over that question and the things Tahnee had told them about the likelihood of war and what that would mean for him and Hannah. It took him quite a while to go to sleep.

Chapter 39

The Future

The next morning Misha and Rory arrived after breakfast and told Hannah and Narlo that they had cancelled Tahnee’s session for that day. Instead they invited them to come and sit outside by the pool. Both were apprehensive as to what they were about to be told. They sat down under a tree and Rory gave them the news they’d

been hoping not to get: Hannah had been accepted by Ireland, but Narlo would not be accepted there or by any other sanctuary state.

This was obviously a major disappointment. Hannah asked if she and Narlo could go for a walk by themselves.

‘Of course,’ Rory answered.

They walked to a quiet area. Hannah really had little choice other than a sanctuary. For Narlo on the other hand that was now not an option. So it looked like they were going to be separated.

Narlo was aware that he found it easier than Hannah to accept their fate. He’d been ambivalent about marrying her anyway. He hadn’t said anything to her, but once the emotion of surviving the kidnap had passed, he’d thought quite a bit about what he was giving up in turning his back on a trog life – and potentially unending life. He had pondered how he would feel about his decision when he was about to die. He wouldn’t have reneged on his promise, but something inside him was almost relieved that a different decision had now been forced upon him.

So Narlo didn’t feel too bad. Though, on the other hand, he felt bad about not feeling bad. He probably wasn’t going to be able to bring himself to tell Hannah what he really thought, and felt that doing so would serve no purpose anyway. They still had a few days of the induction left and they would be able to stay as they were for that time.

For Hannah, of course, separation had no such silver lining. She would be moving to a place where she knew no one and didn’t speak the language. It was a consolation that there would be Christians there and that Christians tend to be welcoming of new people, particularly those in need. There was also the fact that people might be interested in her past. But the worst thing was going to be not having Narlo. And she told him this.

‘What will you do?’ she asked him.

‘Well, I’m worried about the blip,’ Narlo said. ‘And besides, if I

took the blip, I would still be alone in Morinya, unable to talk to anyone except a few old people – at least until I mastered the language, which is likely to be a while. So I think it’s going to have to be tugging. I am worried about what’s likely to happen in the next few years though.’

Hannah looked at Narlo, clearly close to tears. She put her arms around him and the two held each other without saying anything for several minutes. Then they walked back to where Rory and Misha were sitting and sat down.

Narlo explained that Hannah would probably go to Ireland and that he was thinking about being tugged.

* * *

‘But can I ask a few more questions?’ Narlo said.

‘Sure,’ replied Rory. ‘Do you want to ask now?’

‘Might as well. It seems that there’s the likelihood of war between Morinya and Celestia fairly soon and that, if Morinya loses, it would be either death or slavery for the tugs and probably not a great fate for bobs. How likely is the war and how likely are we to lose?’

‘Are you after my personal opinions?’ said Rory.

‘Yes.’

‘I think the most likely course of events is that Morinya will refuse to move. Celestia will probably attack, but it’s not clear whether it will be straight away or whether they will take a while to prepare themselves further. Also, it’s not clear whether they will try to invade the disputed territories and be happy with that for a while or whether they will attempt to take the whole of Morinya in one go. Because Celestia would have more troops than us, and quite likely more equipment, it would be to their strategic advantage to fight on as broad a front as possible, so they might

well go for the latter option.

‘As for the probability that we lose, it’s hard to tell because a lot depends on military preparedness on both sides and much of the information on that is classified. Obviously the people who make the final decision to comply with Celestia’s demand or refuse will have access to all that information.

‘This is all assuming of course that the war is fought in the traditional way,’ Rory added.

‘How do you mean?’

‘I mean with soldiers, tanks, planes and the like.’

‘Is there another way?’

Morinya does have other options. Tahnee didn’t mention them yesterday. She would have brought them up later, but I can tell you.’

Narlo waited for elaboration.

‘The first option is very drastic. Even if we did have the ability to use it, I’m not sure that we would. But, if it looked like Morinya was going to lose, that our bobs were going to be subjugated and our trogs destroyed or made into slaves, we might.’

‘Mm.’

‘In this option Morinya would trog its remaining bobs . . .’

‘Mm . . .’ Narlo said with a frown.

‘Then it would flood the world with biological warfare agents.’

‘And kill all the Celestians?’

Rory nodded.

Hannah spoke up. ‘Would Morinya do that?’

‘As I said, I’m not sure that we would. Certainly it’s not a stated policy. But if we were put in a position where either they wipe out the Celestians or the Celestians will wipe out the Morinyans, or even just the trogs and Morinyan culture, . . . I think there’s a chance they would go that way.’

Hannah and Narlo both found this disturbing.

‘So that would be the end of mankind?’ Hannah said.

‘No,’ Rory replied, ‘it would be the end of bobs. Mankind would continue – just in a different form. It would be more like when the Neanderthals were replaced by modern man. Although the Neanderthals might have seen it as a disaster and the end of Neanderthal-kind, to us in retrospect it was just another step in the evolution of humans.’

‘So targs are the next step in the evolution of humans?’ Hannah asked.

‘We don’t know what’s going to happen, but that’s a possibility. Evolution is characterised by slow progressive changes punctuated with sudden more drastic ones. The drastic changes are never pleasant for those around at the time, but they are often a good thing in the bigger picture. If the Chicxulub meteorite hadn’t wiped out the dinosaurs, mammals would probably still be little things crawling around in the trees at night catching insects. There’d be no humans, no you or me, no Morinyans or Celestians, and possibly no intelligent life at all.’

Hannah didn’t respond.

‘The oxygen catastrophe is an even better example.’

‘Oxygen catastrophe?’ Narlo queried.

‘That’s what happened a couple of billion years ago when oxygen started accumulating in the oceans and atmosphere.’

‘Go on . . .’ Narlo said.

‘Well, before then, all life forms on Earth had evolved to live in an anoxic environment. In fact free oxygen was toxic to them. Organisms produced oxygen by photosynthesising, but all the oxygen reacted with iron dissolved in the sea to produce iron oxide which deposited on the sea floor and got buried. So the water stayed anoxic.’

‘Mm’

‘But eventually, more oxygen was produced than the iron could

absorb and so oxygen started to accumulate in the water and in the air. As it accumulated, it began to poison most living things – including those which produced it.’

‘A bit like being asphyxiated by your own farts.’ Narlo suggested.

‘Never thought about it that way, but yes I suppose so. Anyway, most living things died. Those that were most tolerant of the oxygen survived longest and some of those evolved into species that could actually use the oxygen to metabolise. Metabolism based on oxygen is much more efficient than what was used before and this allowed the development of multi-celled organisms and eventually us.’

Narlo nodded.

‘Now to the bacteria that were killed by the oxygen it would have been a catastrophe. But when you consider the bigger picture, it was a good thing – a great thing even – and we wouldn’t want it not to have happened.’

In a few thousand years time, there might be a trog civilization which has developed into something beyond what we could imagine today. The trogs might look back the same way on the elimination of Celestia with its religions and maybe even the bobs.

Hannah and Narlo both thought about this.

* * *

‘So,’ Narlo started, ‘let’s say trogs totally replace bobs as you say.’

‘I’m not saying they will,’ Rory interrupted. ‘It’s just one possible scenario.’

‘Ok, but suppose it does happen. That would be the end of human evolution. And surely that’s not a good thing in the long term.’

‘No, human evolution would probably happen much more

rapidly in the trog world.’

‘How? . . . How can you have evolution without reproduction? . . . and without genes to mutate?’

Quite a bit of research is going into relating the structure of a brain – or a trog – to its traits like intelligence, personality, mental health and so on. They are also experimenting with trying to use this knowledge to modify trogs by resetting some of their synapse registers.’

‘What sort of modifications?’

‘Well some peopled are trogged with psychological problems or with disabilities caused by stroke or brain injury and of course these problems are transferred to the trog. It is in theory possible to fix these by some simple adjustments.’

‘So if I’m schizophrenic or have some phobias, they’ll be fixable once I’m a trog?’ Narlo asked.

‘In theory. We’ve still got a way to go in working out how to do it. But eventually, there’s no reason why we shouldn’t be able to.’

‘Could they make me more intelligent too?’

‘They could. But again, we’ve got quite a way to go to work out how to do it.’

‘So you’re saying trogs will evolve on an individual basis rather than as a species?’

‘The mechanism of evolution will be different because individuals will change rather than producing different offspring then dying. One possibility is to incorporate extra digital storage and processing capacity into an existing trog. A simple computer can read exabytes of data within a few minutes and recall it all without a single error. A brain can memorise maybe a couple of dozen one-digit numbers in the same time and then tends to make errors when retrieving them and forgets them a few minutes later. A computer can do billions of calculations per second; a brain can barely do one per second. If we could add the data storage and

processing capacity of a computer to a trog, we would get something that could do a lot of things neither other humans nor computers can do.’

‘Have they done that?’

‘Not yet, but it may not be long. In theory, there should be no limit to the additional intelligence we can build into a trog once we understand how intelligence works.’

‘Mm . . . Ok, so individual trogs can evolve, but if there are no bobs, there will never be any new trogs.’

‘We can make new trogs by duplicating old ones. And then we can modify the new ones. Thought has even been given to trogs having babies. In theory, it should be possible to create trogs from new-born babies, then get parents to bring them up.’

‘Trog parents?’

‘Yes. Obviously they would bring them up in the virtual trog world.’

‘Would they breast feed them?’

‘Probably. Not for the nutrition, but because human brains are wired to need that sort of nurturing to grow up well.’

‘They haven’t made any trog babies yet?’

‘Not yet. If they did let trogs have babies, lots of them might want them and then we would get a population explosion.’

‘I suppose you would – especially as the old ones don’t die to make room for the new ones.’

* * *

Misha chirped up: ‘There’s an interesting book which you might read some day. It’s called *A God Like Me* and it’s set in a future where trogs can have babies.’

‘Mm’

‘It describes how a rich man named Clufer got some slabs and

EICs and a central server, then got hold of copies of the data for some baby trogs and made the trogs. Then he used verns to bring up the babies and of course he controlled the verns – everything they did and said.

‘He never let the trogs know they were in a virtual world – he brought them up to believe they were in a natural world which they could move around in, observe and study scientifically. He gave them access to books etc. which told them the history of their world (made up of course) and which explained the universe they lived in and how it works – just like the books we have that explain our universe. So, in general, they never questioned the nature of their world.

‘The environments they lived in also had hints that the physical laws of their universe didn’t explain everything, but rather that an unseen supernatural god could override those laws and so had ultimate control over their destiny. A book was available that explained the nature and will of this god, but the god never showed himself directly or in an undeniable way – he expected the people to have faith in his existence.

‘He also encouraged them to pray to him, to ask him for things they wanted – and to worship him. He made it seem that their god would reward them if they behaved the way he wanted and punish them if they went against his will.’

‘So Clufer was playing god?’ Hannah asked.

‘You could look at it that way. But you could look at it in a different way: he wasn’t playing god; he *was* their god! In the sense that he had made them and had total power over them, he was their god.’

‘Mm . . .’ Hannah said with a frown.

‘Then the book suggested that the Christian God was just a man with a computer and that we are his subjects living in a world which is real to us, but which is virtual to him.

‘Of course humans have no way of knowing whether this is or isn’t the case. And the book asked if it changed anything if it was in fact the case, or if it made God any less God. If you see a god as someone who created people and who has ultimate control over them, their environment and their destiny, then the man with the computer is just as real a god as any other conceptualisation of god’.

Hannah looked at Misha without saying anything. While the story was obviously a fiction, the message wasn’t lost on her.

‘That’s given me something to think about,’ Narlo said, somewhat intrigued.

* * *

After a pause Rory pointed out that exterminating bobs wasn’t the only possible strategy for avoiding defeat in a coming war. He said that there were other strategies which might not be quite as effective, but which might be more humane and acceptable.

In the first, before the Morinyans wiped out the rest of the world with biological weapons, they would build shelters for their bobs to provide protection from the bacteria or whatever that would devastate the Celestians. The Morinyans would stay in the shelters until the air was safe again. If they had time, they would build enough shelters for all the Morinyan bobs; if not, they would save as many as they could and these would then act as a breeding stock from which they could produce a new population.

In another strategy, instead of flooding the world with biological agents, Morinya would just made it clear to Celestia that they were capable of doing so and ready to do it. But that they would hold off if Celestia withdrew and ended the war.

Both these scenarios seemed a bit less drastic than the first picture Rory had painted.

‘There is one more option that saves the trogs without killing any Celestians, but it does leave Morinyan bobs at the mercy of Celestia,’ Rory continued. ‘In this one the trogs pack up and go and live somewhere else.’

Narlo was intrigued. ‘Like?’

‘There’s an asteroid orbiting the sun between Mars and Jupiter.’

‘There are lots of asteroids orbiting the sun between Mars and Jupiter,’ Narlo replied.

‘True,’ said Rory, ‘But there’s one in particular called Sylvester. It’s about 30 km across and consists basically of a pile of rubble with lumps up to a kilometre or so across and with the spaces between the lumps partially filled with smaller rocks, gravel, dust and ice. With a bit of excavation, these spaces would make good caves and the asteroid contains all the raw materials that would be needed to set up and maintain a trog colony.’

‘The idea is to send some equipment there – excavating, mining and refining equipment, manufacturing equipment and solar panels for energy. They would also send a few trogs along with roamers. The trogs would find suitable places within the asteroid to excavate and mine and would set everything up. Once the construction machinery and infrastructure are established, they would make more trog slabs, more roamers and more solar energy collectors.’

‘As the trog slabs became available, the data for the trogs still on Earth would be beamed there electromagnetically and programmed into the slabs.’

‘The trog colonies they set up, being inside the asteroid, would be protected from solar storms and other cosmic rays which can damage electrical equipment. And because gravity would be almost negligible, especially right inside the asteroid, there would be no need for heavy frameworks to hold the trogs like we need on Earth: a very light framework would be adequate. And, as the ambient temperature inside the asteroid is around minus 80

degrees, little would be needed in the way of cooling equipment. The energy used by the trogs would keep the inside temperature around a comfortable zero.'

'Compared to the other options, this one sounds almost reasonable,' Narlo said.' 'So what's stopping them?'

'Nothing. The possibility of doing something like this was looked into from about the time Celestia made the demand for Australia and New Zealand. A suitable asteroid was identified and visited and plans were drawn up for its colonisation. But nothing further was done until last year when Celestia made its second demand for land. Since then, the project has been underway with some urgency and the first shipments of trogs and equipment are already on their way.

'The trouble is that it will be another eight years before we can get enough infrastructure established and all the 860 million trogs transferred along with all the virons etc. But we don't know whether we will have eight years to get the job finished.

'Morinya has shared this plan with Celestia and has suggested that it might be willing to hand over the territory that Celestia is demanding if Celestia is prepared to wait the eight years. Of course Celestia sees that as us stalling for time so that we can get better prepared to defend ourselves before reneging on the deal. So agreement is unlikely and we're still preparing for war any time from next July.

'Anyway, as a trog, you could end up having a long and peaceful life in a well appointed cave on beautiful Sylvester.'

'And the Celestians would be happy to leave the trogs alone there?' Narlo asked.

'Mm . . . That we're not sure about. Hopefully they would see the trogs as just machines which have no need to be enlightened with the ways of righteousness and that have no desire to come back to Earth, and so they will be happy to leave them alone. But

we can't know for sure. It could be more in their interests to dispatch a few nuclear weapons to eliminate the threat and rid the solar system of the ungodly influence once and for all. But of course, Sylvester could arm itself against missile attacks and probably would.'

'I thought you said we'd had all the heavy stuff,' Hannah said.

'Sorry,' Rory replied. 'I suppose this is a little heavy.'

'It is.'

Rory went on anyway: 'The other things the Sylvestians could do is to spread out to other asteroids in the same way that they had spread to Sylvester. There would be thousands of suitable asteroids out there and being spread among them would make it a lot harder for the Celestians to eliminate them.'

'This is starting to sound like science fiction,' Narlo said.

'It is, isn't it,' Rory agreed.

* * *

Hannah rejoined the conversation. 'One thing I've wondered is how these decisions are made – like making trogs, going to war, moving to an asteroid . . . Presumably there's some sort of government, or is it a dictator or a big brother computer . . . ?'

'That's a good question,' Misha replied. 'We haven't told you anything about that sort of thing. It was going to be in a later world affairs lesson, but I can tell you now.'

'Morinya has a government which makes these decisions. It's democratic, though the system is quite different from the one that you would be used to. It's actually a lot more democratic than the old system.'

'There are now two types of people – bobs and trogs – and all get equal say. Basically, the government consists of just 13 elected bobs and 13 elected trogs plus appointed staff. But rather than these

26 making all the decisions, they formulate proposals and put them to the general population who can then vote on each proposal.

‘Voting is done over the Internet. Everyone over 16, bob or trog, can vote. On the government site, there is always a list of proposals on which voting is being accepted at that time. For any given proposal, voters can read the possible choices and a report summarising the position of those for it and the position of those against it. People can add their own comments to the report too if they wish and can read other people’s comments.

‘To vote, people use their blip to identify themselves. But before they can vote, they have to answer a few randomly chosen questions to show that they have at least a basic understanding of the issue they’re voting on.’

‘I think some countries were actually talking about changing to a system like that before you left.’

‘Yes, it was being talked about in Australia,’ Narlo said.

‘So do they have to have a vote before they can go to war?’ Hannah queried.

‘That could be a bit different,’ Misha replied. ‘If there’s plenty of time, they will check what people think about doing so. But if an urgent response is needed, then the military chiefs can act autonomously. Obviously a lot of things are done under military secrecy as well and those things don’t get voted on. But two of the 26 elected governors are the ministers of defence – one bob and one trog. So they are accountable for their actions in the way politicians of old were.’

* * *

‘You know, there’s one more thing we have to tell you,’ Misha said brightly.

Hannah and Narlo both looked worried about what they were

going to be hit with now.

‘This is good news,’ Misha added, noticing their expressions. ‘It’s about your money.’

Hannah and Narlo did look more interested – and a little relieved.

‘You both have 76 years pay in the bank. That should be enough to live quite well for the next 40 or 50 years without having to work. The money is in mors which can be used anywhere in Morinya including the Irish sanctuary state; and it can be converted to Empyrean dollars which would see you live well for quite a while as a trog.’

That was good news. It would save one worry in life, particularly for Hannah. It didn’t make up for the bad news about the war and their forced separation, but it did finish the discussion on a more positive note.

Chapter 40

Decision

That night, Narlo thought through what Rory and Misha had said. Of course, things could pan out in lots of different ways, but it seemed that, all in all, being trogged was no more likely to lead to bad consequences than remaining a bob. Even if Celestia did attack and win, it would probably be quite a few years before he was turned off (or worse) and there was a good chance that he would be killed during that time as a bob anyway – or even die of natural causes. He stuck with the decision to be trogged.

Knowing he and Hannah would soon be separated, the remaining days of the induction were more sombre than the earlier days and there were a few teary moments. Narlo noticed that Hannah was at

times not as communicative as she had been earlier: she seemed to be preoccupied with her own thoughts and she spent a lot of time by herself. He could understand why she would be like that, but still he felt a little shut out. On one of those days Hannah suggested that there wasn't a lot of point in their getting married. It wasn't that he particularly wanted to get married, but this did seem to indicate a change in her feelings.

The last day of the induction came. Arrangements had been made – Hannah was to fly out the next day; Narlo would be converted a few days later. It all seemed to come upon them very quickly. That night would be their last night together.

* * *

Rory and Misha left them at their apartment about 7 o'clock. Hannah walked over and put on some music – a song from their era – a soft song, but one they had both liked and that they had listened to quite a bit in the Shack. Then she walked back to Narlo and asked him if he wanted to dance. Narlo was a little surprised, but took the offer. Hannah seemed happier than she had done for several days. They put their arms around one another, held each other close and danced slowly.

'I've been thinking,' Hannah said, 'and I've made a decision.'

Narlo pulled his head back so he could look at her face, then waited for her to go on.

She continued, 'I'd like to come with you.'

Narlo looked at her quizzically, not quite sure what she was saying.

'I've decided I would like to be trogged,' she said.

'What?' Narlo said with surprise, pulling back further to get a better look at her, but still holding on.

'Would you want me to be trogged with you?' she asked.

Narlo looked at her with delighted surprise. ‘You would do that?’ he said. ‘But . . . why? I mean you’re not sure that trogs are people – alive, conscious, with a soul.’

‘No, I’m not, but I’d rather take the chance than go to Ireland without you.’

Narlo was obviously touched. Hannah was prepared to do something at odds with her fundamental beliefs to stay with him.

‘What are the possible results?’ she said. ‘If trogs are not living beings with souls, then I die when I’m trogged just as I would if I died in an accident or of old age or in a war. I will be with God. If trogs are living beings with souls, then my life will continue until such time as the trog is terminated. Then I will die and be with God. The other possibility is that there is no God and there are no souls. To me that’s not very likely. But if it is the case, then I will be better off as a trog.’

This was the first time Hannah had expressed that sort of ambivalence. Narlo had reasoned along similar lines himself, but had just accepted that Hannah would never be swayed by such logic.

‘I always assumed you just wouldn’t go that way. Are you sure you want to do that?’

‘I’ve been thinking about it the last few days and I’m comfortable with the decision. It’s what I want to do.’

Narlo wrapped his arms around her again and squeezed her. They both hugged each other tightly. The warmth between them was back. Hannah seemed genuinely happy with what she had said.

* * *

After a few minutes, Hannah pulled back again and said, ‘Well . . . you haven’t answered my question.’

Narlo looked at her as if to ask what question.

‘Would you want me to be trogged with you?’

Narlo looked at her for a moment and said, ‘That would be the best thing that could happen to me.’

‘Good,’ she said. ‘I have another question.’

Again a moment’s pause, then she said, ‘I would like to be married to you when we go. What do you think?’

Hannah went on, ‘I hope we can spend our time together as trogs. But I would like to be married to you as a bob – even if it’s just for a day.’

‘We’ll do that,’ Narlo said with genuine enthusiasm.

The music had stopped, so Hannah disentangled herself from Narlo, went and put it on again, then came back and re-entangled herself, but at arm’s length so they could see each other.

She looked at him intently and said ‘You really did want to be a trog all along, didn’t you?’

Narlo was somewhat surprised at her insight, but then thought that it would probably have been fairly obvious, knowing the way he thinks.

‘You did, didn’t you?’

He felt a bit put on the spot, but decided to admit that he did.

‘I could see the good side of it.’ he said.

‘Seeing people the way you do, it makes perfect sense to want to. A trog life seems to have more to offer than a bob life.’

Narlo was once again surprised. Up to now, Hannah just hadn’t seemed to see things that way at all.

‘But despite what that meant to you, you were prepared to turn your back on it and come to Ireland with me, weren’t you?’

‘I was,’ he said.

‘That’s the most beautiful thing anyone has ever been willing to do for me,’ she said. ‘You are the most fantastic person.’

Hannah looked at him intently for a few more seconds, then said, ‘I love you.’ Then they kissed – their first real kiss and a long

passionate one.

That was the first time either of them had ever mentioned love in the sense that Hannah meant it here. Narlo had thought about it. He wasn't really *in love* with Hannah in the way that young people fall in love. But, in a different sort of way, Narlo did love Hannah and he loved her deeply. He loved her in a way that had grown over so many years and through so many different situations – good and bad. He just had never told her that, but now was the time.

'I love you too.' Narlo replied. The words didn't seem enough to convey what he really felt. But Hannah seemed to know what he meant. She had understood the way he felt even though he had never talked about it. She understood people a lot better than he did.

They didn't say a lot more. They danced till the end of the song. Then Hannah slowly and tenderly started to undo Narlo's shirt buttons. She pushed him to the bed and laid him down. They enjoyed the closeness, though both were happy to wait the extra few days for their matrimonial rights. They didn't need to talk about that. Both stayed awake for an hour or so savouring the joy of what now promised to be a happy ending, made all the sweeter by the fact that it had come out of the uncertainty and disappointments of the last few days.

* * *

The next morning, they told Misha and Rory of their decision. Like Narlo, Misha and Rory were surprised. But they were delighted too and showed it more than Hannah and Narlo expected. Narlo enjoyed the foursome. They all got on well and he was very comfortable. He knew that he would still be able to see Rory and Misha in the trog world even if Hannah had gone to Ireland, but it wouldn't have been the same without her. Now Hannah would be

there with them.

They cancelled Hannah's ticket to Ireland and they asked about getting married.

Rory and Misha were obviously a little amused by their decision to get married just before leaving the bob world. But they seemed to understand. They made the arrangements for them. Rory and Misha would be the best man and the bridesmaid. The guest list would be very short.

Chapter 41

Last Days

They planned the wedding for late Sunday afternoon – and the conversion for the following day.

‘When you're converted,’ Rory said, ‘you have the choice as to whether you want the capacity to feel pain as a trog.’

Narlo and Hannah were both a bit taken off guard by the choice. ‘What are the pros and cons?’ Hannah asked.

‘What do other people do?’ Narlo added.

‘Most people go for the no-pain option,’ Rory explained. ‘Pain can be a desirable aspect of some experiences for some people. But the experiences are generally ok without the pain.’

Narlo gave Rory a somewhat incredulous look.

‘The main reason people choose not to have the pain is in case someone evil ever gets control of them. It is theoretically possible for someone who doesn't like them to inflict very large amounts of pain on a trog for a very long time. And there's nothing the trog can do about it.’

‘And that's not possible if you opt out?’ Hannah asked.

‘Not without making fairly major and difficult changes to you.’

‘Who goes for pain, then?’ Narlo asked.

‘Masochists mainly,’ Rory replied.

Narlo seemed to find that amusing. ‘I think I’ll go for the non-pain option.’ Hannah made the same choice.

‘Now one other thing’ said Rory ‘is that you shouldn’t take any drugs, including alcohol, for 48 hours before your conversion. So a dry wedding.’

‘That’s fine with me,’ Narlo said.

‘Me too,’ said Hannah.

* * *

On Saturday, Misha took Hannah out to get a dress and some shoes. They only went to one shop. There were hundreds of dresses to try on. There were some in the old-fashioned wedding dress style, but these appealed to Hannah less than some of the more modern designs. Misha handed her a cream-coloured dress made from a very light, soft and smooth material which had an iridescent sheen. There wasn’t much to it, but Misha encouraged her to try it on. Hannah came out of the change room.

‘That looks stunning,’ Misha said. It was sleeveless, but with shoulder straps. The neck line was a bit revealing, though not overly so and anyway, despite her modesty, Hannah’s natural assets were worth showing off a bit. The bottom was about knee length, though higher in parts and lower in others. The dress brought out the shape of her body in a way that none of her other clothes did.

‘What do you reckon?’

Hannah looked at herself in the mirror. It wasn’t quite what she’d had in mind, but she obviously liked it. It was very flattering. ‘It’s maybe a little tight around here.’ she said.

‘Don’t worry about that. You won’t get this one. Yours will be made to your measurements.’

They looked around a bit more, but the more she looked, the more she became happy with the one she was wearing. They picked a pair of shoes that went with it. Then Misha took her into the measuring room. All she had to do was to stand there in her underwear in an upright pose, legs slightly apart and arms slightly out from her sides, and all the measuring was done with lasers.

‘How long will it take to make?’ Hannah asked.

‘It’ll be ready in a couple of hours. I’ll look after it until tomorrow.’

‘Does someone have to make it?’

‘No, it’s all computerised.’ Misha answered.

Narlo, meanwhile, was having a similar experience picking a suit with Rory.

* * *

On Sunday Rory and Misha arrived after breakfast. Misha left with Hannah to get ready. Rory took Narlo. They wouldn’t see each other again until the ceremony.

Rory and Narlo went to a place in town for a hair trim (for Narlo, not Rory) and a bit of general brushing up. After this they went to a restaurant on the waterfront for a light lunch. Then it was off to the chapel. They were met by a young man who showed them to where their clothes were waiting. They got dressed, each in a light-coloured suit in a fairly traditional style.

They checked each other over, then went into the room where the ceremony would take place. It was small, but very nicely decorated in white with touches of blue. There were seats with an aisle down the centre. The front and sides were mostly glass and looked out over lawn and beautifully manicured gardens. They walked to the

front, where a man was waiting for them.

‘This is Hugo,’ said Rory. ‘Narlo.’

Hugo seemed to be about 40, with a pleasant face and demeanour to match. He spoke English fluently, in an Australian accent and the three of them conversed in English. Quiet music played in the background.

Then the bridal march started, more loudly. The three men turned to the back of the room to see Hannah and Misha walk in. Narlo hadn’t really been terribly emotional or nervous up to this point, but the music and the sight of the two women walking into the room brought a knot into his throat and moisture to his eyes.

Hannah looked fantastic – beyond what he had envisaged. Hannah and Narlo keep their eyes fixed on each other as the ladies walked up.

‘You look beautiful,’ Narlo said. Hannah responded by putting her arms around him and they hugged each other.

‘Ahum,’ Hugo said with a knowing smile, ‘we’re supposed to marry you first.’

‘Oops, sorry,’ Narlo replied.

Hugo spoke to the couple for a few minutes. The vows contained no mention of *for richer or poorer* or *in sickness or in health*. Nor was there any mention of *till death us do part*. None of that had seemed terribly applicable in the circumstances. But they promised to love and care for each other for as long as either of them wanted to be loved and cared for. The words seemed a little non-committal, but they both knew the other wouldn’t abandon them. There would always be a special bond there. Just the fact that they would continue to be together was a real bonus.

They both said *I do*. Then they were allowed to kiss. For a couple of oldies, it was a pretty good kiss.

They signed the book, then went outside through a glass door, where a woman was waiting to take some photographs. She didn’t

speaking English, so Rory and Misha translated the few instructions that weren't obvious. The sun was getting low in the sky giving a warm golden glow to the garden. They took quite a few pictures in various combinations of the five people present and against various backgrounds.

A table was set in the garden with a small array of delicacies. The five of them sat down while the photographer disappeared. Hannah and Narlo ate one or two things. Misha explained that, like her and Rory, Hugo didn't eat.

After they'd eaten, the photographer came back with a handful of photos. They looked at them. They were good.

'It's a pity we've only got a day to enjoy them,' Hannah said.

'You'll be able to get them after the conversion,' Misha replied.

Hannah thought for a moment to let that sink in.

A little while later, Rory and Misha took Hannah and Narlo to a bridal suite in a nearby building overlooking a lake. It was lavishly decorated and very pleasant.

'We'll see you about 9 tomorrow morning,' Rory said as they left. 'Have fun.'

Narlo took Rory's arm and said, 'Thank you' to him and Misha, making it clear he wasn't just thanking them for dropping him off.

* * *

Neither Hannah nor Narlo had had any previous experience with sex – not involving more than one person anyway – so they weren't sure as to how it would go. On top of that, they were aware that they would only have one chance as bobs. But they took comfort in the fact that it would probably be better as trops anyway.

As it turned out, they needn't have worried at all. They had a great night and the fact that it would be, in a sense, their only one, made it all the more special.

* * *

Narlo woke before 5 o'clock, still luxuriating in the afterglow of the night before and the way everything had turned out over the last few days. He was lying on his back. Hannah was beside him with her arm across his chest and one leg folded across his legs.

He lay there for a while enjoying their closeness, but eventually needed to change position. By now he was wide awake. He wondered if Hannah was, so he whispered her name. She replied in a way that suggested she had been awake for a while too. They found a new position facing each other. Hannah closed her eyes again, but a warm, satisfied expression stayed on her face.

They both lay there as the red glow of the coming dawn lightened the sky. Then they got up.

'This is so good,' Narlo said.

'It's the best moment of my life,' Hannah replied.

They had a shower together and went and sat on the balcony looking over the lake. Narlo started to think about the event that was coming up later that day. For the first time he was feeling nervous about it. He put it down to the nervousness that comes when facing any unknown new experience. He told Hannah how he felt. Hannah wasn't nervous. Narlo felt he should be more like her.

They watched the sun come up over water that was glassy in the morning stillness.

They ate breakfast, put on some clothes that had been left in the suite for them and waited for Rory and Misha to arrive, which they did right on 9 o'clock.

* * *

Their appointment was for 3 o'clock. Misha gave them both a small bottle of liquid and explained that they had to drink it as part of the preparation for the conversion.

They spent the rest of the morning doing some relaxing things around town.

Misha explained a bit about the conversion. 'It's a bit like having an operation,' she said. 'You'll be given an injection and a few seconds later you'll pass out. Once you're out, they divert your carotid artery blood flow through a cooler and back into your head. This will cool your brain down to 1°C. This stops the normal cerebral activity and means that your brain cells will remain unchanged for several hours without further blood flow. That provides the time that's needed to carry out the scan.

'Then, once the scan is complete, they feed the data into your slab, connect it to your EIC, select a viron and fire you up. The next thing you'll know is waking up in Empyrean.'

'Will we be together?' Hannah asked.

'Yes, you'll both be there and Rory and I will be there too.'

'Ah good,' Narlo said.

Hannah was clearly happy with that idea.

'Rory and I will be with you for a few days. We'll induct you into trog life the way we've been inducting you into bob life.'

'Does it take a lot of inducting?' Hannah asked.

'A bit,' said Misha. 'There's a lot of stuff you'll need to be shown how to do.'

Narlo and Hannah both nodded contentedly.

Narlo had a thought. 'Will we see you after the induction?'

'Yes,' said Rory. 'We will be in the same colony, so we can see each other any time.'

'We don't plan to abandon you,' Misha added with a reassuring smile.

'That's good,' Hannah said.

‘So what viron will we be in when we wake up?’ Narlo asked.

‘That’ll be a surprise,’ Misha answered before turning and giving Rory a look as if they were keeping a secret from him.

‘Mm, ok,’ Narlo said.

A bit later they had a light early lunch and headed off to Ulanhot by car. They pulled into the building that housed the colony they’d visited a few days earlier, though they went into a different part.

They were greeted in the foyer by three staff, none of whom spoke English. They conversed through Misha and Rory. They appeared to be the only customers there and were given lots of attention and made to feel important.

They were given a run-through of what would happen to them over the next few hours. The first job was the measurement booth. They were told that they would initially have bodies that looked and felt like their bob bodies and the time in the booth would allow the necessary measurements to be made to generate these. Narlo went first, stripped off and subjected himself to the booth. He was asked to stand in different positions and to move in different ways. Lasers and small jets of air were directed onto every part of his body. Some made him quite ticklish. Cameras and other sensors recorded the data that was required. Hannah went second and got the same treatment.

Next came the head shaving. They had this done together. Neither had seen the other bald before. Hannah looked quite different, though still good. Narlo looked better if anything.

After the shaving, they showered and put on the gowns they would wear for the operation. With the gowns on, they were taken into a room with a couple of mobile beds with attached machinery. A large window separated this room from the one in which the operation would be performed. There was a large machine in the operation room, though it was difficult to make much sense of it. Other equipment was scattered around the room too. A brief

explanation was given, though a lot was left to the imagination.

‘Well, how do you feel?’ Misha asked them.

‘I guess I’m as ready as I’ll ever be,’ Narlo replied, then looked at Hannah for her response.

Hannah took Narlo’s hand and gave it a squeeze. Narlo knew that Hannah really didn’t know what was on the other side of the operation for her. But she was composed and smiled at Narlo encouragingly.

‘Do we lie on these?’ Narlo asked. Hannah was directed to one, Narlo to the other. They lay down and looked at each other.

Hannah got her injection first. They watched each other as her eyes closed. Then, before, she’d been moved, Narlo got his. He remembered the 10 seconds waiting for the injection to take effect and feeling that nothing was happening.

Chapter 42

The End

The next thing Narlo knew was that someone was shaking his shoulder gently. It was Rory. Narlo opened his eyes. He was still in the same room in which he’d been given the injection, still lying on the same bed. He looked across to where Hannah had been lying. She was still there in the same gown – still bald. He looked back at Rory, a little puzzled.

‘There’s going to be a bit of a delay,’ Rory said.

‘What’s happened?’ Narlo asked.

‘A bit of a problem with the computer that compiles the data from your brain.’

Narlo became concerned. He was entrusting his whole future to

this computer. ‘What sort of problem?’

‘Not sure, but it will be ready in a couple of hours.’

Narlo felt the top of his head to make sure it was still there, noticed that it was and that it was still bald, then looked across to Hannah again. She was looking at him, somewhat puzzled and worried too.

Rory continued ‘When you feel ok, you can get up and we’ll go and wait outside.’

Narlo felt ok, so he sat up and got down off the bed. He stepped over to Hannah and helped her down too.

‘Are you sure you’re ok?’ Misha said to Narlo.

‘Yeh, fine,’ Narlo said, seemingly surprised that there was any doubt about it.

‘You ok?’ she repeated to Hannah.

‘Yeh, I’m fine.’

‘You both feel the same way that you did before you got the injection?’ Misha persisted.

‘Yes,’ they both said.

‘Good.’

Rory and Misha looked apologetic and the staff looked slightly embarrassed.

Misha said, ‘Put your clothes back on and we’ll sit out in the garden while they get things ready again.’ One of the staff handed them their clothes.

They got changed, then Rory led the way and the four of them went out of the room, down a bit of a corridor, and out into the garden. There was a lawn with a few two-seater outdoor chairs, some garden beds with a few shrubs and some trees beyond them.

‘Take a seat,’ Rory said.

They sat down. Narlo and Hannah sat on one chair and Rory and Misha sat on another one not quite facing them. Narlo took Hannah’s hand. There didn’t seem to be much to talk about. All the

important things in the lead-up to the conversion had been said. This was a bit of an anti-climax.

* * *

It was a sunny afternoon, the sun would be going down soon and it was reasonably cool, but Narlo thought he heard a sound like distant thunder. He didn't say anything, but then he heard it again, louder.

'Is that thunder?' he asked.

'Don't know,' Rory said, looking slightly puzzled. Hannah obviously heard it too.

Then there was a loud roar from above them. They all looked up to see orange flames shooting out from behind the roof, followed by a dark shape. Hannah and Narlo both took fright and jumped up from the seat.

The shape turned out to be a head followed by a long neck, then a huge winged body. It looked like a dragon! Hannah grabbed hold of Narlo, though he wasn't exactly feeling strong and brave. The dragon banked and turned in front of them, gave another belch of fire, then came in as if to land on the lawn.

But instead of landing, it stretched down its neck, grabbed Hannah in its mouth and flew off with her dangling, back over the roof whence it had come.

Narlo looked at Rory aghast, then at Misha. But neither seemed to share his concern. He tried to say something, but nothing came out.

Then the dragon returned, without Hannah and this time picked up Narlo. It got him by the back of his shirt. This wasn't comfortable, but at least its teeth hadn't gone into his flesh. It lifted him quickly off the ground to a terrifying height, but then swung him around and dropped him astride its shoulders. There were two

horn-like protrusions sticking out from its neck which conveniently acted as handlebars, so at least he had something to hold on to.

Narlo looked around, though his main concern was staying on the beast. He was flying well above the tops of the buildings. As his mount turned, he noticed another dragon circling not far away with someone sitting on its shoulders. As they flew towards each other, he could see it was Hannah. His dragon passed near enough to hers that he could see the expression on her face. She looked terrified, knuckles white, eyes open wide.

Then he saw two other winged monsters flying towards them. Mounted on them were Misha and Rory. As they got close, he noticed they didn't look scared at all: they seemed to be having the time of their lives.

Narlo's brain was trying to process a huge amount of information in a very short time and trying to make sense of it, as well as, at the same time, worrying about surviving whatever it was that was happening to him. Up until then, it hadn't been doing very well.

But then, as Rory turned and passed him, he yelled out, 'Welcome to Empyrean!' and his dragon gave a roar, belching out a huge ball of orange flames that made Narlo's face momentarily quite hot.

That was what Narlo needed to start to get a grip on things. Over a few seconds, it all became clear. His expression changed from one of confusion and panic to one of total exhilaration. He and Hannah passed each other again. She'd obviously worked it out too.

Then Misha came past and yelled to him, 'You can guide him with the handlebars!'

Up until then, he'd been using them just to hang on for dear life. But then he started to experiment and quite quickly got to be able to steer the monster fairly much where he wanted to go. Then Misha headed off and the other three followed – soaring gracefully

into the sunset.